THE BOTANICAL SOCIETY AND EXCHANGE CLUB OF THE BRITISH ISLES.

REPORT FOR 1916

(WITH BALANCE-SHEET FOR 1915)

BY THE

SECRETARY,

G. CLARIDGE DRUCE,

PRESIDENT OF THE ASHMOLEAN NATURAL HISTORY SOCIETY OF OXFORDSHIRE.

VOL. IV. PART V.

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to whom, at YARDLEY LODGE, 9 CRICK ROAD, OXFORD, the Subscription, 7s 6d per annum, and Non-Contributing Member's Subscription of 5s per annum, should be paid on and after January 1, 1917.

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The Distributors' Report on Plants sent in for 1916 will appear in due course.

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BOTANICAL SOCIETY & EXCHANGE CLUB OF THE BRITISH ISLES.

THE REPORT OF THE TREASURER & SECRETARY,

G. CLARIDGE DRUCE, YARDLEY LODGE, OXFORD,

FOR 1916.

BALANCE SHEET FOR 1915.

By Subscriptions received,	£68	3	6	Balance from 1914, - -	£12	14 6
Sale of Reports, - -	4	3	1	Printing Reports, &c.,	61	6 9
Balance due to Treasurer,	13	11	6	Expenses of Distribution,	2	14 0
				Stationery, Postages, Incidental Expenses, - -	9	2 10
	£85	18	1		£85	18 1

Audited and found correct, January 23, 1917.—F. TWINING.

Balance due to the Treasurer, £13 11s 6d. ALL SUBSCRIPTIONS SHOULD BE PAID TO HIM AT THE ADDRESS GIVEN ABOVE ON THE FIRST OF JANUARY IN EACH YEAR (SO THAT THE TROUBLE AND EXPENSE OF APPLYING FOR THEM MAY BE AVOIDED); of 7s 6d for each member who contributes and receives specimens; of 5s for each non-contributing or corresponding member who receives the *Reports* only, but who may send specimens for identification, or as records of interesting plants, or for noting in the *Report*. Payment in advance for two or more years is much preferred, as it saves trouble and expense. Members joining in 1917 pay 10s (or 12s 6d Exchange), which includes *Reports* for 1916.

Members may have a complete set of the *Reports* for the years 1879-1900 for 20s; 1901-9, 20s, post free; odd copies, 1s 6d each; from 1901-9, 2s 6d each, post free; 1910, 4s; 1911, 5s; 1913, 1914, and 1915, 7s each.

Following the usual plan I have prepared a Review of the salient features of British Systematic Botany for the year, with other matter

which may interest those studying this subject. Being my own compilation it carries with it none but purely personal authority. All rights in its publication are reserved. New county records, new localities, or other particulars are always gladly received. Plants sent to be named should be accompanied by full details of their occurrence, *e.g.*, "No. 4. Grass. In turf on chalk downs, alt. 500 ft., near Albury, Herts., Aug. 4, 1916. Coll. A. Smith." If a duplicate is retained with a similar number it saves the trouble of returning specimens. Should the specimens be required, return postage must be enclosed, with a direction label. Any information that I am able to give on the acquisition of *desiderata*, of plants, or books, or on subjects connected with British Botany is entirely at the service of members.

The Publication of the Secretary's Report, which appeared in April, and that of the Distributor's, issued last November, were greatly retarded owing to war conditions. We give our hearty thanks to the Distributor, Mr A. R. Horwood, for completing his arduous task under very adverse conditions. He was called up in the spring, so that the proofs had to be corrected when he was in actual training and away from his library. Our best wishes go with him. A Supplement on *Bursa pastoris* was being prepared, but it awaited the results of experimental culture of some of our forms, from Dr Almquist, of Stockholm, before publication. This, therefore, I deferred, and only Mr Horwood's notes appeared.

The large number of plants sent in, amounting to 8153, many of a highly critical nature, led to an alarming increase in the size of the *Report*, which costs much more than the Subscriptions of the Exchange Club section. The very great increase in the cost of printing, paper, and postages, which is not likely to be lessened in the near future, renders some curtailment necessary. This, it is agreed, can be done without materially diminishing its value or interest. It is suggested, therefore, that no comments be printed concerning specimens lacking essential characters, *e.g.*—Rootless plants of *Festuca rubra* var. *fallax* seedless plants of *Spergula arvensis*, immature examples of *Sparganium neglectum*, or Brambles without barren stems. Critical notes either by sender or expert should only treat of the actual specimen sent; general questions of ecology, plant distribution, etc., should be avoided. Specimens of cultivated plants, or plants from recorded stations, although very acceptable, will be unnoticed in the *Report*

unless accompanied by noteworthy botanical facts. Contributors should follow a uniform plan of writing labels, *i.e.* :—

4. *Thalictrum minus* L., var. *collinum* (Wallr.) [Ref. No. 161.] Dry bank, Fouldon Common, Norfolk, v.-c. 27, Aug. 22, 1915. F. Robinson.

We express our thanks to the Director and Staff of the Herbarium at Kew, to the Director and Staff of the National Herbarium at South Kensington, and to Professor S. Vines, F.R.S., for facilities in consulting their collections, and for kind assistance in naming critical specimens. To Dr A. Thellung we are specially indebted for examination of many alien species. Mr C. C. Lacaita, Dr C. Bucknall, Mr J. W. White, Rev. E. S. Marshall, Rev. E. F. Linton, Rev. H. J. Riddelsdell, Professor Percival, and Mr E. D. Marquand are among others who have given assistance. Miss Ida M. Hayward kindly lent blocks of *Physalis ixocarpa* and *Cyperus congestus*, and the Editor of the *Gardeners' Chronicle* the block of Poplar-leaves which appeared in the last *Report*. Thanks are also due to Mr C. Bailey and Mr W. Saunderson for donations to the Benevolent Fund.

The War has hit us very hard, but the wisdom of carrying on our work has not been seriously questioned; indeed, the amount of material which has come in has been extraordinary. Serving with the colours are our members—Lieut. P. M. Hall, that promising Wintonian and acute Orchid student, who is in the Artillery Service in Lahore; Lieut. S. Porter, an old Radleian, who sent several gatherings of plants from the trenches in Flanders; the brilliant Etonian, Lieut. W. James, grandson of Lord James of Hereford, who has all the makings of a good systematist; Lieut. T. H. Leach, my godson and companion for many years, who is in the 'Tanks'; Mr A. R. Horwood; Mr W. B. Turrill, one of the most promising of Botanical workers from Kew; and Mr G. Adair; while the attention to military matters commands the time of Major Wolley-Dod, Colonel F. J. Smith, Dr Vigurs, Colonel Henry Halcro Johnston, and others.

The sincerest condolence is offered to the Hon. Mrs Guy Baring, whose gallant husband, Lieut.-Colonel Guy Baring, the member for Winchester, was killed in action in France on September 15, just before a victory was secured. The Guards, led by Lieut.-Col. Baring, had to advance nearly a mile, unsupported by artillery, in the face of a devastating fire from front and flank. As the Hon. John Fortescue says:—"Among the many examples of British bravery

this will always stand eminent." A braver, more loyal, and truer gentleman in the highest sense of the word never existed. He was conspicuous in his attention to public duty, and his home relations were of the very happiest. The memory of my last sight of him with his wife and pretty little ones at his beautiful Wiltshire home will abide. At the time one had the sad foreboding that he—the dauntless—might be one to fall, and thus shatter the happiness of that ideal home. Our condolence is also offered to Lady Davy on the loss of her husband, Sir James Davy, K.C.B., a distinguished and popular servant of the Crown; to me a very dear and honoured friend. Also to Mr E. H. Farr, on the loss of his son, Lance-Corporal Farr, LL.B., who died in August from wounds received in action in France. Our member, Mr N. H. Martin, an old and valued colleague, has also passed away.

Our ranks have been reinforced during the year by Lady Charles Bentinck, Mr J. Brock, the Bournemouth Nat. Hist. Society, Mrs Callaghan, Miss Cobbe, Mr H. N. Dixon, M.A., F.L.S., Mr F. Druce, Mme. Dussan, Mr J. G. Geake, Col. Godfery, Mr S. Heaton, Mr J. W. Higgens, Mr E. C. Horrell, Mr W. Johnson, Mrs Knowling, Mrs Lothinière, Sir Alfred Lascelles, Hon. Mrs Mildmay; Bishop Mitchinson, Master of Pembroke College, Oxford; Rev. Aelfric Murray, M.A., Mr A. A. Pearson, Hon. Miss de Saumarez, Dr C. N. Scott, and Lady Stucley. Four members have resigned.

THE UNIVERSITIES OF LOUVAIN AND WARSAW.

Since the Botanical Library and Herbarium at Louvain have been burnt by the Germans, and as Professor Chmielevsky of Warsaw has sent me an especial appeal to replace his specimens, books, microscopical material, etc., which are now in the hands of the enemy, and the University has been removed to Rostov-on-the-Don, our members will be glad to render such assistance as lies within their power. It is suggested that members having duplicate plants should send in two specimens poisoned and mounted on thin cartridge paper, 15 in. × 10 in., with their label attached. These will be stamped with the B.E.C. stamp, and will be stored till opportunity offers to send them to Louvain and Warsaw as the offering of their British confrères. Reprints, journals, and botanical works will also be gladly received. Each should have the name of the donor on it, and the name of the University to which it is to be sent.

PLANT NOTES, ETC., FOR 1916.

(Mostly New Plants to the British Isles.)

9. ANEMONE NEMOROSA L. In the *Annals of Botany* 525, 1916, Dr E. J. Salisbury describes two new varieties, var. d. ROBUSTA and var. e. APETALA as follows :—

Var. *genuina*. Phyllis perigonii elliptico-lanceolatis aut ovatis, apicibus acutis, latitudine maxima infra medium. Lateribus inferioribus foliorum non nitentibus. Long. phyll. perig. 19-20 mm.

Var. ROBUSTA. Phyllis perigonii oblongo-lanceolatis, apicibus obtusis, latitudine maxima supra medium. Lateribus inferioribus foliorum nitentibus. Major et minus viridis quam var. *genuina* est. Long. phyll. perig. 18-19 mm. Stocking's Wood, Harpenden, Herts.

Var. APETALA. Phyllis perigonii parvis purpurascentibus vel 1-3 externis albis, petaloideis. Long. phyll. ext. 3-4 mm., long. phyll. int. 2-3 mm. In oak-hornbeam woods, Herts.; Carnforth, Westmorland.

Figures of both are given. Specimens in my Herbarium show that some with short sepals have the apices rounded, not acute. One from the Chilterns, Bucks., seems to agree with var. *robusta*. The name *apetala* is not very happy, because the coloured outer circle, usually called sepals, is, although very short, still present.

19. RANUNCULUS REPENS L., var. e. VILLOSUS Lamotte Prod. Fl. Centre 50, 1877. Tige et pétioles couverts de poils mous [not as Rouy has it, moins], longs et étalés. Lamotte found it in the Puy de Dôme. Whether it is identical with the plant of Mr Wheldon, *Rep. B.E.C.* 309, 1915, I am unable to say. The Lancashire plant is well represented with us at Oxford as a common form.

Var. REPTABUNDUS (Jord.). I cannot fit this with Jordan's description, "mollement et courtement velue," since Dr Shoolbred's plants, sent to the Club in 1915, are very free from pubescence.

47 *c*. RANUNCULUS FICARIA L., var. c. SINUATA [SINUATUS] Horwood, in *Rep. B.E.C.* 312, 1915. Planta stolonifera reptans; foliis dentatis, sinuatis, apice acuto, basi rariter incumbente. Ratcliffe,

Leicester. This is a similar form to one I sent to the Club from the border of the road under Trinity College Wall, Oxford, in May 1882, a place which still continues to produce it. Dr Boswell said it was merely the form which *Ficaria* assumes late in the season. A similar plant was sent to the Club by Dr Shoolbred in 1909, from a garden at Chepstow, when he commented on the long basal shoots. It is well worth cultivating to see if its characters remain unchanged under different conditions. Perhaps I too hastily assumed that the variation in leaf outline was due to lack of nutrition.

54 *b*. AQUILEGIA VULGARIS L., var. MILLERIANA. *A. alpina* Hudson Fl. Anglica 208, 1762, not of L. Anglis, Mountain Columbines. Habitat: in sylvis montosis in comitatu Westmorlandico, Per. June (with wrong references to Linnaeus, Bauhin, and other authors), Hudson, *l.c.* The earlier reference is "Aquilegia montana, magno flore, C.B. Mountain Columbine with large flowers. . . . I found growing wild in the park of Robert Fenwick, Esq., near Ingleborough Hill, in Yorkshire." Miller's *Abr. Gard. Dict.* i., 1754. "This I found growing wild in the park of Robert Fenwick, Esq., near Ingleborough Hill, in Yorkshire. The flowers of this are much larger than those of the Garden Columbine, and the seeds which I sowed of this in the garden at Chelsea produced the same species without the least variation." Miller's *Gard. Dict.* 1768. In 1778 Hudson (*Fl. Ang.* 236) adds "nimis affinis praecedenti, an distincta," with no reference to Miller. Smith (*Flora Britannica* ii., 579, 1800) has a "var. b. *A. alpina* Huds.," which he says "minus luxuriat, nectariis attenuatis, parum incurvis. Omnino distincta ab *A. alpina*, Linnaei." "Hudson's *A. alpina*, said to grow in the mountainous woods of Westmorland (*sic*) is a lesser variety, with the nectary extended, and but little curved inwards." With. *Nat. Arr.* iii., 608, 1812. "Var. b. *A. alpina* Huds. 235, excl. syn. In more mountainous situations at Matlock Bath, Derbyshire. Has scarcely more than one flower on each stem, and the nectaries are rather less curved. The whole plant is less luxuriant and more elegant." Sm. *Eng. Fl.* iii., 33, 1825. "*A. alpina*, Ingleborough, Martyn, 1763, rep. Gough's Cam. 1789. A dwarfed, but large flowered form of *A. vulgaris*, such as grows in the fissures of the elevated limestone pavements, was intended by this, not the Linnean continental *alpina*." Lees *Fl. W. Yorkshire* 126, 1888. Placed under *A. vulgaris* in Linton's *Fl.*

Derbyshire 55, 1903. It is unnoticed by Syme in *Eng. Bot.*, and it is not included in the odd jumble of Excluded Species in the Appendix to Hooker's *Student's Flora*. Bearing in mind the positive statement of Miller that the Ingleborough plant did differ from *vulgaris*, and that its characters came true from seed, it deserves varietal rank. Further investigation to rediscover the same form is highly desirable.

54 (2). AQUILEGIA ALPINA L. Native?? Rocks of Caenlochan Glen, Forfar, alt. 2900-3000 feet, Aug. 16, 1916, R. H. Corstorphine. Continental distribution. — France: from 1500-2200 metres, Isère, Haute-Savoie, Savoie, Breson, Hautes-Alpes, La Grave, Basses-Alpes, Vaucluse, Mt. Ventoux, Alpes-Maritimes. Switzerland: rocky thickets in the Val d'Illiez, Zinal, Zermatt, Grand St Bernard, Mt. Cenis, Chamounix, Valais Plattje at 2100 m., Bex at 8000 feet, Engandine, Val du Fain. Italy: the Alpes Apennines. Root stock rather stout. Stem 3-7 dcm. with 1-5 flowers, glabrous or hairy. Leaves small, 2-10 cm. across, ternate, glabrous; the leaflets 2-3 partite, inciso-crenulate, the segments often overlapping. Flowers bright blue, very large, 5 cm. across; sepals broadly oval, 2 cm. across; spurs straight or curved at top, but not cornucopeia-like as in *vulgaris*; petals broad, 1-2 cm. across in British spec. (1-1.3—5 cm. in foreign examples), truncate, not rounded; stamens shorter than the petals; the spur as long as or longer than the petal; follicles (in foreign spec.) pubescent, large, 20-25 mm. long. Flowering August-September. The British plants differ from the Swiss specimens I have seen growing by their smaller size and by their flowers being of a paler blue colour. The leaves, too, are somewhat smaller, in this resembling those of *A. pyrenaica*, but the plant has not the rounded petals characteristic of that species. The very slightly curved spur and small leaves distinguish it at once from any form of *vulgaris*. Last August when *Aquilegia alpina* was discovered I visited the rocks at the head of Caenlochan Glen with Mr and Mrs Corstorphine. By the Isla the special plant in evidence was the Alpine form of *Gnaphalium sylvaticum*, var. *alpestre* Druce (often erroneously named *norvegicum*). In the wet turf at 2250-2500 feet altitude *Phleum alpinum* was extraordinarily plentiful, giving quite a distinct colour from the abundance of its purplish spikes. With it was associated *Poa irrigata*. The characteristic plants of the rocks, which range from 2750-3250 feet in altitude, were *Erigeron*

borealis, *Veronica fruticans*, *Potentilla Crantzii*, *Dryas octopetala*, *Sagina scotica*, *Poa alpina*, *Carex atrata*, and *Carex vaginata*. *Dryas* and *Potentilla* were practically over flower, but the *Veronica* was in beautiful bloom. On some of the precipitous rocks Mr Corstorphine found *Pyrola rotundifolia* in magnificent blossom, several hundreds of flowering spikes making a splendid show. This is doubtless Balfour's station. *Saussurea* was also in great beauty. Mr Corstorphine found the *Aquilegia* in a narrow and very steep gully with precipitous rock sides, and a brave show it made, its beautiful flower being fully expanded. Beside it were some young plants. On the west side of the gully I saw nearly at the apex of the rock pinnacle and in an almost inaccessible spot some more seedlings. Proceeding westward to the Gentian rocks in quest of that and of a tufted *Poa alpina* (my var. *acutifolia*), which, however, I did not find, I saw another Columbine and many young plants, perhaps about 400 or 500 yards from the first station. A question at once arises about the grade of citizenship of this plant. Its continental distribution—a native of the French, Swiss, and Italian Alps—not extending into Scandinavia—is distinctly against it. Unfortunately it is not the only adverse element. Caenlochan has been frequently visited by botanists. Between 1847 and 1866 Balfour and his students (as described in the most interesting Botanical Excursions of Prof. J. H. Balfour in the *Notes of the Edinburgh Botanical Garden* for April 1902) visited Caenlochan on six different occasions between August 4th and 17th. The glen has also been worked by Hanbury, the Lintons, Buchanan White, Sadler, and in the early eighties Bishop Robertson of Exeter and myself were together on these rocks, but not to my recollection quite on the same spots as those in which the *Aquilegia* grows. It is unlikely that so conspicuous a plant should have escaped all notice. The plants enumerated by Balfour grow immediately near it. Too much stress upon its not being previously noted, however, must not be made. One of the points that strike one in reading Balfour's notes is, that one season *Mulgedium* was noticed; another year it was not. One year *Juncus castaneus* was abundant; another year none was seen in the same place. How few people have seen *Astragalus alpinus* in Clova, or *Saxafraga rivularis*, *Saxifraga decipiens*, and *Carex atrofusca* on Ben Lawers? How many good botanists must have passed by *Deyeuxia borealis* at Killin or *Chaerophyllum aureum* at Callander? As *Aquilegia* is a late flowering plant

it seemed probable that in a closely protected glen like Caenlochan, botanists went too early, and thus it might have eluded observation. (I was one who visited it in July.) Evidently in earlier years the glen was easier of access, for Balfour's visits were all made in August; and therefore its non-observance by him and his students does suggest an introduction. This indeed may be the case. Buchanan White wrote (*Journ. Bot.* 27, 1885), "Unless my memory deceives me, I was told by a horticultural friend that he had sown a quantity of the seed of *Mysosotis alpestris*, derived from cultivated Ben Lawers plants, along with the seeds of other alpines, in Caenlochan One result of this was the discovery there, by some members of the Edinburgh Botanical Society, in 1880, of *Myosotis alpestris* var., *Erinus alpinus*, *Primula Auricula*, and other aliens. . . . I believe all the seeds sown were of those plants which from their showy flowers are in common cultivation, and hence that no obscure-flowered species, as grasses, carices, &c., if discovered hereafter in these localities need be looked upon with suspicion." I have an impression of being told the same thing by Dr White. At any rate the knowledge of aliens having been sown there, led me to avoid wasting time over Caenlochan, which I never visited again until last August, and the recollection of the above statement did not obtrude until we saw the *Aquilegia*, when it again recurred to me. With this knowledge before us it seems best to strongly query for the present the indigeneity of *Aquilegia alpina* in Scotland. One may add that neither *Erinus* nor any other alien was noticed in Caenlochan by myself or my friends, nor have I heard of *Myosotis alpestris* being found there since the Revs. H. E. Fox and E. F. Linton found it in 1884. Hudson's and Miller's record of *A. alpina* from Ingleborough forms the subject of a special note. Their plant was, however, a form of *A. vulgaris*. In the *Worcester Victoria County History A. alpina* is noticed, but only as a garden escape. In conclusion, one might say that the Scottish plant differs from the extreme form of *A. alpina*, such as I have seen in the Canton Valais. It has yet to be submitted to an authority who knows *alpina* in a critical sense. *Alpina* is said to be "tricky" in culture. These Scottish plants looked healthy enough and as if they had been there for many years. One could not account for the seeds, if intentionally sown, reaching some of the habitats where it now grows. This record emphasises the importance of strenuously trying to prevent stupid people sowing alien plants in wild spots in Britain.

68 (3). ACONITUM AMOENUM Reichb. Uebers Acon. 23. Alien, Europe. Waste ground, near Tenby, Pembroke, 1873, C. BAILEY.

129. BARBAREA VULGARIS R. Br. A. Bruce Jackson describes the following varieties in *Journ. Bot.* 202, 1916 :—

Var. SILVESTRIS Fries Nov. Fl. Suec. 205, 1828. Plant usually small, with solitary stems. Lateral lobes of lower leaves very small or wanting. Pods short, about 12 mm. long, appressed. S. Devon, Dorset, N. Hants., W. Kent, Surrey, Middlesex, Herts., N.E. Yorks., Co. Down, Kildare.

Var. CAMPESTRIS Fries, *l.c.* *B. vulgaris* DC. Syst. ii., 206. Plant robust, pods usually longer, up to 25 mm., obliquely erect or slightly spreading. Common.

Var. ARCUATA Fries, *l.c.* *B. vulgaris*, forma *divaricata* Trimen and Dyer Fl. Middl. 29, 1866. Inflorescence often laxer. Pedicels patent. Pods arcuate, ascending, spreading at right angles to the axis, or even deflexed. Not uncommon.

Sub-var. BRACHYCARPA Jackson. Pods short, valves often only about twice as long as pedicel and twice as long as style; often partly sterile. Glais Ley, Thames side, between Kingston Bridge and Hampton Court; Britton Straffan, Co. Kildare.

Var. TRANSIENS Druce Fl. Berks. 44, 1897. Plant stout, lower stem leaves with oblong cuneiform terminal lobe, the lateral linear lobes well developed, up to five pairs, exceeding the terminal lobes in width. Hayling Island, S. Hants.; Welloway, N. Som.; Bulstrode, Bucks.; Chellow, Englefield, Newbury and Benham, Berks.; Nazeland, Suffolk; Shrewsbury, Salop; Clifton Ings, York; Pentraeth river banks, Anglesey.

184 *b*. SISYMBRIUM ALTISSIMUM L., var. b. RIGIDULUM (Decaisne). *S. rigidulum* Decaisne in Ann. Sc. Nat. ser. 2, iii., 272, 1835. Alien, Europe. Kirkstall, York, 1915, E. C. HORRELL. Det. A. THELLUNG, *Rep. B.E.C.* 223, 1915.

237. LEPIDIUM DRABA L., forma VIRIDESCENS mihi. Differs from the type in the leaves being free from tomentum, but having a few scattered hairs. Tingley, York, 1915, E. C. HORRELL.

237 (2). LEPIDIUM CHALEPENSE L., var. AURICULATUM (Boiss.). Alien, Asia, W. and S. Tingley railway bank, and Elland, York, 1915,

E. C. HORRELL. Det. A. THELLUNG, *Rep. B.E.C.* 223, 1915, who puts it under the sub-species *chalepense*.

247. LEPIDIUM VIRGINICUM L., forma MICROPETALUM Thell. in Hegi Ill. Fl. Mitt. Eur. iv., lief 35 (1913), 87. Alien, Amer. bor. Waste ground, Oxford, Sep. 1915, G. C. DRUCE.

Gen. 58 (2). AETHIONEMA Br., in Ait. Hort. Kew. iv., 80, 1812.

247 (30). AETHIONEMA GRAECUM Boiss. and Sprun. Diagn. ser. i., vi., 16. Alien, Greece. Hortal. Ware, near the gravel pit, Herts., 1916, Mrs KNOWLING, vide sp.

284 (2). RESEDA INODORA Reichb. Ic. Fl. Germ. ii., 22. Shortlands, Kent, 1898, A. HUME. Named at Kew.

299. VIOLA HIRTA × ODORATA, f. GIGAS. First found in "Violet Lane," Stokeinteignhead, v.-c. 3, March 1913. Flowers averaging about 3 cm. in length. Examinations of this plant have now extended over four years and have been made on wild and cultivated material. The first note on this violet reads thus: "A plant found, March 13, 1913, had stipules 8 mm. broad at base and for two-thirds of their length; the tip concave on the one side and convex on the other, suddenly narrowing; the flowers, of an exquisite pale mauve colour, had a large white eye; the lateral petals were very much inflected and made it useless at this date to attempt to measure their breadth. The whole plant, of a remarkably thick texture, reminded one of *V. odorata*, var. *floribunda*." A portion of the only plant we were able to find was removed and placed by Miss Peck in a small pot in her greenhouse at Maidencombe House, St Mary Church. It remained there until established, and was then transferred to her garden. The second examination on portions of the original plant, in February 1914, notes:—"Leaves rounded at the apex, hairs slightly depressed, as is usual in plants of *V. hirta* × *odorata*; flowers scentless, of a pale colour (the same shade exactly as in the pale double flowers grown in frames for the market), on long peduncles (11-12 cm.); bracts 1 cm. in length by 5 mm. in breadth at base; spur thick, hooked, purple; sepals broad, obtuse; petals and all parts of the plant thick; flowers averaging about 3 cm. in length and breadth." Some confusion arose in 1915 through the discovery of an escaped violet (the "Czar") which Miss Peck enclosed with specimens of

f. *gigas*, and, as I then supposed, from the same habitat. The size and thick texture of these plants inclined me to believe that f. *gigas* was the result of a cross between the escape and var. *dumetorum* of *V. hirta*. With this impression in my mind I sent some examples to the Rev. E. S. Marshall in March 1915, who replied: — "Many thanks for the giant violet, *V. hirta* × *odorata*, which Mr Britten (now with us) and I examined. I certainly do not think our wild sweet violets would produce such a large flower; the "Parma" (since identified as the "Czar") origin seems very probable." In April 1915 correspondence with Miss Peck elicited the fact that the garden escape received in the same parcel with f. *gigas* was and is growing in a lane below her own home, and two miles from the Stokeinteignhead habitat of f. *gigas*. We are therefore dealing with an absolutely native violet in this newest form of *V. hirta* × *odorata*, which I suspect of being the cross var. *dumetorum* × *hirsuta*. Early in April 1915 living plants were sent by Miss Peck to Mr Hunnybun, who prepared drawings for the Violet volume of the forthcoming *Cambridge Flora*. He, too, detected the likeness between f. *gigas* and the var. *floribunda*, of which, in his opinion, it might be a west-country form. Many intermediates occur between this plant and the form of × *permixta*, described on p. 15 of *British Violets*. It will be only waste of time to name extensively until we know how the variations arise. We really only guess that some of them are hybrids at all, though we have pretty good ground for our guessing. A giant race has cropped up in *Primula sinensis* from certain crossings. These have been discovered to be double-celled. Natural crossings may have originated a giant race in the genus *Viola*. My notes on f. *gigas* in 1915 refer to a peculiarity occurring in the form of lobes of varied size and shape at the base of the laminae. I believe these to be displayed only by plants under cultivation, and chiefly in the summer state. E. S. GREGORY.

304. VIOLA SEGETALIS, var. SUBINCISA (Jord.). Urswick, L. Lancs., W. H. PEARSALL. See *Rep. B.E.C.* 328, 1915.

341 *b*. SILENE DICHOTOMA Ehrh., var. RACEMOSA (Otth. in DC. Prod. i., 384) Rohrh. Alien, Europe. Kirkstall, York, E. C. HORRELL. Det. A. THELLUNG, *Rep. B.E.C.* 223, 1915.

356 (3). SILENE SCHAFTA Gmelin ex Hohen. in Bull. Soc. Nat.

Mosc. xii., 397, 1838. Alien, Caucasus. Hortal. A pretty garden perennial, figured in *Bot. Reg.* t. 20, 1846. Ludlow, Salop, E.C. HORRELL.

358. LYCHNIS FLOS-CUCULI L. Our member, Mr J. G. Geake, in June last directed my attention to some forms of this plant found near Effingham, Surrey. The commoner form there has a reddish-brown calyx, but a rarer form has the calyx entirely green; others possessed intermediate characters. No very minute descriptions are given in our British Floras. Syme (*Eng. Bot.* ii., 71) says the calyx is usually tinged with dull red, with ten purplish veins. Leighton (*Fl. Shropshire* 196) says calyx, reddish purple; Stokes (Withering *Nat. Arr.* i., 473, 1787) says empalement with ten ribs and ten furrows, coloured; but most authors leave the point unnoticed. Mr Geake's specimens bore out his remarks, his commoner plant having the calyx purplish-brown, but with paler interspaces, that is between the calyx ribs. The other plant, which I propose calling sub-var. *viridescens*, has the calyx wholly green, the ribs being darker than the paler, more glabrescent, almost hyaline interspaces. This is represented in my herbarium more numerously than the previous one, which may be called the type. I have specimens from Delapre, Northants.; Banbury, Oxon.; Abingdon, Berks.; Chesterton Wood, Warwick, *C. E. Palmer*; Alstonfield, Stafford; Bilstone, Leicester; Wimblington, Cambridge; Stockleigh Pomeroy, Devon; Cowden, Kent. Intermediate forms are common as at Unst, Shetland, *R. Tate*; Fannich, W. Ross; Edinburgh; Wimblington, Cambridge; Northants.; Eynsham, &c., Oxon.; Welwyn, Herts.; Odiham, Hants. The type I have seen in Sussex, Hants., Dorset, Devon, Carmarthen, Oxon., Berks., Bucks., and Glamorgan this year.

359 (2). LYCHNIS MACROCARPA Boiss. and Reut., in Boiss. Voy. Bot. Espagne ii., 722. *L. divaricata* Reichb. Ic. Pl. Crit. iii., t. 303. *Melandryum macrocarpum* Willk. Ic. et Descr. i., 28, Nyman Consp. Fl. Eur. 86. Alien, Spain, S. France, S. Italy, Dalmatia, Thessaly, Tunis, Algeria, Marocco. Several plants at St Philip's Marsh, Bristol, Misses COBBE and G. C. DRUCE; Portmadoc, Carnarvon, Miss COBBE; Brechin, Forfar, on a rubbish-tilt, 1916, G. C. DRUCE and R. and M. CORSTORPHINE. A plant with the aspect of large *L. alba*, but with much larger capsules. The petals lack the auricles which are present in *L. alba*.

391. ARENARIA SERPYLLIFOLIA L., var. PATULA R. and F. Fl. de Fr. iii., 240. With green, pubescent, not glandular foliage, with open branches, and long pedicelled fruiting branches. Salisbury Crags, Midlothian, G. C. DRUCE.

398 (3). ARENARIA HOLOSTEOIDES C. A. Mey. Edgew., in Hook. f. Fl. Brit. Ind. i., 241. *Lepyrodiclis holosteoides* Fenzl, in Fisch. and Mey. Enum. Pl. Nov. Schrenck 93. Alien from Asia Minor to China; Himalayas. Hortal. Kirkstall, York, E. C. HORRELL. See *Rep. B.E.C.* 223, 1915. A common weed in wheat-fields in Baltasan, where it is eaten as a vegetable. It ascends to 3700 metres in Kashmir.

483 (3). GERANIUM CAROLINIANUM L. Alien, N. Amer. Lonesome, near Mitcham, Surrey, Sep. 1897, C. E. BRITTON, vide sp.

488. GERANIUM ROBERTIANUM L., var. e. HISPIDUM mihi. Cliffs of Berry Head, S. Devon, June 1916. Plant very viscid, pale green, turning red, much branched, brittle; the stem and leaves, thickly clothed with patent glandular white hairs, give it a hoary appearance; petals slightly smaller than the Midland plant, entire; carpels glabrous, G. C. DRUCE.

505 *c*. OXALIS CORNICULATA L., var. MINOR Lange, teste A. THELLUNG. Alien. Hortal. Thornton Dale, York, E. C. HORRELL. See *Rep. B.E.C.* 223, 1915. One of the many forms of this polymorphic species, closely allied to the var. *microphylla* Hook. f. Fl. Nov. Zeal. i., 42, 1853.

526. ACER CAMPESTRE L., forma DISSECTIFOLIUM Melvill, ex Fl. Berks. 128. Wood Perry, Oxon [P.1192], Sep. 1916. This differs from the type in having deeper and more sharply-cut leaves. Probably this was the plant referred to by Lobel (*Adversaria* 443, 1570), "Acutie foliorum cognitu facilis Aceris species quam prope Oxoniam oriri nonnulli sponte nobis aseruerent." G. C. DRUCE.

560 (2). TRIGONELLA FISCHERIANA Seringe, in DC. Prod. ii., 183, 1825. Alien, Asia Minor, Armenia, Caucasus. Lanal? Kirkstall, York, 1915, E. C. HORRELL. Det. A. THELLUNG. See *Rep. B.E.C.* 223, 1915. An attractive, bright orange-flowered species.

574 (2). MEDICAGO MUREX Willd. Sp. Pl. iii., 1410. Alien, S. Europe. Heckmondwike, S.W. Yorks., v.-c. 63, Lees' *Flora of West Yorkshire*, 1888.

615. TRIFOLIUM CONSTANTINOPOLITANUM L., var. PHLEOIDES Boiss. Alien. Between Kew and Richmond, Surrey, 1855, BLAKE; Twerton, Som. N., 1901, S. T. DUNN; Ashford, near Staines, 1906, E. T. SHEPHERD.

634 (2). TRIFOLIUM BADIUM L. Alien, Europe. S. Lincoln, 1896, F. A. LEES.

659 (3). ASTRAGALUS TRIBULOIDES Delile Fl. Ægypte iii., 70. Alien, Orient. Halifax, CROSSLAND, 1898, in *Herb. Hume.*

684 (4). VICIA CRETICA Boiss. and Heldr. Diagn. ser. i., ix., 118. (*V. Spruneri* Boiss., *l.c.* 19). Alien, Greece. Below Roseland Nurseries, Hoddesdon, Herts., J. E. LITTLE, teste J. W. WHITE. See *Rep. B.E.C.* 337, 1915.

731 (3). PISUM HUMILE Boiss. and Noe. Diagn. ser. 2, ii., 45. Alien, Syria, Mesopotamia. On cotton-seed refuse, Colchester, 1914, G. C. BROWN. Det. A. THELLUNG.

747 (6). SPIRAEA VESTITA Wallich, ex G. Don Gen. Syst. ii., 521. Alien, India. Railway bank, opposite Garve station, E. Ross, A. WALLIS, ex C. E. SALMON, vide sp. It is said to be established there.

941. ROSA EMINENS, forma nova. A shrub 1-1.5 m. high, bark brownish green, flowering shoots slightly pruinose. Branches slender, flexuose, tufted. Prickles, long, straight, directed slightly upward, compressed, base an elongated oval, on leafy shoots, paired, sub-stipular. Petioles pubescent, glandular, a few prickles beneath. Leaflets 5-7, basal ones smaller than the others, in size and shape varying, obovate, small on lower leaves of twig, increasing in size and becoming quite regularly oval upward, carinate, dark green, almost glabrous above, strongly pubescent, glandular (but to no great extent) on veins and body of leaf beneath, dentate, each tooth in turn having glandular denticles. Stipules fairly broad, yellow-green, glabrous above, pubescent-glandular below, fringed with stipitate glands,

auricles spreading. Peduncles generally one, but on very young stems rarely up to five, short, half the length of fruit, glabrous, except for a slight pubescence at the base, provided with an inner pale oval bract, bearing a more or less linear leafy appendage, almost glabrous near midrib below, but glandular for the most part and at the edge, glabrous above, and an outer foliaceous bract with three leaflets of the ordinary type. Sepals spathulate, two entire, tomentose at the edges, and glandular in the middle, three pinnatifid, covered with stipitate glands below. Flowers not large, rose, veins darker, base of petal white; petals nearly cordate, fruit pyriform, quite smooth, early crowned by the erect sepals. Wolsingham, Satley, Lanchester, County Durham. J. W. H. Harrison in *Vasculum* 99, 1916. Differs from *R. Sherardi*, its nearest ally, in the glabrous peduncles and fruit, and from *farinosa* by the pyriform fruit, by the leaflets in many cases being hollowed at the ends, by the sepals being densely covered with stipitate glands, and by the peduncles being pubescent, not glandular at the base.

961. PYRUS ARIA × TORMINALIS. Symond's Yat, W. Gloster, A. LEY and E. S. MARSHALL; Bucknor rocks, W. Gloster, A. LEY. See *Journ. Bot.* 14, 1916. P. ARIA var. RUPICOLA Syme × TORMINALIS. (*Sorbus salicifolia* = *S. rupicola* × *torminalis* Hedl.) Cefn Coed, Brecon, A LEY. See *Rep. B.E.C.* 605, 1899; Dan-y-Craig, Glamorgan, A. LEY and W. A. SHOOLBRED. See Marshall in *Journ. Bot.* 14, 1916. A queried hybrid *P. minima* × *latifolia*, Watersmeet, N. Devon, an undescribed plant near *Mougeoti*, and *Sorbus incisa* are also referred to.

969 (3). CRATAEGUS CRUS-GALLI L. Alien, N. America. Mortlake, Surrey, 1875, *Hb. Brit. Mus.* An extensively planted shrub, but it does not appear to spread from seeds.

Gen. 182 (2). LEPTAXIS Rafin. Fl. Tellur. ii., 75, 1836. TOLMIEA, Torrey and Gray Fl. N. Amer. i., 582, 1840. Saxifragaceae.

995 (5). LEPTAXIS MENZIESII Rafin., *l.c.* (*T. Menziesii* Torrey and Gray, *l.c.*). Alien, N. America. In a wood among bluebells near Hayshott, W. Sussex, Dr MARIE C. STOPES, in *lit.* and vide sp. The plant is remarkable for its leaf bulbils. It was introduced from N. America in 1812.

1061 *b*. OENOTHERA BIENNIS L., var. PARVIFLORA (L.). Alien, America. Sandhills, Southport, Lancashire, J. D. FIRTH, ex E. C. HORRELL. Det. A. THELLUNG.

1098. HELOSCIADIUM in Britain. Mr E. G. Baker first started me on the enquiry into our native forms in this genus, the results of our early joint work appearing in a paper on *British Forms of H. nodiflorum* Koch, which was published in the *Journal of Botany* for June 1906, under both our names. Since then I have kept up the study, steadily increasing my knowledge both of herbarium collections and of the living plant. Some further attempts to elucidate the relationship of the various forms took the shape of papers in the *Irish Naturalist* for January 1914 on *Helosciadium Moorei*; and for April 1914 on the *British Forms of Helosciadium*, and in the *Proceedings of the Cotteswold N.F. Club* for 1914, *Notes on Helosciadium*. The previous relevant literature of the subject is mentioned in the *Journ. Bot.* paper, and in the *Irish Nat.* paper on *H. Moorei*. The chief problems on which I have endeavoured to obtain light are:—

1. The true significance of the forms of *H. nodiflorum*.
2. The relation of *H. nodiflorum* and *H. repens*.
3. The possible existence of the hybrid *nodiflorum* × *repens*.
4. The origin and status of *H. Moorei*.

1. The forms of *H. nodiflorum*. Very little satisfaction is to be had from most herbarium specimens. The only way adequately to cope with the problem is to study in the field, not isolated plants, but whole series of plants. Such a series can be well represented in a herbarium, if judicious selection is exercised. Anyhow it is necessary (a) to follow a growth of *Helosciadium* out into varying surroundings, especially differences of moisture and shade; (b) to observe how differently it behaves at different seasons; and (c) to get entire plants, especially late in the season, and note how great is (frequently) the range of variation, especially in foliage, in different parts of one plant at one time. This last mentioned procedure is not always easy, owing to the large size of some of our forms; but to cite one result of it, the rooting character is frequently found to be strongly present on the lower branches or stems, while the central or main stem shows no sign of it. To take another point (b). I have in my herbarium specimens which show a small creeping form very near

Watson's var. *pseudo-repens* growing late in a dry summer from the root of what had in early summer been f. *vulgare*—the change being due to a long drought laying the mud of a pond bare, and some accident causing the disappearance of the main plant. As to surroundings (a), soil, moisture, and cover—the species flourishes not only in ditches, but also in spots where the water always disappears at certain seasons; in rough swampy ground, either shaded or occupied by a good deal of varied low-growing vegetation; muddy margins of ponds; parts of grassy or heathy hillsides; the damper parts of the flat sandy ground behind dunes, which dry up in summer, though they are under water at other seasons. Its roots are probably always within easy reach of water. Moreover, the form taken by the species is largely determined by the amount of cover. Even the same plant, which grows just on the edge say of a bramble thicket, will consist partly of the big coarse form—*vulgare*, and partly of a smaller-leaved form which has a compacter and lower habit and runs just over the open grass by a rill. I am pretty certain, from these observations, that the number of forms which the species may assume is almost unlimited; that they are transient and due to circumstances, and not to any permanent cause; and that they are "forms" and not "varieties." Var. *longipedunculatum* F. Schultz is, however, a good variety. See its description in *Journ. Bot. l.c.* In certain instances it bears a strong external resemblance to *H. repens* Koch. This is when, owing to surroundings, it becomes a small creeping plant; behaving, in fact, just like the type of the species. McT. Cowan in *Rep. B.E.C.* 564, 1910, gives an instance of two "forms" of it appearing on one root. I have called the creeping form f. *simulans*. The variety occurs in many places—Haddingtonshire, Midlothian, Oxon., Cambs., Norfolk, Suffolk, Northants., and Cheshire. I should say with respect to the plants distributed by McT. Cowan through the Club in 1910 from Luffness, that all I have seen come under this variety.

2. *H. repens* Koch, is a true species, differing not only in habit, stability, peduncle, umbels, umbel-bracts, foliage, etc., but also in the decisive character of fruit—one specimen of which I have seen, thanks to Mr G. Webster, from Skipwith. The fruit is different in shape, size and colour, from that of *H. nodiflorum*. A Fifeshire plant in *Hb. Syme* must, I believe, come under *H. repens*; and since botanising on Port Meadow and Binsey Common, near Oxford, last year,

I feel convinced, even in the absence of fruit, that there too we have this species. In this case, the matter is complicated by the presence also of *H. nodiflorum* and intermediate forms. The examination of a series of plants throws light where a single specimen only deepens the darkness. But while this is so and our British plant really comes under *H. repens* Koch, I am inclined to look upon it as a local variety of that species. It differs from the constant continental form in a tendency to have fewer leaflets to a leaf, and fewer umbel-bracts, as Mr Lees pointed out in *Rep. B.E.C.* 13, 1879. The difference is too slight to make a scientific name desirable for the variety.

3. Intermediate forms grow on Binsey Common, and apparently also on Port Meadow. (See *Rep. B.E.C.* 226, 1906. Mr Jackson's specimen sent to me was not *repens*, but probably one of those intermediates.) On Binsey Common the two species grow close together; *H. nodiflorum* in a very small form; and a large number of intermediate forms which I certainly think it likely are forms of the hybrid between the two. These forms vary largely, approaching more or less closely first to one then to another of the "parents." Sometimes it is extremely close to *repens*, showing the presence of *nodiflorum* only in the course reddish stem. Again it may in most respects be very near the latter, and show the presence of *repens* only in the length of peduncles. One of the first characters of *repens* to disappear in crossing is the peculiar shape of the leaflet. I put to the hybrid some plants which are almost indistinguishable from *repens*, except that the leaflets are lanceolate and toothed, with no sign of lobing. But good middle forms are by no means absent, and the gradation of forms is a very satisfactory one. Indeed, I have but little doubt myself that on Binsey Common grows *H. nodiflorum* × *repens*; and I think a close study of the series there would (subject to the fruit test of *repens*) bring most botanists to the same conclusion. But, of course, proof is lacking. Specimens are distributed this year, and a note upon them appears in the Distributors' Report.

4. × *H. Moorei*. This is, of course, a plant far better known than the above "hybrid." A full account of it can be seen in the *Irish Naturalist* for January 1914, and a description in *Rep. B.E.C.* 324-5, 1913. The grounds on which I found my belief in its hybrid origin (*inundatum* × *nodiflorum*) may be summarised:—1, its great

range of variation in habit and facies; 2, variability of foliage; 3, sterility—it is reproduced vegetatively; 4, large vegetative development; 5, general intermediate position between the "parents"; 6, invariable occurrence in company with the parents. *H. inundatum* Koch, var. *fluitans* Fr., is a form or state in which all the leaves are divided into capillary segments. It occurs in several Irish and English counties, but my experience of it in Gloucestershire raises a very considerable doubt as to whether it is really anything better than a mere state.—H. J. RIDDELSDELL.

1114 *e.* PIMPINELLA SAXIFRAGA L., var. ROSEIFLORA E. and H. Drabble in *Journ. Bot.* 136, 1916. A var. *dissecta* with bright crimson flowers, Starkholmes, Derby, E. and H. DRABBLE, *l.c.*

1126. ANTHRISCUS SYLVESTRIS Hoffm. *Chaerophyllum sylvestre* L. An observant botanist, conversant with this early-flowering Umbellifer, which is such an abundant and graceful ornament of our hedges and wood-borders, a haunter of coppices and open forest-land, which delights in the shade and shelter of trees in meadows and park-lands, is struck as he visits Scotland by its comparative rarity. Indeed, from great areas it is conspicuously absent, and when it occurs a plant of quite different appearance, of more rigid habit, with more finely-cut foliage, meets his eye, causing him to look twice to see if it is really identical with his southern friend. To blur this impression comes the thought that it is in the fruiting stage, in a different climate, and under other conditions, and thus half satisfied from year to year he leaves it. More recently, however, I have looked at this common species more closely, bearing in mind Newbould's dictum "that if one wanted to find new varieties it must be a well-known common plant always before one's eyes that would yield them," since such an object was only superficially glanced at. The experience of the past season shows that the leaf variation of the Hedge Parsley is quite considerable, and many forms might be described, but for practical purposes three groups may be made. First, the plant with large, 20 cm. or more across, leaves, having broad and sometimes overlapping secondary divisions, as much as 10 cm. across, the tertiary segments being broad, 15-20 mm. across, the apical segments being rather abruptly narrowed into a mucronate straight or sometimes falcate point. This form varies as to the degree

of hairiness, but is usually more hairy than the northern form. Further investigation is necessary in order to see if any differences in the petals or fruit accompany this variety, which I propose to call var. *latisecta*. I have seen it from Castlehill, N. Devon; near Bath, Somerset, N., *Druce*; Plumstead and Beckenham, Kent; Fareham, S. Hants., a glabrescent form, *Hb. Bailey*; Odiham, N. Hants., *C. E. Palmer*; Middlesex, *Hb. Bailey*; Kennington, &c., Berks.; Buckingham; Fairford, Gloucester, E.; Stansteadbury, Herts.; Sudbury, Suffolk, W.; Braintree, Essex, N.; Woodstock, &c., Oxon; Yardley Gobion, Northants., *Druce*; Leicester; Plumley, Cheshire; West Derby; S. Lancashire, *Hb. Bailey*; Furness, *Hb. Brit. Mus.* The figure in *Eng. Bot.* may be put here, but the form is not extreme.

2. Var. ANGUSTISECTA mihi. This is characterised by its leaves being more open. A leaf of a Forfarshire specimen, measuring 24 cm. across, has the ultimate segments only 5-8 mm. across, and these are gradually attenuate into a less conspicuous mucro. The texture of the leaf is more rigid, and the whole plant lacks the soft outline of the southern plant. Each has the curious ring of hairs at the base of the fruit, but on the whole I think the fruit of the northern plant may be very slightly larger. Each has the swollen nodes, each varies in the more or less pronounced stem furrows, and on the whole the northern plant is more glabrescent. I have not seen this variety south of Derbyshire. Plants which come under it are contained in *Hb. Bailey* from Mere Clough, Cheshire; Richmond, York (not very pronounced); Allerton, Lancs.; Perth; and I have it from Newton Stewart, Wigton; Edinburgh; Loch Fithie, Forfar; Kingussie, Easterness; and Applecross, W. Ross. I may add that its general outline, but not the colour-tint, resembles *Chaerophyllum aureum*. An approach to the northern form has been found at Cleeve Hill, Gloucester, by Mr C. Bailey. It would be incorrect to assume that these forms are separated by any sharp lines of demarcation from others; there are very many which are best kept under the type in a median group. For working purposes these two names cover the extreme forms. It is too soon to say that one is exclusively northern, the other southern, but it would appear that that is probable. On the Continent the narrow segmented plants seem to be most frequent. Our most finely-cut plant is still quite different from var. *alpina*. It is curious that both the Ivy and the Hedge Parsley should show a diminution of leaf-surface in the north. Since preparing these notes

I find that in the *Dansk. Bot. Arkiv.* for 1915 there is a highly critical paper, "Indledende Studier over Polymorphien hos Anthriscus silvestris," in which 59 different forms of leaves are figured. These are divided into 16 groups, a refinement which would rather repel the student who begins the segregation of its forms. Had funds permitted one would have liked to have reprinted it in English, as it is a paper of great taxonomic interest. The following note by Dr J. E. Gray which appeared in Seeman's *Journal of Botany* 296, 1863, may be worth giving here:—"On the banks of the river, near Kew, there grow two forms of *Anthriscus sylvestris* which are very distinct from one another in size and external appearance, . . . they grow side by side in the same bed, and there is no apparent reason for the difference in size and colour, either in the soil, exposure, or situation of the plants. The one is a large, strong plant, with green foliage and large white flowers, and with a thick green stem with large angular projections on it. The other is a slender, straggling plant, with the leaves far apart, small flowers, and stem not thicker than a crowquill, cylindrical, and with numerous equal ridges. The stem and foliage are generally purple or blackish, rarely dark green. These two plants, where extreme forms are examined, are so distinct that I am surprised they have not been described as distinct species in some of the Continental Floras, but I do not find them noticed by either British or foreign writers. This plant is remarkable among the Umbelliferae for having some small . . . setulae at the base of the fruit, which, but for their position, look remarkably like a calyx. These seem to have been generally overlooked by draughtsmen. In the 'English Botany' figure, which is not strictly characteristic of either variety, they are entirely omitted. I examined the original drawing of this plate by James Sowerby [now in the Brit. Mus.]. I found that the careful artist had correctly given them, but Sir James Edward Smith, to whom the drawings were submitted for approval before being engraved, has corrected (!) the drawing, because, as he writes, they are too like a calyx. Sir James, knowing that the fruit in Umbelliferae is inferior, at once discarded Sowerby's 'calyx,' thus making his generalisation or preconceived theory overturn the observed fact of the other, a proceeding too common amongst a certain class of naturalists." Smith was somewhat jealous of J. E. Gray, and placed great difficulties in his access to the Linnean Herbarium.

1130 (2). FOENICULUM PIPERITUM DC. Sweet Hort. Brit. i., 187. Alien, S. Europe. St. Philip's Marsh, Bristol, Misses COBBE and G. C. DRUCE; Tadcaster, York, 1916.

1180. VIBURNUM OPULUS L., var. FLAVA Horwood, in *Rep. Wats. Exch. Club*, 540, 1915-16. Narborough Bog, Leicester. Fruit rich golden yellow and differing also in its leaf-lobing and in the smaller seeds and fruits.

1180 (2). VIBURNUM TINUS L. Bird-sown bushes, in several places, on sides of Upper Cliff, Ventnor, Isle of Wight, 1916, E. W. HUNNYBUN, in *lit.*

1192. GALIUM BOREALE L., var. STENOPHYLLUM. [Ref. No. P.1121.] Sand-dunes, St. Cyrus, Kincardine, Aug. 1916. Discovered in this unusual habitat by Prof. Trail many years ago. The description of *G. boreale*, var. *intermedium* (Rouy, Fouc. & Camus *Fl. Fr.* viii., 10, 1903) covers this plant, but on referring to type specimens and to the description in Koch's *Syn.* 332, 1837, which is "fructus setulis brevissimis adpressis adspersi. quasi punctis argenteis picti," it does not apply to this form, where the fruit-bristles are long and erect; therefore the above name is suggested. The plant has narrow, almost linear, leaves, which in most cases are attenuated at the base, strongly three-nerved below, with margins somewhat enrolled; the thyrsiform panicle is open, many-flowered, the fruits thickly covered with long greyish-white glochidiate bristles; and the upper part of the panicle-branches are covered with shorter and less hooked-bristly hairs. The plant in drying does not blacken. Its general aspect, when growing, recalls *G. erectum*, not *boreale*. The fruit characters are, however, unmistakable. To this are also to be referred plants gathered at the sea-level at Sligachan, Skye. G. C. DRUCE.

1204. GALIUM ANGLICUM Huds., var. LEIOCARPUM Tausch, in *Bot. Zeit.* xviii., 354. Castle Acre, Norfolk [Ref. No. 350.], 1915, F. ROBINSON. Probably this is our common form.

1231 (2). DIPSACUS STRIGOSUS Willd., ex Roem. & Schultes Syst. iii., 520. Alien, Persia. By the side of a ditch close to the Thames at Kew, Surrey, H. TRIMEN, in *Journ Bot.* 268, 1872.

1236 (2). SCABIOSA VIRGA-PASTORIS Mill. Gard. Dict. 1768 = S. SUAVEOLENS Desf. Tabl. 110. Alien, Europe, Asia Minor. Wandsworth, Surrey, A. IRVINE.

1245 (2). SOLIDAGO SEMPERVIRENS L. Alien, N. America. Coquet River, Northumberland, at Thrum, 1904, M. TINKER in *Hb. Brit. Mus.*

1248. BELLIS PERENNIS L., var. HYBRIDA (Tenore Fl. Nap. v., 233, t. 194) as a species. I should have referred it to var. *caulescens* Rochebr., but Mr C. C. Lacaita names it *hybrida.*

1257 (4). ASTER PRENANTHOIDES Muhl. in Willd. Sp. Pl. iii., 2046. Alien, N. America. Tayside, Perth, 1869, *Hb. Wats.*

1262 (2). ERIGERON PULCHELLUS DC. Prod. v., 287. *E. caucasicum* Stev. Alien, Orient, Asia Minor. Preston Docks, *Flora of Preston Neighbourhood* 26, 1903.

1286 (2). PULICARIA ARABICA Cass. in Dict. Sc. Nat. xliv., 94. Alien, Egypt, Orient. Galashiels, Selkirk, Miss I. M. HAYWARD.

1290 (2). AMBROSIA PERUVIANA Willd. Sp. Pl. iv., 377. Alien, S. America. Stubble, Margate, Kent, 1865, W. T. DYER. See *Journ. Bot.* 53, 1871. It is not given in the *Flora of Kent.* Was it afterwards rejected?

1318 (2). BAERIA PLATYCARPHA A. Gray in Proc. Ac. Am. ix., 196, 1874. Alien, N. America. Aber, Carnarvon, 1877, J. F. C. WILLIAMS. See H. TRIMEN in *Journ Bot.* 209, 1877.

1334 (3). ACHILLEA CRITHMIFOLIA Waldst. & Kit. Pl. Rar. Hung. i., 68. Alien, Orient. Casual, Aberdeen South, TRAIL in *Ann. Scot. Nat. Hist.* 46, 1906.

1356 (9). CHRYSANTHEMUM SINENSE L. Alien, Japan. Hortal. Tweedside, Selkirk, 1916, Miss I. M. HAYWARD, vide sp.

1362 (2). MATRICARIA OCCIDENTALIS Greene Man. Bot. San Franc. Bay, 208, 1894. Poole Court, Co. Kerry, 1902, R. W. SCULLY in *Hb. Hume.*

1384. TUSSILAGO FARFARA L. Prof. G. West sent specimens gathered by one of his students in Sutton Park, Warwickshire, in

1915, of a plant which only occurs in ditches, the leaves and flowers being above the water. The under sides of the leaves are scarcely downy when mature. In a ditch bordering Cornbury Park, Oxfordshire, I found similar plants, and am growing them to see if under different conditions they revert to the type. Prof. West says his plant has been quite constant for nine years to his knowledge. It seems fixed, he says, since the anatomical structure of rhizome and petioles differs from that of ordinary *Farfara*.

1395. SENECIO ERUCIFOLIUS L., without ray florets. Near Weston, Northants., 1916, G. CHESTER, vide sp. = var. *discoideus*.

1408 (22). SENECIO MACRODONTUS DC. Prod. v., 873. Alien, Australia. Tweedside, below Galashiels, Roxburghshire, 1914, Miss I. M. HAYWARD. Det. G. C. DRUCE.

1411 (3). CALENDULA PERSICA C. A. Meyer Verz. Pfl. Cauc. 72. *C. gracilis* DC. Prod. vi., 453. Alien, Persia. Wandsworth, Surrey, A. IRVINE in *Hb. Wats.*

1430. CIRSIUM PRATENSE (Huds.) Druce. Were the Plumed and Unplumed Thistles combined in one genus there would be complete unanimity in using the name *Carduus pratensis* Huds. for this plant. Linnaeus misunderstood it, and Hudson (*Flora Anglica* 307, 1762), misled by the synonym *Cirsium anglicum* Lobel, wrongly used by Linnaeus under *Carduus dissectus* (*Sp. Pl.*), used for it that name, which belongs to a non-British plant. In the second edition (*Flora Anglica* 353, 1778) Hudson called it *Carduus pratensis*. There seems a general consensus of opinion among the leading systematists of to-day to separate the Thistles into two genera. Bentham and Hooker in the *Genera Plantarum*, however, used for the plumed thistle the name *Cnicus* L. The *Vienna Actes*, following the majority of continental botanists, however (perhaps somewhat arbitrarily), conserved the name *Cirsium* which had been used by Lobel and by Tournefort in his *Institutiones*. This genus *Cirsium* was brought into the area of citation by Miller (*Abr. Gard. Dict.* 1754). He used for our meadow thistle the name *Cirsium anglicum* with a reference to Gerard. Unfortunately in this edition Miller had not consistently adopted the binomial system of nomenclature, so this binary is accidental, and is not valid for citation. We are therefore thrown back

upon Hudson's trivial, which in the interval he had established. This name, however, has a disadvantage. Lamarck and De Candolle (*Fl. Fr.* iv., 113, 1805) used the name *Cirsium pratense* for *C. monspessulanum*, or a form of it, but as *monspessulanus* has priority, the trivial *pratense* becomes available. *Cirsium pratense* is therefore to be adopted for the soft meadow thistle in preference to *C. anglicum* or *C. britannicum*. It was first recorded in Britain by Lobel (*Observationes* 315, 1576) as "*Cirsium anglicum* . . . provenit in pratis C. viri D. Nicolai Pointz equitis praefecturae Glostriensis in villa vernacule Acton nomine." This locality and his figure, which is also repeated by Johnson (*Gerard* 1183, 1634), show it to be the Soft Meadow Thistle. Johnson, however, made the mistake of thinking it to be the same as the northern species, afterwards called *Carduus heterophyllus* by Linnaeus, since he gives the locality and figure from Clusius (*Stirp. Pannon. Hist.* 655, 1583) from Ingleborough where it still grows, and which had been supplied by C. V. Thomas Pennaeus, a doctor of medicine in London. Clusius called it *C. britannicum*. This name was adopted by Scopoli (*Iter Tiroliense* 1769), with a reference to "Clusius II." and "Haller 21," which belong not to our Soft Meadow Thistle, but to *C. heterophyllum*. Therefore *Cirsium britannicum* Scop. gives way to *C. heterophyllum* Hill. Since each of the Thistles under discussion has considerable leaf variation, some of the confusion between them may have arisen from that cause. *C. heterophyllum*, normally laciniate, occurs sometimes with sub-entire leaves, and *C. pratense*, with usually sub-entire leaves, has a variation which Lejeune and Courtois (*Comp. Fl. Belg.*) allude to under *Cirsium anglicum* as "foliis dissectis," which some Flemish botanists mistook for the true *C. dissectus* L. In Britain similar mistakes have been made, but more frequently the cut-leaved form of *C. pratense* has been taken for a hybrid with *palustre*, and the name *Pseudo-Forsteri* was applied. (See *Rep. B.E.C.* 10, 1866.) Being unable to find its description, therefore, in *Fl. Berks.* 302, 1897, I named it sub-var. *polycephalus*, a not very happy name, since it is not always many-headed. Normally it is a branching plant with more or less cut leaves and is not uncommon in Ireland. The trivial *polycephalum* is used by Cosson and Germ. *Fl. Env. Par.* 385, 1845, under *Cirsium anglicum* = *Cirsium pratense* (Huds.) Druce, var. *polycephalum* (Coss. and Germ.) Druce, characterised by its sinuate or sub-pinnatifid leaves, and the stem usually branching. The leaves of

the first year's growth are usually entire. The hybrid of *C. pratense* × *palustre* is × *C. Forsteri* Wats.

1453 (2). CENTAUREA AXILLARIS Willd. Sp. Pl. iii., 2290. Alien, Europe. S. Lincoln, 1896, F. A. LEES.

1459 (3). CENTAUREA SPINOSA L. Alien, Crete, Orient. N. Lincoln, G. C. DRUCE.

1470 (2). CENTAUREA DURIAEI Rouy Fl. de Fr. ix., 176, 1905. (*Microlonchus Duriaei* Spach in Ann. Sc. Nat. ser. 3, iv., 166, 1845). Alien, Spain, Marocco. Lanal? Old Quarry, Sandal, York, 1888, P. F. LEE in *Fl. W. Yorks.* 284, 1888. In France it is a wool-alien. The var. *tenella* (Spach) Thell. occurs in Tunis, Algeria, and Sicily.

1479 (2). SCOLYMUS GRANDIFLORUS Desf. Fl. Atl. ii., 240. Alien, N. Africa. Ballast heap, above North Sands, Hartlepool, Durham, 1873, F. A. LEES in *Rep. Bot. Rec. Club* 29, 1873.

Gen. 356 (2). PTEROTHECA Cass. in Bull. Soc. Phil. 200, 1816. (*Lagoseris* M. Bieb. and Nyman).

1504 (10). PTEROTHECA SANCTA C. Koch in Linnaea xxiii., 692, 1850. *P. nemausensis* Cass. *l.c.* Alien, S. Europe. On coal ash refuse, Millbay Pier, S. Devon, 1875, T. R. A. BRIGGS in *Hb. Wats.*

Gen. 357 (2). ANDRYALA L.

1638 (20). ANDRYALA INTEGRIFOLIA L. *A. sinuata* L. Alien, S. Europe. Clover-field, Fair Mile, Surrey, 1866, *Hb. Wats.*

1663 (10). SCORZONERA HUMILIS L. *Rep. B.E.C.* 202, 1915. This plant has a continental distribution through Finland, Norway, Sweden, Denmark, Belgium, W. France, Portugal, Spain, Switzerland, Germany, Austria, N. Italy, etc., growing in "'prairies' (Rouy), 'pratis humidis' (Koch), 'pascoli subalp.' (Archangeli), 'prairies humides ou marécageuses' (Crépin), 'prairies marécageuses, endroits tourbeux et decouvert des bois' (Bouvier, Suisse), 'prairies humides' (Cosson), 'landes humides' (Brébisson)." To these habitats may be added, damp sandy and marshy places near the coast where I gathered it at La Touquet, near Boulogne, in 1912. This plant was first discovered in 1914 by Mrs and Master Noel Sandwith in Dorsetshire, and was described in our *Report, l.c.* 1915. Through the kindness of

the Headmaster of Clifton, Master Noel Sandwith was given leave to accompany Mrs Sandwith and myself in June 1916 to the place where they made this very interesting addition to the British Flora. We found it in great plenty growing in a very wet pasture among *Hydrocotyle*, *Ranunculus Flammula*, *Carex panicea*, *Carex echinata*, *Carex flava* var. *oedocarpa*, *Carex Goodenoughii*, *Molinia*, *Cirsium pratense*, *Potentilla palustris*, *Juncus articulatus*, *Juncus acutiflorus*, *Festuca rubra*, *Agrostis alba*, and *Sieglingia*, but with no adventitious species. The tract is only a little above sea-level, but is, I think, outside the inrush of tidal water, as no maritime plants were adjacent. Statements have been made that the land was at no distant time under cultivation. This portion, inhabited by *Scorzonera*, shows no evidence of recent disturbance, and the plant-association is one rather to negative its having been in agrestal use. Fortunately my enquiries resulted in having an interview with its former owner. He told me that about thirty years ago, when he was living in that area, he had a portion of the land ploughed, but the only crop he planted was Black Oats of English origin. The experiment was not successful, and the land was allowed to revert to rough pasture. He was not at all certain that the portion of the ground where *Scorzonera* now grows was actually brought under the plough. Judging by its present appearance it would not be a tempting piece of ground for such a purpose, even under the present wild schemes for agrestal extension. One may add that in the upper portion a few plants of *Trifolium procumbens* grew. These were absent from the lower and wetter portion. It seems to me more probable that the ploughing eradicated *Scorzonera* from the upper portion, than that it was a means of introducing it to the lower. When out of flower the plant might be easily passed over for *Plantago lanceolata*. I had not time to make a search over any great extent of similar country, but subsequently my friends were rewarded in finding it in an adjacent field. There seems to me no reason to reject this species from our list of natives. Its continental distribution on the contrary makes one wonder why it does not occur in many stations with us. The habitat in which it occurs is similar to those in which it grows in Europe. There it is variable and the plant of sub-alpine pastures may be distinct in a varietal or sub-specific sense. Its associates are like those which accompany it in France. It is neither a garden plant nor of economic interest. In Dorset it has a somewhat restricted distribution so far

as has been yet ascertained, but now attention has been directed to the matter we may expect to hear of it elsewhere. With our present knowledge it need not yield the palm to *Lobelia urens* which it greatly outnumbers, despite the discovery of that plant in another county where, however, cultivation now threatens it. This year I have sent *Scorzonera* for distribution to our members.

1712. HYPOPITYS MONOTROPA Crantz. Dr Domin (Sitzungersber Kgl. Boehm. Ges. Wiss. Prag. math. Nat. Klasse 1915, i. St. p. 1-111, 1916) has under *Monotropa Hypopitys* var. *glabra* a sub-var. *atricha*, the plant totally without hairs; a sub-var. *piligera* "filamentis styloque et interdum quoque petalis hirsutiusculis"; a nov. var. *gracilescens* Domin; and a var. *tomentosa* Velen.

1760 (2). GENTIANA ACAULIS L. "Occurring frequently in fine down grass, round by a small headland of Knoydart, up Loch Hourn, Inverness, near the point at which one lands to cross to Barriscale. Blooming between June and September, James Baird. Plant seems perfectly established, though hardly native. The place is difficult of access. (Of course it is possible that *G. Pneumonanthe* is referred to, but I doubt this)," REGINALD FARRER, in *lit.* We have no positive evidence of *G. Pneumonanthe* occurring in Scotland. Could the very large solitary-flowered form of *Campanula rotundifolia*, the var. *speciosa* More, have been mistaken for *acaulis*? This latter plant has been recorded erroneously for Britain, and the notice is appended:— "Mr Townley, of Manchester, gathered this plant several times on sandhills near Liverpool, where he described it as growing in abundance, far apart from any cultivation. I have seen and possess some of his specimens, which were brought in a living state to the late Mr Crozier." J. SIDEBOTHAM in *Phyt.* 71, 1848. "The improbability of the alleged fact appears to me sufficient to overbalance the testimony in its support, and to render it more likely that the evidence is defective through some error as to the species or its wildness. The sandhills near Liverpool have been very frequently scoured by botanical collectors during the last quarter or half century; and yet we do not find *Gentiana acaulis* mentioned in the *Flora of Liverpool* published within these ten years. It is difficult to imagine so showy a plant remaining unseen on a frequented track of land, which is covered only by a thin and short vegetation. And as three other

species of the genus—*campestris*, *Amarella*, and *Pneumonanthe*—have undoubtedly been collected there, it is likely enough that one of these three has been mistaken for *G. acaulis*." H. C. WATSON in *Phyt.* 84, 1848.

1779 (2). PHACELIA CONGESTA Hook. Bot. Mag. t. 3452. Alien, Texas, America. Between Apperley and Calverley, York, 1887, *Flora of West Yorks.* 793.

1781 (4). HELIOTROPIUM ANCHUSAEFOLIUM Poir. Enc. Suppl. iii., 23. *Tournefortia heliotropioides* Hook. Bot. Mag. t. 3096. Alien, Argentina. Perching Sands Farm, Fulking, W. Sussex, F. ROBINSON.

1792. SYMPHYTUM PEREGRINUM. *Uber das "Prickly Comfrey" der Engländer.* In this article Dr Thellung holds that our Prickly Comfrey is a hybrid of *S. asperum* and *S. officinale* (with which Dr Cedric Bucknall agrees), but while the latter calls it *S. peregrinum* Ledeb., Dr Thellung states that the proper name is *S. uplandicum* Nyman Syll. Fl. Eur. 80, 1854, as asserted by Dr C. F. Lindman in *Bot. Notiser* 71-77, 1911. These authors say it is the *S. peregrinum* of Briggs in *Rep. B.E.C.* 17, 1877-8, and of *Bot. Mag.* t. 6466, 1879, but not of Ledebour, and is also the *S. caeruleum* Petit. See Thellung in Verh. des Bot. Ver. der Prov. Brandenb. lvii., 1915.

1807 (2). NONNEA ROSEA Link Enum. Hort. Berol. i., 167, forma VERSICOLOR. *Anchusa latifolia* Hort. Bot. Mag. t. 3477. Alien, Caucasus. Agrical. Cornfield, in considerable quantity, Church Stretton, Salop, July 1916, Misses COBBE, who have kindly sent a supply for the Exchange Club. In this form the flowers are red in bud, but turn a beautiful blue in flower. The plant is a diffuse hardy annual. Mrs Davenport sent it me from woods in that place ten years ago.

1833 *c.* CONVOLVULUS ARVENSIS L., var. LINEARIFOLIUS Choisy in DC. Prod. ix., 406, 18. "Feuilles linéaires; fleurs ordinairement plus petites." In the sandy hollows of the bunkers on Frilford Golf Course, Berks., July 1916. The leaves were only about 5 mm. broad.

1843. CUSCUTA RACEMOSA Mart. Reise Bras. i., 286, var. b. CHILIANA Engelm. Alien. Waste ground, Colley Hill, Reigate, Surrey, 1900, C. E. SALMON.

1845. SOLANUM DULCAMARA L., var. d. OVATUM Dunal ap. DC. Prod. xiii., 1, 78. Leaves oval-oblong, undivided. By the Lavant, Chichester, 1916, Rev. Preb. BURDON and G. C. DRUCE.

1851 (5). PHYSALIS FOETENS Pour. Enc. Suppl. ii., 348. Alien, Mexico, Guadeloupe, Antigua. On waste ground at St. Philip's, Bristol, July 1916, Misses COBBE and G. C. DRUCE. Perhaps introduced with banana packages. It was there in some plenty and produced fruits.

1872 (3). CALCEOLARIA MEXICANA L. First recorded as *C. gracilis* by J. C. Hudson in *Science Gossip* 19, 1868. In a barley field about half a mile from Bradford Abbas, Dorset, seeding and appearing again in 1871. Identified by J. Britten in *Journ. Bot.* 268, 1872. Galashiels, Selkirk, 1915, Miss I. M. HAYWARD.

1882 (3). LINARIA ORIGANIFOLIA DC. Fl. de Fr. iii., 591, (*Chaenorrhinum origanifolium* Lange). Alien, France, Portugal, Spain. On a wall at West Malling, Kent, SHRIVELL in *Hb. Pharm. Soc.*, ante 1899. A pretty annual plant with glandular bluish-violet corolla.

1933. EUPHRASIA BREVIPILA × LATIFOLIA. Grassy cliffs, Melvich, Sutherland, E. S. MARSHALL in *Journ. Bot.* 170, 1916.

1934. EUPHRASIA NEMOROSA, var. b. CILIATA Drabble. See *Journ. Bot.* 75, 1916. "Foliis bracteisque, raro et calycibus ciliatis vel leviter hirsutis." Truro, etc., Cornwall; Potter's Crouch, Herts.; Leigh-on-Sea, Essex; Llandudno, Carnarvonshire; Monsall Dale, etc., Derby; Wallasey, Cheshire; Freshfield, Lancashire.

1934 (2). EUPHRASIA CAMPESTRIS Jord. Pugill. 131. Near Clevedon, Somerset, 1916, CEDRIC BUCKNALL. This, Dr Bucknall says, has the following characters:—"Stem with numerous branches, which are sometimes compound, internodes long. Leaves at base of principal branches longer than the bracts, spreading or deflexed. Spike fairly lax, the internodes visible nearly to the top. Bracts with lanceolate or subulate teeth. Corolla of moderate size. Glandular hairs short, straight, more or less numerous on bracts and calyx. Resembling *E. nemorosa* in habit, size of leaves and bracts, but differing in having glandular hairs." E. racemis terminalibus modice

elongatis foliosis, calicis pedunculati ad nervos pilis *glanduliferis* brevibus obsiti semi-quadrifidi lobis lineari-lanceolatis breviter acuminatis erectis, corollae (haud parvae) tubo calicem *fere superante*, labio superiore lilacino fasciolis violaceis insignito extus inferne punctulis nigris notato bifido, lobis emarginatis reflexis, labio inferiore albido in medio flavo-maculato trifido, lobis porrectis profunde emarginatis, capsula calice paulo breviore folium fulcrantem *superante* oblonga inferne leviter augustata apice *subaequali* hispida *subtruncato-emarginata* mucrone brevi *subexserto* apiculata, foliis parvis saepe obscure virentibus patulis pube minuta saepe *glandulifera* adspersis oblongo-ovatis basi in petiolulum augustatis profunde dentatis, dentibus utrinque saepius 4 lanceolatis, foliorum superiorum breviter acuminatis, caule erecto flexuoso ramosissimo, ramis tenuibus *subarcuato-patulis* pube reversa *brevi* superne pilis *glanduliferis* intermixta obductis.

Hab. in siccis et ericetis, ad oras sylvarum, circa Lyon, ubi frequentem legi :—Fl. Sept. Oct.

Ab *E. officinali* L. differt florescentia seriore, racemis brevioribus, calice folium fulcrantem superante corollae tubum subaequante, capsula potius emarginata minus utrinque augustata, foliis minoribus haud late ovatis minus basi contractis, caule, proceriore, ramis magis patulis, pubescentia valde breviore. JORDAN, *l.c.*

1941. EUPHRASIA ROSTKOVIANA × SCOTTICA. Loch Mor, Betty Hill, E. S. MARSHALL, *l.c.*

1966. OROBANCHE MAJOR L., var. b. CITRINIS mihi. A specimen was gathered near Aldbourne, Wilts., by Miss Todd, of a pure yellow colour, the tint of *O. Ritro* var. *hypochaeroides* from Jersey, but the flowers are larger and the plant not so glandular. It is a smaller plant than *major*, which is abundant in the area. It requires further study, but provisionally I name it as above. G. C. DRUCE.

1988. MENTHA ROTUNDIFOLIA × SPICATA. Above Pangbourne, Berks., probably of garden origin. Found by Col. F. J. SMITH, 1916. This has the odour and the habit of the spearmint, but the inflorescence is a little broader. The leaves are, however, very strongly veined, sub-glabrous above, shortly hairy below, and full of oil cells. They are broadly lanceolate and sharply toothed.

2010. SATUREIA GRANDIFLORA Scheele. This name must not be used for the Apse Down plant, the true *grandiflora* (*C. grandiflora* Moench) being alien in Britain. I have it, doubtless of garden origin, from Cliveden, Bucks., 1913, coll. by Mrs DRUMMOND.

2010 (2). SATUREIA MENTHAEFOLIA (Host Fl. Austr. ii., 129, 1831, as *Calamintha*) is the correct name for the Isle of Wight plant, as Mr C. C. Lacaita shows. *Calamintha menthaefolia* Host = *C. sylvatica* Bromf. = *C. officinalis* Jord. It is strange that *C. menthaefolia* Host should have been so unreasonably misunderstood. Jordan (1846), Bentham (1848), and Grenier and Godron (1850) seem to have been the original sinners, and they have been repeatedly copied. Host distinguishes most clearly—pace Jordan, whose remarks on the subject (*Obs.* iv., 6, 1846) are quite unjustified—(1) *C. officinalis*, "pedunculis axillaribus . . . brevissimis; foliis denticulatis," with synonyms *Melissa Calamintha* L., *Thymus Calamintha* Sm. and *E.B.* t. 1676, which, although not a good figure, is obviously, ex locis, intended for *C. ascendens*, not for *sylvatica*. (2) *C. menthaefolia*, "pedunculis folio longioribus, foliis serratis," without synonymy. Briquet (*Lab. Alpes Mar.* 434, 1895) has reinstated Host's *menthaefolia* in its proper place as synonymous with Bromfield's *sylvatica*. This is the common woodland Calamint of south-western Italy, where it is very copious, occasionally occurring in individual plants with smaller corollas, when it must not be confounded with *C. ascendens*, as it keeps the serrate leaves and long inflorescence of its kind. C. C. LACAITA.

2011. SATUREIA CALAMINTHA Scheele is founded on *Melissa Calamintha* L., a compound species, including both *menthaefolia* and *ascendens*, but restricted by Scheele under *Satureia* to the plant named *Calamintha ascendens* Jord. In Britain it has been called *Calamintha montana* Lam., and wrongly *Calamintha menthaefolia* Moench.

2013. SATUREIA ACINOS Scheele. Mr C. C. Lacaita has kindly looked over my set of *Acinos*. He writes as follows:—"The *Calamintha Acinos* interests me much. It is extraordinarily uniform, and is all var. *elliptica* Billot (see Briquet *Lab. Alp. Mar.* 457). I have nothing like this from the south [Italy], where it is all var. *lancifolia* Murbeck, though possibly better called var. *acutata* Willk." Scheele includes *Calamintha* in *Satureia*, and this plant is *S. Acinos* Scheele,

var. ELLIPTICA (Billot) comb. nov. The suggestion that in England we have two plants, that of the rocks and of cultivated ground, seems negatived by Mr Lacaita's remarks. That the latter may have been derived from the former is possible. G. C. DRUCE.

2019 (2) SALVIA SCLAREA L. Alien, S. Europe. Hortal. Arniston, Dalkeith, Midlothian, EDMONSTON, circa 1840.

2023. SALVIA PRATENSIS L. When I gathered this species in Monmouthshire in 1908—it had been recorded for the county in *Journ. Bot.* 285, 1903—it was evident that two forms of it were present, as Mr Shoolbred points out in *Rep. B.E.C.* 365, 1915. In 1915, in the company of Messrs Shoolbred and Marshall, I once more gathered it in the same spot, taking roots. Grown on in the garden they show marked distinguishing characters. Mr Shoolbred, *l.c.* accurately distinguishes the flower colours. Roughly we may speak of dark and light blue forms. The former is apparently typical. The foliage characters, however, are also well marked. The dark-flowered plant, which in the garden bloomed (1916) several days ahead of the other, looks robuster in habit. It has leaves of a full green, broader (in proportion to their length) especially at the base; often so truncate below as to be triangular; coarsely crenate, sometimes lobed, occasionally deeply; plicate and strongly wrinkled above with prominent veins below. Mr Druce places it near *rostrata* Reichb. f. It was distributed in 1915. The light blue form has leaves of a rather yellowish green; narrower, lanceolate, usually with the broadest part some way above the base; much more finely crenate-serrate; more regular in outline, without lobes; not plicate, with smoother surface and less prominent veins below. I refrain from describing it under a name as a variety, as I only know of it from one locality; and, moreover, it is possibly already so described. If the root in my garden flourishes well enough, I hope to distribute this form in 1917. With regard to the size of the flowers, my specimens from Oxon and Monmouthshire, and one from E. Gloster exhibit the very large flowers which are familiar in this species. Other specimens, *e.g.*, from Surrey, distributed by Mr Marshall in 1910, have flowers considerably smaller, and less exerted from the calyx. The same thing occurs in a plant sent me from another place in E. Gloster. But smaller flowered still is a plant from a third locality in E. Gloster.

This last has certain points of difference, in calyx also, from both *pratensis* and *verbenaca*. Moreover, it grows in a meadow along with both those species, and although it shows definite *pratensis* foliage, it may nevertheless prove to be a hybrid between the two. H. J. RIDDELSDELL.

Salvia pratensis is an extremely common plant on the continent. It is rarely out of one's sight in the long journey from Trieste or Brindisi to Calais, and naturally assumes many forms. Two described by Rouy (*Fl. de Fr.* xi., 326) were alluded to in our last *Report* (p. 365), but for the benefit of those members who may not possess that work the six varieties into which Rouy divides it are here given :—

Var. c. ROSTRATA Reichb. f. Ic. Fl. Germ. et Helv. xviii., 29, t. 1252, f. 3, em. Rouy. Flowers large, hermaphrodite, exceeding the calyx by 12-20 mm. ; leaves crenate, or incise-lobed, not pinnatipartite, the limb broadly oval-triangular, cordate, with open sinus, regularly arranged upon the stem Reichb. *l.c.* merely says "foliis pinnat. dentatis" and the leaf only is figured.

Var. APRICA Rouy. Flowers of *rostrata ;* leaves very rugose, all radical in a large basal rosette, sometimes with a pair of leaves on the upper part of the stem.

Var. VULGARIS Reichb. *l.c.* Basal leaves oval or elliptic-oblong, cordate, but with a narrow sinus, more or less crenate, not pinnatipartite ; calyx small (5-6 mm. long whilst flowering), corolla hermaphrodite, projecting 12-15 mm.

Var. b. MODESTA Briq. Lab. 529. Flowers of *vulgaris* ; basal leaves elongated, narrowly oblong, more or less truncate or attenuated at the base. The Griston, Norfolk, plant (*Rep. B.E.C.* 365, 1915) of Mr F. Robinson's, I think, belongs here. The flowers are smaller and of a duller and darker blue.

Var. PARVIFLORA Lec. and Lam. Cat. 296. Female plant small-flowered. Flowers 12-15 mm. long, the stamens included or subatrophied ; style longly exserted. Rather a biologic state than a variety, since the leaves are sometimes of one variety, sometimes of another.

Var. NICAEENSIS Briq. *l.c.* 528. Leaves of *vulgaris* ; calyces large, membranous, with very prominent nerves, 7-9 mm. long whilst flowering ; corolla hermaphrodite, projecting about 2 cm.

2102 (11). PARONYCHIA POLYGONIFOLIA DC. Fl. de Fr. iii., 403. Alien, S. Europe. Gala, Selkirk, A. BROTHERSTON in Berwick *Proc.* 136, 1873.

2122. CHENOPODIUM MURALE L., var. MICROPHYLLUM (Coss. and Germ. Fl. Env. Paris 452, 1845, as sub-var.) Gürke Pl. Eur. ii., 132, 1897. Trent Meadows, Nottingham, A. R. HORWOOD. See *Rep. B.E.C.* 367, 1915.

2213 (2). ARISTOLOCHIA ROTUNDA L. Alien, S. Europe. On the N. Downs, near Shoreham, West Kent, in a thicket. One well-grown plant, for two or three seasons, about 1901. C. E. BRITTON, in *lit.*

2227 ×. EUPHORBIA AMYGDALOIDES × PILOSA = × E. TURNERI. In the classic locality, near Prior Park, Bath, for *E. pilosa*, grows also a quantity of *E. Amygdaloides*, but *pilosa* has nearly or quite disappeared. When I first saw it there many years ago I found *E. Amygdaloides* with hairy capsules and more hairy leaves than usual. This still continues, although I was unable to find *pilosa* with it this year. There is little doubt that this hairy-capsuled form is a natural hybrid as above stated. *E. pilosa* seems reduced to a single plant which still occurs in the vicinity. The hybrid may be defined as having "capsula pubescentia." The hybrid name is given in honour of the father of British Botany, once Dean of Wells. G. C. DRUCE.

2236. EUPHORBIA EXIGUA L., forma CONDENSATA mihi. On the south-western cliffs of Berry Head, S. Devon, in full exposure. This differs from the type in being about 8 cm. in height, by having the narrow linear leaves, 7 mm. long by 1-1.2 mm. broad, closely appressed to the stem, and the inflorescence crowded into a head. The fruit and seeds are normal. The presence of it on these cliffs might be held to be a certain proof of its indigeneity. However, near it was a clump of the cut-petalled garden form of *Papaver somniferum.* Perhaps the round seeds of each had been blown over the cliffs, where finding small competition they easily established themselves. G. C. DRUCE.

[2338 (2). HABENARIA ODORATISSIMA (L.). *Gymnadenia odoratissima* Rich. in Mem. Mus. Paris iv., 57, 1817. *Orchis odoratissima* L. European distribution: Sweden, Luxemburg, Germany, Switzer-

land, N. Italy, Austria-Hungary, Rumania, and Russia. Mr J. W. Heslop Harrison tells me he found a single specimen on the Magnesian Limestone in E. Durham. He is positive as to its identity. Pending further material being found this record is bracketed. It differs from *H. Gymnadenia (conopsea)* by its linear leaves, and the very slender, dense, short inflorescence. The middle lobe of the lip is broad and prominent, and the spur pendant and rather short, about as long as the ovary. The flowers are much smaller and are strongly vanilla scented. This was first recorded as British by Mr W. Pamplin in the *Mag. of Nat. Hist.* ix. 475, 1836, between Juniper Hill and Box Hill, Surrey, on June 28, 1833. But it was not 'taken up' by Brewer or Beeby. Corroboration is highly desirable.]

2361 (2). SISYRINCHIUM CHILENSE Hook. in Bot. Mag. t. 2786. Alien, Chilian coast. A half-hardy species introduced into cultivation about 1826. Now naturalised in New Zealand. Ware gravel pits, 1916, Mrs KNOWLING and Miss M. DRUMMOND, vide sp.

2388. CONVALLARIA MAJALIS L., forma ROSEA. Corolla stained with dull red or crimson at bottom. Quantocks, Somerset, F. J. HANBURY and F. STRATTON. See *Journ. Bot.* 211, 1916; Farley Wood, Winchester, Townsend's *Flora of Hampshire* 431.

2411 (3). SCILLA ITALICA L. Alien, Europe. N. Lincoln, 1896.

2489. POTAMOGETON VENUSTUS Baagoe in Compt. Rend. Congr. Bot. Paris 517, 1900. *P. crispus* × *alpinus* A. and G. Syn. ed. 2, 515, 1913; and in Pflanzen iv., ii., 1907. In the Earn, near Dunning, Mid Perth, W. BARCLAY, who distributed specimens last year. See *Rep. B.E.C.* 376, 1916. Mr Arthur Bennett, under the above names, gives an account of it in *Proc. Perth. Soc. N.S.* vi., pt. iii., 10, 1916. Mr Barclay showed me the plant *in situ* in August last. Its hybrid origin seemed evident. It had the colouring of *alpinus*, and the leaf-margins of *crispus* were quite distinct.

2502. POTAMOGETON PERFOLIATUS L., var. OVALIFOLIUS Wallr., teste A. Bennett. King's Weir, Oxford, G. C. DRUCE. See *Rep. B.E.C.* 376, 1915.

2617 *e*. CAREX PANICULATA L., var. PSEUDO-PARADOXA (S. Gibson in Phyt. i., 778, 1843, as a species) Asch. and Graeb.

Syn. ii., 2, 46, 1902. See C. E. Salmon in *Journ. Bot.* 14, 1916. This was first recorded from near Manchester [Seaman's Moss Pits, Cheshire] as one of the "two varieties of *C. teretiuscula*, this having the fruit [nut] of *C. paniculata*." *Phyt.* 366, 1842. In the same publication (778, 1843), Mr Gibson published it as a species. "*C. pseudo-paradoxa.* Spikes panicled, branches approximate; perigynium oval, gibbous, acuminated into a serrulate bidentate beak, more or less plano-convex, with seven nerves on the convex side (three very slender in the middle and two strong ones on each side of them), the outer nerves, or those nearest the margin, being very short; nut rhomboidal, narrowing from below the middle; style enlarged at the base; stem three-angled, angles rough on the upper part; leaves narrow, rough on their edges." He says it grows plentifully by Malham Tarn. In a long note (*l.c.* 1038-1044) Gibson replies to his acrid critics of the plant in question and says that when mature "it differs from *teretiuscula* in its nut being narrowed from below the middle, and in the perigynium being broader and truncate at the base; it also differs from that plant in its stem having three acute angles, with their interstices flat. From *paniculata* it differs in the perigynium being differently ribbed and less distinctly bifid at the point, and in having narrower leaves. From *C. paradoxa* it will be found to differ in the perigynium being less distinctly ribbed on its inner side, and also in the form of the stem. And from all the other three it differs in its mode of inflorescence." Mr C. E. Salmon (*l.c.* 17) describes it as "whole plant more delicate and graceful, not forming immense tussocks; stems $3\frac{1}{2}$-$5\frac{1}{2}$ dcm. high; leaves narrower, $2\frac{1}{2}$-$3\frac{1}{2}$ mm. broad; inflorescence simulating that of *C. teretiuscula* [i.e. *diandra*] or with short erect branches as in *paradoxa*." Found by C. E. Salmon and E. G. Baker at Restennet, Forfar, in 1912. In 1899 I found similar plants there and in the adjacent marsh at Rescobie, which I thought might be *diandra* × *paniculata*. I submitted them to Pfarrer Kükenthal, who named them *C. paniculata*, var. *simplicior* Anderson Pl. Scand. 67, 1849, where it is described "spica angusta, spiculis parum decompositis, pedunculis arrectis." There is an earlier name var. *simplex* Petermann, which is used in the *List*; but S. F. Gray used the same name for a slender starved form of *paniculata*, "panicle simple, lower spikelets distant," Nat. Arr. Br. Pl. ii., 46, 1821, which does not fit Gibson's plant. However, Anderson's varietal name is earlier than that of Ascherson & Graebner.

2669 (6). STIPA SETIGERA Presl Reliq. Haenke i., 226, 1830. *S. intricata* Godr. Fl. Juvenal in Mem. Acad. Mont. sect. med. i., 449, 1853. *S. Neesiana* Trin. & Rupr. in Mem. Acad. Peters. ser. 6, v., 27, 1842. Alien, S. America, Uruguay, Argentina. First noticed in Europe at Port Juvenal, S. France. Introduced with wool in 1853, and abundant near the wool-washing at Montplaisir in 1877, and at Bédarieus in 1904. Also adventive at Berlin, Anhalt. (See Thellung *Fl. Adv. Montp.* 94). Found by Mr RAKE on a rubbish heap near the destructor at Mortlake, Surrey (see *Observer*, October 1916). What is probably the same plant (teste Dr Thellung) was gathered in 1915, at Selkirk, by Miss I. M. HAYWARD.

2717. AVENA FATUA × SATIVA. Drayton, Middlesex; Slough, Bucks., 1909, teste E. Hackel. This interesting hybrid has the Black Oat as one of its parents, the Wild Oat as the other. One of the glumes only is awned, and there are a few hairs at the base of the dark coloured lower glume. It is probably the *A. intermedia* Lind. G. C. DRUCE.

Gen. 687 (2). SCHISMUS Beauv. Agrost. 73, t. 15, f. 4, 1812.

2757 (10). SCHISMUS CALYCINUS (L.) Coss. in Bull. Soc. Bot. Fr. iv., 399, 1857. (*S. marginatus* Beauv., *l.c.*). Alien, S. Europe, Central Asia, N. Africa. Levenhall, Midlothian, 1916, J. FRASER, vide sp. I have only gathered it on the site of the Roman City, Timgad, N. Africa.

2760. POA PALUSTRIS L., var. d. MURALIS Aschers. Canal bank, Litterland, S. Lancs., J. A. WHELDON and W. G. TRAVIS. See *Rep. B.E.C.* 386, 1915. Plant slender, leaves narrow, panicle small, ellipsoid, contracted.

2775. GLYCERIA FESTUCIFORMIS Heyn. In *Rep. B.E.C.* ii., 482, 1901, I drew attention to the fact that the Irish plant found by Mr R. Ll. Praeger, was not identical with the Adriatic species, and I suggested that it should be called var. *hibernica*. Recently I have collected a series in W. Sussex which very closely approximates to this plant. Indeed Dr Stapf, who has kindly examined my series of British and Irish specimens, considers they all belong to *G. maritima*, not to *festuciformis*, and that my Sussex specimens are the same as the Irish plant. Dr Rendle thought the Irish plant was nearest to

festuciformis, and that also was Hackel's view. The true *festuciformis* is very critical. It seems to be represented in exsiccata by two or three very different plants. The descriptions of authors are also divergent. Certain characters which Rouy lays stress on are also possessed by forms of *maritima*, itself most polymorphic. Its range of variation is illuminative of the influence of soil and conditions of growth and throws a side-light upon the forms of *Salicornia* which are subject to the same influences.

2776. GLYCERIA MARITIMA Wahl., sub-var. AMETHYSTINA Meyer Chlor. Hannov. 629, as var. Florets dark violet. Chichester Harbour, Sussex, 1916, G. C. DRUCE.

2778. GLYCERIA PROCUMBENS Dum. To change a well-known name of a plant is never popular with botanists, and if a trivial for upwards of a century has been universally adopted, only the strongest and most unmistakable evidence would justify a change. Since 1795 *Poa procumbens* Curtis has afforded such a trivial, which has been in use throughout the world. Unfortunately we cannot absolutely fix the date of the publication of the plate 11 in the 6th Fasc. of Curtis' *Flora Londinensis*, where it first appeared, but we have very strong presumptive evidence that it was before the end of 1795, possibly at the end of 1794. Curtis found it on the edge of the river, near St Vincent's Rocks, in August 1793. He took home the root, planted it, and sowed seeds. The next season, 1794, it flowered, and he was convinced it was a new species. Not satisfied with having only a single specimen, he says "We delayed publishing this account, hoping that it might be found more abundantly elsewhere" [? 1794]. Sir Thomas Frankland sent him from Bristol on the 7th of August [? 1794] fresh specimens from "waste ground west of the wet dock, below Clifton." This confirmation of his discovery doubtless induced him to publish this new species at once. Withering (*Nat. Arr. Brit. Pl.* 146, t. 26, 1796) described it as *Poa rupestris* (it is not a rock plant), from the same locality, gathered by Mr Milne, "who observed to me that Mr Curtis first found it there." He quotes, moreover, Sir Thomas Frankland's having also found it there, and also on the new pier at Scarborough, both these localities being published by Curtis from Frankland's letter of August 7th. Although Withering does not quote Curtis' plate, yet there seems a presumption that he must

have seen the letterpress, unless Frankland also wrote to him respecting it. There is at least one plate in Curtis' 6th Fasc. which was published after 1796, for instance *Lobelia urens*, which was sent to Curtis in 1796 by Lord Webb Seymour, as Curtis says "two years ago." But 31 of the 78 plants are cited by Sibthorp in *Fl. Oxon* 1794. Plates 8 and 9 were published in 1791 and No. 13 before 1794, *Poa procumbens* being No. 11. This is not conclusive, since the plates were not issued consecutively, and the binder had directions to sort them into proper sequence according to the Index, an instruction which unfortunately he obeyed too well. For the last ten years I have examined every copy I could lay my hands on in the hope of finding one in the original sequence, but not even the copy at Longleat gave one what one wished. Nor have the other 25 copies given any satisfaction. Withering not citing Curtis is no proof that *P. procumbens* was not already issued, any more than Withering's name is not cited by Curtis. The two works were in preparation at the same time. Those who wish to replace a good name by a bad one have overlooked the contemporary evidence. In 1799 Sowerby produced the plate, t. 532, of *Poa procumbens* for *English Botany*. Is it at all likely that Smith, in whose memory the publication of both works was quite fresh, and who had no great liking for Curtis, should go out of his way to publish a later instead of an earlier name, well knowing that such a proceeding would lay him open to censure? His choice of *Poa procumbens* was never challenged by Withering, and in 1799 in the *Flora Britannica*, in 1800 in his *Compendium*, he still retained Curtis' name, as in the *English Flora* of 1824, when he put it in the genus *Glyceria*. Prior to this both Knapp (*Brit. Grasses*) and Sir W. Hooker (*Flora Scotica*, 1821) used the same trivial. In 1828 Gray, under *Sclerochloa* called it *procumbens*, and he cites Withering's *rupestris* as a synonym. Surely such a conspiracy of injustice to Withering could not have prevailed had there been a shadow of doubt as to the first user of the name. Again, Withering was a friend and a frequent guest of the Countess of Aylesford at Packington, yet her painting of this grass, sent her by Dickson, made in 1802, is named *P. procumbens*. Recently, through the kindness of its present owner, the Earl of Dartmouth, I have had an opportunity of examining it. Again there is no question here of ambiguity. Contemporaneous botanists were fully cognisant that *Poa procumbens* and *P. rupestris* were one and the same species. They deliberately

chose one, and rejected the other, having the circumstances of the case clearly before them, and no protest is to be found by Withering or his friends, as they doubtless considered he had been properly forestalled in its description by its discoverer. Clarke (*First Records*, 182) gives the date of Curtis', *circa* 1794, and ignores Withering. Dr Daydon Jackson, than whom no one can speak with more authority, puts the date of the publication as 1795, that is prior to Withering's publication in 1796, and with that we may safely leave it. *Rupestris* as a trivial must not replace *procumbens*. Recently continental botanists have adopted the name *Atropis*, itself antedated by *Puccianella* for the section of *Glyceria* containing the above species. Probably both will be found to be invalid.

2807. BROMUS COMMUTATUS Schrad., var. APRICORUM Sim. Teste W. B. Turrill. Wolvercote, Oxon, 1915, G. C. DRUCE.

Gen. 712 (2). LEPTOLEPIA Metten. Kuhn. Chaet. 348, 1882. (DAVALLIA Sm.)

2888 (2). LEPTOLEPIA NOVAE-ZEYLANDIAE (Col. Tasm. Journ. ii., 182, 1844) Kuhn. *l.c.* Alien, New Zealand. On lower stone-work, bridge over the Swale, near Thirsk, York, 1874, F. ADDISON in *Journ. Bot.* 78, 1875.

2932 (2). SELAGINELLA KRAUSSIANA A. Br. in Ind. Sem. Hort. Berol. 22, 1859. *Lycopodium denticulatum* Hort. Alien, S. Africa, Azores, Madeira (? Sicily). Introduced in 1878, and frequently grown in greenhouses. This was shown me last June by the Duke of Richmond and Mr Brock, growing in a grassy hollow of Goodwood Park, Sussex, where it had been known for some time. Doubtless some clearings from the conservatory had been thrown there, but it is somewhat remarkable that this plant should survive our English winter.

RECENT PUBLICATIONS.

ILLUSTRATIONS OF THE BRITISH FLORA. A series of Wood Engravings with Dissections of British Plants, drawn by W. H. Fitch, F.L.S., with additions by W. G. SMITH, F.L.S., forming an illustrated companion to Bentham's Handbook of the British Flora. Fourth

revised edition, pp. xvi., 338, 1916; 9s net. L. Reeve & Co., London. These small but very pleasing and vivid figures by Fitch, with which botanists were well acquainted, have now been printed on paper which will take water-colours, so that the increasing number of "Benthamites" may with advantage secure a copy of this very clearly printed edition for the purpose of painting in a reminiscence of their discoveries. The work is rendered more useful by the addition of a few synonyms and by a letter, denoting the main colour of the flower. A terse but useful guide to the Natural Orders has been inserted. One only regrets that the Handbook itself, which has so many valuable points, is not brought up to date. Its omission of important species is often a pitfall to the beginner. As it is, we are grateful for this instalment, which we are confident will have a large sale.

Some Alien Plants of the Mersey Province. J. A. Wheldon, F.L.S. Reprinted from the *Lancashire and Cheshire Naturalist*, September 1914. In this tersely written account Mr Wheldon has very clearly given the salient features of the numerous adventitious plants of the area mentioned, as well as much valuable information about them. Quite a large number of those recorded as having been found in Britain are passed under review. Up to the present time we have had nothing of the kind so useful. *Poa palustris*, an increasingly frequent alien, occurs in the area mentioned, and also its varieties *effusa* and *muralis*. *Apera interrupta* has also appeared both there and in Yorkshire.

The Flora of the Bagshot District, H. Wollaston Monckton, Treasurer of the Linnean Society, London, pp. 32, 1916, is curiously unsatisfactory, considering the eminence of its compiler as a geologist, inasmuch as it contains nothing like a complete account of the plants already recorded for that area in the *Flora of Berkshire*. The recent Surrey and Hampshire records have not been examined to see if it is equally imperfect with regard to them. Many Berkshire species are omitted, and numerous records of localities are cited without acknowledgment. Indeed, the *Flora* is more usually cited when the author has been unable to find a species. That the search has not been minute is shown by the failure to find *Trifolium filiforme*, *Carex pilulifera*, or *Leontodon nudicaule*, all of which occurred, and doubtless still occur, within a short radius of Wellington College.

Among other omissions which leap to the eye are *Rosa Eglanteria*, *R. obtusifolia*, *Potamogeton alpinus*, *Carex vesicaria*, *C. elongata*, *C. hirta*, and *Agropyrum caninum*. On the other side, there are a few plants given which are new to the *Flora*. *Hieracium surrejanum*, *H. grandidens*, *H. scanicum* (the last two having been described since the *Flora* was written; the Rev. A. Ley named a specimen from the locality of the last species, *H. cacuminatum*; do both occur?), and *Helleborine atrorubens* from Sandhurst. One would like to see a specimen of the latter, as *H. media* has occurred there, a locality more suited for it, since *atrorubens* grows usually on calcareous, not acid soil. Another critical plant is recorded which might well occur — *Deschampsia setacea*—which grows at Fleet Pond, not far distant, in Hampshire, but it eluded my search in the Berkshire locality given. Failing the production of specimens, it will be safer to hold these records over. *Phegopteris Dryopteris* is also included, but in answer to my enquiry Mr Monckton kindly tells me he was misinformed. Some records attributed to me belong to others; for instance, *Samolus* from Cæsar's Camp. This was found there by Miss de la Motte eighty years ago, and it is probably extinct. In other ways the citation of authorities leaves much to be desired. The two pages on the Geology of the area are very useful. This country is so fascinating that a complete and accurate list of its plants, with their published localities, their source and date, and the correlation of their occurrence with soil-conditions would be most acceptable. Persevering search by a resident ought to result in several additions being made to the flora as already ascertained.

THE EXCURSION TO SUNNINGDALE, SURREY. *Proc. Geol. Assoc.* xxvii. (2) 110, p. 114, 1916. Contains a pleasing description of the Geology of that district.

ANNALS OF BOTANY, vol. xxx., 1916. An able and appreciative memoir (pp. 1-24, with portrait) of that talented botanist, David Thomas Gwynne-Vaughan, supplied by Dr Dukinfield H. Scott, contains much of general interest, since it includes short descriptive incidents of Gwynne-Vaughan's journeys in South America and Siam. He was born at Llandovery, March 12, 1871, and his premature death from tuberculosis took place on September 4, 1915. In 1894 he published his discovery of *Arabis stricta* on an ancient camp near

Llandrindod, Radnor (see *Science Gossip* 1894). The Evolution of Species in Ceylon. J. C. Willis, M.A., D.Sc. Contests the statements, based largely on Wallace's *Island Life*, that endemic species are local species developed in response to local needs or conditions. He considers they are of more recent age. He does not believe that any angiospermous species in Ceylon is dying out at the present time. Morphology and anatomy of the genus *Statice* as represented at Blakeney Point, by E. de Fraine, p. 239, states that Blakeney yields all the British species except *S. Dodartii* (Gri.) [*sic*]. Photographs of the dwarf and broad-leaved forms of *S. binervosa* are given, the latter, it is suggested, is a hybrid of *S. binervosa* and *S. bellidifolia (reticulata)*. The Distribution of Species in New Zealand, J. C. Willis, proposes to substitute age for natural selection as the chief agent in determining the area occupied by any given species, and holds that New Zealand and Ceylon support his contention. Variations in *Anemone nemorosa*, E. J. Salisbury, D.Sc., describes two new varieties of the Wood Anemone from Hertfordshire. See p. 397. On Endemism and the Mutation Theory, H. N. Ridley, F.R.S., combats the views of Mr Willis and states that endemic species are nearly all the relics of an old flora rapidly disappearing, and that in most cases they cannot be evolutions of a later date, as there is nothing in the land from which they can have evolved, and therefore they must be the oldest, not the youngest part, of the flora. Alfred Stanley Marsh, born February 1, 1892, killed by a German sniper, January 5, 1913. Memoir by R. H. Compton.

JOURNAL OF BOTANY. Among the papers of interest to British botanists are :—Notes on *Sorbus*, Rev. E. S. Marshall, p. 10. Dr Hedlund's paper, from which his remarks are quoted, gives as British *S. arranensis* Hedl. (which he thinks was conveyed by birds to Arran from Norway), *S. minima* (Ley) Hedl., *S. Aria* × *torminalis*, *S. minima* × *latifolia*, from a station not known to yield *minima*, *S. salicifolia* × *torminalis*, *and S. incisa* (Reichb.). *Carex pseudo-paradoxa* S. Gibson in *Phyt.* i., 778, 1843, and i., 7, 178, 1844 (*C. paniculata* var. *pseudo-paradoxa* A. & G.), C. E. Salmon, p. 15, suggests that the Sedge which evoked so acrid a discussion in the *Phytologist*, and which was named a species by Gibson, is a variety of *C. paniculata*. Messrs Salmon and E. G. Baker found it at Restennet in 1912. This is the plant I found there in 1899, and which, on the

authority of Pfarrer Kükenthal, I recorded as *C. paniculata* var. *simplicior* And. in *Ann. Scot. Nat. Hist.* 106, 1901, the var. *simplex* Peterm., a name which precedes Gibson's. East Wiltshire Mosses, C. P. Hurst, p. 17. New British Plant Galls, E. W. Swanton, p. 24. Dialysis of the Corolla in *Convolvulus arvensis*, G. S. Boulger, p. 37. Botany of Antigua, L. R. Wheeler, p. 41. Note on *Rubus fruticosus* L., by R. A. Rolfe, p. 54, suggests using this name for *R. rusticanus* Merc. Plants of Salisbury's Prodromus, J. Britten, p. 57, includes a new combination under a proscribed name. *Spergularia* is conserved by the *Actes*. *Nepeta Glechoma* forma *parviflora* in Hereford, E. Armitage, p. 65. *Juncus tenuis*, Lilliput Common, Dorset, C. B. Greene p. 65 (see *Rep. B.E.C.* 75, 1914). *Euphrasia nemorosa* and *E. curta*, E. Drabble, p. 73. A New Hybrid Willow-Herb, *Epilobium hirsutum* × *palustre* = × *E. Waterfallii*, Rev. E. S. Marshall, p. 75 (see *Rep. B.E.C.* 198, 1915). Bibliographical Notes on Lord Bute and John Miller, J. Britten, p. 84. *Juncus tenuis* in Carnarvonshire, near Capel Curig, A. H. Wolley-Dod, p. 88. *Phleum alpinum* in England, H. S. Thompson, p. 88, already recorded in *Rep. B.E.C.* 397, 1913. Somerset Plant Notes for 1915, E. S. Marshall, p. 97, adds *Eriophorum gracile* to the County. Note on *Puccinellia* Parl. by the Editor, p. 108. Surrey Plants, including *Azolla filiculoides*, at Lower Morden, C. E. Britton, p. 112. *Crocus vernus* in the Isle of Wight, near Freshwater, F. Stratton, p. 114. *Epilobium palustre* × *tetragonum* and *E. hirsutum* × *palustre*, near the Dungeness Lighthouse, Kent, R. H. Compton, p. 114. Notes on the Flora of Derbyshire, E. & H. Drabble, p. 133, confirms *Habenaria bifolia* for the County (see *Top. Bot.* 391). William Peete and his Herbarium, S. H. Bickham, p. 139. Notes on some Devon Plants, Rev. E. S. Marshall, p. 140. *Carex rariflora* on Ben Lawers, L. Cumming, p. 145. Index to Curtis's "Flora Londinensis," B. Daydon Jackson, p. 153. Notes on Plants from Skye, C. E. Salmon, p. 165, includes a reference to an interesting *Statice* which Dr Clement Reid thought might be *sibirica*. *Epipactis ovalis*, from the limestone pavement of Ben Suardal, and a useful note on *Eleocharis uniglumis* are also given. Plants of West Sutherland and Caithness, Rev. E. S. Marshall, p. 169, includes two new Euphrasia hybrids, *E. Rostkoviana* × *scottica* and *E. brevipila* × *latifolia*. *Hydrilla verticillata* in Britain, G. C. Druce, p. 172. An Overlooked Irish Botanist,

Andrew Caldwell, J. Britten, p. 173. *Potomageton Drucei*, pp. 37, 87, 180. *Rubus fruticosus*, p. 181. The Rev. H. J. Riddelsdell shows that this name cannot be used in the sense of *R. rusticanus*. A Study of *Barbarea vulgaris*, A. B. Jackson, p. 202, includes a new sub-var. Thomas Wainwright, W. P. Hiern, p. 208. An Overlooked British Mint, James Britten, p. 224. Isle of Wight Plants, includes an erroneous record of *Stachys germanica*, F. Stratton, p. 232. Hertfordshire Poplars, J. E. Little, p. 233. Henry Andrews and his Botanists' Repository, a valuable paper on the dates and text of that work by J. Britten, p. 236-246. *Carex basilaris*, H. S. Thompson, p. 246. This was gathered by me as a new record for Catalonia on Tibidabo, above Barcelona, in Spain, April 21, 1914. The plant from Mont d'Oiseaux, Hyères (for which department *C. basilaris* is already on record) was at first thought to be *basilaris*. It was subsequently named *C. Halleriana*. Both my Spanish and French plants are in the Fielding Herbarium, Oxford, to which my continental specimens are given. *Helleborine viridiflora* in Anglesey, W. G. Travis, p. 247. *Viola montana* L., A. J. Wilmott, p. 257. County Lists of Mosses for Berks., Wilts., &c., C. P. Hurst., p. 262. The Word Herbarium, J. Britten, p. 274. The Vegetation of Harptree Combe, H. S. Thompson, p. 295. John Fleming, J. Britten, p. 301. *Potamageton alpinus* × *lucens*, Bindon Mill-dam, near Wool, and the River Frome, above Wareham, Dorset, found by Mr Green, A. Bennett, p. 306. Wm. Sherard's Jersey Plants, G. C. Druce, p. 335. On the Name *Lamprothamnus*, J. Groves, suggests that our plant should be named *Lamprothamnium papulosum* (Wallr.) Groves, p. 336. *Aquilegia alpina* in Scotland, R. H. Corstorphine, p. 337. *Matricaria suaveolens* in Essex, Salop, and Wicklow, J. Britten, p. 338. William Anderson (1778) and the Plants of Cook's Third Voyage, J. Britten, p. 345. *Sieglingia decumbens* in Lincolnshire, E. A. Woodruffe-Peacock, p. 359. Isle of Wight Plants, F. Stratton, p. 371. Supplement. Flora of Seychelles and Aldabra, W. Botting Hemsley, LL.D., F.R.S.

THE NEW PHYTOLOGIST FOR 1916 contains, among other papers, the Vegetable Anatomy of *Molinia caerulea*, by Rev. T. A. Jeffries, F.L.S., pp. 49-71.

BRITISH WILD FLOWERS: THEIR HAUNTS AND ASSOCIATIONS. 8vo., pp. x. 320, with 50 plates illustrating over a hundred species.

WILLIAM GRAVESON. Headley Bros., Kingsway, London (n.d. ? 1917); 7/6 net. With a pleasing cover, well printed, and freely and tastefully illustrated, this work by one of our members comes in an attractive guise. Nor is it only the outer appearance that is satisfactory, for the literary matter is equally deserving praise, arranged as it is in chapters beginning with the harbingers of Spring—would there were a spring to welcome them—and then carrying the reader along the various months all too speedily through the haunts of the flowers till he finds himself among the autumn berries. Under each heading is a great amount of useful and accurate notes, full of well-assorted information, which has been judiciously culled from many sources and placed before the reader in a pleasing style. Treating of Weeds and Wayside Flowers, Mr Graveson tells of some experiments made by Mr W. C. Collinge, M.Sc., in the Journal of the Board of Agriculture relating to the examination of the excreta of the House Sparrow, Greenfinch, and Bullfinch. Fifty-four droppings of the first yielded 133 plants belonging to seven species, of the second 38 gave 52 plants consisting of seven species, and of the last 50 droppings afforded 96 plants and nine species. Seventeen different species were thus obtained from these three birds. The Ribwort Plantain occurred in each, 67 specimens altogether. Other species, consisting of *Cerastium vulgatum*, *Senecio vulgaris*, *Brassica arvensis*, *Rumex crispus*, occurred in two lists, and the following appeared in one list only, *Rumex Acetosella*, *Bellis*, *Achillea Millefolium*, *Ranunculus repens*, *Taraxacum*, *Polygonum aviculare*, *Galium Aparine*, *Prunella*, *Sonchus oleraceus*, *Senecio Jacobaea*, *Chrysanthemum segetum* and Hawkweed. This method of weed-introduction may account for the sudden and unusual appearance of *Prunella* in so many urban lawns last season, and certainly points to the moral of preventing too many birds from holding their levees in one's garden. Illustrations in the book in most cases are quite admirable—the Coppice full of Wood Anemones, the Daffodils amongst the grass, the Pollard Willows and *Populus serotina* in the Lea meadows, the Wild Cherry by the highway, the Water Crowfoot in the woodland pool, the Sea Mayweed on the sea cliffs, the Purple Loosestrife by the stream, and the Heather and Bracken on the moor. Excellent too are the flower photographs—*Stellaria Holostea*, *Orchis mascula*, *Crataegus monogyna*, *Silene maritima*, *Papaver Rhoeas* and the Privet Berries—which have a crispness and exactitude in

pleasing contrast to the travesties of British plants which have appeared in more pretentious works. These photographs and its letterpress make the book a delightful present for the intelligent youth of both sexes, since there is nothing to repel but much to attract, and its perusal is almost certain to secure another worker at the still unexhausted mine of pleasure open to the Field Botanist.

THE JOURNAL OF ECOLOGY OF 1916 contains, among other communications: — Recolonisation of Cultivated Land allowed to revert to Natural Conditions, W. E. Brenchley and Helen Adam. Ecology of Breckland, E. P. Farrow. Oak-Hornbeam Woods of Hertfordshire, E. J. Salisbury, notes that *Epipactis violacea* (*Helleborine purpurata*) does not produce its leaves until after the inception of the shade-phase, and often grows where the canopy is moderately dense. *Ranunculus auricomus* is given as one of the members of the deep shade flora. One's experience hardly supports this as a general rule. With us it prefers the shelter of hedges rather than the shade of woods. Botanical Results of a Fenland Flood, R. H. Compton. *Cladophora flavescens* covered a very large proportion of the flooded area, acres at a stretch. So thick was it in some places that it was necessary to rake it off before the land could be ploughed. In the upper meadows of the Thames it has also covered great areas with a blanket-like growth. Mr Compton shows photographs illustrating its heavy texture. *Polygonum amphibium* and *Alisma Plantago* were present in local abundance, and *Chara hispida* "climbed out of the ditches and formed a zone several feet broad on either side. This natural experiment compares with the sterilisation of Krakatoa, and gives a striking demonstration of the rapidity and completeness of the invasion of a new adaptive flora." Salt Marshes of the Dovey Estuary, R. H. Yapp, D. Johns, and O. T. Jones.

THE NATURALIST, 1916, edited by T. Sheppard, M.Sc., and T. W. Woodhead, contains papers on—Wild Roses of Durham, J. W. Harrison; Yorkshire Hawkweeds, J. Cryer; Plants of Commondale, by our veteran honorary member, Mr J. Gilbert Baker; Botanical Problems at Austwick, C. A. Cheetham (survival of *Silene maritima*); Casual and Alien Plants from Wakefield, J. Cryer.

THE IRISH NATURALIST, 1915 to April 1916. *Orchis Morio*, *O. pyramidalis*, *Circaea lutetiana* on Lambay, Cecil Baring; *Ranun-*

culus auricomus in North Kerry, Mrs Jenner and R. W. Scully; *Ophrys apifera* Huds. in Donegal, Rev. A. H. Delap; *Trichomanes radicans* and *Asplenium lanceolatum* in Co. Carlow, R. A. Philips; *Nasturtium sylvestre* in Co. Down, Rev. C. H. Waddell.

GLASGOW NATURALIST, 1915. *Castanea* in the Clyde Area, J. Renwick; *Goodyera repens* in Scotland, J. Renwick; Alpine Lousewort, R. Brown; Banffshire Flowering Plants, L. Watt; Visit to Source of River Falloch, J. R. Lee; *Claytonia sibirica* in Clyde Area, A. Shanks.

PROC. PERTHSHIRE SOCIETY OF NATURAL SCIENCE. Perthshire Roses, vol. v., pt. ii, pp. 66, 74, 1910, W. Barclay. Under *R. coriifolia* our expert describes *incana* Kit., *bovernieriana* Lagg. and Pug. He also records *R. pimpinellifolia* × *mollis* and *R. pimpinellifolia* × *rubiginosa*, the latter from the Tay side below Caputh Bridge. Our Native Hybrid Roses, *l.c.* vol. v., pt. iii., 1911, includes *R. pimpinellifolia* × *rubiginosa* from Port Seaton, Haddingtonshre. Notes on Roses, *R. mollis*, *R. involuta*, *R. glauca*, and *R. coriifolia* form the subject of his address as President. Vol. vi., pt. ii., 1915, gives an extremely interesting history of Smith's *Rosa mollis*, *R. involuta*, *R. hibernica*, and *R. spinosissima* × *mollis* from Betty Hill, Sutherland; Kinfauns, Perth; Boyne and Tomintoul, Banff; *R. spinosissima* × *rubiginosa* from near Abbotsford, Roxburgh, Miss Hayward; the Aberdeen plant was of garden origin. *R. pimpinellifolia* × *alpina*, *R. rubella* Sm., was believed by some botanists to be this hybrid, but Mr Barclay thinks the Durham plant to be a form of *R. spinosissima*. *R. gallica* × *canina* = *R. collina* Jacq., from Calstock, Devon, he thinks may have this origin. A luminous account of *R. spinosissima* completes these very suggestive papers by Mr Barclay, which we regret space does not allow us to give in entirety. I may add that the red flowered form of *spinosissima* occurs in Jersey, and on the limestone of Ballyvaughan, Co. Clare.

PLANTS OF THE LATE GLACIAL DEPOSITS OF THE LEA VALLEY. CLEMENT REID, F.R.S., F.L.S., V.P.G.S. Nearly 70 species are enumerated, including *Thalictrum alpinum*, *Draba incana*, *Silene coelata* (nov. sp.), *Linum Praecursor* (nov. sp.), *Armeria arctica*, *Oxyria*, *Betula nana*, *Salix Lapponum*, *S. herbacea*, *S. reticulata*, *Scheuchzeria*, *Carex incurva*, and *Isoetes lacustris*. Many of these had been previously

unrecorded in the fossil state, and two are new species. The *Silene* from Ponder's End seems to be the first undoubtedly extinct form that has yet been found in British Pleistocene deposits. Perhaps . . . it may still linger in the mountains of China. *Linum Praecursor.* "seeds are abundant in all four localities in the Lea Valley, . . . and in the Arctic plant-bed at Hoxne in Suffolk, beneath a deposit full of Acheulian implements, and a single seed has been discovered at Beeston (Norfolk), at the base of the whole Glacial deposits. In each case the flax seeds are associated with the dwarf Arctic willows, and with a moss flora of thoroughly Arctic characters. The living *Linum* which they most resemble is the cultivated *L. usitatissimum*, of which the wild form is unknown. . . . But *L. usitatissimum* is not an Arctic plant. . . . (Its) origin has been much discussed, . . . it is grown over a great part of the world, and in no region can it be said definitely that a corresponding wild form is found. As a cultivated plant it is found in Roman deposits and in the Swiss Lake dwellings, seeds from the Roman layer in Tooley Street being indistinguishable from recent specimens. Comparing these fossil seeds with cultivated ones, the only important difference is the narrower and more oblong outline. This is a difference which may well be due to thousands of years' cultivation. The cultivated flax is essentially a temperate species, and it is not easy to imagine that the flax of ancient cultivation in Egypt, found also in the Swiss Lake dwellings, can be descended from a plant essentially arctic. Possibly the common Flax . . . may be a hybrid between this Arctic plant and a southern form, for there is more than one variety of flax in cultivation, though none quite match this fossil." *Armeria arctica* fruiting calyces are common in the Lea Valley. The plant is no longer living in Europe or Asia. (Siberia is an error.) Figures of the seeds of *Linum* and *Silene* are given. See *Quarterly Journ. Geol. Soc.* lxxi., pt. 2, pp. 155-161, 1916.

JOURNAL OF GENETICS, vol. vi., 1916. On the Number of Nodes and their Distribution along the Main Axis in *Senecio vulgaris* and its Segregates, and On Albinism in *Senecio vulgaris*, Prof. A. H. Trow. White seedlings appeared in the progeny of a cross *S. sylvaticus* × *S. viscosus* in 1911, and in 1912 the segregates *lanuginosus* and *praecox* of *vulgaris* threw white seedlings in the F 2 and F 4 generations. Experiments led him to believe in the doubly recessive

character of albinism in the seedlings of the cross. The highly technical character of the paper prevents any condensed report. It is an important contribution towards the elucidation of a little understood subject.

LINNEAN SOCIETY. January 20, H. W. Monckton gave a paper on some aspects of the Flora of the Bagshot district. March 2, Dr Stapf explained the presence of the Southern Element in the British Flora. He adopts the views of Dr Christ as to the Box being a relict of the Tertiary flora of Southern Europe, and the discontinuous distribution as brought about by disintegration of an old continuous and much larger area. So far as the English stations are concerned, to me they recall the fact of the four hundred years of the Roman occupation and its possible influence in plant distribution. Solms-Laubach, Hooker, and Bentham believed it to be native. But have we any evidence of its existence in Britain in pre-Roman times? March 16, Notes on Plants collected in Sikkim, Mr C. C. Lacaita. Early Botanical Exploration of North America, B. D. Jackson. May 4, E. A. Bunyard on the Origin of the Garden Red Currant. This, until recently, was believed to be the descendant of *R. rubrum* L. In 1907 Janczewski showed that the parent species was *R. vulgare* Lam., which had been in cultivation since the early 15th century. *R. petraeum* was introduced to gardens by Conrad Gesner in 1561, and a few years after Camerarius alluded to it as "baccis rubris majoribus." Mr Bunyard thinks the inter-hybridisation of the three species, *rubrum*, *petraeum*, and *vulgare*, accounts for the numerous varieties of red currant now grown in gardens. November 30, Mr J. Small exhibited an apparatus to determine the exact velocity of the wind required to blow the fruits of the Compositae to ensure proper dispersal. *Tussilago Farfara* requires less than half the force necessary for *Senecio vulgaris* or *Taraxacum*. T. A. Dymes contributed a note on the seeds of *Iris Pseudacorus*, the capsules of which contain (1) flat seeds, (2) seeds more or less rounded, which are present in the curved base and apex of the capsule. The seed lies over till the late spring, its loose light testa floats for a period of at least four months, and it germinates on or near the surface of the water in the latter half of May.

THE JOURNAL OF THE LINNEAN SOCIETY FOR 1916 contains, *inter alia*, Ecological Notes, chiefly Cyptogamic, from the pen of our late

member, William West; Lichens of South Lancashire, by J. A. Wheldon and W. G. Travis; and an elaborate and painstaking account of the Structure and History of Plav, the floating fen of the Delta of the Danube, by our member, Miss Marietta Pallis, which is of great interest since a comparison is made with the reed-fens of East Anglia. The form of *Phragmites* of the Danube is the var. *flavescens* Gren & Godr. (See *Rep. B.E.C.* 217, 1915). Excellent photographs of the floating islands of the Danube and of the Reed-Stools and Sedge Fen of Norfolk are given, as well as lists of the plants found in the Danube delta. The issue for December 1916 contains a suggestive paper on The Seed-Mass and Dispersal of *Helleborus foetidus* by T. A. Dymes, in which he proves that the seeds in the curious larval-like masses which break away from the follicle are conveyed for some distance by snails which eat the elaisome, and in doing so accidentally carry the seeds on their bodies. The seeds themselves are not eaten. The young follicles are even eaten through by the snails in order to reach the elaisome. One has always been struck by the number of snails sheltered by the leaves of *H. viridis*, despite its virulent acridity. *H. viridis* drops its seeds singly and has not developed elaisome. Ants are also said to feed on it, and its larval-like appearance suggests, though this has not been proved, that birds may also act as a distributing agency.

Linnean Society Trans., vol. ix., 1916. Report of the Wollaston Expedition to Dutch New Guinea, 1912-13, by Mr H. N. Ridley, C.M.G., assisted by Messrs E. G. Baker, &c. The plants collected by Mr Wollaston included over 500 new species and 11 new genera, 9 being described by our member, Mr Ridley, and two by Mr Wernham, one being named *Neowollastonia*.

Kew Bulletin, 1916. The contents of this very cheap publication include: Description of *Lathyrus hirsutus* used to hybridise one of the garden varieties of the Sweet Pea, and *L. laxiflorus* Kuntze (*Orobus hirsutus* L.) from the Balkans and Crete. Brazil Wood. J. H. Holland describes the source of the dye-wood yielded by *Caesalpinia Sappan* and allied trees. An excellent account is also given of Logwood yielded by *Haematoxylon campechianum*, a common and beautiful tree in Jamaica, Tobago, and other West Indian Islands. Culinary Herbs—their Names and Culture. *Stipa Neesiana* in Eng-

land, p. 206. Botany of Tapu de Nuku (9500 feet) in New Zealand, records the discovery at 8500 feet of the curious plant, *Haastia pulvinaris*, known as the Vegetable Sheep. A Collection of Drawings, belonging to Sir Arthur Church, given by Lady Church to Kew. They include *Dabeocia polifolia* by G. Ehret, *Sedum Telephium* by P. J. Redoute, *Campanula glomerata* and *Geranium pratense* by T. Stothard. The Arboretum at Tregehan, Cornwall, is well described by W. J. Bean. Junipers and their Commercial Importance, W. Dallimore. Lists of Seeds of Hardy Herbaceous Plants, Trees, and Shrubs. New Garden Plants for 1915. This list of papers shows that the scientific work at Kew is well maintained despite the adverse influence of the war.

NOTES FROM THE ROYAL BOTANIC GARDEN, EDINBURGH, vol. ix. Fifty new species of *Primula* from Asia are described by Prof. I. Bayley Balfour. A new genus of Ranunculaceae, *Beesia*, is described, allied to the Japanese *Glaucidium*, after the firm Bees Limited, founded on a species collected in northern Burma at an elevation of 9000 feet in the dense shade of the rain forest, called *Beesia cordata* Balf. f. and Smith Diagnoses Spec. Nov. in Herb. Hook. Reg. Bot. Soc. Ed. cognitarum species Chinenses. August 1916.

TRANSACTIONS OF THE BOTANICAL SOCIETY OF EDINBURGH. *Pilularia globulifera* in Glamorganshire, Orr, 281-5, 1914, given without personal authority in *Top. Bot.* *Stratiotes Aloides* near Crieff, 180, 1914. Plants from West Lothian, J. Fraser. Flora of Orkney, A. Bennett, 54, 1915, states that *Sison Amomum* was an error of identification. A hybrid new to Britain, *Potamogeton venustus* Baagoe in Compt. Rend. Paris 517, 1903. This is the plant of the river Earn recently distributed by Mr Barclay.

YORKSHIRE'S CONTRIBUTIONS TO SCIENCE, WITH A BIBLIOGRAPHY OF NATURAL HISTORY PUBLICATIONS. T. SHEPHERD, p. 233, A. Brown & Co., London, 1916, 5/-.

THE THIRTY-SECOND ANNUAL REPORT OF THE WATSON BOTANICAL EXCHANGE CLUB, 1915-1916. Hon. Sec. and Editor, G. Goode, M.A.

BRITISH ASSOCIATION. Report of Correspondence Society Committee and of the Conference of Delegates held in Manchester 1915.

Address on the Organisation of Scientific Societies, Sir T. Holland, K.C.I.E., F.R.S. Colour Standards, by Mr J. Ramsbottom, a useful and practical paper. Meeting at Newcastle 1916. The Presidential Address, by Dr A. B. Rendle, D.Sc., F.R.S., was a suggestive and thoughtful discussion of practical use in connection with Botany and its economic applications. He deplored the inadequate systematic work which up till recently such an accessible and beautiful island as Jamaica had received—its most complete flora, that of Sir Hans Sloane, being pre-Linnean. He suggested the holding of an Imperial Botanical Congress at which matters of general and special interest might be discussed.

A Census of New South Wales Plants. J. H. Maiden, Director of the Botanic Garden, Sydney, and the late E. Betsche. 8vo. pp. xx., 216, W. Gulliver, Sydney, 1916. About 4000 species are enumerated occurring in an area of 310,000 square miles.

The Weeds of Queensland, J. F. Bailey and C. T. White, in the Queensland Agricultural Journal, treats of *Aster subulatus* and *Erigeron canadensis*. An Amarantaceous species, *Alternanthera Achyranthes*, from S. America, is becoming a nuisance on sheep runs from its prickly fruits becoming entangled in wool, and has already earned the vernacular name Khaki Weed. The Asclepiadaceous shrub *Gomphocarpus fruticosus* is one of the worst introductions to the State.

Contributions to West Australian Botany. The Sea Grasses by C. H. Ostenfeld in *Dansk. Bot. Ark.* B. 2, 6, pp. 1-44, 1916. Deals with species of Potamogetonaceae and Hydrocharitaceae.

Illustrations of the New Zealand Flora. Edited by T. F. Cheeseman, F.L.S., assisted by W. B. Hemsley, F.R.S. Plates drawn by Miss M. Smith, Vol. ii., 4to., tt. 122-250. John Mackay, New Zealand, 1914. The drawings and their reproductions are excellent and the text clear and good. *Agathis australis*, the tree yielding Kauri Resin, was discovered by Marion du Fresne, and incidentally led to his massacre in 1772. Resin from this tree to the declared value of £465,244 was exported in 1910.

Revised List of the Norfolk Island Flora. R. M. Laing, in *Trans. New Zealand Inst.*, vol. 47, 1915. The island is remarkable

for the paucity of Composites, only seven being enumerated. The Norfolk Island Pine *Araucaria excelsa* is common from the coast to the top of Mount Pitt. No Myrtaceous species is native, but 40 species of ferns occur. Twenty-nine per cent. of the species are said to be endemic.

FLORA BATAVA. J. KOPS, F. VAN EEDEN, L. VUYCK, 380e-383e, 1915. The coloured illustrations are a great improvement upon those of the earlier volumes and include *Rubus diversifolius*, *Vicia calcarata*, *Briza minor*, *Bromus arvensis* var. *velutinus*, *Carex axillaris*, *Rumex maximus* (stated to be a hybrid of *Hydrolapathum* and *aquaticus*, but this combination cannot be present in our British plant which occupies areas in which *aquaticus* is absent), *Rumex aquaticus*, *Crepis pulchra* (adv.), *Melilotus macrocarpa* (adv.), (of which the large fruits full of Coumarin are said to be used as spice by Arabs), *Iva xanthiifolia* (adv.), and *Azolla filiculoides* (said to have been first noticed in Holland in 1880).

FLORA DER SCHWEIZ. SCHINZ AND KELLER, ii. Teil. Kritische Flora. Dritte stark vermehrte Auflage, bearbeitet und herausgegeben von Prof. Dr Hans Schinz unter Mitwirkung von Dr Albert Thellung, Zurich. Albert Raustein, pp. 582, 8vo. mit figuren, 1914, 10 francs.

ERGANZUNGEN ZUR FLORA VON BASEL, A. BINZ. Verh. Naturf. Ges. Basel, xxvi., 176-221, 1915, includes a large number of adventitious plants with the hybrids *Chenopodium album* × *hircinum*, *C. album* × *striatum*, and *C. hircinum* × *striatum*.

BEITRAGE ZUR KENNTNIS DER SCHWEIZERFLORA. H. SCHINZ AND A. THELLUNG. In this article the authors direct attention to the change suggested by the Fern authority H. Woynar (*Hedwigia*, lvi., 385, 1915) to *Filicula* Seguier Pl. Veron. Suppl. 54-5, 1754, from *Cystopteris* Bernh. dating from 1806. They prefer *Dryopteris Oreopteris* (Ehrh. 1789) Maxon, to *D. montana*, the latter being based on a "totgeborener" name of Vogler's. *Dryopteris Villarsii* (Bell.) Woynar is suggested to replace *D. rigida* Underw. Bellardi's trivial dates from 1792 in Mem. Act. Turin v., 255, 1792 (as *Villarsii*). *Polypodium rigidum* Hoffm. Deutsch. Fl. ii., 6, 1796, is not the *P. rigidum* of Aublet. Another of our Fern names is also changed, *Dryopteris spinulosa* Kuntze becoming *D. austriaca* (Jacq.) Woynar,

based on *P. austriacum* Jacq. Obs. Bot. i., 45, 1763, which is much earlier than *P. spinulosum* Müll. Fl. Dan. xii., 7, 1777, t. 707, and our *Polystichum angulare* becomes *Dryopteris setifera* (Forsk.) Woynar says the Linnean specific *aculeatum* is = *P. lobatum* Hudson, but has become, sensu stricto, a "nomen confusum." Forskal's *Polypodium setiferum* dates from his Fl. Aeg.-Arab. 185, 1775. *Polygonum patulum* M. Bieb. Fl. Taur. Cauc. i., 304, 1808, replaces *P. Bellardi* All., which is said to be an *aviculare* form, perhaps *rurivagum*, and *Lythrum meonanthum* Link, 1808 (sine descr. but with a ref. to Brot.) they suggest should replace *L. Graefferi* Ten., 1811. Schinz and Thellung, *l.c.*, pp. 414-430, 1916, give *Cystopteris fragilis* Bernh. as more correctly *C. Filix-fragilis* (L.) Chovenda in Ann. di Bot. i., 210, 1904. They adopt *Eupteris* Newman for the Bracken instead of *Pteridium*, rejecting Scopoli's genus of 1760. Our species stands as *Eupteris aquilina* Newman, in *Phyt.* ii., 278, 1845. For *Setaria glauca* the authorities are Roemer and Schultes. Beauvois' name is a "nomen nudum." Once again our Common Sedge has to change its name. *Carex flacca* (which some botanists continue to call *C. glauca*) is said to be *C. diversicolor* Crantz Inst. i., 415, 1766, and therefore the varietal names var. *Micheliana* (Sm.)—itself antedated by *ambliocarpa* (Willd.)—var. *stictocarpa* (Sm.), var. *erythrostachya* (Hoppe), and var. *acuminata* (Ar. Benn.) must be placed under *diversicolor*, and the hybrid × *Jaegeri* is *acutiformis* × *versicolor*. *Melilotus messanensis* All. becomes *M. sicula* (Turra) Jackson Ind. Kew. ii., 199, 1895. In *Ind. Kew.* iii., 199, the plant stands as *M. sicula* Vitm. Summa Pl. iv., 326, but according to Le Grand, Vitman wrote *Trifolium M. sicula.*

THE FLORA OF MALTA AND ITS NEIGHBOURING ISLANDS, by SOMMIER & GATTO, pp. 500, 1916, contains accounts of 916 Phanerogams and Vascular Cryptogams, 78 Mosses, 18 Hepatics, 183 Lichens, 296 Algae, and 499 Fungi.

ON OENANTHE AQUATICA, OE. FLUVIATILIS AND OE. CONIOIDES IN DENMARK. C. H. OSTENFELD in *Bot. Tidskr.* B. 33, 117. In this communication our hon. member records for the first time *Oe. fluviatilis* for Denmark, one of our supposed endemic species, which has also been found in Germany, and will surely be discovered in

Holland, Belgium, and France. Ostenfeld found it in two rivers in the western part of Jutland, the Linding Aa and Varde Aa. *Oe. conioides* Lange, which has no submerged leaves, should be specially sought for in our eastern fen-lands. At present it is only known from the Elbe, round Hamburg. It is closely related to *fluviatilis*.

WILD WHEAT IN PALESTINE, O. F. COOK in U.S. Dep. of Agric. Bulletin, n. 274, 1913. In this most interesting and valuable paper Mr Cook shows that the progenitor of one of our wheats, for which he proposes the name *T. hermonis*, is found wild on Mount Hermon, where it was discovered by Mr Aaronsohn. Koernicke used the tautological trivial *dicoccoides* under *T. dicoccum*. On Mount Hermon it grows chiefly on calcareous soils, and a spontaneous form of *T. monococcum* was found also in the same area. A tradition of remote age has been discovered in ancient Egypt that wheat was originally brought from the Hermon range, and it is now substantiated. That the culture of wheat is of immense antiquity is no longer doubted. The presence of two kinds in the Neolithic remains not only in Switzerland but in Britain is a sufficient proof. A few years back the writer had some well-formed carbonised grains of *T. antiquorum* and another species given him, which were found on Hunsbury Hill, Northants., in a cinerary urn of the Neolithic period. Cook believes agricultural civilisation may have existed in the Old World for 20,000 years, while in America it may have extended for 100,000 to 200,000 years. Prof. Percival, the greatest authority on cereals in Britain, says that for the past 2,000 years the actual grain of wheat has been but little improved, but that wheat plants have been made to yield more grains. Mr Cook's paper is illustrated by photographs showing the Wild Wheat growing among nummulitic limestone near the lake of Gennesaret, and of a variety of it growing on the slopes of Mount Hermon at about 4,000 feet altitude. This species readily hybridises with other wheats when brought into cultivation, and our wheat may be one of these fixed hybrids.

FLORA OF ADEN. The third and concluding part by Father ETHELBERT BLATTER, F.L.S. See *Rep. B.E.C.* 235, 1915.

THE FLORA OF THE PRESIDENCY OF MADRAS. J. S. GAMBLE. (S. T. Dunn prepared a draft of the first 128 pages.) Adlard & Son, Part 1, pp. 200, 1916. Ranunculaceae to Aquifoliaceae. 8/-. Keys

are given for the genera and species. The elevations of localities are frequently stated. *Ranunculus muricatus* ascends to 7000 feet at Ootacamund Lake. The name *Nasturtium* is still employed for the Water Cress, which, it is suggested, may be adventitious.

THE FLORA OF THE NILGIRI AND PULNEY HILLTOPS (above 6500 feet) . . . round the hill stations of Ootacamund, Kotagiri and Kodaikanal. P. F. FYSON, B.A., F.L.S., Prof. of Botany, Presidency College, Madras. 8vo., vol. i., pp. xxvi., 475, 4 maps; vol. ii., 268 plates. 10 rupees or 15/-.

FLORA OF THE UPPER GANGETIC PLAIN. J. F. DUTHIE. Vol. iii., part I, pp. 168. Gov. Press, Calcutta, 1915; 1/10.

NOTES ON THE FLORA AND FAUNA OF THE VEDDA COUNTRY AND ITS PEOPLE, by F. LEWIS, appears in *Solia Zeylanica*, x., pt. 37, 1915.

ICONES PLANTARUM FORMOSANARUM nec non et Contributiones ad Floram Formosanam. Dr HAYATA. Vol. v., pp. vi., 358, 1915. FLORA MONTANA FORMOSAE. Materials for a Flora of Formosa. Dr HAYATA. These volumes succeed the *Enumeratio Plantarum in Insula Formosa*, 1906. The eight volumes deal with 3325 species, which have been found in an island only about half the size of Scotland, but the highest mountain, Mount Arisan, reaches 14,000 feet, while sea cliffs on the eastern half, facing the Pacific, attain 5000 to 6000 feet. One of its species, a beautiful *Alpinia*, was discovered by Mr Elwes. It has flowered in his garden at Colesborne, and our member Mr W. B. Turrill described it in *Bot. Mag.* t. 8651, 1916, as *Alpinia Elwesii*. From Formosa Camphor has been long exported. See article by A. Henry in *Gard. Chron.* (2), 55, 1916.

THE FLOWERING PLANTS OF AFRICA. FR. THONNER. pp. xvi., 647, Dulau & Co., London; 15/-.

BEITRAGE ZUR KENNTNIS DER AFRIKANISCHEN FLORA. HANS SCHINZ and A. THELLUNG in *Viert. der Naturf. Ges. Zurich* Bd. 61, pp. 431-464. Includes descriptions of many new species as well as critical *Lepidium* species, *e.g. L. papillosum* Muell. and *L. oxytrichum* Sprague, the latter a Tweedside plant.

A NATURALIST IN MADAGASCAR. JAMES SIBREE, F.R.G.S. 8vo., pp. 320, with 52 illustrations and 3 maps. Seeley, Service, London,

1915; 16/-. A well written and illuminative record of fifty years' experience with the natives and a study of the animal and vegetable life of an island which exceeds France, Belgium, and Holland in land surface.

WILD FLOWERS OF THE NORTH AMERICAN MOUNTAINS. JULIA W. HENSHAW. M'Bride, Nast & Co., London and New York. Cloth 8vo., pp. 383, with 19 cold. and 64 uncold. plates, 1916. Those who have seen Mrs Henshaw's beautifully painted lantern slides of mountain flowers and have heard her charming lectures on the flowers she loves and the country in which they grow, would expect to find in any work she prepared on the subject a whole-hearted enthusiasm which would make it at once pleasant reading and at the same time a valuable assistance to one wishing to become acquainted with the flora of the region whence Douglas brought back so many of his discoveries which now adorn our gardens. In every way the accomplished task fulfils its aim. The first 44 pages are devoted to a General Key to the Families, which is terse and practical. Then follows a description of the species enumerated, and one is rather surprised to find so many that are native of Britain, especially among the Ferns. Trees of whatever order are described in Section 2. The third section is devoted to Reeds, Grasses, Sedges and Rushes, and the other sections are based on floral colour. There is an excellent figure of *Veratrum viride* and of *Clintonia uniflora* which Mrs Henshaw christens by the English name Queen-cup, "a lovely chalice" which once delighted my eyes in the Selkirks. There is a good plate of *Spiranthes Romanzoffiana*, which "is the last Orchid" of the American season, growing in wet, marshy places just when the power of the summer sun is beginning to wane. My visit was too early to see it, but the photograph suggests its being identical with the Irish plant which flowers in July. *Corallorrhiza* (rightly called *trifida*), *Polygonum viviparum*, *Dryas octopetala*, *Silene acaulis*, *Linnaea borealis*, *Astragalus alpinus*, and *Campanula rotundifolia* are among the British plants occurring in the Rockies. They are all beautifully figured. Even good as the colour productions are, they do not compare with Mrs Henshaw's own magnificent paintings. The memory of the Tree Cornel and of the flame-like *Castilleja* will abide with one. In these times when our travellings are confined to narrow limits such a book as this is especially welcome, as it cheaply

and easily transports us to charming climes where these lovely alpines grow, countries of our own race, the inhabitants of which are now fighting with us the common foe.

BRITISH COLUMBIA. Third Annual Report of the Botanical Office by J. DAVIDSON, F.L.S. pp. 081-0150, 1916. Contains interesting photographic reproductions of *Lewisia rediviva*, and the effects of irrigations on ground covered with Sainfoin.

FLORA OF THE NORTH-WEST COAST. C. V. PIPER and R. K. BEATTIE. 8vo., pp. xiii., 418. Lancaster, Pa., 1915. Takes in part of British Columbia to the south part of Lane Country, Oregon, and from the summit of the Cascade Mountains to the Pacific.

FLORA OF THE VICINITY OF NEW YORK. NORMAN TAYLOR, Curator at the Brooklyn Bot. Garden. Memoirs of the New York Botanical Garden. Large 8vo., pp. vi., 683, 1915. The fertility of American botanists and the liberality of its institutions make a British botanist envious of the facility with which such works as this are produced. The printing is excellent, and the maps of plant distribution show how far behind even a University Press in England can be in supplying these important details. The financial aid rendered by the New York Academy of Science and the Esther Hermann Research Fund is acknowledged in the Introduction. The area treated of contains 2038 native species and 613 weeds of adventitious origin. The introduction gives a vivid account of the geologic features, and of the plants associated with particular soils. A good bibliography is appended. The various species are described and generic and specific keys given. The comparison of plant names with those employed in Britain shows that before uniformity is attained a whole Atlantic must go under a bridge. The author generally follows the plan adopted by Britton and Brown in their classic work on the *Flora of the Northern States*. *Cystopteris fragilis* stands as *Filix fragilis* (L.) Gilib. *Dryopteris* is the Oak Fern; *Elodea* is replaced by *Philotria* Rafin, *Tragus* Scop. by *Nazia* Adans. (a name arbitrarily barred by the *Actes*). *Chaetochloa* is used for *Setaria*, and *Homalocenchrus* for *Leersia*. *Spartina stricta* Roth has as a synonym *S. alterniflora* Loisel. We keep them as distinct species. *Panicularia* Fabr. is used instead of *Glyceria*, and *Puccianella* is kept distinct for the halophytic section. 155 species of Carex are described. *Juncoides*

is used instead of *Luzula*, *Unifolium* instead of *Maianthemum*, and *Ibidium* for *Spiranthes*. *Persicaria* is a distinct genus, and *P. dumetorum* and *P. Convolvulus* are in the genus *Tiniaria*. The genus *Dondia* is rightly kept instead of *Suaeda*, and *Tissa* is still used instead of *Spergularia*. *Castalia* and *Nymphaea* are used in their correct meaning. *Batrachium* is a distinct genus. *Bicuculla* is used for *Dicentra*, and *Capnoides* for *Corydalis*. *Radicula* is rightly used for *Nasturtium*, but the Water-Cress is called *Sisymbrium*. *Grossularia* is kept distinct from *Ribes*, as is *Filipendula* from *Spiraea*. *Sorbus* and *Malus* are separated from *Pyrus*. 29 species of *Crataegus* are given. *Padus* is apart from *Prunus*. *Geranium Robertianum* is in a separate genus, *Robertiella*. 34 species of *Viola* occur. *Limonium* is wisely used instead of *Statice*, *Centaurium* for *Erythraea*, and *Nymphoides* for *Limnanthemum*. *Rhinanthus* is retained. *Specularia* is one of the few instances where a name clearly antedated (by *Legousia*) is retained. *Ambrosia artemisiaefolia* L. is replaced by *A. elatior* L. In the area it is a pernicious weed. 39 species of *Aster* are given. *Cirsium* is correctly used for the Plume Thistles, *Cnicus* being kept for *C. benedictus*. As only 11 Hieracia are enumerated, the American botanist has an additional cause for being optimistic.

VEGETATION OF FLORIDA. J. W. HARSHBERGER in *Trans. Wag. Inst.* vii., pp. 49-190, 1914.

VEGETATION OF NANTUCKET. J. W. HARSHBERGER in *Bull. Geog. Soc. Phil.* xii., pp. 70-79, 1914.

BOTANICAL EXPLORATION OF S. CALIFORNIA. E. A. GILMAN in *Cont. from the United States National Herbarium*, vol. xvi., pt. 14, 1916. Twenty-two new species were discovered.

BULLETIN OF THE TORREY BOT. CLUB. Ferns and Flowering Plants of Nantucket, E. P. Bicknell, p. 265. Vegetation of Connecticut, G. E. Nicholls, p. 235. Flora of S. Patagonia, W. W. Rowlee. Phytogeographic Notes of the Rocky Mountain Region, P. A. Rydberg, p. 343. Notes on Carex, K. K. Mackenzie, p. 423. Notes on Plants of S. United States, F. W. Pennell, pp. 93 and 407. Studies of W. Indian Plants, N. L. Britton, p. 441. Flora of Ladak, R. R. Stewart, p. 571.

MONOGRAPH OF THE NORTH AND CENTRAL AMERICAN . . . SENECIO. J. M. GREENMAN. *Ann. Missouri Bot. Gard.* ii., pp. 573-626, 1915.

TERCERA CONTRIBUCION AL CONOCIMIENTO DE LAS GRAMINACEAAS ARGENTINAS. T. STUCKERT in *Ann. Mus. Mac. Buenos Aires*, xxi., pp. 1-214, 1911. Contains descriptions of many new species and varieties from Argentina.

THE NATURAL HISTORY OF HAWAII . . . and the Native and Introduced Plants and Animals. Prof. W. A. BRYAN, pp. 596, G. E. Stechart & Co., London.

TREES OF INTEREST AT GOODWOOD. The DUKE OF RICHMOND AND GORDON. 4to., pp. 53, 1912. Goodwood is celebrated for its fine trees, the Cedars of Lebanon being among the most magnificent in Britain. They were planted in 1761 by the third Duke. Peter Collinson says "he paid John Clarke, a butcher of Barnes, who was very successful in raising Cedars, for 1,000 plants, 8th of June, 1761, £79 6s on behalf of the Duke of Richmond." Of these trees Loudon in 1837 saw 139. In 1911, 108 were still growing. No. 4 is probably the finest example in Britain. The examples of the Cork Oak, *Quercus Suber*, are extraordinarily good. A great Tulip tree was brought from Virginia in 1739. Collinson was largely instrumental in introducing trees of American origin, he being in constant communication with the New England botanists of that period. The specimen of *Taxodium distichum*, still growing at his home at Mill Hill, was sent him by John Bartram of Philadelphia.

THE BLACK POPLARS. A. HENRY in *Trans. Royal Scottish Arboricultural Society*, vol. xxx., January 1916.

TREE WOUNDS AND DISEASES: their Prevention and Treatment, with a special chapter on FRUIT TREES. A. D. WEBSTER. 32 full-page illustrations, pp. 215, Williams & Norgate, cloth 8vo., 1916. 7/6 net. To any people having trees under their care this work is of extreme importance, for in the thirteen chapters it contains will be found practical advice of the greatest value. The first chapter is devoted to the Management of Decaying Trees. Examples are shown of the Wilberforce Oak before and after "treatment." Hollow Trunks and their treatment are next dealt with, and methods are shown of

filling them with various compositions, for which recipes are given. Chapter 3 is on Supporting Heavy and Diseased Branches. One of the methods suggested has been successfully adopted with the magnificent specimen of *Sophora japonica* at the Oxford Botanic Garden. The weight of the lateral branches was opening a fissure in the main trunk. Then comes advice on Injured Bark, and a photograph illustrates an elm killed by piling earth on the roots, whence comes an attack of *Stereum purpureum*. Chapter 5 gives advice on Pruning Diseased Trees. Chapter 6 describes the Injurious Influence from Soil or Atmosphere, and Chapter 7 Fungus Growth. Excellent photographs show the various kinds which are inimical, and methods are fully given by which these unwelcome hosts are best attacked. Chapter 8 describes the insects which are so often destructive of tree-growth, such as Sawflies, Beech Coccus, various Beetles, Aphides, and Moths. It is stated that in 7,000 square miles of Eastern Europe the Spruce was killed by *Liparis monacha*. Injuries arising from Animals and Birds are enumerated. Fruit Trees and their enemies are especially well treated, good illustrations of the principal foes being given, as well as of the best ways of meeting their devastations. Chapter 11 gives directions for Preventing Disease, and Chapter 12 is devoted to the Accidents and Diseases to which Trees are liable, the last Chapter giving an account of Preservatives. The book is well printed, has a good index, and certainly supplies a long-felt want.

BRITISH FORESTRY: Its Present Position and Outlook after the War. EDWARD PERCY STEBBING, Head of the Forestry Department, University of Edinburgh. Cloth 8vo. pp. xxx., 257, tt. 13. John Murray, Albemarle Street, London, 1916. 6/- net. The work, a powerful piece of special pleading, is divided into four parts. (1) A National Planting Scheme; (2) British Timber Supplies and the Forests of Russia; (3) Timber Supplies and the War; and (4) The Employment of Women in Forestry. The author estimates that there are 4,000,000 acres of waste ground in England; 4,200,000 acres in Scotland; 700,000 in Wales; and 1,500,000 in Ireland—a considerable proportion of which might be used for tree growth. There are also about 16,500,000 acres of mountain and heath land in the two islands, part of which could be afforested. The author contends that there will be an immense demand for timber after the war, and Britain, once covered with forests, is now one of the most

poorly wooded countries in the world, the percentage being only 4. We purchase nearly half the timber exported from all countries to the value in 1913 of £37,300,000, and of wood pulp to the value of £5,425,000. Of this £2,400,000 was for pit props, the price of which, even when the book was written, having in some cases nearly trebled. We could easily increase the percentage to 12%, and he urges that $6\frac{1}{2}$ million acres in the British Isles should be planted with Conifers. The volume teems with points of interest and is full of practical suggestions to meet our needs in timber for the next half century.

A Glossary of Botanic Terms with their Derivation and Accent. B. Daydon Jackson, Knight of the Polar Star, Hon. Ph.D., Upsala, Gen. Sec. Linn. Soc. of London. Third edition, revised and enlarged; pp. xii., 428, Duckworth & Co., London, 1916; 7/6 net. British and foreign botanists owe a great debt to the compiler of this important and useful work, prepared as it is by a born lexicographer. In his *Guide to the Literature of Botany* he showed this power, and the catalogues of the Linnean and Kew Libraries evince the same masterly capability of dealing with masses of material, a gift which had its culmination in the herculean task of preparing that magnum opus the *Index Kewensis*. During the last four months the writer has had to consult many thousands of plant names in it, and has been struck with the great accuracy of the references, even the weak spots being almost entirely those which were due to his not having an entirely free hand in its arrangement. Mr Jackson's great skill and knowledge of literature have enabled him to give us this splendid glossary, well thought out in detail and arranged so carefully that there will be few cases in which the consulter goes empty away. Although of useful size and weight, Mr Jackson has packed over 20,000 names into this work, and if the various meanings are added the total number would be over 22,000. The Glossary is well printed in clear and distinct type on good paper and with ample margin. It is an indispensable book for all working botanists, and a useful and practical vade mecum for those to whom Botany is a recreation rather than a life's work. Its moderate price in these times is remarkable, since its preparation and printing must be of considerable technical difficulty. The thought in one's mind in looking through it is first amazement at the industry of the compiler, and secondly that so many of the terms "ought never to have been made." Systematists

may with some justice be charged with the multiplication of synonyms, but surely morphologists and ecologists are not those who should throw stones considering their rampant exuberance of name construction. Mr Jackson has explained most of the cryptic words used by students of the latter subject. He, however, wisely avoids introducing such triple hyphenated compounds as *Carex-Sieversia-Polygonum-Coryphium*. He has not even included one suggested by the writer to that distinguished ecologist, Dr Schroeter, who when in Ireland saw a disused tannery, and asking its name was told that it was a place for tanning leather, which we called a Tannery, and which I suggested should be known as a Tana-cetum! His Roland for an Oliver was to call me a Periclinal-Chimaera, which, teste the Glossary, is "the product from a bud with mechanical coalescence of two parent forms, a Graft-hybrid," which he anglicised into a union of botanist and humourist.

JOURNAL OF THE HORTICULTURAL SOCIETY. December 1915. Flora of North-Western Yunnan, G. Forrest, p. 200. May 1916. Some Books on Rock-Gardening and Alpine Plants, E. A. Bowles, p. 393, a very readable and useful guide to the literature of the above subject. Under Common-place Notes there is an incidental reference to Sir J. D. Hooker, and a capital illustration of the plaque which has been placed to his memory in Westminster Abbey. On it is carved "Josephus Dalton Hooker, 1817-1911. Herbarum scientia praestantissimus."

THE GARDENERS' CHRONICLE FOR 1916 contains among other matter Mr Reginald Farrar's racy descriptions of his experiences in China, and vivid pen-pictures of the many new plants observed. Our member, Mr H. J. Elwes, gives a series of articles on a Cotswold Garden which teem with interesting matter. Mr E. G. Baker contributes a paper on the Botany of Mount Kenia—nearly 20,000 feet high—illustrated with photographs taken by Mr C. L. Blackburne-Maxe. These include a view of the vegetation at 14,000 feet, in which giant Groundsels and Lobelias are prominent features. One of the latter species, named by Mr Baker, *L. Gregoriana*, is 5-6 feet high, and there is a Senecio 15 feet high. Mount Kenia is nearly equatorial, and such is the spread of civilisation that its foot can be reached by motor car. Nettles, which "sting like bees," 8 feet high,

through which a path had to be cut, offered a change of scenery. At 8,000 feet the thickets of Bamboos were so dense that elephants made them their haunts. The Senecios occurred at as high a level as 16,000 feet. The ascent of the peak itself is quite steep. A paper on New Balsam Poplars is supplied by Augustin Henry. An account of the Aldenham Garden is also given.

STANDARD CYCLOPEDIA OF HORTICULTURE. Edited by L. H. BAILEY. Vol. iii., F-K, pp. 1201-1760, figs. 1471-2422; vol. iv., L-O, pp. 1761-2422, figs. 2048-2693. Macmillan & Co., New York. 25/- each vol. It contains 160 short biographies of prominent deceased horticulturists connected with America. In the third vol. the genus *Iris*, with 109 species and their varieties, is very practically treated. The genus *Lilium* is described in the fourth vol.

THE PRINCIPLES OF PLANT CULTURE, by the late E. S. GOFF. Revised by J. G. Moore and L. R. Jones. Eighth edition, pp. xxiii. 295. Macmillan & Co., New York, 1916. 5/6.

MY GARDEN IN AUTUMN AND WINTER. E. A. BOWLES, M.A. 8vo. pp. iii., 272. Jack, London, 1915. 5/-. A companion volume to his *Garden in Spring* and his *Garden in Summer*.

POPULAR HARDY PERENNIALS. T. W. SANDERS, F.L.S. Collingridge, London, 1915. 5/-.

MY GROWING GARDEN. J. H. M'FARLANE. Macmillan & Co., New York, 1916. 8/6. Tells graphically how a city man turned an old much-neglected two-acre garden into one after his own taste. It includes a pleasant chapter on weeds.

ROCK GARDENS AND ALPINE PLANTS, including Water, Bog, and Moraine Gardens. T. W. SANDERS. 8vo., pp. 206. Collingridge, London, 1915. 3/6. A sound practical work on this popular subject.

THE BOOK OF HARDY FLOWERS. H. H. THOMAS. 8vo., pp. 492. Cassell & Co., London, 1915; 12/6. Contains 30 coloured plates and numerous illustrations.

POTTER'S CYCLOPEDIA OF BOTANICAL DRUGS AND PREPARATIONS. Second edition by R. C. WREN, F.L.S., with additions by E. M. HOLMES,

F.L.S. Small 8vo., pp. 339. Potter & Clarke, Ltd., Artillery Lane, London. In this modern Culpepper a great number of the vegetable drugs used in medicine are briefly but clearly described. Their vernacular and scientific names, their synonyms, and the natural orders to which they belong are given, with their medicinal properties and doses, as well as the chief preparations made from them, both the British and United States pharmacopeias being freely quoted. Mr E. M. Holmes, a recognised authority on matters connected with pharmacology, has revised the botanical names of the drugs and supplied a useful glossary of botanical terms. He has added a useful list of botanical authorities with their names in full. It explains what are often cryptic abbreviations, such as H.B.K. and W.K. to those who are not botanical adepts. The various forms of medicinal preparations are clearly described and doses with their equivalents shown. A chapter is devoted to Continental Herbal Compounds, one of which, Thé de Santé, is made from fennel, cream of tartar 1 part, elder flowers and aniseed 2 parts, senna leaves 4 parts. It is to be infused in hot water. Drug culture, now so fashionable, will doubtless largely stimulate a demand for such a work as this, which seems to be the best on the subject produced in Britain. As an example of the description of drugs we may give that of "Cherry Laurel, *Prunus Laurocerasus* L. N. O. Rosaceae. Part used, leaves. Action, sedative. Mostly used to produce cherry laurel water, and as such of value in cough, whooping-cough, and asthma; useful as an addition to other medication, and in dyspepsia, indigestion, &c. Preparation, water B.P. Dose, $\frac{1}{2}$-2 drachms. Distinctive character—Leaves leathery, shining, about 5-6 in. long by $1\frac{1}{2}$-2 in. wide, oblong-lanceolate, pointed, and serrate at the margins. At the back of the leaf there are two or three dot-like glands close to the midrib near the base. Odour when the leaves are bruised like that of oil of bitter almonds."

The Cultivation of Medicinal Herbs attracted a very large amount of attention during last year—indeed, wholly out of proportion to the economic returns likely to accrue, bearing in mind the transference of labour from the culture of cereals and vegetables to this technical industry. The Board of Agriculture and Fisheries issued a useful *Leaflet, No.* 288, in which it was stated that an acre of ground yielded in the first year 6 cwt. of dried Belladonna leaves and 15 cwt. of

dried Henbane leaves. 35 cwt. of *Cnicus Benedictus* were also obtained from an acre. Details as to the method of cultivating Aconite, Belladonna, Stramonium, Henbane, &c., are given.

ATROPA BELLADONNA L. Several members have recently made enquiries about the cultivation of *Belladonna* since there is now a shortage of supplies of this medicinal plant. I have therefore made an abstract of a paper in the *Pharmaceutical Journal* of 1860, where many details are given respecting its culture on the land of the late Mr Ransom of Hitchin. It is propagated in two ways, by division of the roots and by seeds. Root division, as adopted by Mr Perks, is made when the plants are about three or four years old. The roots are divided, and the cuttings are planted out in autumn, in rows about a yard apart, and at a distance of about a foot between the plants, in a damp stiff loamy soil. After this planting has been performed, a good top dressing of farmyard manure is applied. This is given not only to supply nourishment to the young plants, but also to preserve their young shoots from injury by late spring frosts, when, as sometimes happens after a mild winter, they appear above ground at an early period. Mr Ransom grew his plants from seed sown about March in a moist loamy soil. The seedlings appear about May, and grow very slowly for two months, but towards the autumn they progress more rapidly. They usually flower little or not at all during the first year's growth. The first frosts in the autumn cause the plants to die down to the ground; then before winter approaches, while the weather is still open, these young first year's plants are planted about two feet apart in rows placed also about two feet apart. The ground is then well manured on their first appearance in the spring.

PROFITABLE HERB GROWING AND COLLECTING. ADA B. TEETGEN. The Country Life Library, 3/6 net.

THE PRACTICAL PRINCIPLES OF PLAIN PHOTO-MICROGRAPHY. GEORGE WEST, Lecturer University College, Dundee. Small 4to., pp. x., 146. 4/6 net.

THE ANTHOCYANIN PIGMENTS OF PLANTS. MURIEL WHELDALE, Camb. Univ. Press. pp. xii., 318, 1916. 15/- net.

THE EVOLUTION OF SEX IN PLANTS. JOHN MERLE COULTER. Cr. 8vo., 46 text figures. Camb. Univ. Press. 4/6 net.

PLANTS IN HEALTH AND DISEASE. F. E. WEISS, A. D. IMMS, and W. ROBINSON. Longmans, Green & Co., pp. 143, 1916. 1/6.

THE PRINCIPLES OF PLANT TERATOLOGY. W. C. WORSDELL. London, Ray Society. Vol. i. 8vo., pp. xxiv., 270, pl. 25, text fig. 60, 1915. 25/- net.

PLANT LIFE. Prof. J. BRETLAND FARMER, F.R.S. Williams & Norgate, London, pp. 255. Cloth. 1/3 net. The Home University Series. The work has numerous illustrations. Twenty chapters are devoted to the phenomena connected with plant life which are treated in the masterly manner we should expect from the writer. Without the employment of too many scientific terms he clearly explains Vegetable Reproduction, Sexual Reproduction, and the Cell Nucleus and Fertilization. The chapter on Fungal Parasites is especially interesting. This inexpensive work is sure to have, as it deserves, a wide circulation.

A MANUAL OF MENDELISM. JAMES WILSON, M.A., B.Sc. A. & C. Black, Ltd., pp. 152. 1/- net.

A SCHOOL FLORA, for the use of Elementary Botanical Classes. W. MARSHALL WATTS, D.Sc. New edition, with 205 illustrations. Longmans, Green & Co., pp. viii., 208, 1915. 3/6.

ALGAE. Vol. i. Myxophyceae, Peridinieae, Bacillarieae, Chlorophyceae, together with a brief summary of the Occurrence and Distribution of Freshwater Algae, by G. S. WEST, M.A., D.Sc., A.R.C.S., F.L.S., Mason Professor of Botany in the University of Birmingham. Large royal 8vo., pp. x., 476, 271 illustrations of 1284 lettered or numbered figures. Camb. Univ. Press, 1916. 25/-. An indispensable work to the students of this group, and the outcome of most laborious research on the part of its author over a protracted period.

BRITISH FUNGI AND HOW TO IDENTIFY THEM. J. H. CRABTREE. pp. 62. C. H. Kelly, 26 Paternoster Row, London, 1916. 1/-. Some forty species are here represented by good photographs, each

with a page of useful descriptive sketch, affording a ready help in identifying them. The compact Introduction describes the method of spore examination and the outlines of classification. It states that the Common Puff Ball produces seven billions of spores, of which seven may perchance fructify. A few sheets of blank paper for notes are inserted in this handy and useful pocket-handbook for those who wish to commence the study of Fungi.

FUNGOID AND INSECT PESTS. F. R. PETHERBRIDGE. Camb. Univ. Press. pp. 174, 1916. 4/-.

CATALOGUE OF THE MESOZOIC PLANTS IN THE BRITISH MUSEUM (NATURAL HISTORY). The Cretaceous Flora, pt. ii., Lower Greensand (Aptian) Plants of Britain. Dr MARIE C. STOPES, D.Sc., Ph.D., pp. xvi., 360, tt. 32. British Museum Publication.

THE PROCEEDINGS OF THE ROYAL SOCIETY contain a Preliminary Report on the Purbeck Characeae by Clement Reid and J. Groves. They describe a new fossil genus, *Clavator*, and state that there are seven or eight species, belonging to four genera, to work out from the close-grained limestone.

AN ADDRESS TO THE ENTOMOLOGICAL SOCIETY OF LONDON by the President, the Hon. N. C. ROTHSCHILD, describes at length the efforts which have been made in various countries of the world to obtain Nature Reserves. Special allusion was made to Kingley Bottom, near Chichester, the property of the Duke of Richmond and Gordon, which is a virgin Yew-forest of some hundreds of acres. No reserve in any part of Europe is of greater beauty and interest. Canada possesses in its Dominion and Provincial Parks over 12,000 square miles dedicated to the public. The United States has 5,000,000 acres conserved. Recently the Falls of Iguaza (perhaps the largest in the world), with 50,000 acres, have been reserved in the Argentina. Photographs of *Orchis militaris*, *Senecio paludosus*, and *S. palustris*, *Veronica spicata*, *Orchis hircina*, *Cypripedium*, *Sonchus palustris*, *Pyrus domestica*, *Lathyrus maritimus*, *Anemone Pulsatilla*, *Draba aizoides*, *Potentilla rupestris*, *Mibora*, *Helianthemum Breweri*, *Cotoneaster*, and *Lloydia* were shown as examples of plants whose habitats it was desirable to preserve in Britain. See *Ent. Soc. Journ.* 1916.

OBITUARIES.

CHARLES CROSSLAND, born 1874, died at Halifax in December 1916. He was a butcher by trade. When he was about the age of forty, his daughter took part in a wild flower competition. This at once interested him in the study. Five years later Mr G. Massee of Kew induced him to study fungi. It resulted in a special Committee of the Yorkshire Naturalists' Union being formed to promote investigations in this branch of Natural Science. Crossland assisted Massee in the compilation of a Fungus Flora of Yorkshire which enumerated 2626 species, and was published in 1905. He was the colleague of our member, Mr W. B. Crump, in preparing the excellent *Flora of Halifax*. A more painstaking and exact worker it would be difficult to find.

HENRY NICHOLSON ELLACOMBE, born at Bitton, near Bristol, February 18, 1822, died there February 7, 1916, having succeeded his father as Rector in 1850. His beautiful garden was visited by most British horticulturists, and few came away without being recipients of his generosity. Sir Joseph Hooker, in the 107th vol. of the *Botanical Magazine*, which he dedicates to him, justly says, "Allow me, when adding your name to the list of recipients of this modest tribute, to record my high appreciation of the value of your venerable father's and your own intelligent interest and zeal in the introduction and cultivation of interesting, rare, and beautiful hardy plants, and your disinterested liberality in the distribution of them among horticulturists." His best known work is the *Plant-Lore and Garden-craft of Shakespeare*, which first appeared in *The Garden* in 1877, and was reprinted as a separate work in 1878. A second edition appeared in 1884. To the *Gardeners' Chronicle* he also contributed *Flowers of Chaucer, Spenser, and Milton*. See an appreciative Memoir by his friend, Mr H. J. Elwes, in the *Gardeners' Chronicle* 108, 1916, where there is a reproduction of a pastel portrait of him by Mr Graham Smith.

EDWARD GILLETT GILBERT, M.D., born at Harleston, Norfolk, March 12, 1849, died at Tunbridge Wells, December 17, 1915. He was Secretary and Vice-President of the Tunbridge Natural History Society. He critically studied the British *Rubi*, and adopted views

as to their origin which ran counter to those of other British students of the group. He published (*Journ. Bot.* 129 and 339, 1907) papers on the *Suberecti*, in which the hybrid origin of some "species" was suggested. The recent Monograph by Dr Focke suggests a hybrid origin also of plants which have been considered good species; he, however, considered *R. Rogersii* a good species. In 1912 (*l.c.* p. 280), Gilbert continued these notes. All his papers show that he was a critical observer. He also contributed a few notes to the *Flora of Kent*. His *Rubi* have been given to the Herbarium at Kew.

Professor Octave Lignier, born at Pougy, Aube, Champagne, died at Caen, March 19, 1916. A distinguished palæobotanist.

Arthur Stanley Marsh, born at Crewkerne, 1892, killed in action in France, January 5, 1916. An Exhibitioner of Trinity, Cambridge, 1909, he obtained a double first and acted as assistant demonstrator at the Botany School, Cambridge. A valuable paper on *Azolla* (see *Rep. B.E.C.* 43, 1914) appeared in the *Proc. Camb. Phil. Soc.* 1914, and another on the *Maritime Ecology of Holme, Norfolk*, in *Journ Ecol. Soc.* 1915. He had attained the rank of Captain when his promising career was prematurely cut off in the trenches by a German sniper. See Memoir in *Ann. Bot.* 1916.

Nicholas Henry Martin, J.P., Ph.C., F.C.S., F.R.S.E., born at Trebartveth, Cornwall, May 2, 1847, died at Ravenswood Low Fell, Gateshead, July 5, 1916. He was apprenticed as a pharmacist at Penrhyn, and became assistant to Henry Deane, the excellent microscopist at Clapham. Later he took over W. Ransom's business at Hitchin, and eventually became partner with Henry Brady, F.R.S., the great authority on *Foraminifera*, at Newcastle. Martin, although interested in Field Botany, never took seriously to it, his scientific bent lying in the direction of Chemistry. He filled the Chair of his section when the International Society of Chemical Industry visited London. He was President of the Pharmaceutical Conference at the Oxford Meeting, when he laid special stress on the need for more thorough scientific teaching. His comparatively sudden death came as a great shock to his old colleagues, who valued his alert mind, and his readiness to help in promoting scientific research.

Clement Reid, born January 6, 1853, died at Milford on-Sea, after a short illness, December 10, 1916. He became a member of

the Geological Survey in 1874, working in the south-west. He soon migrated to the eastern counties, the results of which are seen in his *Geology of the Country round Cromer*, which was published in 1882, of *Holderness* in 1885, and the *Pliocene Deposits of Britain* in 1890. He became specially interested in plant-remains of the later geologic periods, and his investigations were made public in 1899 under the title of *The Origin of the British Flora*. Another work on this subject appeared in 1913, as *Submerged Forests*. He possessed a critical knowledge of the British Flora, as is evidenced by his note on *Geranium modestum*, which appeared in *Rep. B.E.C.* 429, 1909. Recently he became convinced that our alpine Thrift from Culrannoch and the Breadalbanes was specifically distinct from the coastal plant, and this year some plants which Mr C. E. Salmon sent him from Slioch, W. Ross (I recorded it from that station in *Trans. Bot. Soc. Ed.* 150, 1894, as *planifolia*), convinced him we had a third species in Britain. This helped to explain the difficulty about a Ross-shire plant which I had collected on Ben Dearg, as well as the Slioch, which had the calyx of *planifolia*, but narrow leaves. His recent account of the *Late Glacial Plants of the Lea Valley* is noticed elsewhere in the *Report*. In 1901 he was placed in charge of the Geological Survey work in Cornwall and Devon. Since 1913 he had lived in Hampshire. He was made a Fellow of the Royal Society in 1899, and has been the recipient of the Bigsby and the Bolitho Medals. He was Vice-President of the Geological Society in 1913, and contributed papers of great interest to the British Association meeting at Portsmouth. He was a most kindly helper, and his place as a consultant on seeds and recent plant remains will be very difficult to fill. He was working at the fossil Characeae with Mr James Groves, a preliminary note on which was read before the Linnean Society last June.

DANIEL OLIVER, born at Newcastle-on-Tyne, February 6, 1830, died of heart failure at Kew, December 21, 1916, aged 87. Educated at the Friends' School at Brookfield, near Wigton, he early showed his love for Natural Science, contributing to the *Phytologist* (986, 1847) a *List of a few Plants found in Boulsdersdale and Teesdale*, with the formations on which they were found. In the same Journal (676, 1852) he gave the results of an Irish tour as *Botanical Notes of a Week in Ireland*. There he describes a much misunderstood plant,

Melampyrum pratense var. *ericetorum*. He visited the Aran Isles, where he found a species of *Euphrasia* which Babington thought was *E. gracilis*, but which is doubtless, as Oliver suggests, *E. salisburgensis*, and the first British record. In 1851 he became a Fellow of the Edinburgh Botanical Society, and in 1853 he joined the Linnean Society. He became assistant at Kew in 1858, publishing *Lessons in Elementary Botany* in 1864, three volumes of the *Flora of Tropical Africa* between 1868 and 1877, his *First Book of Indian Botany* in 1869, and his *Illustrations of the Principal Natural Orders of the Vegetable Kingdom* in 1874, Fitch being responsible for the plates. He also prepared a *Guide to Kew Gardens*, and a volume on its *Museums of Economic Botany*. He was appointed Professor of Botany at the University College in 1861. He was made an F.R.S. in 1863, and became keeper of the herbarium and library at Kew in 1864, retiring from that office in 1890. He continued to edit, on Hooker's retirement, the *Icones Plantarum* till 1895. He was made an LL.D. of Aberdeen University, and received the medals of the Royal and of the Linnean Societies.

H. H. W. Pearson, Professor of Botany at Cape Town, born at Long Sutton, Lincoln, in 1870, died prematurely at Mount Royal Hospital, Wynberg, S. Africa, November 3, 1916. After completing his studies at Cambridge, where for a time he was assistant-curator of the Herbarium, he joined the staff at Kew in 1893. In 1903 he was appointed to the Chair of Botany in the South African College. Here with Sir Lionel Phillips and other public men in South Africa he started the National Botanic Garden at Kirstenbosch. He travelled widely, visiting Damaraland, Namaqualand, Angola, &c. He contributed interesting accounts to the *Gardeners' Chronicle* in 1911 et seq. Shortly before his death he was made a Fellow of the Royal Society. When wandering over the slopes of Table Mountain in 1914 I accidentally met him. Then he was full of enthusiasm to make the Gardens a model of what such institutions should be, and he was keenly alive to the desirability of retaining great areas for the preservation of the flora and fauna. The Silver Leaf thickets on Table Mountain had been already protected against depredation. An interesting letter from him to Prof. Herdman appeared in *Nature* for March 2, 1916, giving details of his visit as a Captain, with the permission and goodwill of General Botha,

through the recently conquered "South-West," and the land inhabited by the Bastar Hottentots, into which no German dare penetrate. He found the native inhabitants could hardly do enough for him. They seemed profoundly thankful that the German régime was over. There is an excellent portrait of him in the *Gardeners' Chronicle*, 250, 1916.

HERMAN GRAF ZU SOLMS-LAUBACH, Ph.D., Berl., Sc.D., Cantab. Born at Laubach, December 23, 1842, died at Strassburg, November 24, 1915, of which University he was Professor of Botany. He was son of Count Otto zu Solms, a Prince of Wied. Formerly he held the chair of Botany at Göttingen. A very distinguished scientist, whose work covered a vast area, he specialised in Fossil Botany. His work, bearing that title in English, was published by the Clarendon Press in 1891, having been translated by Mr H. E. Garnsey. The results of his investigations of the Isle of Wight Fossil *Bennettites Gibsonianus* were made public in 1890. He monographed the Cycads, and the Acetabulariaceae, a family of calcareous algae, the latter appearing in the *Transactions of the Linnean Society*. In 1905 he published his work on the *Principles of Plant Geography*. In 1900 he described a curious indehiscent-fruited form of *Bursa pastoris* as *Capsella Hegeri*. For many years he studied the genus *Fragaria*, and he was much interested in a variety (*bercheriensis*) which is described in the *Flora of Berkshire*. This he cultivated for several years, and eventually suggested that it was the descendant of a plant formerly in cultivation, which had now gone wild. This is quite possible, as it grew on the park-border at Haines Hill, where it is now probably extirpated. Its fruit was white and strongly fragrant. Count Solms-Laubach was a Fellow of the Royal Society, and he received the gold medal of the Linnean Society. Frequently he attended the British Association meetings. He was a man of courteous kindliness, and of original thought, and he was anxious to secure a good feeling with England. At the Darwin Celebration at Cambridge in 1909 I saw him receive the degree of Sc.D. He then told me the Berkshire strawberry was still alive in his garden. He was Editor of the *Bot. Zeitung* from 1872, and in 1908 with Prof. Just he founded the *Bot. Zeitschrift*.

FREDERICK STRATTON, born at Newport, Isle of Wight, November 16, 1840, died at Mount Pleasant House, Newport, December 5, 1916,

aged 76. His wife, the mother of eleven children, survives him. For 53 years he had been in practice as a solicitor, and for 40 of these he served as Clerk to the Guardians at Newport, where he was widely known and greatly respected. In 1900 he published a small work on *The Wild Flowers of the Isle of Wight*. He was a Fellow of the Linnean Society, and contributed several articles to the *Journal of Botany*. Two notes by him are in that *Journal* for 1916, one containing the record of *Stachys germanica* for the Island, but the specimen is the garden plant *S. lanata*. He is frequently quoted in *The Flora of Hampshire*. He was a landscape painter of considerable merit. At the Winchester Diocesan Conference he was a well-known figure and a welcome speaker. In his younger days he was an expert climber and knew Switzerland well. His herbarium has been acquired by myself.

THOMAS WAINWRIGHT, born at Leeds, April 7, 1825, died at Barnstaple, April 29, 1916. For many years he was Librarian and Secretary of the North Devon Athenæum. He was a good all-round naturalist and discovered *Hypericum undulatum* in North Devon (*Journ. Bot.* 296, 1875). See *l.c.* 208, 1916, for a Memoir by W. P. Hiern.

NEW COUNTY AND OTHER RECORDS.

ABBREVIATIONS.—*Ir. Nat.* = *Irish Naturalist*; *J. B.* = *Journal of Botany*; *Nat.* = *The Naturalist*; * = New County Record; † = Adventive; ! placed after the plant name = that the compiler has seen the specimen; if after the locality, that the compiler has seen it in the locality.

9. ANEMONE NEMOROSA L., var. CAERULEA DC.! Ashdown Forest, E. Sussex, TALBOT. Mr Grant Allen sent it me in 1891 from near Dorking, Surrey. Alverstone, Isle of Wight, DRUCE.

20. RANUNCULUS ACRIS L. agg., forma MINUTIFLORUS! Flowers very small, but petals well formed. Sent from Strensall, York, by Colonel GODFERY, 1916.

*21. R. AURICOMUS L. North Kerry, Mrs JENNER and R. W. SCULLY, in *Ir. Nat.* 106, 1915.

†29. R. TRILOBUS Desf. Mill-yard, Portishead, N. Somerset, Miss I. M. ROPER, in *Wats. B.E.C.* 480, 1914-15.

32. R. PARVIFLORUS L. Twerton-on-Avon, N. Somerset, Misses COBBE.

46. R. HEDERACEUS L., forma NATANS (var. HOMIOPHYLLUS auct.? if R. HOMIOPHYLLUS Tenore). Lyndhurst, S. Hants. Specimens will be distributed in 1917. DRUCE.

†55. NIGELLA DAMASCENA L. Brechin, Forfar, R. & M. CORSTORPHINE and DRUCE.

†66. ACONITUM LYCOCTONUM L. Brechin, Forfar, with †67 (2) A. VARIEGATUM L., Brechin, Forfar, R. & M. CORSTORPHINE and DRUCE.

†79. PAPAVER SOMNIFERUM L., var. HORTENSE (Huss.), forma LACINIATUM. Low down the cliffs of Berry Head, S. Devon, in some plenty. Lady DAVY and DRUCE.

80. P. RHOEAS L., var. PRYORII Druce. The Lizard, Cornwall, Misses COBBE. Var. OMPHALOPHORUM Fedde. Hambledon, Bucks.; Wootton, Berks, DRUCE.

†88. MECANOPSIS CAMBRICA Vig.! Woodland, Haslemere, Surrey, J. LAMB.

†90. GLAUCIUM CORNICULATUM Curtis. Ware, Herts., Mrs KNOWLING and HIGGENS; near Lunan, Forfar, R. & M. CORSTORPHINE and DRUCE.

†94. HYPECOUM GRANDIFLORUM Benth. Wakefield, CRYER, in *Nat.* 250.

†95. H. PROCUMBENS L. Portishead Dock, N. Somerset, Miss LIVETT, ex WHITE.

†97. BIKUKULLA FORMOSA Planch. (DICENTRA)! Garden stray, between Penrith and Edenhall, Cumberland, 1915, WALLIS, in *Hb. Salmon.*

†100. CAPNOIDES SOLIDA Moench! Patshull, Staffs., ex Lady JOAN LEGGE.

104. FUMARIA CAPREOLATA L., var. BABINGTONII Pugs. Orkney, BENNETT, in *Trans. Bot. Soc. Edin.* 54, 1915.

*106. F. PURPUREA Pugs. West Lothian, FRASER, in *Trans. Bot. Soc. Edin.* 54, 1915.

*109. F. BASTARDI Bor. West Lothian, FRASER, *l.c.*

*124. RADICULA SYLVESTRIS Druce. River Quoile, Downpatrick, Hollymount, WADDELL, in *Ir. Nat.* 188, 1915.

125. R. AMPHIBIA Druce, var. PINNATIFIDA Druce. Aylestone, Leicester, HORWOOD, in *lit.*

†137. ARABIS ALBIDA Stev. Mardock, HIGGENS; Hitchen, Herts., LITTLE.

†155. ALYSSUM ALYSSOIDES L. Mullion, Cornwall, Miss A. B. COBBE.

†158. A. MARITIMUM Lam. Naturalised on cliffs at Ventnor, Isle of Wight, HIGGENS.

161. DRABA INCANA L., var. CONFUSA (Ehrh.). Cliffs of Caenlochan, Forfar, DRUCE.

†176. HESPERIS MATRONALIS L.! Langdale End, Scarborough, York, HORRELL.

†177. WILCKIA MARITIMA Scop.! Barmouth, Merioneth, Miss COBBE.

†178. W. AFRICANA F. v. Muell.! Ware, Herts., HAYLLAR.

†184. SISYMBRIUM ALTISSIMUM L. Very abundant at Ware, both in the brick-yards and gravel pits, and at Hertford, &c., Herts., since 1906, DRUCE; 1916, HIGGENS; Portmadoc, Carnarvon, Misses COBBE; Buryport, Carmarthen, HAMER; Wareham, Dorset,! NOEL SANDWITH; St Cyrus, Kincardine, Mrs CORSTORPHINE and DRUCE; Dundee, Forfar, DRUCE and CORSTORPHINE; Thetford, Norfolk, ROBINSON; Arnley, Leeds, HORRELL; Goring, Oxon, GAMBIER-PARRY; *Wakefield, York, CRYER, in *Nat.* 250.

*†185. S. ORIENTALE L. Wye, Kent, a N.C.R., inasmuch as the record in *Fl. Kent* is based on an erroneous naming by the Rev. W. R. Linton of a specimen rightly sent as *S. pannonicum* to the *B.E.C.* by WOLLEY-DOD; Buryport, Carmarthen, DRUCE; Portmadoc, Carnarvon, Misses COBBE; two plants in Mr Graveson's garden at Hertford, HIGGENS; Dundee, Forfar, CORSTORPHINE, DRUCE, and SMITH; Elland, York, HORRELL; Wakefield, York, CRYER, in *Nat.* 250.

*†187. S. LOESELII L. Brislington, N. Somerset, Miss M. COBBE.

†188. S. IRIO L. Wakefield, York, CRYER, *l.c.*

†196 (2). ERYSIMUM SUFFRUTICOSUM Sprengel. On a wall near Fishbourne, W. Sussex, DRUCE and BURDON.

†200. CONRINGIA ORIENTALIS Dum.! Watton, Norfolk, 1915, ROBINSON; Lambourne, Cornwall, RILSTONE; Elland, York, HORRELL; Goring, Oxford, GAMBIER-PARRY.

*†203. CAMELINA SYLVESTRIS Wallr. Baptist Mills, Bristol, Misses COBBE; Wakefield, York, CRYER, *l.c.*; Grasmere, Westmorland.

205. BRASSICA OLERACEA L. Braunton, N. Devon,! Countess FORTESCUE. Is it a real native of England?

†224. B. INCANA F. Schultz. Portmadoc, Carnarvon, Misses COBBE; Buryport, Carmarthen, DRUCE.

?†226. DIPLOTAXIS TENUIFOLIA DC. Abundant near the embankment and in other places, Portmadoc, Carnarvon, Misses COBBE; Kirkstall, York, HORRELL.

†227 (2). D. VIMINEA DC. Baptist Mills, Bristol, Miss M. COBBE.

†228. ERUCA SATIVA Mill. Watton, Norfolk, 1915, ROBINSON; Ware, Herts., Mrs KNOWLING; Belgrave, Leicester, HORWOOD.

†230. MORICANDIA ARVENSIS DC.! Ware, Herts., HAYLLAR.

†231. CARRICHTERA ANNUA Ger. Ware, Herts., HAYLLAR.

*†233. CORONOPUS DIDYMUS Sm. Wakefield, York, CRYER, in *Nat.* 250.

*†235. LEPIDIUM GRAMINIFOLIUM L. Portmadoc, Carnarvon, Miss M. COBBE.

†237. L. DRABA L. On rubbish at Portmadoc, Carnarvon, Miss M. COBBE; Braunton Burrows, N. Devon, Countess FORTESCUE and A. W. TRETHEWY; Tingley, HORRELL; Wakefield, York, CRYER, *l.c.*; Dundee, Forfar, DRUCE and CORSTORPHINE.

*†239. L. PERFOLIATUM L. Wakefield, York, CRYER, *l.c.*

†240. L. RUDERALE L. Thetford, Norfolk, ROBINSON.

†240 (2). L. NEGLECTUM Thell. Thetford, Norfolk, ROBINSON, in *lit.*

*†243. L. INCISUM Roth. Wakefield, York, CRYER, *l.c.*

†247 (11). L. FASCICULATUM Thell. ! Tingley, York, HORRELL.

249. THLASPI ARVENSE L. On rubbish at Portmadoc, Carnarvon, Miss M. COBBE; Thetford, Norfolk, ROBINSON.

250. T. PERFOLIATUM L. In the parish of Snowshill, Gloster, 1916, Earl of GAINSBOROUGH, in *lit.*

†258. VOGELIA PANICULATA Horn. Elland, York, HORRELL; Bletchley Railway, Bucks., DRUCE.

†263. BUNIAS ORIENTALIS L. Dundee, Forfar, DRUCE; near Taplow, Bucks., DRUCE.

†267. RAPISTRUM ORIENTALE DC. Montrose, Forfar; St Cyrus, Kincardine, DRUCE.

†268. R. RUGOSUM All. Morley, York, HORRELL; Twerton, N. Somerset, DRUCE.

†273. ERUCARIA MYAGROIDES (L.) Halac. ! Ware, Herts., Mrs KNOWLING, Miss TROWER and DRUCE; Kirkstall, York, HORRELL.

293. VIOLA SYLVESTRIS Kit., var. PUNCTATA Druce. Cribbs Causeway, Henbury, W. Gloster, Miss I. M. ROPER; Wassail Copse, N. Hants., 1882, Miss C. E. PALMER; Blenheim Park, Oxon, 1880,

DRUCE. Forma ROSEA. Compton Abdale, E. Gloster, GREENWOOD, in *lit.*

294. V. RIVINIANA Reichb., var. PSEUDOMIRABILIS (Coste). St Cyrus, Kincardine, DRUCE. Var. DIVERSA Greg. Canon's Wood, Walton in Gordano, N. Somerset, Miss I. M. ROPER; Benscliffe, HORWOOD; Wakefield, York, CRYER, in *Nat.* 250.

296. V. CANINA L., var. LANCEOLATA Martr.-Don. St Cyrus, Kincardine, Mrs CORSTORPHINE and DRUCE.

296. V. CANINA × RIVINIANA. Henwood, Berks.; Elsfield, Oxon, 1880, DRUCE; Yate Lower Common, W. Gloster, Miss I. M. ROPER; Sibstone, Leicester, Bishop MITCHINSON.

297. V. LACTEA Sm., var. PUMILIFORMIS R. and F. Pradannack Downs, Cornwall, Miss COBBE.

298. V. ODORATA L., var. PRAECOX Greg. Beckley, Oxon, DRUCE; Almondsbury, W. Gloster, Miss I. M. ROPER.

298. V. ODORATA × HIRTA = × V. COLLINA Bess. Alveston Common, W. Gloster, WHITE.

301 (2). V. EPIPSILA Ledeb. On Snowdon, 1850, Miss LIGHTFOOT, in *Hb. Druce.* The hybrid with *palustris* was found in Carnarvonshire at Coed Fynnon, near Bettws-y-Coed, by Miss C. E. PALMER, where I was unable to see type *epipsila*; Fenmoor, Goathland, N.E. York. Var. GLABRESCENS. Crianlarich, Mid Perth, DRUCE.

*303. V. LLOYDII Jord., var. INSIGNIS Drabble. Melvich, W. Sutherland; Wick, Caithness, MARSHALL, in *J.B.* 169, 1916.

*304. V. DERELICTA Jord. Melvich, W. Sutherland, MARSHALL, *l.c.*

305. V. NANA Godr. Scilly Isles, *Hb. Druce.*

*311. POLYGALA CALCAREA F. Schultz. Roundstone Pit, near Bloody Oaks Wood, Empingham, Rutland, Earl of GAINSBOROUGH and HORWOOD. An interesting extension of its eastern range. Also in Leicestershire, HORWOOD, in *Rep. B.E.C.* 329, 1915.

314. FRANKENIA LAEVIS L. "Very common in mud-flats on Hayling Island, 1862, Trimen," *Fl. Hampshire*. Since become very scarce. A few patches growing on sand, not mud, were found by Mrs and Master NOEL SANDWITH in 1916.

†321. DIANTHUS CARTHUSIANORUM L.! New Farm, St Albans, Herts., DICKENSON, in *Hb. Salmon*; a patch of about a dozen stems at Colesborne, Gloster, J. EDWARDS and H. J. ELWES.

†331. SAPONARIA VACCARIA L. Buryport, Carmarthen, DRUCE; Watton, Norfolk, ROBINSON; Calow, Derby, DRABBLE, in *J.B.* 135, 1916; Elland, Garforth, W. Riding, HORRELL; Wakefield, York, CRYER, *l.c.*

†332 (2). S. CALABRICA L.? A garden weed at Longleat, Wilts., Lady KATHLEEN THYNNE.

*†337. SILENE JUVENALIS Del. Wakefield, York, CRYER, in *Nat.* 250.

*340. S. NOCTIFLORA L. Portmadoc, Carnarvon, Miss COBBE.

†341. S. DICHOTOMA Ehrh. Sibford, Leicester, Bishop MITCHINSON.

†342. S. GALLICA L. Sibford, Oxon, J. LAMB.

343. S. ANGLICA L. Saham Toney, Norfolk, ROBINSON; Woodhall Spa, Lincoln, HORWOOD.

†344. S. QUINQUEVULNERA L. Between Truro and Malpas; field near Ruan Minor, Cornwall, Misses COBBE. A colonist likely to spread.

†345. S. PENDULA L. Garden weed, Walton, Liverpool, 1916, ex TRAVIS; Galashiels, Selkirk, Miss I. M. HAYWARD.

†347. S. ARMERIA L. Wakefield, York, CRYER, *l.c.*

†352. S. LAETA A. Br. In cultivated ground, Stoborough, Dorset, Mrs SANDWITH.

*†356. S. ANNULATA Fenzl. (S. CRETICA L.) Milverton, S. Somerset, Misses B. and M. FALCON, ex E. S. MARSHALL, in *J.B.* 97, 1916.

360. LYCHNIS DIOICA × ALBA. Near Selham, West Sussex, in quantity, and varying towards one or other parent, LACAITA and DRUCE; Wareside, Herts., HIGGENS; Uppingham, Rutland, HORWOOD; near Byfield, Northants; Brill, Bucks.; and Edgehill, Warwick, DRUCE.

†367 (2). CERASTIUM TOMENTOSUM L. Railway bank, Maidenhead, Berks., RIDDELSDELL; Brechin, Forfar, DRUCE and R. and M. CORSTORPHINE.

372. C. PUMILUM Curt. Snowshill, Gloster, 1916, Earl of GAINSBOROUGH.

380. STELLARIA NEGLECTA Weihe, b. UMBROSA (Opiz.) Park Wood, Bramfield, Herts., 1915, LITTLE, in *Wats. B.E.C.* 530, 1915-16; the type at Selham, W. Sussex, LACAITA and DRUCE; Stoke by Nayland, W. Suffolk, BROWN.

*392. ARENARIA LEPTOCLADOS Guss., var. VISCIDULA R. & F. Lea, Derby, DRABBLE, in *J.B.* 135, 1916.

394. A. TENUIFOLIA L. Railway tunnels, Welwyn, Herts., HIGGENS.

399. SAGINA NODOSA Fenzl, var. MONILIFORMIS Lange. Pembrey Burrows, Carmarthen, abundant; Whitehorn Point, Glam.; Montrose, Forfar, DRUCE.

403. S. SAGINOIDES (L.) Dalla Torre. Sparingly on the cliffs of Glen Phee, Glen Dole and Caenlochan, Forfar. Not seen on Little Culrannoch around which *S. scotica* is so abundant. On Ben Laoigh, Mid Perth, DRUCE.

403 (2). S. SCOTICA Druce. Very abundant by the rills on the table land of Clova, and there apparently with a higher and a lower altitudinal range than *saginoides*, with which I saw no intermediates. In the West and Winter Corries, Clova, where *saginoides* was not observed; on the slopes and cliffs of Ben Laoigh and in Corrie Ardran, Mid Perth, DRUCE.

408. S. PROCUMBENS L., var. COROLLINA Ledeb.! Littleworth Common, Surrey, BRITTON. With more conspicuous petals at Rescobie

and on the Esk at Montrose, Forfar, but having a different facies from *S. scotica.* DRUCE.

*411. SPERGULARIA RUPESTRIS Lebel. Rhos-on-Sea, Denbigh, WATERFALL in *Rep. B.E.C.* 331, 1915.

†417. PORTULACA OLERACEA L. Nursery-garden weed, Christchurch, S. Hants., LINTON, in *Wats. B.E.C.* 488, 1914-1915.

†418. CLAYTONIA SIBIRICA L. In the Clyde area, see *Glasgow Nat.* 1915.

†419. C. PERFOLIATA Donn. Road bank, Hertford, 1916, HIGGENS. Confirms the doubtful record in the *Flora.*

423. ELATINE HYDROPIPER L. ! which has for the time disappeared from Berkshire owing to military operations, and is now excessively rare in Surrey, has been found in its old locality at Lynn Coron, Anglesey, 1916, by Mr G. MACONCHY.

†441. ALTHAEA ROSEA L. Twerton, N. Somerset, DRUCE.

†443. A. HIRSUTA L. In a field near Itchen, Stoke, Hants., Mrs SANDWITH.

†445. LAVATERA SYLVESTRIS Brot. Rubbish-heaps, Ware, Herts., HIGGENS.

†448. L. PUNCTATA All. Waste ground, Woodmill, Southampton, RAYNER.

452. MALVA MOSCHATA L., var. HETEROPHYLLA Lej. & Court. Bladon, Oxon., DRUCE; Copley Wood, S. Somerset, MARSHALL, in *J.B.* 98, 1916. This is already recorded for the county in Woods' *Tourist Flora* 62, 1850, where Mr Borrer says it has propagated itself as an annual for 20 years without alteration. The white-flowered form with heterophyllous leaves also remains remarkably constant in cultivation. Patshull, Stafford, ex Lady JOAN LEGGE. *Var. INTEGRIFOLIA Lej. & Court. Copley Wood, S. Somerset, MARSHALL, *l.c.*

†452 (2). M. NICAEENSIS All. Meanwood, Leeds, HORRELL.

†454. M. PUSILLA With. Newport, Isle of Wight, STRATTON, in *J.B.* 371, 1916.

†456. M. PARVIFLORA L. Meanwood, Leeds, HORRELL; Dundee, Forfar, DRUCE and CORSTORPHINE; Little Ellingham, Norfolk, ROBINSON. See *Rep. B.E.C.* 332, 1915.

465. TILIA CORDATA Mill. In a hedgerow, probably planted, near Chichester, W. Sussex. Shown me by Rev. Preb. BURDON; *Dolgelley, Merioneth, BARTON, in *Rep. B.E.C.* 333, 1915.

466. RADIOLA LINOIDES Roth, with CENTUNCULUS. Talsarnau, Merioneth, Miss M. COBBE.

†475. GERANIUM VERSICOLOR L. On hedge-banks in great plenty near Leary, N. Devon! Completely naturalised and known for some years. Countess FORTESCUE.

486. G. PUSILLUM L. At Portmadoc, Carnarvon. ?† Miss COBBE. Confirms Robinson's record in *Top. Bot.*

488. G. ROBERTIANUM L., with tri-lobed petals. Wareside, Little Hadham, Herts., HIGGENS.

†494. ERODIUM MOSCHATUM Ait. Meanwood, Leeds, from skin-dressing works, HORRELL.

497. E. CICUTARIUM Ait., var. PIMPINELLIFOLIUM (Sibth.). Clover field, Haslemere, Surrey, HIGGENS.

†499. E. CYGNORUM Nees! Meanwood, Leeds, HORRELL.

†501. TROPAEOLUM MAJUS L.! Hertford, Ware, Herts., HIGGENS; Taplow, Bucks.; Cardiff, Glamorgan, DRUCE.

†502. IMPATIENS PARVIFLORA DC.! Hertford, HIGGENS.

†513. I. GLANDULIFERA Royle! By the river at Flete, S. Devon, in great quantity, Mrs MILDMAY; on waste ground at Perth, BARCLAY and DRUCE; West Runton, E. Norfolk, in brick-yard, R. CREED.

†531. LABURNUM ANAGYROIDES Med. Seedlings on Oxford Castle; Slough, Bucks., DRUCE.

538. ULEX GALLII Planch. Near Southampton, ! RAYNER.

539. U. MINOR Roth, var. LONGISPINOSUS (R. & F.) Druce. See *Rep. B.E.C.* 192, 1915. Bedwyn Brailes, N. Wilts., HURST. The strong spines of this plant, associated with a strong erect habit, have led to its being mistaken for *Gallii*. DRUCE.

†540 (2). CYTISUS MONSPESSULANUS L. Milford-on-Sea, S. Hants., MELVILL. See *Rep. B.E.C.* 334, 1915.

543. ONONIS REPENS L. Orkney, BENNETT, in *Trans. Bot. Soc. Edin.* 1915. Var. HORRIDA Lange. Brading Harbour, Isle of Wight, HIGGENS.

†548. TRIGONELLA FOENUM-GRAECUM L. ! Elland, York, HORRELL; Slough, Bucks., DRUCE; Wakefield, York, CRYER, *l.c.*

*†552. T. CORNICULATA L. Wakefield, York, CRYER, *l.c.*

†554. T. M. CAERULEA (L.) Druce. Buryport, Carmarthen, DRUCE; Wakefield, York, CRYER, *l.c.*

†562. MEDICAGO FALCATA L. Rough field, Hoddesdon, Herts., HIGGENS; Dundee, Forfar, CORSTORPHINE and DRUCE. Var. TENUIFOLIOLATA Vuyck ! Portmadoc, Carnarvon, Misses COBBE; Elland, York, HORRELL; Pewley Hill, Guildford, KENNEDY.

†574. M. TUBERCULATA Willd. Colchester, Essex, BROWN. Teste A. THELLUNG.

†579. M. HISPIDA Gaertn. Meanwood, Leeds, HORRELL. †Var. DENTICULATA Burnat. Meanwood, Leeds, HORRELL; Portmadoc, Carnarvon, Misses COBBE. †Var. CONFINIS Burnat. Froggart, Derby, 1915, FORDHAM. †Var. LAPPACEA (Desr.) Ware, Herts., 1907, DRUCE; Foss Island, York, 1889, WHELDON; Thetford, Norfolk, ROBINSON.

†581. M. MINIMA Desr. ! Railway side, Tingley, York, HORRELL.

586. M. LUPULINA L., var. WILLDENOWIANA Koch. Pyrford, Surrey, Lady DAVY; Wareham, Dorset; Kidwelly, Carmarthen, DRUCE.

†592. MELILOTUS SULCATA Desf. Slough, Bucks., Miss A. B. COBBE.

†595. M. ALBA Desr. Newport, Isle of Wight, STRATTON, in *J.B.* 232, 1916; Portmadoc, Carnarvon, Miss M. COBBE; Dore, Derby, DRABBLE, in *J.B.* 135, 1916; Wakefield, York, CRYER, *l.c.*

†596. M. ARVENSIS Wallr. Newport, Isle of Wight, STRATTON, *l.c.*; Portmadoc, Carnarvon, Miss M. COBBE; Wakefield, York, CRYER, *l.c.*

†597. M. INDICA All. Newport, Isle of Wight, STRATTON, *l.c.*; *Steetley, Calow, Derby, DRABBLE, *l.c.*; Halifax, York, HORRELL; St. Cyrus, Kincardine, DRUCE; Wakefield, York, CRYER, *l.c.*

†605. TRIFOLIUM LAPPACEUM L.! Sibford, Oxon., LAMB.

609. T. MOLINERII Balb. Between Cadwith and Poltesco, Cornwall, Miss M. COBBE.

617. T. BOCCONEI Savi. Near the quarries, Poltesco, Cornwall, Miss M. COBBE.

619. T. STRIATUM L., var. ERECTUM Gasp. Near Errol, Mid Perth, Miss TODD.

†622. T. RESUPINATUM L. Ware, Herts., HIGGENS; Sibford, Oxon., LAMB.

626. T. STRICTUM L. Between Cadgwith and Landevednach, Cornwall, Miss M. COBBE.

†630. T. NIGRESCENS Viv. Portishead, N. Somerset, Miss LIVETT, ex WHITE.

†642. CIRCINNUS CIRCINNATUS Kuntze (HYMENOCARPUS)! Tadcaster, York, W. JOHNSON.

†651. GALEGA OFFICINALIS L. Hoddesdon, Herts., HIGGENS; Brislington, Bristol, Miss M. COBBE.

†652. ROBINIA PSEUDO-ACACIA L. Seedlings in a copse near Thundridge, Herts., HIGGENS.

†657. ASTRAGALUS BAETICUS L. ! Colchester, Essex, BROWN.

†665. SCORPIURUS SUBVILLOSA L. Tingley, York, a sub-glabrous form. Teste A. THELLUNG.

†666. CORONILLA VARIA L. Ware, Herts., DRUCE and Miss TROWER; Bewdley, on the Severn bank, established there since 1853. LAMB. In abundance and completely naturalised on steep cliffs and at their base near Dundee, Forfar, CORSTORPHINE, DRUCE, and SMITH.

†667. C. SCORPIOIDES Koch. Ware, Herts., Miss TROWER and DRUCE; Elland, HORRELL; Wakefield, York, CRYER, *l.c.*

†670 (2). ORNITHOPUS ROSEUS Dufour. Woking, Surrey, 1913, Miss SAUNDERS, in *Hb. Salmon.*

†676. CICER ARIETINUM L. Ware, Herts., Mrs KNOWLING; Brislington, Bristol, Miss M. COBBE.

†678. VICIA TENUIFOLIA Roth. Lower Wick, Worcester, growing spontaneously in a nursery, CARLETON REA, in *lit.*

†683. V. VARIA HOST. Cobham, Kent, Miss RIDLEY.

†691. V. LUTEA L. Poltesco Little Cove, Cornwall, abundant, Miss M. COBBE; Ware, Herts., Miss TROWER and DRUCE.

†694. V. PANNONICA Crantz, var. STRIATA (Bieb.). Brislington, N. Somerset, Miss I. M. ROPER, ex WHITE.

†706. V. GRACILIS Lois. Cornfield hedge, near Grange Court Station, W. Gloster, Miss VACHELL.

†707. LENS CULINARE Med. Ware, Herts., Mrs KNOWLING; Watton, Norfolk, ROBINSON. See *Rep. B.E.C.* 337, 1915.

†709. LATHYRUS LATIFOLIUS L. Near Hamworthy, Dorset, DRUCE; gravel-pit, Wareside, Herts., HIGGENS.

†722. L. SATIVUS L. Watton, Norfolk, ROBINSON.

722 (2). L. HIEROSOLYMITANUS Boiss. St Philip's Marsh, Bristol, Miss COBBE. This is doubtless the pretty pea referred to in White's *Flora of Bristol.*

†724. L. OCHRUS L. Ware, Herts., Miss TROWER and DRUCE.

†726. L. APHACA L. Ware, Herts., HIGGENS, Miss TROWER, and DRUCE; near Welbeck, Notts., Countess de BAILLET-LATOUR.

738. PRUNUS CERASUS L. Chichester, DRUCE; Aldbourne, Wilts., Miss TODD.

748 *b*. RUBUS IDAEUS L., var. OBTUSIFOLIUS (Willd.). Cothill, Berks., DRUCE. Var. LEUCOCARPUS, with white or pale yellow fruits, found by Miss TODD, in E. Harptree, Combe, N. Somerset, 1916; near Forres, Elgin, DRUCE.

The following *Rubi* have all been verified by the Rev. W. MOYLE ROGERS :—

*761. R. IMBRICATUS Hort. Boxted, N. Essex, BROWN.

*770. R. NEMORALIS P. J. Muell. Todenham, Gloster, RIDDELSDELL.

*780. R. RHOMBIFOLIUS Weihe. Tiptree Heath, Essex, BROWN.

*782. R. LEUCANDRUS Focke. Bergholt, N. Essex, BROWN.

*793. R. SALTERI Bab. Okeford, Dorset, CUMMING. See *Rep. B.E.C.* 339, 1915.

*795. R. SPRENGELII Weihe. Langham, N. Essex, BROWN.

*798. R. HIRTIFOLIUS Muell. and Wirtg. Tiptree Heath, N. Essex, BROWN.

*842. R. FUSCUS W. and N. Boxted, N. Essex, BROWN.

*849. R. FOLIOSUS W. and N. Tiptree Heath, N. Essex, BROWN.

*855. R. HOSTILIS P. J. Muell. Todenham, E. Gloster, RIDDELSDELL; West Bergholt, Little Horkesley, N. Essex; Stoke by Nayland, W. Suffolk, BROWN.

*872. R. DUMETORUM Weihe, var. RADULIFORMIS Ley. Alkerton, Oxon, RIDDELSDELL. Var. DIVERSIFOLIUS (Lindl.). White Colne, N. Essex, BROWN.

*875. R. BALFOURIANUS Blox. Gt. Bromley, Tiptree, Chappel, N. Essex, BROWN.

883. GEUM RIVALE L. Caenlochan, Forfar, alt. 3000 feet, as a curious monstrosity. The plant was only two inches high with a single large flower ($\frac{3}{4}$ in. across) with crimson petals in three rows. Could such a form have been mistaken for *Rubus arcticus* reported from Ben-y-Gloe? Near Castle Hill, N. Devon (queried in *Top. Bot.*), Countess FORTESCUE and DRUCE.

883. × G. INTERMEDIUM (Ehrh.), growing with G. RIVALE at Castle Hill, N. Devon. Without personal authority for v.-c. 4 in *Top. Bot.*

*†885. FRAGARIA MOSCHATA Duchesne. Near Chichester, W. Sussex, Rev. Partington; Castle Hill, Countess FORTESCUE and DRUCE; Haslemere, Surrey; timber-yard, Hertford, HIGGENS (I have not seen these two specimens).

895. POTENTILLA ARGENTEA L. Near Selham, W. Sussex, LACAITA; †Dundee, Forfar, DRUCE and CORSTORPHINE.

902. P. PROCUMBENS × REPTANS. Alphamstone, N. Essex, BROWN.

903. P. ERECTA Hampe, var. SCIAPHILA (Zimm.) Druce. *Fermoy, Co. Cork, LEACH. P. ERECTA × REPTANS. Tiptree Heath, N. Essex, BROWN.

†906. P. NORVEGICA L. Racecourse, Northampton, GOODE; Portmadoc, Llanberis, Carnarvon, Miss A. B. COBBE; Welbeck, Notts., Mrs DRUMMOND.

†910. ALCHEMILLA ARGENTEA Don (A. CONJUNCTA Bab.) On a railway bank near Perth, v.-c. 88, far from houses, and known there for many years. Shown me by Mr Barclay in 1916. Doubtless originally adventive. The Glen Dole locality we have repeatedly searched, but in vain.

914. AGRIMONIA ODORATA Mill. *Herts., GRAVESON and HIGGENS; Hayling Island, S. Hants., NOEL SANDWITH.

†915. A. AGRIMONOIDES L. Quite naturalised at Annat, near Errol, E. Perth, Miss TODD.

†916. ACAENA ANSERINIFOLIA (Forster) comb. nov., vice A. SANGUISORBAE Vahl Enum. i., 294, 1884, based on ANCISTRUM ANSERINIFOLIA Forst. Char. 1772-5. Tweedside, Roxburgh, quite naturalised. Shown me by Miss I. M. HAYWARD.

917. POTERIUM SANGUISORBA L. A curious monstrosity sent from Winchester by Mr G. J. TALBOT, had the lateral branch bearing heads of stalked flowers instead of a solitary branch as normally.

925. ROSA SYSTYLA Bast., with dark red flowers. A beautiful rose at Hamsworthy, Dorset, DRUCE.

935. R. CORIIFOLIA FRIES. Medbourne, Leicester, HORWOOD and CHESTER.

*945. × R. INVOLUTA (Sm.) var. Armadale Burn, W. Sutherland, MARSHALL, in *J.B.* 170, 1916.

The following Roses are enumerated as occurring in Durham in a paper by J. W. Heslop Harrison in the *Naturalist* for 1916. *Rosa arvensis* Huds., rare in plantations, Ravensworth, with *R. systyla* Desv., both probably adventive. *R. canina* L., var. *lutetiana* (Lém.), common; var. *flexibilis* (Déség.), Birtley, Billingham; var. *senticosa* (Ach.), Cowpen Bewley; *R. sarmentacea* Woods, common; var. *biserrata* (Mér.), Lamesley; var. *Malmundariensis* (Ley), Wolsingham, Greatham. *R. andegavensis* Bast., Wolsingham; *R. scabrata* Crép., var. *vinacea*, scattered; *R. dumetorum* Thuill., widely spread; var. *urbica* (Lém.), common; var. *hemitricha* (Rip.), rare; var. *platyphylla* (Rau), Billingham; var. *frondosa* (Baker), Cowpen Bewley; var. *incerta* (Déség.), Wolsingham. *R. glauca* Vill., Witton Gilbert, Greatham, etc.; var. *complicata* Gren., Eggleston; *R. caesia* Sm. (*coriifolia*) Satley, Thorpe, etc.; var. *Watsoni* (Baker), Birtley Fell; var. *subcollina* (Christ), Vigo, on mineral line; var. *Bakeri* (Déség.), between Birtley and Lamesley; var. *pruinosa* (Baker), Wolsingham. *R. obtusifolia* Desv., var. *Borreri* (Woods) Bewicke Main. *R. micrantha* Sm., generally on magnesian limestone. *R. Eglanteria* L., var. *comosa* (Rip.), Team Valley, Wolsingham; var. *echinocarpa* (Rip.), between Satley and Wolsingham. *R. mollissima* Willd. (*tomentosa*), general; var. *cinerascens* (Dum.), Billingham, uniserrate; var. *pseudo-mollis* (Baker), Birtley Fell; var. *cuspidatioides* (Crép.),

sparingly throughout the area; var. *Sherardi* (Davies), Wreckerton, etc.; var. *scabriuscula* (Winch), Langley Park; var. *eminens* Harrison, Wolsingham, Satley and Lanchester. *R. omissa* Déség., var. *resinosoides* (Crép.), Waldridge, Billingham, etc.; var. *submollis* (Ley), Wolsingham. *R. villosa*, common in the east; var. *caerulea* (Woods), Beamish. *R. pomifera* Herrm., between Greatham and Cowpen Bewley, possibly a garden escape, a single plant in hedge. *R. spinosissima* L., var. *pimpinellifolia* (L.), inland on Falcon Clints. *R. involuta* Sm., *f. Sabini*, Horden, etc. *R. hibernica* Templ., Haverton Hill.

†959. PYRUS INTERMEDIA Ehrh. Hampstead Heath, Middlesex, HIGGENS; Haste Common, Surrey, SWAINTON, ex HIGGENS. Under this is an unpublished plant (? SORBUS ANGLICA Hedlund), possibly of hybrid origin, in the Wye Valley, W. Gloster, Hereford and Monmouth; Cheddar, N. Somerset, and Craig Cille, Brecon (LEY). See MARSHALL in *J.B.* 13, 1916, where he translates Hedlund's paper (*Ove Dahl: Bot. Unders. i Helgeland* ii., 181-4, 1914).

*961. P. ARIA × TORMINALIS Hedl. (as SORBUS), *l.c.* Symond's Yat, W. Gloster. Gathered as *P. latifolia* by MARSHALL and LEY in 1901.

†972. COTONEASTER MICROPHYLLA Wall. On the craggy sides of the limestone undercliff near Niton, Isle of Wight, 1916, HUNNYBUN, in *lit.*; Great Orme, Carnarvon, WATERFALL, in *Rep. B.E.C.* 348, 1915; Whitchurch, Caterham, Surrey, ! Mrs HANBURY TRACY; near Scarborough, in a wood on the Forge valley, York. Occasionally planted for game-covers.

†972 (2). C. SIMONSII Baker! White Mill, near Caterham, Mrs LEITH.

*1000. PARNASSIA PALUSTRIS L., var. CONDENSATA Trav. and Wheld. Melvich, W. Sutherland, MARSHALL, in *J.B.* 170, 1916; Thurso, Caithness, DRUCE.

†1004 (3). RIBES SANGUINEUM Pursh. Wall-top, Wadham College, Oxford, 1916, DRUCE. Bird sown.

†1006 (4). CRASSULA SIEBERIANA (Schultes Mantissa iii., 345, 1827), comb. nov., as TILLAEA SIEBERIANA comb. nov. Tweedside, Galashiels, Selkirk, Miss I. M. HAYWARD.

†1016. SEDUM ALBUM L. Cliff-bank at Cadgwith, Cornwall, Miss A. B. COBBE.

†1017 (2). S. LYDIUM Boiss. Roadside near Auldbar, Forfar, DRUCE and R. and M. CORSTORPHINE. Quite naturalised. Some plants were brought in from Clovenfords, Selkirk, where we first found it wild in Britain, by Miss Hayward to her garden. It quickly spread to the gravel paths, where it flourishes exceedingly well, a curious instance of the accommodation to the Scottish climate of a plant from the Orient.

*1029. × DROSERA OBOVATA M. and K. Britty Common, S. Somerset, W. D. MILLER, ex MARSHALL, in *J.B.* 99, 1916.

1036. CALLITRICHE OBTUSANGULA Le Gall. Braunton, N. Devon; Chichester, W. Sussex, DRUCE.

1039. C. PLATYCARPA Kuetz. Exton, Rutland, HORWOOD.

1047. EPILOBIUM HIRSUTUM × MONTANUM = × E. ERRONEUM Haussk.! Growing on waste ground at Perth with plenty of both parents, BARCLAY. Det. DRUCE. Hook Norton, Oxon, LAMB.

1047. E. HIRSUTUM × PARVIFLORUM = × E. INTERMEDIUM Reichb. Peakirk, Northants., HORWOOD and CHESTER.

1047. E. HIRSUTUM × PALUSTRE = × E. WATERFALLII E. S. Marshall, in *J.B.* 75, 1916. See *Rep. B.E.C.* 198, 1915. Also found near Dungeness, E. Kent, COMPTON, in *J.B.* 114, 1916.

*1049. E. TETRAGONUM L., var. STENOPHYLLUM Druce. Copley Wood, N. Somerset, MARSHALL, in *J.B.* 99, 1916.

*1049. E. TETRAGONUM × PALUSTRE. Near Dungeness, E. Kent, COMPTON, ex MARSHALL, in *J.B.* 114, 1916. Found wild for the first time in Britain.

*1050. E. LAMYI × PARVIFLORUM and E. LAMYI × TETRAGONUM. Copley Wood, Somerset, MARSHALL, in *J.B.* 99, 1916.

†1058. E. NUMMULARIIFOLIUM R. Cunn., var. PEDUNCULARE. Roundhay, Leeds, 1908, LEES, but only a garden weed.

†1061. OENOTHERA BIENNIS L. Buryport, Carmarthen, DRUCE.

†1071. FUCHSIA RICARTONI Hort. Landslip, Luccomb, Isle of Wight, HIGGENS.

*1073. CIRCAEA ALPINA L. Near Bala, Merioneth, 1916, Rev. A. B. W. HIGGENS.

*1073. C. INTERMEDIA Ehrh. Between Bettws and Llanrwst, Carnarvon, Miss COBBE.

†1077 (10). TETRAGONIA EXPANSA Murr. W. Kent, WOLLEY-DOD.

?†1080. ERYNGIUM CAMPESTRE L. Portmadoc, Carnarvon, several plants probably adventive, Misses COBBE. Mr J. Higgens tells me there is a specimen, probably of this species, in the Hertford Museum from the Isle of Man.

1087. SMYRNIUM OLUSATRUM L. Between Stanstead and Ware, HIGGENS; Welwyn, Herts., in which county it is rare, *Hb. Blake.*

†1090. BUPLEURUM ROTUNDIFOLIUM L.! Dry bank, by railway, Fleet, N. Hants., Miss HODGSON.

†1091. B. PROTRACTUM H. & L. Garden weed, Colchester, Essex, BROWN; Elland, York, HORRELL.

†1092. B. ODONTITES L. East Bristol Tip, W. Gloster, WHITE; Elland, York, HORRELL.

†1101. AMMI MAJUS L. Cobham, Kent, Miss RIDLEY, vide sp.; Goring, Oxford, GAMBIER-PARRY; near Madeley, Staffs., DALTRY, in *lit.*

†1103. CARUM CARVI L. On the moor, Glencarse, Perth, Miss TODD; Glen Dole, Forfar, DRUCE; Wakefield, York, CRYER, in *Nat.* 250.

1107. C. BULBOCASTANUM Koch. In clover field between Wareside and Hunsdon, Herts., a new locality, HIGGENS.

1114. PIMPINELLA SAXIFRAGA L., var. POTERIIFOLIA Wallr. Evington, Leicester, HORWOOD.

†1128. ANTHRISCUS CEREFOLIUM Hoffm.! Near Torquay, S. Devon, C. F. VINCENT.

†1130. FOENICULUM VULGARE Mill. On the railway, near Sutton, Surrey, HIGGENS; waste ground, Hertford, Ware, etc., Miss TROWER and DRUCE.

†1153. HERACLEUM VILLOSUM Fisch. Near Slapton Lea, S. Devon, Lady DAVY and DRUCE; Bunch Lane, Haslemere, Surrey; Ware, Herts. (or an allied species), HIGGENS; Twerton, N. Somerset, DRUCE. Abundant and well established on rocky slope near Dundee, on a rubbish-tilt; Brechin, Forfar, R. & M. CORSTORPHINE and DRUCE.

†1157. CORIANDRUM SATIVUM L. Oxford, TROLLOPE; Pyrford, Surrey, Lady DAVY; Wakefield, York, CRYER, in *Nat.* 250.

*†1159. ANIDRUM TESTICULATUM Kuntze. Wakefield, York, CRYER, in *Nat.* 250.

†1165. CAUCALIS LEPTOPHYLLA L. Colchester, Essex, BROWN; Wakefield, York, CRYER, *l.c.*

†1166. C. DAUCOIDES L. Elland, York, HORRELL; Wakefield, York, CRYER, *l.c.*

†1171. C. LATIFOLIA L. Falmouth Docks, Cornwall, Miss A. B. COBBE; Wakefield, York, CRYER, *l.c.*

1172. HEDERA HELIX L., var. BOREALIS Druce. Grange-over-Sands, Lake Lancs., WILSON, in *Rep. B.E.C.* 350, 1915. Var. SARNIENSIS Druce! A plant approaching this from Chewton Keynsham, N. Somerset, 1916, Miss I. M. ROPER.

†1175. CORNUS STOLONIFERA Michx. By stream, Callestick, Cornwall, RILSTONE; Mesopotamia, Oxford; Patshull, Staffs., DRUCE.

†1178. SAMBUCUS NIGRA L., var. LACINIATA L. Swanage, Dorset, Miss I. M. ROPER; waste ground, Dundee, Forfar, DRUCE and SMITH. Var. FOL. TERNATIS. See Schultes' *Letters*, 1824, where it is said to be wild on an old Roman wall in Wiltshire. Can any member verify this record?

†1182. SYMPHORICARPOS RACEMOSUS Michx. Very abundant on Week Down, near Ventnor, Isle of Wight, 1916, HUNNYBUN; Nobold, Salop, MELVILL; Bucknye Woods, Undergrowth, Herts., HIGGENS.

†1187. LONICERA XYLOSTEUM L. Near Scampton Hall, York, W. H. ST. QUINTIN and DRUCE.

†1191. RUBIA PEREGRINA L. Rubbish heaps, West Drayton, Middlesex, Miss A. B. COBBE.

1194. GALIUM ERECTUM Huds. Wareside, Herts., a rare plant in the county, HIGGENS.

†1210. ASPERULA ARVENSIS L., with pinkish flowers. Ware, Herts., HIGGENS; Wakefield, York, CRYER, in *Nat.* 250.

†1211. A. CILIATA Rochel! Near Churchill, Oxon, W. H. ANSON.

1216. VALERIANA SAMBUCIFOLIA Mikan. On the cliffs of Glen Phee, Forfar, about 2400 feet, as a form in which all the flowers are in one dense inflorescence, R. and M. CORSTORPHINE and DRUCE.

†1229. DIPSACUS FULLONUM L., var. SATIVUS L. Twerton, N. Somerset, DRUCE; in an oat field, Newport, Isle of Wight, STRATTON, see *J.B.* 371, 1916; Yiewsley, Middlesex, WEBSTER.

†1235. SCABIOSA ATROPURPUREA L. Ventnor, Isle of Wight, 1916, HIGGENS.

†1244. SOLIDAGO LANCEOLATA L.! Between Shard and Axminster, near the village of Alston, Devon, in great quantity in a heathy field far from houses, RAYNER.

†1255. ASTER NOVI-BELGII L. Junction of Tweed and Till, Berwick, 1915, Miss I. M. HAYWARD.

†1279. INULA HELENIUM L. Llanberis, Carnarvon; Harlech, Merioneth, Miss M. COBBE.

†1284. I. VISCOSA Ait. Portmadoc, Carnarvon, Misses COBBE.

†1284 (2). I. GRAVEOLENS L. Tweedside, Roxburgh, Miss I. M. HAYWARD.

†1291. A. ARTEMISIFOLIA L. Portmadoc, Carnarvon, Misses COBBE; Thetford, Norfolk, ROBINSON; Silloth, Cumberland, WALLIS, ex SALMON.

†1292. AMBROSIA TRIFIDA L. Winscombe, N. Somerset, Miss I. M. ROPER. I have some doubts as to my identification, and Mr J. W. White thinks it may be a species not hitherto recorded in Britain.

†1294. XANTHIUM STRUMARIUM L. Brislington, N. Somerset, Miss M. COBBE.

†1295. X. SPINOSUM L. Meanwood, Leeds, HORRELL; St Cyrus, Kincardine, DRUCE.

†1312. GALINSOGA PARVIFLORA Cav., var. ADENOPHORA Thell.! In the grounds of Buckingham Palace, Mme. DUSSAN.

†1315. HEMIZONIA PUNGENS Torr. and Gray. Kirkstall, York, HORRELL; Colchester, Essex, BROWN.

†1317. H. KELLOGGII Greene. St Philip's Marsh, Bristol, DRUCE. Det. Dr WERNHAM.

*1337. DIOTIS MARITIMA Cass.! Land's End District, Cornwall, A. J. HOSKING. A most interesting discovery of a dying-out species in Britain.

†1338. ANTHEMIS TINCTORIA L. Hertford, ANDREWS.

†1356 (6). CHRYSANTHEMUM SEROTINUM L. Landslip, Luccombe, Isle of Wight, 1916, HIGGENS.

†1357. C. CORONARIUM L. Brechin, Forfar, R. and M. CORSTORPHINE and DRUCE.

†1358. C. BALSAMITA L. Near Carnoustie, Forfar, DRUCE.

†1362. MATRICARIA SUAVEOLENS Buch. Gravel Hill, Ludlow, Salop; Bray, Co. Wicklow, BRITTEN, in *J.B.* 338, 1916; Wakefield, York, CRYER, in *Nat.* 250; Tintern, Monmouth, LAMB; St. Cyrus, Kincardine, DRUCE.

†1363. M. DECIPIENS C. Koch. Kirkstall, York, HORRELL.

1373. ARTEMISIA VULGARIS L., var. COARCTATA Fors. Near Stansteadbury, Herts., Miss TROWER and DRUCE; Lathom, Lancs., Hon. Mrs. J. SAVILE; *Spital, Derby, DRABBLE, in *J.B.* 136, 1916; Melvich, W. Sutherland, MARSHALL, in *J.B.* 170, 1916.

†1380. A. BIENNIS Willd. Hertford, 1915, Miss TROWER and DRUCE; E. Gloster; Radyr, Glamorgan, RIDDELSDELL; Elland, York, HORRELL.

†1382. A. ANNUA L. Ware, Herts., HIGGENS; Flete, S. Devon, Mrs MILDMAY, vide sp.

†1389. DORONICUM PLANTAGINEUM L. Great Saling, near Braintree, Essex, Rev. H. E. Fox, in *lit.*

*†1396. SENECIO SQUALIDUS L. Near Grove Park, W. Kent, 1916, DRUCE; King Sutton, Northants., carried along the railway from Oxford, DRUCE; Cardigan, Dr. H. CLARKE.

†1399. S. VISCOSUS L. Portmadoc, Llanberis, Carnarvon; Blaenau-Festiniog, Merioneth, Misses COBBE.

†1410. CALENDULA OFFICINALIS L. Naturalised on cliffs, Ventnor, Isle of Wight; waste ground, Cambridge, HIGGENS.

*1420. ARCTIUM NEMOROSUM Lej. Patshull, Staffs., ex Lady JOAN LEGGE.

†1425. CARDUUS PYCNOCEPHALUS L. Wakefield, York, CRYER, *l.c.*

1433. CIRSIUM ARVENSE Scop., var. MITE Koch. Brechin, Forfar, R. & M. CORSTORPHINE and DRUCE. *Var. SETOSUM Mey. Brickfield, Ware, Herts.; Rye House, Essex, Miss TROWER and DRUCE, 1912; Buryport, Carmarthen, 1916; Twerton, N. Somerset, 1916, DRUCE.

1434. C. PALUSTRE Scop., var. FEROX Druce. Winter Corrie, Clova; Corrie Ardran, Mid Perth, DRUCE.

†1442. CYNARA CARDUNCULUS L. On the sands at Saunton, N. Devon, DRUCE.

†1453. CENTAUREA MONTANA L. Ware, Herts., HIGGENS.

†1462. C. SOLSTITIALIS L. Thetford, Norfolk, ROBINSON; Goring, Oxford, GAMBIER-PARRY; Wakefield, York, CRYER, *l.c.*

†1463. C. MELITENSIS L. Near Rye House, Herts., Miss TROWER and DRUCE; Thetford, Norfolk, ROBINSON.

†1465. C. CALCITRAPA L. Elland, York, HORRELL; Wakefield, York, CRYER, *l.c.*; Ware, Herts., DRUCE.

†1467. C. PALLESCENS Del. Elland, York, HORRELL.

*†1472. C. IBERICA Trev. Wakefield, York, CRYER, *l.c.*, with *1473, C. VERUTRUM L.

†1477. CARTHAMUS TINCTORIUS L. Portmadoc, Carnarvon, Misses COBBE; Ware, Herts., HIGGENS; Botley, Oxon.; St. Cyrus, Kincardine, DRUCE.

†1481. CICHORIUM ENDIVIA L. Stiffkey, Norfolk, ROBINSON.

1484. CREPIS BIENNIS L.! Chichester, W. Sussex, BURDON.

1493. C. PALUDOSA Moench. Swallow Falls, Carnarvon, Miss A. B. COBBE.

1502. C. TARAXACIFOLIA Thuill. Berry Head, S. Devon, DRUCE.

†1503. C. SETOSA Hall. f. Lea Bank, near Roydon, Hertford, HIGGENS.

*1536. HIERACIUM HYPARCTICUM Elfstr. Near the head of Glen Shirra, Laggan, Easterness, MARSHALL, in *lit.*

1588. H. SURREJANUM F. J. H. Sandhurst, Berks., MONCKTON. Needs confirmation.

1589. H. EUPREPES F. J. H. High on Caenlochan, Forfar, DRUCE. Var. GLABRATUM Linton. By the railway, Rannoch, Mid Perth, DRUCE and BURDON.

1600 (2). H. MUTABILE Ley. Several places in the Burle Valley, above Dulverton, S. Somerset, MARSHALL, in *lit.*

*1607. H. MACULATUM Sm. Newburgh, Fife, Miss TODD.

*1609 (2). H. GRANDIDENS Dahlst. Plentiful on a railway bank south of East Anstey station, extending into N. Devon and S. Somerset, MARSHALL, in *lit.*

1610 (2). H. CACUMINATUM Dahlst. Railway embankment, N.E. of Somerton, Somerset (with some slight doubt), MARSHALL, in *lit.*

1630. H. RIGIDUM Fr. Abundant at Perth, 88, DRUCE, as forma. Var. SCABRESCENS Dahlst. Bitterne Park, S. Hants., RAYNER.

YORKSHIRE HIERACIA by JOHN CRYER, in *Naturalist* 59, 1916.

H. anglicum Fr., var. *Brigantum* (F. J. H.) W. R. LINTON, Ghaistrills, Bastow Wood, near Grassington; **H. lasiophyllum* Koch, var. *euryodon*, F. J. H., Cronkley Scar, Teesdale, 1913; *H. britannicum* F. J. H., Ling Gill, LINTON, and near Skipton; **H. scoticum* F. J. H., Ling Gill and Littondale, T. A. COTTON, 1892, and J. CRYER, 1913; **H. stenolepis* Lindeb., Heseldon Gill, 1915; *H. pellucidum* Laestad., Hackfall Woods, near Tanfield; **H. crebridens* Dahlst., Arncliffe, LINTON, and High Force. Each station yields a different form. **H. sagitattum* Lindeb., var. *subhirtum* F. J. H., Winch Bridge, 1914; **H. rotundum* Kit., Ling Gill, 1912. New to England. **H. caesium* Fr., Bastow Wood, Grassington, 1911; *H. acroleucum* Stenstr., Ling Gill; **H. mutabile* Ley, Heseldon Glen, 1913, Ling Gill, and Bastow Wood; **H. orarium* Lindeb., Heseldon Glen, 1915; *H. maculatum* Sm., Heseldon Glen, Bastow Wood, and Ling Gill; *H. rigidum* Hartm., var. *Friesii* Dahlst., Grassington; *H. crocatum* Fr., Ling Gill.

1641. HYPOCHAERIS GLABRA L., var. BALBISII Lois. Woodhall Spa, Lincs., HORWOOD.

1645. TARAXACUM LAEVIGATUM DC. Braunton, N. Devon, DRUCE.

†1648. LACTUCA VIROSA L. Tiverton, N. Somerset, DRUCE.

1649. L. SERRIOLA L. In a chalk pit near Corfe, Dorset, ! Mrs SANDWITH.

†1670. CAMPANULA MEDIUM L. Berry Head, S. Devon; Twerton, N. Somerset, DRUCE.

*1672. C. LATIFOLIA L. River Barle, above Dulverton, S. Somerset, MARSHALL. Some years ago the Rev. R. P. Murray found a single specimen which he thought was alien there, but Mr Marshall says it is to all appearance native.

1678. C. PATULA L. Near Church Stretton, Salop, Misses COBBE. A white-flowered plant from Mr Merriden, Warwick, in 1787, is painted by the Countess of Aylesford.

†1679. LEGOUSIA SPECULUM-VENERIS Dur. Wakefield, York, CRYER, *l.c.*

*1691. ARCTOSTAPHYLOS ALPINA Sprengel, new to Ireland. In the Herbarium of Bishop Mitchinson, the Master of Pembroke College, Oxford, which he has recently given me, I noticed specimens of the above plant localised Co. Donegal. In answer to my enquiry, the Bishop showed me his diary which contains the following entry:—"1865, July 14. We returned by Gweedore by car, gathering *Acrostaphylos alpina* on the way past Kilmacrenan to Letterkenny." His remembrance is that at their halting place they ascended a rocky eminence on which this plant was gathered. The Bishop had been in Scotland, where he knew *A. Uva-Ursi*, but after consulting his itinerary, it would seem quite unlikely that he should have met with *A. alpina* on his Scottish tour. This record should stimulate search in Donegal for this Alpine Bear-berry, not previously recorded for Ireland. It has a curious distribution in Scotland, its head centre being the western side of the County of Ross, where the plant is usually found about 2000 feet elevation on the rather bare shoulders of rocky hills among *Empetrum*, etc., in fairly full exposure.

*1715. LIMONIUM LYCHNIDIFOLIUM Kuntze, var. CORYMBOSUM Salm.! Cliffs at Crabbe, Jersey, Sep. 1916, ATTENBOROUGH. An extremely valuable addition to the Flora of Jersey. It is so restricted and in such small quantity in its Alderney station, where it might so easily be exterminated, that a new habitat which from its situation is in little danger of being destroyed, is especially welcome.

*1722. STATICE MARITIMA Mill., the holotrichous plant. Slapton Ley, S. Devon, DRUCE.

1745. CENTUNCULUS MINIMUS L. Leigh Woods, N. Somerset, Mrs SANDWITH and Rev. E. ELLMAN. A very rare plant in the Bristol district. Near Edenbridge, W. Kent, TALBOT, in *lit.* Talsarnau, Merioneth, Miss M. COBBE.

†1750. VINCA MAJOR L. In the beech wood above Roydon Heath, far from houses, HIGGENS; Hitchen, Herts., LITTLE.

1758. CENTAURIUM CAPITATUM Druce, in *Ann. Scot. Nat. Hist.* 48, 1905. Above Kynance Cove, Cornwall, Miss M. COBBE.

†1777. POLEMONIUM CAERULEUM L. Quite wild, but adventive, in marshy meadow, Wilsford, near Salisbury, Wilts., Miss JOSEPHINE WILKINSON, vide sp.; Hertford Heath, HIGGENS.

†1787. LAPPULA ECHINATA Gilib. Goring, Oxford, GAMBIER-PARRY; Chelmsford, Miss ROBINSON.

†1792. SYMPHYTUM PEREGRINUM Ledeb. Scalby, near Scarborough, *Hertf. Mus.*; Stanstead, Hertford, HIGGENS.

†1800. ANCHUSA OFFICINALIS L. Brislington, Bristol, Miss COBBE.

†1800 (2). A. OCHROLEUCA Bieb. Kirkstall, York, HORRELL.

†1802. A. AZUREA Mill. Marcham, Berks., DRUCE.

†1810. ASPERUGO PROCUMBENS L. Twerton, N. Somerset, Miss A. B. COBBE.

1822. LITHOSPERMUM OFFICINALE L., var. PSEUDO-LATIFOLIUM C. E. Salm. Netherlands Copse, near Merrow, Surrey, COMBER.

1845. SOLANUM DULCAMARA L., var. ALBIFLORA. Helston Road, near Lizard, Cornwall, Miss M. COBBE.

†1864. VERBASCUM BLATTARIA L.! Sleaford, Lincs., F. J. SMITH.

1865. V. PULVERULENTUM L. Ware, Herts., Miss TROWER and DRUCE.

1866. V. LYCHNITIS L., with yellow flowers. Behind Ware Park Mill, HIGGENS. The type, Hitchin, Herts., LITTLE.

*1867. V. NIGRUM L. Portmadoc, Carnarvon, † Miss M. COBBE.

†1872 (2). LINARIA MACEDONICA Griseb. On a railway wall, Brixham, S. Devon, DRUCE.

1873. L. VULGARIS Mill., var. PROSTRATA Domin. Pembrey, Carmarthen, DRUCE. *Var. LATIFOLIA Bab. Whaley, Derby, DRABBLE, in *J.B.* 137, 1916.

*1878. L. REPENS Mill. Sea-shore, near the toy railway, in great abundance, Portmadoc, Carnarvon, Miss M. COBBE. Perhaps introduced, but it also occurs in Cardigan.

*1883. L. MINOR Desf. Near the toy railway, Portmadoc, Carnarvon, Miss M. COBBE.

1892. SCROPHULARIA AQUATICA L., var. APPENDICULATA Mérat. Cothill, Berks., DRUCE.

*1893. S. ALATA Gilib. Pontuckel Wood, near Ruthin, Denbigh, 1916, HARNAMAN, vide sp.; Melbourne, Leicester, 1916, HORWOOD and CHESTER.

1894. S. NODOSA L., var. BOBARTII Pryor. Sully Island, Glamorgan, 1898, Miss E. VACHELL, in *lit.*

†1898. MIMULUS GUTTATUS DC. Near Bere, Dorset, Mrs SANDWITH.

†1899. M. MOSCHATUS Dougl. Between Llanberis and Cwm-y-Glo, Miss M. COBBE; near Sticklepath, Okehampton, Devon, Miss L. PERSHORE at Linn. Soc. Meeting, 1916; Ardingly, Sussex, Capt. A. SMITH, vide sp.

1904. ERINUS ALPINUS L.! Near Troy Station, on a wall of Troy House, Monmouth, May 1916, LAMB. It still grows abundantly on a wall at Henbury, W. Gloster, see *Fl. Bristol*, and is plentiful on the Roman remains near the Roman Wall, Northumberland, where it was, I believe, introduced by the father of Lord Stamfordham.

1907. VERONICA OFFICINALIS L., var. GLABRATA Bab.! Meall Farrnin Chor, above Appin, Mid Perth, HAGGART.

1912. V. ANAGALLIS L., VERA. Near Braunton, Devon; Chichester, W. Sussex, DRUCE.

*1936. EUPHRASIA OCCIDENTALIS Wettst. Black Crag, Stromness, Orkney, HALCRO JOHNSTON. See under *E. curta*, *Rep. B.E.C.* 273, 1912.

1951. RHINANTHUS MAJOR Ehrh. Still very abundant at East Haven, Forfar, where it also exists as a modification *var. ANGUSTIFOLIUS mihi. Foliis angustis, 2-3 mm. lata. DRUCE.

1956. R. BOREALIS Druce. *Cuchullins, Skye, SALMON. Abundant in Glen Phee, Glen Dole, Caenlochan, and in the West and Winter Corries, Clova, Forfar, R. & M. CORSTORPHINE and DRUCE; Ben Laoigh, Mid Perth, DRUCE.

*1960. MELAMPYRUM PRATENSE L., var. HIANS Druce. Woodland, N. Lancs., PEARSALL. See *Rep. B.E.C.* 362, 1915. Cathole, Derby, DRABBLE, in *J.B.* 138, 1916; Melvich, W. Sutherland, MARSHALL, in *J.B.* 171, 1916.

1962. OROBANCHE RAPUM-GENISTAE Thuill. Near Church Stretton, Misses COBBE.

1966 (2). O. RETICULATA Wallr., var. PROCERA (Koch) Druce. Hook Moor, near Aberford, W. Riding, F. ASHWELL, ex HORRELL.

*1969. O. PICRIDIS F. Schultz. Hoo, near Welwyn, Herts., 1822, *Hb. Blake*, as *minor*.

1971. O. MINOR Sm. Hamsworthy, Dorset, with ? in *Top. Bot.* DRUCE.

?*1976. UTRICULARIA MAJOR Schmid., fide Bennett. Common in shallow water among the stems of *Scirpus Tabernaemontani* Gmel., eight feet above sea level, Loch of Graemeshall, Holm, Mainland, Orkney, August 25, 1916. Plants neither in flower nor fruit, HALCRO JOHNSTON, in *lit.* Dr Glück says it is not possible to distinguish barren specimens of *major* from *vulgaris*, but the probability is in favour of *major* rather than *vulgaris* occurring in the Orkneys.

1988. MENTHA ROTUNDIFOLIA Huds.! Near South Church, Bishop Auckland, Rev. E. M. REYNOLDS.

†1989. M. ALOPECUROIDES Hull. By the Thames at Oxford, GAMBIER-PARRY; churchyard, Wigginton, RIDDELSDELL; both adventive.

1990. M. LONGIFOLIA Huds. Scampston Park, by the lake, W. H. ST. QUINTIN and DRUCE. This may be put under *Nicholsoniana*. Twerton, N. Somerset, with M. SPICATA L., DRUCE.

1993. ×M. PIPERITA L. Gower, Glamorgan, Miss E. VACHELL; Llanmadoc, Glamorgan, DRUCE.

1994. M. AQUATICA L., var. MINOR Sole. Sand-dunes, Kidwelly, Carmarthen, DRUCE. Var. MAJOR Sole. Barrington, Combe, N. Somerset, Miss TODD.

1997. ×M. GENTILIS L.! Ribblehead, York, Rev. E. M. REYNOLDS.

1999. ×M. RUBRA Sm. Twerton, N. Somerset, DRUCE.

*2001. M. PULEGIUM L.! Wrington, Somerset, on the edge of a wood, Miss TODD. Not given in *Fl. Som.*, but in *Top. Bot.* it says "5 or 6"; Hayling Island, S. Hants., a new locality, NOEL SANDWITH.

2004. ORIGANUM VULGARE L., var. MEGASTACHYUM Koch, but not an extreme form. Cheddar, N. Somerset, Miss TODD; *Lathkill Dale, Derby, DRABBLE, in *J.B.* 138, 1916.

2011. SATUREIA CALAMINTHA Scheele. Wareside, Herts., HIGGENS.

2012. S. NEPETA Scheele. Royston, Herts., ANDREWS.

†2017. MELISSA OFFICINALIS L. Kingston, N. Somerset, Miss TODD; Churchill, N. Somerset, Miss M. COBBE; Llammadoc, Glamorgan, DRUCE; Portmadoc, Carnarvon, Miss M. COBBE; Patshull, Staffs., MILLER, ex Lady JOAN LEGGE.

†2020. SALVIA AETHIOPIS L. Wakefield, York, CRYER, in *Nat.* 250.

†2029. S. HORMINUM L.! Near Kettering, Northants., CHESTER. Battandier and Trabut treat it as a var. of *S. viridis* in *Fl. Alger.*

†2039. DRACOCEPHALUM PARVIFLORUM Nutt. Wakefield, York, CRYER, *l.c.*

2042. SCUTELLARIA GALERICULATA × MINOR. Isle of Purbeck, Dorset (SUPER-GALERICULATA), Rev. E. ELLMAN and J. GREEN.

†2048. SIDERITIS MONTANA L. Elland, York, HORRELL; Wakefield, York, CRYER, *l.c.*

†2055. STACHYS LANATA Jacq. This is the plant recorded in *J.B.* 233, 1916, as *S. germanica*, from a chalk pit, Steephill, Isle of Wight, as Mr Hunnybun kindly informs me. Of course it is adventive.

*2056. × S. AMBIGUA Sm. Patshull, Staffs., MILLER, ex Lady JOAN LEGGE.

2057. S. PALUSTRIS L., var. CANESCENS Lange. Port Meadow, Oxon.; near Chesters, Northumberland, DRUCE.

†2059. S. ANNUA L. Portishead Station, N. Somerset, Miss TODD; Godalming, Surrey, DRUCE; Halifax, York, HORRELL.

2065. LEONURUS CARDIACA L. Talsarnau, Merioneth, Miss M. COBBE.

†2067. WIEDEMANNIA ORIENTALIS F. & M. Portishead, N. Somerset, Miss LIVETT, ex WHITE; Wakefield, York, CRYER, in *Nat.* 250.

†2089. PLANTAGO INDICA L. (RAMOSA). Ware, Herts., HAYLLAR; Wakefield, York, CRYER, *l.c.*

*2091 (2). P. HUDSONIANA Druce. Ben Laoigh, Mid Perth, DRUCE.

2092. P. LANCEOLATA L., var. ELLIPTICA Druce. Babbacombe, S. Devon, Lady DAVY; Wareside, HIGGENS; Slough, Bucks., DRUCE.

†2095. P. LAGOPUS L. Wakefield, York, CRYER, *l.c.*

†2110. AMARANTHUS RETROFLEXUS L. Pyrford, Surrey, Lady DAVY; Thetford, Norfolk, ROBINSON; Portmadoc, Carnarvon, Miss COBBE.

†2114. A. CHLOROSTACHYS Willd., var. ARISTULATUS Thell. Meanwood Tannery, Leeds, HORRELL. Det. A. THELLUNG.

2117. CHENOPODIUM RUBRUM L. Gt. Bedwyn, Wilts., HURST; Portmadoc, Carnarvon, Miss M. COBBE. Confirms Robinson's record for 49.

†2118. C. BOTRYODES Sm. Wakefield, York, CRYER, *l.c.*

†2120. C. HYBRIDUM L. Cardiff, Glamorgan, DRUCE; Hertford canal dredgings, HIGGENS.

†2121. C. URBICUM L. Near Ridge, Dorset, Mrs SANDWITH.

†2122. C. MURALE L. Buryport, Carmarthen, DRUCE; Meanwood, Leeds; near Scarborough, York, HORRELL. Var. MICROPHYLLUM C. & G. West Drayton, Middlesex; Brislington, N. Somerset, Miss M. COBBE.

†2123. C. OPULIFOLIUM Schrad. Thetford, Norfolk, ROBINSON.

†2124. C. ALBUM × BERLANDIERII. Galashiels, Selkirk, Miss I. M. HAYWARD.

†2125. C. LEPTOPHYLLUM Nutt. Pyrford, Surrey, Lady DAVY; Thetford, Norfolk, ROBINSON.

†2127. C. GLAUCUM L. *Field border, Goonhavern, TRESSIDER; between Truro and Malpas, Cornwall, Misses COBBE; near Petersfield, S. Hants., still persisting in 1916 on a place where manure had been piled, CECIL and NOEL SANDWITH; Middleton, Durham, REYNOLDS.

†2131 (3). C. HIRCINUM Schrad. In a farmyard at Barsby, Leicester, HORWOOD (as *C. Vulvaria*) in *Rep. B.E.C.* 368, 1915; Portmadoc, Carnarvon; West Drayton, Middlesex, Misses COBBE, vide sp.

†2134. C. VIRGATUM Jessen! Elland, York, HORRELL.

†2135. ROUBIEVA MULTIFIDA Moq. Winscombe, N. Somerset, Miss I. M. ROPER.

†2139. SPINACIA OLERACEA L. Wakefield, York, CRYER, *l.c.*

†2145. ATRIPLEX TATARICA L. Wakefield, York, CRYER, *l.c.*

*2158 (2). SALICORNIA DOLICHOSTACHYA Moss. Taw Estuary, N. Devon, HIERN. See MARSHALL, in *J.B.* 141, 1916.

*2160. S. RAMOSISSIMA Woods. Cofton and Dawlish, S. Devon; Taw Estuary, N. Devon, MARSHALL, *l.c.*; Jersey, ATTENBOROUGH.

*2161 (2). S. GRACILLIMA Moss. Taw Estuary, N. Devon, MARSHALL, *l.c.*

*2161 (3). S. DISARTICULATA Moss. Dawlish, S. Devon; Taw Estuary, N. Devon, HIERN. See MARSHALL, *l.c.*

2178. POLYGONUM MITE Schrank. St. Helen's Green, Isle of Wight; *Broxbourne Wood, Herts., 1916, HIGGENS.

2184. P. HETEROPHYLLUM Lindm., probably slightly crossed with AEQUALE. Leicester, A. J. WADE.

†2191. P. CUSPIDATUM S. & Z. Tweedside, Galashiels, Selkirk, Miss I. M. HAYWARD.

†2193. FAGOPYRUM TATARICUM Gaertn. Throxenby Mere, near Scarborough, York, HORRELL.

*2195 (2). RUMEX MAXIMUS Schreb. Near Chichester, W. Sussex, BURDON and DRUCE.

2196. × R. CONSPERSUS (Hartm.) Brechin, Forfar, with both its assumed parents, R. & M. CORSTORPHINE and DRUCE; waste ground, Perth, BARCLAY and DRUCE.

2198. × R. PROPINQUUS (Aresch.) Brechin, Forfar, with both its assumed parents, R. & M. CORSTORPHINE and DRUCE.

2207. R. MARITIMUS L. Goring, Oxon., GAMBIER-PARRY; Patshull, Staffs., Lady JOAN LEGGE; †Llanberis, Carnarvon, 1916, Misses COBBE, vide sp.; Dundee, Forfar, CORSTORPHINE, DRUCE, and SMITH.

†2210 (4). R. BROWNII Campd. Alien. Meanwood, Leeds, York, HORRELL.

†2229. EUPHORBIA ESULA L. Near Chichester, W. Sussex, BURDON; near Midhurst, W. Sussex, DRUCE; gravel pits, Hertford, HIGGENS; Ware, Herts., DRUCE; Avon side, Evesham, Worcester, LAMB.

†2230. E. CYPARISSIAS L.! Turfy spot, near Exmouth, S. Devon, 1916, Lady DAVY.

*2245. ULMUS GLABRA Mill. Near Chichester, W. Sussex, DRUCE.

†2246. U. WHEATLEYI. Hortal. Near Chichester, W. Sussex, DRUCE.

†2248. CANNABIS SATIVA L. In some abundance at Portmadoc, Carnarvon, Miss M. COBBE.

†2249. FICUS CARICA L. Alien. Vacant site in Farringdon Street, Middlesex, with *Pteris*, *Petroselinum sativum*, *Melilotus*, etc., J. C. SHENSTONE.

†2263. QUERCUS CERRIS L. In abundance and naturalised (that is self sown) in Limeridge Woods, Tickenham, N. Somerset, WHITE, in *lit.*; Nassau Woods, Merioneth, BARTON.

†2264. Q. ILEX L. Hundreds of dwarf bushes on south side of Boniface Down, Ventnor, Isle of Wight, 1916. Said to have been sown there. The south side of the Down is so exposed that they are mere scrub. HUNNYBUN, in *lit.*

2271. × SALIX RUBRA (Huds.)! St Margaret's, Herts., HIGGENS; sides of Tweed, Galashiels, Selkirk, DRUCE and Miss I. M. HAYWARD; by a small stream-side, St Cyrus, Kincardine, DRUCE.

2274. × S. SMITHIANA (Willd.). In the shingle of the Earn at Dunning, Mid Perth, looking as if it had been seeded there, DRUCE.

†2289. POPULUS CANESCENS Sm. Near Chichester, W. Sussex, DRUCE.

†2291. P. EU-NIGRA L. Wareham, Dorset, DRUCE.

*2299. HYDROCHARIS MORSUS-RANAE L. Pond between Norton and Freshwater. New to the Isle of Wight as a native, HIGGENS, in *lit.*

2303. CORALLORRHIZA TRIFIDA Chat. Rothiemurchus, Easterness, Rev. J. ROFFEY, in *lit.*

2316. HELLEBORINE LATIFOLIA Druce, var. ANGUSTIFOLIA Druce. "Sneyd's Coppice, Worcester, in great quantity, with none of the type plants present, only the narrow-leaved variety; therefore it seems that Mr Druce's variety is entitled to specific rank." *Rep. of Worcestershire Naturalists' Club* 1916.

*2317. H. MEDIA Fries. Ayott Green, *Hb. Blake*; Ashridge, Herts., DRUCE; Patshull, Staffs., JOYCE, ex Lady JOAN LEGGE.

[2319. H. ATRORUBENS (Roehl.) Druce. Sandhurst, Miss HINDE in Monckton's *List.* The record must be queried until corroborated, as I have not been able to see specimens.]

*2319 (2). H. VIRIDIFLORA Trav. and Wheld. Newborough Warren, Anglesey, TRAVIS, in *J.B.* 247, 1916.

2324. ORCHIS MORIO L. and 2330 O. PYRAMIDALIS L. Isle of Lambay, Co. Dublin, CECIL BARING, in *Ir. Nat.* 1915.

2326 (2). O. CRUENTA O. F. Muell. Hawkshead, N. Lancs.; Isle of Arran. The name was corroborated at Kew for T. A. Stephenson, who, in *lit.*, remarks that they agree well with the description and figure in *Flora Danica*, except in the less heavily spotted leaves. The specimens sent me from Hawkshead were spoiled in the post, but I thought the labellum was somewhat different from the *Flora Danica* plate. If these are *cruenta* much of the northern *incarnata* probably belongs here.

2331. O. HIRCINA Cr. *On the chalk near Guildford, Surrey. A specimen was found by some children and taken to Mrs Gibson, who kindly sent me a blossom as a voucher. It flowered this year splendidly near Chichester, teste the Duke of Richmond, and also near Canterbury, teste Mr Walker.

*2335. OPHRYS APIFERA Huds. Coolmore, Donegal, DELAP, in *Ir. Nat.* 270.

2338. HABENARIA ALBIDA × CONOPSEA. Glen Feshie, Easterness, ROFFEY, in *lit.*

2343. H. BIFOLIA Br. Cathole, Derby, DRABBLE, in *J.B.* 138, 1916.

†2353. HERMODACTYLUS TUBEROSUS Mill. By the roadside, near Stogumber, MARSHALL, in *J.B.* 103, 1916.

†2355. CROCUS VERNUS Mill. (C. AUREUS Sibth.). Charlton, Kent, COOPER, in *Mag. Zool. and Bot.* 495, 1837.

†2357. C. ALBIFLORUS Kit. (C. VERNUS All. not Mill.). *Meadow near Freshwater, Isle of Wight, in great quantity, STRATTON, in *J.B.* 114, 1916. At Warley, Brentwood, Essex, Miss E. WILLMOTT, in the *Garden*, March 25, 1916. Miss Willmott has traced its existence in this locality back to 1630.

†2359 (2). LIBERTIA FORMOSA Graham. Quite naturalised at Hartland Abbey Wood, N. Devon. Shown me by Lady STUCLEY.

†2363 (4). TRITONIA CROCOSMIFLORA Nicholson. Between Bettws and Llanwrst, Carnarvon, Misses COBBE; waste railway bank, Newport, Isle of Wight, 1916, HIGGENS; on rubbish heap, Brechin, Forfar, R. & M. CORSTORPHINE and DRUCE.

†2372. NARCISSUS BIFLORUS Curtis. In plenty, wild over 20 acres near Colchester. See *Gard. Chron.* 700, 1876. Does it still exist there? Still abundant at Tackley, Oxfordshire, DRUCE; N.-W. of Isle of Wight, near the cliff, WILKINSON, in *Gard. Chron.* 762, 1876.

†2377. GALANTHUS NIVALIS L. Ayston Wood, Rutland, HORWOOD.

2395. ALLIUM SCORODPRASUM L. Loch Fithie, Forfar, R. & M. CORSTORPHINE. See *Rep. B.E.C.* 374, 1915.

2396. A. VINEALE L., var. COMPACTUM (Thuill.) West Kennack Valley, Cornwall, Miss M. COBBE.

†2402. A. CARINATUM L.! Banks of the Esk, at Musselburgh, C. R. SCOTT.

†2408. HYACINTHUS COMOSUS L. (MUSCARI). In cornfield, on Upper Cliff, St. Lawrence, Isle of Wight, 1916, HUNNYBUN, in *lit.*; a casual in a garden sometimes flooded by the Thames at Sutton Courtenay, Berks., Miss N. LINDSAY.

†2409. SCILLA VERNA Huds. In abundance at Hartland, N. Devon (not in *Top. Bot.* for v.-c. 4). Shown me by Lady STUCLEY.

2410. S. AUTUMNALIS L., var. ALBIFLORA. St. Helen's Spit, Isle of Wight, HIGGENS, in *lit.*

†2411 (2). S. HISPANICA Miller! Two plants in a gorse bush, Bull's Green, Datchworth, Herts., HIGGENS.

*†2415. LILIUM PYRENAICUM Gouan. This was found in some quantity by the side of the road between Haverford West and St. David's, Pembrokeshire, by Bishop Mitchinson in 1866. A very interesting record.

2419. TULIPA SYLVESTRIS L. Well Green, Brickendon, Herts., HIGGENS.

†2441. JUNCUS TENUIS Willd. *Near Wellington College, Sandhurst, Berks., Monckton's *List*, but I have not seen a specimen. Near Llanberis; on mud scrapings near the lake at Capel Curig; in timber yard, on waste ground, at Portmadoc, Carnarvonshire, for which county it is on record, Miss A. B. COBBE, vide sp. Talsarnau, Merioneth, Miss A. B. COBBE. See also Major WOLLEY-DOD, in *J.B.* 88, 1916.

2442. J. RANARIUS Perr. and Song. Wareham, Dorset, DRUCE; King's Quay, Osborne, Isle of Wight, STRATTON, in *J.B.* 371, 1916.

2443. J. MUTABILIS Lam. Damp cart tracks in the Downs between the Lizard and Hayle, Cornwall, Miss A. B. COBBE.

2444. J. CAPITATUS Weig. About 8 miles east of the original locality, Cornwall, 1916, Misses COBBE.

†2450. JUNCOIDES NEMOROSUM Mor.! Near Errol, Perth, Miss TODD.

†2459. PHOENIX DACTYLIFERA L. A great quantity of seedling dates occurred at West Drayton, Middlesex, and at Brislington, N. Somerset, Miss M. COBBE; Mortlake, Surrey, O. STAPF, in *Kew Bulletin* 1916.

*2460. TYPHA LATIFOLIA L. Braunton, N. Devon, DRUCE.

2478. ELISMA NATANS Buchenau. Canal between Manchester and Macclesfield, 1916, ADAMSON, in *lit.*

2488. POTAMOGETON COLORATUS Hornem. Hertford Heath, a second locality for Herts., HIGGENS.

2489. P. ALPINUS × LUCENS. Bindon Mill Dam, near Wool, Dorset, GREEN. See BENNETT, in *J.B.* 306, 1916.

*2489. P. ALPINUS × GRAMINEUS ? = P. GRACILIS Wolfg. Loch Moraig, E. Perth, 1916, BARCLAY. The second Scottish locality, the other being Loch of Lumbister, Yell, Shetland. See BENNETT, in *Proc. Perth. Soc. Nat. Sc.* vi., pt. iii., 10, 1916.

2489. P. ALPINUS Balb. Near Edenbridge, W. Kent, TALBOT, in *lit.* Rare in Kent.

*2506. P. OBTUSIFOLIUS M. & K. Mynydd-y-Gliww, Glamorgan, in a small lake, 1915, Miss E. VACHELL, in *lit.*

2534. SCIRPUS LACUSTRIS L., with bract twice as long as inflorescence. Broxbourne, Herts.; Essex, HIGGENS.

2548. ERIOPHORUM ANGUSTIFOLIUM Roth, var. TRIQUETRUM Fr. Near Wareham, Dorset, Mrs SANDWITH and DRUCE. The Rev. T. A. Jeffries sent me from Wicken Marsh, near Littleborough, an enormous specimen of the above species with a stem 3½ feet high and leaves 46 inches long.

*2549. E. GRACILE Roth. Britty Common, S. Somerset, at 900 feet, MARSHALL, in *J.B.* 103, 1916. A very interesting extension of its range.

2559. CAREX RIPARIA × VESICARIA. Wytham Meadows, Oxon; Berks., with both parents, DRUCE.

2570. C. HELODES Link. Castle Hill, N. Devon, DRUCE; Llanbedr, Merioneth, Miss M. COBBE.

*2572. C. SADLERI Linton. On the cliffs of Ben Laoigh, Argyll, at about 3000 feet, very rare, August 1916, with Col. F. J. SMITH. In the vicinity grew *C. binervis* var. *nigrescens* but the shorter

stature and the fewer-fruited spikelets, with the longly attenuate perigynium, readily distinguished the plant. It seems sufficiently distinct from the polymorphic *binervis* to warrant specific rank. It indeed recalled *frigida*, for which Mr Sadler, its discoverer in Glen Callater, mistook it.

2588. C. VERSICOLOR Crantz, var. STICTOCARPA (Sm.) Druce. Ben Laoigh, Mid Perth, DRUCE; Scone, East Perth, Miss TODD, vide sp. Var. AMBLIOCARPA (Willd.) Druce. Glen Dole, Forfar, DRUCE.

*2594. C. RARIFLORA Sm. Ben Lawers, Mid Perth, CUMMING. Verified by Rev. E. S. MARSHALL. It is an extremely interesting addition to the flora of the Breadalbanes, and along with *Saxifraga rivularis* and *Veronica alpina* is another example of the presence of elements of the Grampian flora. *Cerastium trigynum* should be specially sought for there. Watson says it grows under the dark rocks on the north side from which the snow water trickles down to the spot it occupies. This is near the locality for *Carex helvola*.

2604. C. GOODENOWII Gay, var. MELAENA Wimm ! Simonsbath, S. Somerset, Lady DAVY. Var. CHLOROSTACHYA Asch. Lizard, Cornwall, Lady DAVY. A very obese form.

2614. C. LEERSII F. Schultz. Slapton, S. Devon, DRUCE. To this, I think, belongs a specimen gathered near Petworth, W. Sussex, DRUCE.

2617. C. PANICULATA L., var. PSEUDO-PARADOXA (Gibs.) A. & G. If Mr Salmon identifies the plant from Restennet, Forfar, as this variety, and I see no reason to doubt it, it will sink in synonymy as Kükenthal named my specimens from the same area as var. *simplicior* Anders. Spica angusta, spiculis parum decompositis, pedunculis arrectis, *Pl. Scand.* 67, 1849, itself antedated by var. *simplex* Peterm. (var. c. of my *List*).

*2632. PANICUM CRUS-GALLI L. Thetford, Norfolk, ROBINSON. Var. BREVISETUM Doell. Brislington, N. Somerset, Miss M. COBBE. Forma DEPAUPERATA ! Pyrford, Surrey, Lady DAVY.

†2634. P. SANGUINALE L. Brislington, N. Somerset (with P. MILIACEUM L.), Miss A. B. COBBE.

†2637. P. CAPILLARE L. Thetford, Norfolk, ROBINSON.

†2639. SETARIA VIRIDIS Beauv. Between Truro and Malpas, Cornwall; Portmadoc, Carnarvon; Uxbridge, Middlesex, Miss M. COBBE; abundant near Thetford, Norfolk, ROBINSON; *Wakefield, York, CRYER, in *Nat.* 251.

*†2640. S. GLAUCA R. & S. Wakefield, York, CRYER, *l.c.*

2646 (2). BECKMANNIA ERUCIFORMIS Host. Near Goring, Oxon.! GAMBIER-PARRY.

†2653. PHALARIS MINOR Retz. Cobham, Kent, Miss RIDLEY, vide sp.; Avonbank, W. Gloster, Miss M. COBBE.

†2654. P. PARADOXA L. Twerton, N. Somerset; Cardiff, Glamorgan, DRUCE; Avonbank, W. Gloster, Miss M. COBBE.

†2656 (2). P. ANGUSTA Nees! Galashiels, Selkirk, Miss I. M. HAYWARD.

2673. PHLEUM PRATENSE L., forma STOLONIFERUM (Bab.) Pembrey, Carmarthen, DRUCE.

†2683. AGROSTIS VERTICILLATA Vill. Banks of Avon, Avonmouth, W. Gloster, Miss A. B. COBBE.

2684. A. ALBA L., var. MAJOR Gaud. Burton Latimer, Northants., CHESTER, vide sp.; *Nether Loads, Derby, DRABBLE, in *J.B.* 139, 1916; Forteviot, Perth, v.-c. 88, DRUCE. Var. ARMATA (Celak.) Roslin Glen, Cramond, Midlothian, FRASER.

†2699. APERA SPICA-VENTI Beauv. Dundee, Forfar, CORSTORPHINE and DRUCE.

†2700. A. INTERRUPTA Beauv. In a sand pit of about ½ acre, Flixton, near Scarborough, A. J. BURNLEY, vide sp.; †Wakefield, York, CRYER, in *Nat.* 251.

†2701. A. INTERMEDIA Hackel. Wakefield, York, CRYER, *l.c.*

2725 ARRHENATHERUM TUBEROSUM Gilib. St. Cyrus, Kincardine, 1916, DRUCE.

†2737. CYNOSURUS ECHINATUS L. Found abundantly on the South Inch, Perth, in June 1916, by Mr J. Menzies. In the previous autumn a company of the Army Service Corps was encamped on the meadow and doubtless fodder supplied to their horses had furnished seed from which sprung this alien grass. BARCLAY. Thetford, Norfolk, ROBINSON; Brislington, N. Somerset, Miss I. M. ROPER.

2742. KOELERIA ALBESCENS DC., var. GLABRA DC. Abraham's Bosom, Anglesey, TRAVIS.

†2744. K. PHLEOIDES Pers. Thetford, Norfolk, ROBINSON.

*2759 (2). POA IRRIGATA Lindman. In some quantity in a very wet sloping alpine pasture through which water moved, growing with *Phleum alpinum*, Caenlochan, Forfar, DRUCE.

2762. P. NEMORALIS L., var. SUBUNIFLORA Reichb. Harlech, Merioneth, Col. F. J. SMITH.

2765. P. COMPRESSA L. Mid Perth; Dundee, Forfar, DRUCE.

*2777. GLYCERIA BORRERI Bab. Sands of Barry, Forfar, DRUCE.

2785. FESTUCA RUBRA L., var. ARENARIA (Osb.). Sand dunes, St Cyrus, Kincardine, M. CORSTORPHINE and DRUCE.

†2789 (2). F. GENICULATA Willd. (VULPIA)! Musselburgh, Midlothian, 1914, FRASER.

†2792 (3). F. CYNOSUROIDES (VULPIA CYNOSUROIDES Boiss.)! Musselburgh, Midlothian, FRASER.

†2794. BROMUS RIGENS L. (B. MAXIMUS Desf.). Brislington, N. Somerset, Miss M. COBBE.

†2797. B. TECTORUM L. Falmouth, Cornwall, Miss COBBE; Wakefield, York, CRYER, in *Nat.* 251.

†2803. B. UNIOLOIDES H. B. K. Near Thetford, Norfolk, ROBINSON; Uxbridge, Drayton, Middlesex, Miss COBBE.

†2806. B. SECALINUS L., var. VELUTINUS Koch. Uxbridge, Middlesex; Brislington, N. Somerset, Miss M. COBBE.

†2809. B. ARVENSIS L. Cranford, Northants., CHESTER, vide sp.; Wakefield, York, CRYER, *l.c.*

†2816. B. SQUARROSUS L. Thetford, Norfolk, ROBINSON.

†2821. LOLIUM TEMULENTUM L. Thetford, Norfolk, with var. ARVENSE (With.), ROBINSON.

2827. × AGROPYRON HACKELII Druce (A. JUNCEUM × REPENS). Very luxuriant at St. Cyrus, Kincardine, M. CORSTORPHINE and DRUCE.

2830. A REPENS Beauv., var. GLAUCUM Doell. Chichester Harbour, Sussex, DRUCE.

2850. HORDEUM MARINUM Huds. Wakefield, York, CRYER, in *Nat.* 251.

2866. EQUISETUM MAXIMUM Lam, var. SEROTINUM Braun. Wormley Wood, Herts., HIGGENS.

2867. E. ARVENSE L., var. NEMOROSUM Braun. Desford, Leicester, HORWOOD.

2870. E. LIMOSUM L., var. POLYSTACHIUM Lej. Wareham, Dorset, 1916, Mrs SANDWITH and DRUCE. This necessarily belongs to the var. *fluviatile* of *E. limosum*. It occurred in great quantity and presented a striking appearance.

2874. E. VARIEGATUM Schleich., var. ARENARIUM Newm.! Morfa, Harlech, Merioneth, 1916, Misses COBBE.

*2877. ADIANTUM CAPILLUS-VENERIS L. Near Arnside, Westmorland, PEARSALL.

2883. ASPLENIUM LANCEOLATUM Huds. Gowlin, at the foot of Blackstairs, Co. Carlow, PHILIP, in *Ir. Nat.* 1915.

2885. A. ADIANTUM-NIGRUM L. Broxbourne, Herts., HIGGENS. A rare plant in Herts.

2896. DRYOPTERIS FILIX-MAS Schott, var. CRISTATA (Moore)! Polperro, Cornwall, RILSTONE.

2906. CYSTOPTERIS FRAGILIS Bernh. On a wall at Bray, Berks., 1916, RIDDELSDELL.

*2908. PHEGOPTERIS POLYPODIOIDES Fée! Near the Barle, S. Somerset, Lady DAVY.

†2909. P. DROPTERIS Fée. On a wall with the Black Spleenwort, at Broxbourne, Herts., HIGGENS, in *lit.* Doubtless adventive. *P. calcarea* is recorded for Broxbournbury in *Fl. Herts.*, probably in mistake for this. The record for the Bagshot *List* is an error.

2915. TRICHOMANES RADICANS Sw. Co. Carlow, PHILIP, in *Ir. Nat.* 1915.

2933. NITELLA FLEXILIS Ag. Kindrum Lough. An abnormal form, perhaps, of this species, Lough Shannagh, E. Donegal, Rev. Canon BULLOCK-WEBSTER.

2934. N. OPACA Ag. Dyke, near Bawtry, Yorks. Specimens were fruiting in December 1916 when children were skating in an adjoining field, Mrs SANDWITH. Once I saw *N. mucronata* fruiting under the ice near Oxford.

The following Characeae from E. Donegal were found in 1916 by the Rev. Canon BULLOCK-WEBSTER, and were published in the *Ir. Nat.* 2, 1917:—

2936. *N. translucens* Ag. Lough Shannagh. 2940. *N. Nordstedtiana* Groves (*N. confervacea* Braun) Kindrum Lough. 2942. *N. glomerata* (Chevall.). Lough near Ballylar. 2950. *Chara contraria* Braun and var. *hispidula* Braun. Lough near Melmore Head. 2951. *C. hispida* L., and var. *rudis* (Br.) Tra Lough. 2955. *C. aspera* Willd., var. *subinermis* Kuetz. Tra Lough. 2955. *C. desmacantha* (H. & J. Groves). Rinboy Lough, Tra Lough. 2958. *C. fragilis* Desv., var. *capillacea* C. & G. Lough near Melmore Head.

ALIENS AT ST. PHILIP'S MARSH, BRISTOL.

This piece of waste ground at Bristol, W. Gloster, is frequently mentioned in Mr J. W. White's fascinating *Flora*. Many of the following plants are given there. A few exist from year to year and others are from time to time introduced. Grain, fruit packings, and warehouse sweepings account for many. During the past year the site has been carefully searched by such lynx-eyed observers as Misses A. B. & M. Cobbe, Lady Davy, Mrs Sandwith, and Mr T. H. Green, and I have visited it on three occasions. To save space those records are brought together. A few are additions to the *British Plant List*. Two stars mean that it is new to the vice-county. Unless otherwise stated, the records are due to the Misses Cobbe. Those seen by myself have ! added. Those not included in the *Flora of Bristol* for this place are starred. **31. *Ranunculus muricatus* L. *84. *Papaver hybridum* L. *91. *Roemeria hybrida* DC. 91. *Glaucium corniculatum* Curt. ! **93. *Eschscholzia californica* Cham. 184. *Sisymbrium altissimum* L. ! 185. *S. orientale* L. ! 200. *Conringia orientalis* Dum. ! **201. *C. austriaca* Sweet. 202. *Camelina sativa* Cr. **224. *Brassica incana* Schultz ! 226. *Diplotaxis tenuifolia* DC. 227. *D. muralis* DC., var. *Babingtonii* (Syme). **228. *Eruca sativa* Mill. **235. *Lepidium graminifolium* L. 237. *L. Draba* L. ! 240. *L. ruderale* L. ! **240 (2). *L. neglectum* Thell. 249. *Thlaspi arvense* L. ! 258. *Vogelia paniculata* Horn. ! 260. *Myagrum perfoliatum* L. 268. *Rapistrum rugosum* All. ! 327. *Gypsophila porrigens* Boiss. ! 331. *Saponaria Vaccaria* L. ! **336. *Silene Cucubalus* Wibel, var. *carneiflora* Legr. ! 339. *S. conoidea* L. 341. *S. dichotoma* Ehrh. **342. *S. gallica* L. ! 343. *S. anglica* L. **363. *Lychnis macrocarpa* Boiss. Misses Cobbe and Druce. **375. *Cerastium dichotomum* L. ! *443. *Althaea hirsuta* L. ! 468. *Linum usitatissimum* L. 494. *Erodium moschatum* L'Hér. ! **548. *Trigonella Foenum-graecum* L. 550. *T. polycerata* L. 554. *T. M. caerulea* Druce ! 562. *Medicago Falcata* L. ! 564. *M. sativa* L. **566. *M. orbicularis* All. T. H. Green. 579. *M. hispida* Gaertn., var. *denticulata* Burnat ! Var. *apiculata* Burnat ! 593. *M. officinalis* Lam. ! 595. *Melilotus alba* Desr. 596. *M. arvensis* Wallr. !

597. *M. indica* All. ! **605. *Trifolium lappaceum* L. Miss M. Cobbe and T. H. Green. I saw it there in 1915. 622. *T. resupinatum* L. **625. *T. spumosum* L. **657. *Astragalus baeticus* L. *666. *Coronilla varia* L. ! *667. *C. scorpioides* Koch. *676. *Cicer arietinum* L. 683. *Vicia varia* Host. *685. *V. monanthos* Desf. *687. *V. bithynica* L. ! 690. *V. narbonensis* L. ! 691. *V. lutea* L. ! 695. *V. melanops* Sibth. & Sm. 697. *V. sativa* L. **723 (2). *Lathyrus hierosolymitanus* Boiss. This is doubtless the pea mentioned by Mr White. 724. *L. Ochrus* L. ! 726. *L. Aphaca* L. ! **731. *Pisum arvense* L. ! *731 (2). *P. humile* Boiss. & Noe. *906. *Potentilla norvegica* L. Miss A. B. Cobbe and T. H. Green. 1049. *Epilobium tetragonum* L., var. *stenophyllum* Druce ! *1061. *Oenothera biennis* L. ! **1101. *Ammi majus* L. ! **1102. *A. Visnaga* Lam. T. H. Green. **1124. *Scandix australis* L. ! 1130. *Foeniculum vulgare* Mill. ! **1130 (2). *F. piperitum* All. ! 1135. *Oenanthe pimpinelloides* L. 1138. *Oe. fistulosa* L. 1157. *Coriandrum sativum* L. ! 1166. *Caucalis daucoides* L. 1171. *C. latifolia* L. ! 1201. *Galium tricorne* Stokes. 1203. *G. spurium* L., var. *Vaillantii* DC. 1210. *Asperula arvensis* L. ! **1228. *Valerianella discoidea* Lois. Mrs Sandwith. *1242. *Grindelia squarrosa* Dunal ! **1294. *Xanthium Strumarium* L. Miss I. M. Roper. *1295. *X. spinosum* L. ! **1299. *Helianthus decapitatus* L. ! **1317. *Hemizonia Kelloggii* Greene ! Miss A. B. Cobbe and T. H. Green. 1338. *Anthemis tinctoria* L. 1343. *A. arvensis* L. 1351. *Chrysanthemum segetum* L. 1354. *C. coronarium* L. 1362. *Matricaria suaveolens* Buch. 1367. *Artemisia Absinthium* L. *1443. *Mariana lactea* Hill ! 1462. *Centaurea Solstitialis* L. ! 1463. *C. melitensis* L. ! 1465. *C. Calcitrapa* L. ! **1467. *C. pallescens* Delile ! **1470. *C. salmantica* L. ! **1477. *Carthamnus tinctorius* L. 1485. *Rhagadiolus stellatus* Gaertn. 1729. *Androsace maxima* L. 1742. *Anagallis femina* Mill. ! 1787. *Lappula echinata* Gilib. ! 1789 (2). *Benthamia* (*Amsinkia*) *angustifolia* Druce. 1800. *Anchusa officinalis* L. *1805. *Lycopsis arvensis* L. 1810. *Asperugo procumbens* L. *1824. *Lithospermum arvense* L. **1827. *Echium plantagineum* L. 1844. *Lycopersicum esculentum* Mill. 1846. *Solanum nigrum* L. **1851. *Physalis foetens* Poir. Misses Cobbe and Druce. 1855. *Datura Stramonium* L. 1856.

Hyoscyamus niger L. 1864. *Verbascum Blattaria* L. *1870. *V. phoeniceum* L. **1879 (3). *Linaria arvensis* Desf. **1946. *Bartsia Trixago* L. 1973. *Orobanche ramosa* L. T. H. Green 1915; Lady Davy 1916. 2024. *Salvia sylvestris* L.! 2031. *S. verticillata* L. 2059. *Stachys annua* L.! 2067. *Wiedemannia orientalis* F. & M. **2077. *Ballota ruderalis* Sw. Mrs Sandwith and T. H. Green. *2095. *Plantago Lagopus* L.! 2110. *Amaranthus retroflexus* L. 2117. *Chenopodium rubrum* L.! 2122. *C. murale* L. 2123. *C. opulifolium* Schrad. **2125. *C. leptophyllum* Nutt. 2128. *C. Vulvaria* L. **2131 (3). *C. hircinum* Schrad. Misses Cobbe, Green, and Druce. **2131 (4). *C. Berlandierii* Moq.! 2136. *Beta trigyna* W. & K.! **2145. *Atriplex tatarica* L. T. H. Green, Misses Cobbe, and Druce. 2192. *Fagopyrum sagittatum* Gilib. 2390. *Asphodelus fistulosus* L. Miss Cobbe and T. H. Green. 2632. *Panicum Crus-galli* L. 2636. *P. miliaceum* L. **2638. *Setaria italica* R. & S. Mrs Sandwith. 2639. *S. viridis* Beauv. **2646 (2). *Beckmannia eruciformis* Host! **2650 (2). *Phalaris angusta* Nees. 2651. *P. canariensis* L.! 2653. *P. minor* Retz.! 2654. *P. paradoxa* L.! **2679. *Phleum graecum* B. & H. 2690. *Polypogon monspeliensis* Desf. 2698. *Gastridium ventricosum* (Gouan) Thell. 2699. *Apera Spica-venti* Beauv. 2717. *Avena fatua* L.! 2720. *A. sativa* L.! 2737. *Cynosurus echinatus* L. **2744. *Koeleria phleoides* Pers. *2752. *Desmazeria loliacea* Nyman. **2755. *Briza maxima* L.! **2760. *Poa palustris* L. Misses Cobbe and Druce. *2788. *Festuca membranacea* Druce. **2794. *Bromus rigens* L. (*B. maximus* Desf.) **2795. *B. rigidus* Roth. *2797. *B. tectorum* L. 2803. *B. unioloides* H. B. K.! 2806. *B. secalinus* L.! 2821. *Lolium temulentum* L. and **var. *arvense* With. 2823. *L. multiflorum* Lam., and var. *Boucheanum* Kunth. 2835. *Secale cereale* L.! 2844. *Triticum aestivum* L. *2850. *Hordeum marinum* Huds.! **2851. *H. jubatum* L. 2854. *H. distichon* L. **2857 (2). *Elymus canadensis* L.!

AQUATIC VEGETATION OF DERWENT WATER, AUGUST 1916.

By W. H. Pearsall.

75. *Nymphaea lutea* L., and var. *intermedia* (Ledeb.) 77. *Castalia alba* Wood, and var. *minor* (DC.) 1032. *Myriophyllum spicatum* L. 1033. *M. alterniflorum* L. 1039. *Callitriche intermedia* Hoffm. 1664. *Lobelia Dortmanna* L. 1976. *Utricularia major* Sch. 2101. *Littorella uniflora* Asch. 2437. *Juncus bulbosus* L. 2465. *Sparganium natans* L. 2485. *Potamogeton natans* L. 2493. *P. heterophyllus* Schreb., and var. *longipedunculata* (Mérat). 2497. *P. angustifolius* Presl. 2501. *P. praelongus* Wulf. 2502. *P. perfoliatus* L. 2508. *P. pusillus* L. 2544. *Scirpus fluitans* L. 2870. *Equisetum limosum* L. 2924. *Isoetes lacustris* L. 2934. *Nitella opaca* Ag.

MISCELLANEOUS NOTES.

Treatment of Plants to Produce a Permanent Green Colour by Prof. Trail's Copper Acetate Method.

We have used the method described below with very fair success in the Department of Botany of the British Museum in preparing specimens for exhibition. A stock solution is made by saturating commercial strong acetic acid with powdered copper acetate. For treatment dilute the stock solution with water in the proportion of 3 or 4 parts water to 1 of stock solution. The solution is heated in a non-metallic vessel—glass beakers being probably the most suitable—to boiling point. The specimen is placed in the boiling solution, which is kept boiling for a time varying from 1 minute to 40 minutes, according to the action of the copper salt upon the plant. If the action is proceeding satisfactorily a period of 1 to 5 minutes should suffice. The end of the operation is easily judged by the colour, or by treating two different specimens for different periods. A specimen that by such comparison appears to require longer treatment can always be reimmersed to get the desired effect. Many plants, notably

the leaves of evergreen shrubs, are more difficult and generally less satisfactory in the ultimate colour, probably owing to the presence of mucilaginous or decomposition products or tannins. These require long treatment, varying from 20 to 40 minutes. After the first immersion they turn yellowish, and then after action the yellow gradually gives place to green, generally an olive green. Other plants, notably *Aucuba*, fail entirely as they pass from the yellow to a muddy-brown or black colour. After treatment the plants should be washed (like photographic prints) in running water for about two hours. They are then dried under as light pressure as is compatible with keeping the plants from twisting, or after shaking off as much water as possible may be dried in sand. In many cases the plants are rendered so flaccid by boiling that sand-drying is difficult or impossible. Plants that have required long boiling not infrequently revert to a bad colour when sand-dried. Young parts of plants green better than old, and better results may be expected from "spring" leaves than from "autumn" leaves. Wooden (not metal) forceps should be used. A. B. RENDLE, D.Sc., F.R.S. See also *Nature*, November 9, 1916.

The scope of usefulness of the above process, which Dr Rendle has kindly sent, seems limited to leaves and green flowerless or flowering plants. The use of a copper-salt to give a green colour to pickles and fruits has been long known. Many years ago I published the formula of a solution for preserving the colour of flowers, which was Alcohol (methylated with vegetable naphtha) 1 part, sulphurous acid B.P. 2 parts. The entire plant was immersed in this solution (cold) until the colour of the flowers was bleached to white (white flowers from 2 to 5 minutes according to their texture). The plants were then taken out and shaken as far as possible from moisture, which was best effected by putting them in a muslin bag with long strings by which it was swung rapidly round the head. The plants were then placed between sheets of tissue paper, and these between sheets of drying paper. They were then dried in the ordinary manner with very frequent changes into hot drying paper, by which they were quickly desiccated. The colour gradually came back on exposure to the air and was then nearly permanent. The word nearly is used, because if submitted to moist air in a room illuminated with gas the colour becomes more or less destroyed. Difficulties arise in the process from the corollas of some plants becoming flaccid, so that it is well to put

cotton wool into the tubular or hollow corollas. By this process the very fugacious blue of Campanulas was fixed. The solution must be fairly fresh, since, if long kept, sulphuric acid is formed in the solution which turns some blues red. The reds and whites, as in some of our British Orchids, are quite successfully treated by this method. It has the advantage too of hastening the drying process in these and in Liliaceous plants by killing the leaves, and it also prevents, to some extent, the dropping of the leaves in some of the Ericaceae. It utterly failed in the case of *Lathraea*.

Extracts from the Correspondence of RICHARD RICHARDSON of Bierly, Yorkshire, edited by DAWSON TURNER, 1835, contain letters from almost all botanists of note between 1690 and 1776. The original letters included in the above work and a large number of unpublished ones, now bound in twelve handsome folio volumes through the energy of Sir WILLIAM OSLER, Bart., have been recently acquired and presented to the Bodleian Library, Oxford. They passed from Richardson's daughter and heiress, Frances Mary Richardson Currer (whose book-plates they contain) into the possession of Sir Matthew Wilson in 1906. The published letters were excellently selected by the Editor, but much of interest is contained in the others, several hundreds in number, which at present I have not been able to more than glance at. They include one or two of Bobart's and many of Vernon's of Peterhouse. They are arranged chronologically. It is a matter of congratulation that such a mine of interesting botanical information should be a national possession.

On March 30, 1916, a sapling grown from a seed of the Wyre Forest *Pyrus domestica* Ehrh. (*Sorbus domestica*), planted early last century by Lord Mountnorris, which was burned by an incendiary in 1862, was planted in Wyre Forest on the actual site of the historic tree by the members of the Worcestershire Natural History Field Club, who have made arrangements to protect it against rabbits and deer. The sapling was grown by the late Capt. Robert Woodward at Arley Castle. In the Botanic Garden at Oxford there is a descendant of the original tree. The Duke of Richmond showed me a specimen last summer at Goodwood which has regularly fruited for many years. It is supposed to have been brought from the south of France by the second Duke of Richmond before 1750.

Through the generosity of the Government of British Columbia a flag-staff of Douglas Fir has been presented to the Royal Botanic Gardens, Kew. The tree measured 220 feet in length, 6 feet in diameter at the base, and 18 inches at the top. The length of the pole is 215 feet, with a diameter of 33 inches at the base, and 12 inches at the top, and it weighs about 18 tons. It was loaded in August 1915, having been hauled from the lower mainland coast of British Columbia to the H.M.S. Merionethshire, and it reached the Thames at Kew on January 3, 1916.

SIBTHORP'S Flora Graeca: sive Plantarum rariorum Historia, quas in Provinciis aut Insulis Graeciae legit, investigavit, et depingi curavit, Characteres omnium, Descriptiones et Synonyma, elaboravit, J. E. Smith, London, 1806-40, 10 vols., roy. folio, with coloured frontispiece and 966 beautifully coloured plates, half green morocco, gilt top (Mackenzie), £260. Dulau's Catalogue. The above is one of the 25 subscribers' copies of this sumptuous work which, begun in 1806, was completed under Lindley's editorship in 1840, by which time, it was said, no original subscriber survived. Of these 25 copies I have seen 12. Although issued at 250 guineas, the work cost £25,000 to produce. The original drawings by Bauer, which are unequalled for minute accuracy and artistic finish, are in the Library of the Oxford Botanic Garden. Professor Vines and the writer hope to issue a biography of Sibthorp with the identifications of his plants, which are also preserved at Oxford. It is a source of great satisfaction to know that the above copy is purchased by one of our members who is fully able to appreciate its excellence and to preserve it with all the care it deserves. Among the copies I have seen is the one in the superb library at Longleat, a subscription copy of the Marquis of Bath. It is probably unique, as it is in the original red-paper covers.

Dr D. H. SCOTT has been elected a foreign member of the Royal Swedish Academy of Sciences in succession to the late Count Solms-Laubach.

Professor PIER'ANDREA SACCARDO, the eminent algologist, has been elected a foreign member of the Linnean Society.

Our member, Mr F. RANSOM, has placed a sum, which invested

will bring in about £100 yearly, to endow a Research fellowship with the Pharmaceutical Society of Great Britain at Bloomsbury Square Laboratory.

Dr C. E. Moss, of the Botany School, Cambridge, has been appointed to the Chair of Botany at Grahamstown, S. Africa. British Botany will suffer a great loss by his removal, as he possesses knowledge, zeal, and energy, which doubtless will be well used in a wider field.

The issue of *Nature* for March 16, 1916, gives excellent photographs of the memorial tablets which have been put up in Westminster Abbey to Joseph Dalton Hooker, Alfred Russell Wallace, and Lord Lister.

BOOKS IN PREPARATION.

THE FLORA OF KERRY, including the Flowering Plants, Ferns, Characeae, &c., with six plates and a map, by our member, R. W. SCULLY. Dublin: Hodges, Figgis & Co., Ltd. About 500 pages, med. 8vo, cloth, 12/6 net. The knowledge of the county flora possessed by Mr Scully is unrivalled, and the advent of this book on such a lovely and rich botanical district will be warmly welcomed.

We regret to hear that the publication of the FLORA OF SHROPSHIRE and of Mr Arnold Lees' YORKSHIRE FLORA are for the time held up, and the same is true of the FLORA OF OXFORDSHIRE and the FLORA OF BUCKINGHAMSHIRE.

CORRECTIONS, &c.

Report 1915, p. 188. No. 336 *c*. *Silene latifolia* R. & B. This name, Dr Williams says, is invalid, there being already a Barbary species, *S. latifolia* Poiret.

Report 1915, p. 188. No. 354 *b*. *Silene transsylvanica* Schur, Dr Williams tells me, is a nomen nudum, so *S. media* Herbich, although later, is a valid name.

Report 1915, p. 192. No. 597 *b*. For "JOSHUA LAMB" read "L. H. LAMB."

Report 1915, p. 228. Line 2 from top for "Sherrin" read "Sherring."

Report 1915, p. 235. Line 1. For "JOHANDIEZ, Laun, Cargulcranne" read "JAHANDIEZ, Faune, Carqueiranne."

Report 1915, p. 258. No. 354. The Surrey *Silene nutans*, Mr C. E. Salmon tells me, is *S. dichotoma*.

Report 1915, p. 366. Line 6 from bottom for "*Plantago lanceolata* L., var. *platyphylla* mihi," read "*Plantago lanceolata* L., var. *elliptica* mihi."

Report 1914, p. 24. Add after Australia in line 18 Bentham *Fl. Austral.* vi., 259. The author says of the Australian *Hydrilla verticillata* "Only female spathes seen. The leaves are serrulate in the Australian as in the typical Indian form." It appears to be native in N. Australia, Queensland, New South Wales, and Victoria.

Report 1914, p. 120. Line 10. For "N. Devon" read "North Denes."

The following Corrections in Plant Names must replace those given in the *British Plant List* or in the *Reports of the Botanical Exchange Club* :—

213. BRASSICA PARRA (L.) Dur. & Schinz, vice *B. sabularia* Brot.
218. BRASSICA JUNCEA Coss. includes 214. *B. lanceolata* Lange.
273. ERUCARIA MYAGROIDES (L.) Hal., vice *E. aleppica* Gaertn.
590. MELILOTUS SICULA Jacks., vice *M. messanensis* All.
916. ACAENA ANSERINIFOLIA (Forster) Druce, vice *A. Sanguisorbae* Vahl.
1024. LYTHRUM MOENANTHUM Link, vice *L. Graefferi* Ten.
1161 (2). DAUCUS GLOCHIDIATUS (Lab.) F. M. & A. L., vice *D. brachiatus* Sieber.
1196. GALIUM PUSILLUM Murr. (non Lam.), vice *G. sylvestre* Poll. and *G. asperum* Schreb.
1200. GALIUM VALANTIA Web. & Wigg., vice *G. saccharatum* All.

1363 (3). MATRICARIA SUFFRUTICOSA (L.) Druce, vice *M. multiflora* Fenzl.

1365 (3). CENIA TURBINATA Pers., var. *discolor* Harvey (not *tuberculata*).

1408 (4). SENECIO CORONOPIFOLIUS Desf. Fl. Atl. ii., 273 (*S. subdentatus* Led.), vice *Senecio subdentatus* Phil. See *Rep. B.E.C.* 349, 1908. Alien, Tweedside, FRASER.

1420. ARCTIUM NEMOROSUM Lej. Fl. Spa, vice *A. Newbouldii.*

1430. CIRSIUM PRATENSE Druce, vice *C. britannicum* Scop.

1438. CIRSIUM ARGENTATUM (L.) should be 1425 (2). *Carduus argentatus* L.

1802. ANCHUSA AZUREA Mill., vice *A. italica* Retz.

1837. CUSCUTA EPILINUM DC., vice *C. vulgaris* Presl.

1898. MIMULUS GUTTATUS DC., vice *M. Langsdorfii* Donn.

2010. SATUREIA MENTHIFOLIA (Host), vice *S. grandiflora* for the Isle of Wight plant.

2089. PLANTAGO INDICA L., vice *P. ramosa* Asch.

2126. CHENOPODIUM FICIFOLIUM Sm., vice *C. serotinum* L. for the British plant.

2149. ATRIPLEX GLABRIUSCULA Edmonst., vice *A. Babingtonii* var. *virescens.* Var. *Babingtonii* (Woods) Druce, vice *A. Babingtonii.*

2359. ROMULEA PARVIFLORA Bubani, vice *R. Columnae* Seb. & Maur.

2499. Delete *Potamogeton upsaliensis* and substitute × P. VENUSTUS Baag.

2635. PANICUM ISCHAEMUM Schreber, vice *P. glabrum* Gaud. and *P. lineare* Krock.

2697 (2). DEYEUXIA FILIFORMIS (Forster) Druce, vice *D. retrofracta* Kunth.

2791. FESTUCA BROMOIDES L., var. TENELLA (Boiss.) Druce, vice var. *Broteri* B. & R.

2829. AGROPYRUM PROSTRATUM (Pallas) Eichw. Pl. Casp.-Cauc. i., 1831, vice *A. triticeum* J. Gaertn.

2892. POLYSTICHUM SETIFERUM Woynar, vice *P. angulare* Presl, under which come the vars. *hastulatum* (Kunze), *alatum* (Moore), and *gracile* (Wollaston).

2893. POLYSTICHUM LOBATUM Huds., vice *P. aculeatum* Roth, and var. *Plukenetii.*

2898. DRYOPTERIS AUSTRIACA (Jacq.) Woynar, vice *D. spinulosa* Kuntze, and the vars. *elevata* (Braun), *exaltata* (Braun), *decipiens* (Syme), and *glandulosa* (Milde).

2901. D. VILLARSII (Bellardi) Woynar, vice *D. rigida* Underw.

2946. LAMPROTHAMNIUM PAPULOSUM Groves, vice *Chara papulosa* Wallr.

PERSONAL NOTES.

Mr E. W. HUNNYBUN, who is making a series of drawings of British plants for the *Cambridge British Flora*, would be much obliged if members would assist him in obtaining some of his *Desiderata*, a list of which, with other information, will be gladly supplied by him. He will defray the cost of transmission and supply tins for the plants. His address is "Lucknow," Ventnor, Isle of Wight.

Mrs ADAMS, F.L.S., 14 Vernon Road, Edgbaston, and Miss TROWER, Stansteadbury, Ware, Herts., are painting British plants. Would members who are willing to assist in supplying specimens kindly let them know? The latter specially needs British *Rubi*.

F. J. HANBURY, Esq., Brockhurst, East Grinstead, is anxious to have seeds of rare British species. He will defray all expenses.

W. NORWOOD CHEESMAN, Esq., J.P., The Crescent, Selby, York, will be glad to receive or exchange specimens of *Mycetozoa*.

Rev. T. STEPHENSON, Epworth, Aberystwith, wishes to have living specimens of *Liparis*, *Spiranthes* species, *Corallorrhiza*, *Helleborine atroviridis*, and any hybrids.

Mr G. C. DRUCE, Yardley Lodge, Oxford, would like fresh specimens of the Marsh Orchids, stating their precise habitat, also fresh Orobanches.

SUPPLEMENT TO REPORT OF BOTANICAL SOCIETY AND EXCHANGE CLUB FOR 1916,

BY

G. CLARIDGE DRUCE.

JOHN GOODYER, OF MAPLEDURHAM, HAMPSHIRE.

1592–1664.

This great botanist, the son of Raynold Goodyer, a yeoman of Beech Place, was born at Alton, in Hampshire, in 1592. He lived for many years at Mapledurham House. The house was of stately proportions, with a fine garden and orchards. It was once the home of the Shelleys, a Roman Catholic family, and it had secret chambers and quaint hiding places for the priests. It was not dismantled until 1850. A painting of it is now in the possession of Capt. Seward. In the garden Goodyer grew many rare plants and new herbs, including the Jerusalem Artichoke, of which he obtained in 1617 two small roots from William Franqueuill of London. He does not appear to have been educated at Oxford, but details are lacking of his early career. That he had a gentle training and a good education is evident. He was married in 1632 to Patience Crump, of St. Giles-in-the-Field, London. After their marriage they removed to the great house in the Spain, Petersfield. Here in 1651 he was visited by Elias Ashmole and his friend, "the magician," John Backhouse. It now bears a tablet, "John Goodyer, Botanist and Royalist (1592-1664) lived here." He must have in early years taken to simpling since in 1617 he knew *Linum catharticum* and its uses, and in 1619 added *Asperula cynanchica*, *Apium nodiflorum*, and incidentally *Caucalis nodosa* to our flora. He also differentiated the Dewberry from its allies. The following year, 1620, he must have gone through the New Forest in spring, for he found growing there the beautiful *Pulmonaria angustifolia*; later

he added *Sium erectum*, *Carum segetum*, and *Oenanthe Lachenalii* to the British list. In the same year he rode to his friend, the Essex squire, William Coys, so often mentioned in Johnson's *Gerard*, who lived at Stockers, near Romford. There Coys had a garden teeming with strange plants, many brought out of Spain by his correspondent Boellius. Goodyer however kept his eyes open for wild plants, and for the first time clearly separated and described the glabrous leaved Elm (*Ulmus glabra* Mill.), which grew between Romford and Stockers. Probably on his way home he passed Rickmansworth, for in Moor Park he added still another Umbellifer to the British Flora—the poisonous *Cicuta virosa*. In 1621 he visited Alton, and in the field called Marborne he gathered the splendid thistle *Cirsium eriophorum* and "an *Limodorum*," which is most probably the earliest British reference to *Orobanche purpurea*. Another journey in September was southwards through Bere Forest to Burlesdon Ferry. There his eyes were delighted with a great trophy, *Frankenia laevis*, then in flower, a splendid finish to his year's work. In 1622 he rode from Abingdon to Oxford, and doubtless coming down Cumnor Hill he saw *Cirsium eriophorum*, which still grows there. At Oxford he gathered on July 5, near Gloster Hall, now Worcester College, *Sium latifolium* and *Scirpus sylvaticus*. Perhaps the magnet which drew him to Oxford was the newly established Physic garden which, through the munificence of Earl Danby, was given in the preceding year. The ground would, however, be only in preparation when Goodyer came, bringing doubtless a supply of seeds from his own garden. The beauty of Magdalen College must have appealed to him. That, and the hand it had in fostering the scheme of the Physic garden, and possibly his after friendship with William Brown, "who had the chief hand" in preparing its Catalogue of Plants, led Goodyer, who was childless, in after days to leave his Library to that College. In the same year, 1622, he added two Pondweeds, *Potamogeton densus* and *P. crispus*, to the British Flora from Droxford in his own neighbourhood. Both still grow there. In 1624 while riding between Christchurch and Lymington he noticed a new species of Elm, of which he brought home a plant which grew well. It seems probable that this was the Cornish Elm, although some authors have referred it to a species of Eastern England. Of this his lengthy description, which appears in Johnson's *Gerard*, still exists at Oxford. In 1626 he journeyed into Northamptonshire probably to

test the properties of the chalybeate spring called the Red Well at Wellingborough, of which King Charles and Henrietta had drunk. There in the boggy ground below the well he added to science the pretty *Sagina nodosa*. The date must have been about August, for he also added to Northamptonshire the chastely beautiful Grass of Parnassus. Johnson's *Gerard*, the preface of which is dated October 22, 1633, contains ample evidence of Goodyer's industry, since such species as *Thesium*, *Phyteuma orbiculare*, *Helleborine palustris*, *Festuca Myurus*, *Damasonium Alisma*, *Dryopteris dilatata*, and *Geranium lucidum*, are mentioned as having been found by him, while his description of the ferns—the actual manuscript is still in Magdalen Library—and the Elms are most precise and accurate. He was a frequent visitor to the garden of John Parkinson, the author of *Paradisus Terrestris*, in Long Acre, and even in Whitechappel in 1654 he found *Geranium columbinum* and a Crucifer, probably *Bunias orientale*, "growing in the streets." In 1656 two of his most interesting discoveries were made—that of *Ludvigia apetala*, near Petersfield, and of *Littorella*. The former has now disappeared from its original locality, but exists in the New Forest. In 1659 he found the alien *Xanthium Strumarium* in his own county, but that had been already mentioned as growing in Buckinghamshire by Gerard in 1597. How never lived to complete a second edition of his *Phytologia*, but some of his notes of Goodyer's plants, as well as those supplied after Goodyer's death by his nephew, the Rev. Edmond Yalden Goodyer, appeared in Merrett's *Pinax* of 1666. It contains a few new British plants from the Hampshire botanist, including *Campanula patula* and *Caucalis arvensis*. Goodyer's discoveries form a magnificent list. In an essay, not less happy in its elegance of style, than in its accuracy of information, from the pen of Canon Vaughan of Winchester, which appeared in *Cornhill* for June 1916, he tells us that Goodyer died in the spring of 1664 and was buried as directed by his will in the churchyard of Buriton, near his late wife. No stone marks the spot, and no memorial exists to commemorate his benefactions to the parish. To the poor of Weston he left his "Messuage dwelling-house, together with all the barns, stables, outhouses and buildings, and all the garden and orchard thereunto belonging, and some seventeen acres of meadowland known as half-penny land, then in occupation of one Thomas Jacques." The large house was sold for £1,000. This and the rent of the land bring in an

annual income of some £75. Part of this is spent in apprenticing the young lads of the tithing and part in making allowances to servant girls. His main fortune was left to his nephew, Edmond Yalden, who seems to have taken the name of Goodyer (see Merrett's *Pinax*). His Library—with the exception of his book on Chirurgery, called "Ambrose Barry," which was bequeathed to John Westbrook, Gentleman, one of the witnesses to his will—was left to "Magdalen College in Oxon. to be kept entirely in the Library of the said College for the use of the said College," where as will be seen it is carefully preserved. Through the exertion of Miss Mabel E. Wotton (from whose interesting article much information has been culled) a sum of money, towards which Magdalen College contributed five pounds, has been collected in order to put a window to his memory at Buriton Church. The inscription is "To the Glory of God and in Memory of John Goodyer of Alton, Mapledurham, Petersfield, 1592-1664, Royalist, Botanist, Founder of Goodyer Charity, Weston. Buried in Buriton Churchyard." The window bears the Goodyer arms—gules, a fesse between two chevrons vair—and a partridge holding a *good ear* of wheat in its beak. An autograph copy of Lord Hopton's order, 1643, that Goodyer should not be molested will hang near the window. The reproach of neglect will therefore no longer exist, and the memory of one who did so much to enrich the knowledge of his country's plants will be kept fresh in the little church which is situated under the slopes of Butser Hill, where the Squinancy Wort and the Rampion still grow. His benevolent charity will still continue to help the young people who live in the charming countryside overlooking Petersfield, where his greatest discovery was made. The present seems a not unfitting time to bring such scattered information as exists to the members of our Society who have kindred tastes.

Goodyer was in frequent correspondence with the best botanists of his period. He largely assisted Johnson when that author was preparing the second edition of Gerard's *Herbal*, in which are described about 2850 plants. In the Preface Johnson thus handsomely acknowledges his services. "In the first place let me remember the onely Assistant I had in this Worke, which was Mr John Goodyer of Maple Durham in Hampshire, from whom I receiued many accurate descriptions, and some other obseruations concerning plants: the which (desirous to giue euery man his due) I haue caused

to be so printed, as they may be distinguished from the rest: and that you shall know them: in the beginning is the name of the plant in Latine in a line by itselfe, and at the end his name is inserted: so that the Reader may easily finde those things that I had from him, and I hope together with me will be thankfull to him, that he would so readily impart them for the further increase of this knowledge."

Among the references to Goodyer are the following:—

p. 29. "*Gramen murorum spica longissima.* Capon-taile Grasse. I cannot omit this elegant Grasse, found by Mr Goodyer vpon the walls of the antient city of Winchester, and not described as yet by any that I know of . . . my friend, the first obseruer thereof gave it the title of Capons-taile Grasse." The first record of *Festuca Myurus* L.

p. 65. Johnson, alluding to the transmigration of species and quoting Virgil,

> "In furrowes where great Barley we did sow,
> Nothing but Darnel and poore Oates do grow,"

says he had never before heard "that two seuerall graines, perfect in each respect, did grow at any time in one eare: the which I saw this yeare, 1632, in an eare of white Wheat, which was found by my very good friend Master Iohn Goodyer, a man second to none in his industrie, and searching of plants, nor in his judgment or knowledge of them. This eare of Wheate was as large and faire as most are, and about the middle thereof grew three or foure perfect Oats in all respects." Prof. Percival says that some mistake must have been made here, or that some teratological freak led to erroneous observation.

p. 227. "*Palma Christi, radice repente.* Roots of the bignesse of strawes, in substance like those of Sopewort, from the which immediately doth rise foure or fiue broad smooth leaues like vnto the small Plantaine, from the which shooteth vp a small and tender stalke, at the top whereof groweth a pleasant spikee eare of a whitish colour, spotted on the inside with little speckes of a bloudie colour. . . . Found by a learned Preacher called Master Robert Abbot of Bishops Hatfield, in a boggy groue where a Conduit head doth stand. . . . It growes also plentifully within a mile of a market Towne called Petersfield, in a moist medow named Wood-mead, neere the path leading from Petersfield towards Beryton [this locality was doubtless supplied by Goodyer]." Johnson has by some error attached

the wood-block of *Goodyera repens* to this description which admirably depicts *Helleborine palustris* and is the first British record, but gives no idea of the fir-wood loving Orchis. Doubtless this misplaced figure led Robert Brown (under a mistaken idea) to name the genus, already established as *Epipactis* by Haller, *Goodyera*. The fact is remarkable that Brown could have ever read Johnson's description and have thought it applied to the genus he was renaming. He thus connected Goodyer's name with a plant he had probably never seen, and was in no way connected with.

p. 228. "*Nidus avis flore et caule violaceo purpureo colore*; an *Pseudoleimodoron* Clus. Hist. Rar. Plant., p. 270. This riseth up with a stalke about nine inches high, with a few smal narrow sharpe pointed short skinny leaues, set without order, very little or nothing at al wrapping or enclosing the stalke; having a spike of floures like those of *Orobanche*, without tailes or leaues growing amongst them; which fallen, there succeed small seed vessels. The lower part of the stalke within the ground is not round like *Orobanche*, but slender or long, and of a yellowish white colour, with many small brittle roots growing vnderneath confusedly, wrapt or folded together like those of the common *Nidus avis*. The whole plant as it appeareth above ground, both stalkes, leaues and floures, is of a violet or deepe purple colour. This I found wilde in the border of a field called Marborne, neere Habridge in Haliborne, a mile from a towne called Alton in Hampshire, being the land of one William Balden. In this place also groweth wild the thistle called *Corona fratrum*. John Goodyer." Johnson says "he receiued out of Hampshire from my often remembered friend Master Goodyer this description of a *Nidus avis* found by him the 29 of Iune, 1621." The above record has never been corroborated. It has caused much confusion and many contradictory opinions. Ray (*Cat. Pl. Angl.* 224, 1670), overlooking perhaps Goodyer's qualification 'an' identified it as the European Orchid *Limodorum abortivum* which has not been found in Britain and is too striking in appearance to have been overlooked. However some authors took Ray's view, and among others Bobart (*Morison Hist. Ox.* iii., 503, 1699) and Dillenius (*Ray Syn.* 383, 1724). Sir James E. Smith (see *Trans. Linn. Soc.* iv., 164, and *Eng. Fl.* iii., 149, 1824) with greater perspicacity refers it to *Orobanche caerulea*, while Mr Townsend (*Fl. Hampshire*, 642), makes a very unlikely suggestion that it is *Epipactis violacea*, *i.e.*, *Helleborine purpurata*. This may be at once

negatived by the fact that the colour of the flowers is not violet or deep purple, and I suppose it has never yet flowered in England so early in the year as June 29. The inflorescence too is distinctly bracteate, whereas Goodyer says "it is without tailes or leaues growing amongst them." A still more improbable suggestion that it was *Lathraea Squamaria* was made in MS. by Mr Yalden, since *Lathraea* is over flower before June 29 in Hampshire, and the underground portion of the plant in no way answers Goodyer's description. Others thought it was a form of *Neottia Nidus-avis*, but this does not lie within the shadow of a chance. The probabilities are distinctly in favour of its being *Orobanche purpurea*, which is parasitical in light soils on *Achillea Millefolium*. I have paid three visits to Haliborn on June 29 and have probably correctly identified the field, now called Narborne. It is bordered on the eastern side for about 250 yards by a deep gully 10–12 feet deep, now overgrown with bushes, along which a chalk stream intermittently (as the name suggests) flows. My search had negative results. The Yarrow is abundant there. The banks of the gully when bare were a not unlikely place and very similar to where the plant grows in the Isle of Wight.

p. 257. "*Sium alterum Olusatri facie.*" Found by Mr Goodyer in the ponds about Moore Park. This is the earliest reference to *Cicuta virosa* L. Goodyer's own note adds "and ? Denham in Herts."

p. 309. "*Lactuca syl. maior odore Opii.* Found in Hampshire by Mr Goodyer and the seeds sent to Mr Parkinson in whose garden I saw it growing two yeares ago." First record for the county of *Lactuca virosa* L.

p. 417. "*Plantago aquatica minor stellata.*" Mr Goodyer also found it growing on Hounslow Heath. Therefore Johnson and Goodyer were the earliest discoverers of *Damasonium Alisma* Mill. in England.

p. 455. "*Rapunculus Corniculatus montanus.* I receiued seeds and roots hereof from Mr Goodyer who found it plentifully growing wilde in the inclosed chalkie hilly grounds by Mapledurham." The earliest British record of *Phyteuma orbiculare* L., a plant found first in Italy by Fabius Columna, a member of the princely house of Colonna.

p. 555, n. 14. "*Linaria adulterina.* Bastard Tode-flax. Mr Goodyer found it growing wilde on the side of a chalkie hill in an inclosure on the right hand of the way as you goe from Droxford to

Poppie Hill in Hampshire." The first British record of *Thesium humifusum* DC.

p. 559. "*Linum sylvestre catharticum* Mil-mountaine. [Description]. It groweth plentifully in the vnmanured inclosures of Hampshire on chalkie downs and on Purfleet hils in Essex and in many other places. My friend Mr John Goodyer . . . told me [in 1629] he had long knowne the plant, and referd it to *Lines*, but there were some which called it in English Mil-mountaine, and vsed it to purge, and of late he hath sent me this historie of it, which you shall have as I receiued it from him. [Here follows description]. It groweth plentifully in the vnmanured inclosures of Hampshire, on chalkie downs, and on Purfleet hils in Essex, and in many other places. . . . I came to knowe this herbe by the name of Mil-mountaine, and his vertue by this means on the second of October 1617 going by Mr Colson's shop an Apothecary of Vvinchester in Hampshire I saw this herbe lying on his stall, which I had seen growing long before . . . he told me . . . it was called Mil-mountain, and he also told me that beeing at Doctor Lake his house at Saint Crosse, a mile from Vvinchester, seeing a man having this hearbe in his hand . . . hee told him [the name] and also the use of it which is this. Take a handfull of Mill-mountaine, the whole plant leaues, seeds, floures and all, bruise it and put it in a small tunne or pipkin of a pinte filled with white vvine, and set it on the embers to infuse all night, and drinke that vvine in the morning fasting, and he said it would give eight or tenne stooles. This Doctor Lake was afterwards Bishop of Bath and Vvels, who always vsed this hearbe for his purge, after the said manner, as his man affirmed. July 2, 1619, John Goodyer."

p. 567. "*Polygonum alterum pusillo vermiculato Serpillo foliolo Penae.*" Goodyer gives a good and lengthy description and says he "found it flouring the third day of September 1621, on the ditch bankes at Burlesdon ferrey by the sea side in Hampshire." This also is an addition to the British flora of *Frankenia laevis* L.

p. 568. *Alsine palustris foliis tenuissisimis : siue Saxifraga palustris alsinefolia.*" Goodyer also describes this new species and says: "This groweth plentifully on the boggy ground below the red Well of Wellingborough in Northamptonshire. This hath not been described that I finde. I obserued it at the place aforesaid Aug. 11, 1625, John Goodyer." This Red Well was a chalybeate spring, which was visited

by Charles and Henrietta, who stayed at the White Swan Hostelry, and doubtless the Royal visit led Goodyer, who was a Cavalier, also to make his pilgrimage to the Well, thus making known this elegant little species *Sagina nodosa* to science.

p. 604. *Saxifraga.* A conventional figure is given by Johnson, copied from a drawing supplied by Goodyer from a MS. in his possession by Apuleius, and its description in that MS. is also included. Its identity is quite conjectural.

p. 677. "*Acinos odoratissimum.* This plant I first found growing in the garden of Mr William Yalden in Sheete near Petersfield in Hampshire, Anno 1620, amongst sweete Marjerome, and which by chance they bought with the seedes therof. It is to be considered whether the seedes of sweete Marjerome degenerate and send forth this herbe or not, 11th October 1621, Iohn Goodyer."

p. 729. "*Iacea capitulis hirsutis Boelii* [a long description follows]. This plant hath not been hitherto written of that I can find. Seeds of it I receiued from Mr William Coys, with whom I also obserued the plant Oct. 11, 1621, he receiued it from Boelius a Low countrey man. Iohn Goodyer."

p. 744. "*Chrysanthemum Creticum.* Mr Goodyer hath saued me the labour by sending an exact description therof together with one or two others of this kinde, which I think fit here to give you—*Chrysanthemum Creticum primum Clusii,* Small Mountaine Marigold, *Chrysanthemum Boeticum Boelii, inscriptum,* and *C. tenuifolium Boeticum Boelii.*" These are described at length by Goodyer on July 28, 1621. Neither of them is British.

p. 753. Jerusalem Artichoke. Goodyer gives a full description and says the "floures by reason of their late flouring, which is commonly two or three weeks after Michalmas, neuer bring their seed to perfection and it maketh them of abundance of small heads neere the tops of the stalkes and branches forth of the bosomes of the leaues which neuer open and floure with us, by reason they are destroyed by the frosts, which otherwise it seemes would be a goodly spectacle. . . . The tuberous roots will abide in the earth all the winter though the stalkes and rootes by which they were nourished utterly rot and perish away and will beginne to spring up againe at the beginning of May, seldome sooner.

THE PLACE.

Where this plant groweth naturally I know not, in Anno 1617. I receiued two small roots thereof from Master Franqueuill of London, no bigger than hens eages, the one I planted and the other I gave to a friend, mine brought mee a peck of roots, wherewith I stored Hampshire.

THE VERTUES.

These rootes are dressed divers waies; some boile them in water, and after stew them with sacke and butter, adding a little ginger: others bake them in pies, putting Marrow, Dates, Ginger, Raisons of the Sun, Sacke, etc.; others some other way as they are led by their skill in Cookerie. But in my iudgment which way soeuer they be drest and eaten they stirre and cause a filthie loathsome stinking winde within the bodie, thereby causing the belly to bee pained and tormented and are a meat more fit for swine, than men; yet some say they have usually eaten them and have found no such windie qualitie in them, 17 October 1621. Iohn Goodyer."

p. 809. "*Pulmonaria foliis Echii.* Mr Goodyer found [it on] May 25 Anno 1620 flouring in a wood by Holbury House in the New Forrest in Hampshire." An addition to the British flora of the charming *Pulmonaria angustifolia.*

p. 810. "*Bardana minor.* It also groweth plentifully in Southwick street in Hampshire as I have been informed by Mr Goodyer." A new record for the county of *Xanthium Strumarium* L.

p. 823. "*Tribulus aquaticus minor quercus floribus* Clus. p. 252." A good description is given. Goodyer adds "the whole plant is commonly couered with water. It floureth in Iune and the beginning of Iuly. I founde it in the standing pooles or fish pondes adioyning to a dissolued Abbey called Durford which pond diuide Hampshire and Sussex, and in other standing waters elsewhere. This description was made vpon sight of the plant the 2 of Iune, 1622. The first British record of *Potamogeton crispus* L.

p. 823. "*Tribulus aquaticus minor, muscatellae floribus* [also fully described]. This groweth abundantly in the riuer by Droxford in Hampshire. It floureth in Iune and Iuly, when the other doth, and continueth couered with water, greene, both winter and summer. John Goodyer." The first British record of *Potamogeton densus* L. The woodcuts in Gerard of these species are transposed.

p. 839. "*Soldanella marina.* Sea Binde weed. My friend Mr Goodyer hath told me in Hampshire at Chichester and thereabout they make use of this for scuruie-grass and that not without great errour as any that know the qualitie may easily perceiue." First record for the counties of *Convolvulus Soldanella.*

p. 840. "*Gramen Parnassi.* Mr Goodyer found it in the boggy ground below the red well of Wellingborough in Northampton shire 1626." The first record for that county of *Parnassia palustris* L.

p. 841. "*Saxifraga aurea.* Mr Goodyer hath also obserued it abundantly on the moist shadowie moist rockes by Maple Durham in Hampshire." The first record for that county of *Chrysosplenium oppositifolium* L.

p. 871. "*Bryonia nigra florens non fructum ferens.* This is altogether like the first described [*Tamus communis* L.] in roots, branches, and leaues, onely the foot-stalks wheron the floures grow are about eight or nine inches long, the floures are something greater, haueing neither before or after their flouring any berries or shew therof, but the floures and footstalks do soone wither and fall away: this haue heretofore, and now this Sommer 1621 diligently obserued, because it hath not beene mentioned or obserued by any that I know, John Goodyer." The first record for Hampshire of *Tamus communis* L. Goodyer's observations doubtless refer to a male flowered plant. It is normally dicœcious.

p. 931. "*Malua verbenaca.* Veruaine Mallow. Mr Goodyer found [it] with white floures growing plentifully in a close neere Maple-Durham in Hampshire called Aldercrofts." The first Hampshire record of *Malva moschata* L.

p. 938. "*Geranium saxatile* of Thalius. Master Goodyer found it plentifully on the bankes by the highway leading from Gilford towards London neere vnto the Townes end. The first British record of *Geranium lucidum* L.

p. 1018. *Selinum Siifoliis.* Honewort. I tooke the description of this herbe the yeere 1620 but obserued it long before, not knowing any name for it; first I refered it to *Sium*, calling it *Sium terrestre*, and *Sium segetum et agrorum*, afterwards vpon sight of *Selinum peregrinum primum Clusii*, which in some respects resembles this herbe, I named it *Selinum Siifoliis*: yet wanting an English name; at length about the yeere 1625 I saw Mrs Vrsula Leigh (then seruant to Mistris Bilson of Mapledurham in Hampshire, and now 5 Marcii

1632 wife to Master William Mooring, Schoolemaster of Petersfield, a Towne neere the said Mapledurham) gather it in the wheate ershes about Mapledurham aforesaid (where in such like grounds it still groweth, especially in clay grounds) who told me it was called Honewort, and that her mother Mistris Charitie Leigh, late of Brading in the Isle of Wight, deceased, taught her to vse it after the manner heere expressed, for a swelling which shee had in her left cheeke, which for many yeeres would once a yeere at the least arise there, and swell with great heat, rednesse, and itching, vntil by the vse of this herbe it was perfectly cured, and rose no more nor swelled, being now (5 Marcii 1632) about twenty yeeres since, only the scar remaineth to this day. This swelling her mother called a Hone, but asking whether such tumors were in the said Isle usually called Hones she could not tell, by reasin shee was brought from Brading aforesaid young, and not being aboue twelue yeeres old when shee vsed this medicine. Take one handfull of the greene leaues of this Honewirt, and stampe them, put to it about halfe a pinte or more of beere, straine it, and drinke it, and so continue to drinke the like quantity euery morning fasting till the swelling doth abate, which with her was performed in the space of two weekes at the most, August 18, 1620, John Goodyer." Goodyer was the first observer of *Carum segetum* in Britain. It was actually recorded by Johnson somewhat earlier than in the *Herbal.* See Johnson *Itin. Kent* 1629 as *Sium terrestre.*

p. 1119. "*Rubia spicata Cretica Clusii*, Small Candie Madder. A garden species of *Crucianella*, which Goodyer describes on July 1621.

p. 1120. "*Synanchica* [with description]. It floureth all the Sommer long, and groweth in drie Chalkie ground aboundantly, August 13, 1619. John Goodyer." The first Hampshire record for *Asperula cynanchica* L., which probably Goodyer was the first to describe in Britain.

p. 1129. "*Filicis (vulgo maris varietates et differentiae).* I haue obserued foure sorts of Ferne, by most writers esteemed to be the male Ferne of Dioscorides: by Anguillaria, Gesner, Caesalpinus and Clusius, accounted to be the Female, and so indeed doe I thinke them to be, though I call them the male with the multitude. If you looke on these Fernes according to their seuerall growths and ages, you may make many more sorts of them than I haue done; which I am afraid

hath beene the occasion of describing more sorts than indeed there are in nature. These descriptions I made by them when they were in their perfect growths."

p. 1129. No. 1. "*Filix mas ramosa pinnulis dentatis* [a long and minute description follows]. Plentifully in the boggy shadowie moores neere Durford Abbey in Sussex, and also on the moist shadowie rocks by Mapledurham in Hampshire . . . and I haue found it often on the dead putrified bodies and stems of old rotten okes, in the said moores, neere the old plants I haue obserued verie many small young plants growing, which came by the falling of the seed from those dusty scales: for I belieue all herbes haue seeds in themselues to produce their kindes, Gen. i. 11 & 12." This is the earliest reference to *Dryopteris dilatata*.

No. 2. "*Filix mas non ramosa pinnulis latis densis minutim dentatis*. This grows plentifully in most places in shadowie woods and copses." The earliest Hampshire reference to *Dryopteris Filix-mas* Schott.

No. 3. "*Filix mas non ramosa pinnulis angustis, raris, profunde dentatis*. This groweth also in many places in the shade." Doubtless *Dryopteris Filix-mas* Schott, var. *affinis*.

No. 4. "*Filix mas non ramosa pinnulis latis auriculatis spinosis*. Abundantly on the shadowie moist rockes by Mapledurham . . . Iohn Goodyer." The first Hampshire record for *Polystichum lobatum*, or possibly *P. setiferum* Woynar (*angulare*), which is the commoner plant in that area.

p. 1135. "*Dryopteris Penae & Lobelii* [with description]. Many yeares past I found this same in a very wet moore or bog . . . called Whitrow Moore where Peate is now digged. . . . I never found it any other place. John Goodyer, July 6, 1633." Probably the earliest British record of *Dryopteris Thelypteris* Asa Gray.

p. 1139. "*Phyllitis multifida* Finger Harts-tongue. Mr Goodyer found it wild in the banks of a cave near Swaneling (Swaneck) not many miles from Southampton." First record for *Phyllitis Scolopendrium* Newm., var. *multifida*.

p. 1146. "*Trichomanes mas*. Mr Goodyer saith that in Ianuary 1624 he saw enough to lade an horse between Rake and Headley in Hampshire neere Woolmer Forest." The first Hampshire record for *Asplenium Trichomanes* L.

p. 1200. "*Medicae maioris Boeticae* species prima, spinulis intortis, *Medicae maioris Boeticae spinosae* species altera, *Medicae marinae spinosae* species, the descriptions of these three species of *Medicago* are supplied by Iohn Goodyer Aug. 2, 1621."

p. 1271. "*Rubus repens fructu caesio.* This growes common enough in most places and too common in ploughed fields. Sep. 6, 1619, Iohn Goodyer." The first Hampshire record of *Rubus caesius* L.

p. 1371. "*Taxus tantum florens.* In Hampshire there is good plentie of them growing wilde on the chalkie hills. In flower Dec. 19, 1621, Iohn Goodyer." The male plant of *Taxus baccata* L., thus first recorded for Hampshire.

p. 1479. "Of the Elme Tree. Ovr author (Gerard 1597) onely described two Elmes, and those not so accurately but that I thinke I shall giue the Reader content, in exchanging them for better receiued from Mr Goodyer: which are these.

Vlmus vulgatissima folio lato scabro. The Common Elme. This Elme is a very great high tree, the barke of the young trees, and boughs of the elder, which are vsually lopped or shred, is smooth and very tough, and will strip or pil from the wood for a great length without breaking; the bark of the body of the old trees as the trees grow in bignesse, teares or rents, which makes it very rough. The innermost wood of the tree is of reddish yellow or brownish colour, and curled, and after it is drie, very tough, hard to cleaue or rent, whereof naues of Carts are most commonly made; the wood next to the barke, which is called the sap, is white. Before the leaues come forth the floures appear, about the end of March, which grow on the twigs or branches closely compacted or thrust together, and are like to the chiues growing in the middle of most floures, of a reddish colour; after which come flat seed, more long than broad, not much vnlike the garden Arach seed in forme and bignessee, and doe for the most part fall away before or shortly after the leaues spring forth, and some hang on a great part of the Sommer, the leaues grow on the twigs of a dark green colour: the middle size wherof are two inches broad, and three inches long, some are longer and broader, some narrower and shorter, rough on handling on both sides, nickt or indented about the edges, and many times crumpled, hauing a nerue in the middle, and many smaller nerues growing from him, the leafe on one side of the nerue is alwaies longer than the other. On these

leaues oftentimes grow blisters or small bladders, in which in the spring are little wormes, about the bignesse of Bed-fleas. This Elme is common in all parts of England, where I haue trauelled.

Vlmus minor folio angusto scabro. The Narrow leaued Elme. 2. This tree is like the other [1] but much lesser and lower, the leaues are vsually about two inches and a half long, and an inch or an inch and a quarter broad, nickt or indented about the edges, and hath one side longer than the other, as the first hath, and are also harsh and rough on both sides, the barke or rinde will also strip as the first doth: hitherto I haue not obserued either the floures or seeds or blisters on the leaues, nor haue I had any sight of the timber, or heard of any vse therof. This kinde I haue seene growing but once, and that in the hedges by the highway as I rode betweene Christ-church and Limmington in the New Forest in Hampshire about the middle of September 1624, from whence I brought some small plants of it, not a foot in length, which now, 1633, are risen vp ten or twelve feet high, and grow with me by the first kinde, but are easily to be discerned apart, by any that will looke on both.

3. *Vlmus folio latissimo scabro.* Witch Hasell or the broadest leaued Elme. This groweth to be a very greate tree, and also very high, especially when he groweth in woods amongst other trees, the barke on the outside is blacker than that of the first, and is also very tough, so that when there is plenty of sap it will strip or peele from the wood of the boughes from the one end to the other a dozen foot in length or more, without breaking, wherof are often made cords or ropes: the timber hereof is in colour neere like the [first]: it is nothing so firme or strong for naues of Carts as the first is, but it will more easily cleaue: this timber is also couered with a white sappe, next the barke: the branches or young boughes are grosser and bigger and do spread themselves broader, and hang more downewards than those of the first; the floures are nothing but chiues, very like those of the first kinde: the seed is also like, but something bigger: the leaues are much broader and longer than any of the kindes of Elme, vsually three or foure inches broad and fiue or six inches long, also rough or harsh in handling on both sides, snipt or indented about the edges, neere resembling the leaues of the Hasell; the one side of the leaues are also most commonly longer than the other, also on the leaues of this Elme are sometimes blisters or bladders like those on the first kinde. This prospereth and naturally groweth in any soile, moist or

dry, on high hills, and in low vallies in good plenty in most places in Hampshire, wher it is commonly called Vvitch Hasell, as El. 10. This hath little affinitie with *Carpinus*, which in Essex is called VVitch Hasell." The first Hampshire record of *Ulmus montana* Stokes (*U. campestris* L. = *U. glabra* Huds.)

4. "*Vlmus folio glabro* VVitch Elme, or smooth leaued Elme. This kinde is in bignesse and height like the first, the boughes growe as those of the VVitch Hasell doe, that is hanged more downewards than those of the Common Elme, the barke is blacker than that of the first kinde, it will also peele from the boughes: the floures are like the first and so are the seeds: the leaues in forme are like those of the first kinde, but are smooth in handling on both sides. My worthy friend and excellent Herbarist of happy memorie Mr William Coys of Stubbers in the parish of Northokington in Essex told me that the wood of this kinde was most desired for naues of Carts than the wood of the first. I obserued it growing very plentifully as I rode betweene Rumford and the said Stubbers in the yeere 1620 intermixed with the first kinde, but easily to be discerned apart, and is in those parts vsually called VVitch Elme."

With regard to the Elms so well described by Goodyer, that of the Common and the Witch Elm contrasts not unfavourably with those given more recently in more pretentious works. No controversy is likely to arise with regard to their identity. There is also no doubt as to the identity of the third, but the most correct name is not so certain. It is certainly the *Ulmus glabra* of Miller. More recently *Ulmus nitens* Moench has been applied to it, since the compound species *U. glabra* Huds. has been restored for another species. Goodyer's second species *Ulmus minor folio angusto scabro* is however more ambiguous. Hudson (*Fl. Ang.* 95, 1762) made it a variety. Goodyer's name was quoted as a synonym by Miller (*Gard. Dict.* 1768) for his *U. sativa*—whatever that may be—since in the *Cambridge Flora* it is used in the sense of my *U. Plotii*? In Elwes and Henry's *British Trees* it is said to be *U. campestris* (auct.) L. From Goodyer's statement "that he had only once seen it growing, and that between Christchurch and Limmington," the probabilities are strongly in favour of its being the Cornish Elm which does grow there. Goodyer visited Essex, and rode from Romford to his friend, Mr Coys at North Ockenden, where he could hardly have failed to recognise this Elm if it were the same as his Hampshire one, since

U. Plotii occurs in that area, and the Cornish Elm does not. Plot, too, who was probably acquainted with Goodyer, and would certainly have a clear idea of what Goodyer meant, in describing the tree I have connected with his name says (*Nat. Hist. Oxf.* 1677) this "is a narrow leaved Elm which also being smooth justly deserves the name *Ulmus folio angust glabro*, wherin it differs not only from the *Ulmus minor* of Parkinson and Gerarde [Goodyer], but also from their *Ulmus folio glabro.*" Plot's specimen is in the British Museum Herbarium, and shows that it is not as has been suggested *U. viminalis* but *U. Plotii.*

p. 1625. Johnson says, "At the end of this Appendix I haue thought good to giue diuers descriptions of Plants, which I receiued from my oft mentioned friend Mr Goodyer, which also were omitted in their fitting place, partly through haste, and partly for that I receiued some of them after the printing of those chapters wherein of right they should haue been inserted. They are most of them of rare and not written of plants wherefore more gratefull to the curious. Goodyer gives a description of each. The plants are *Hieracium stellatum Boelii*, *H. medio nigrum flore maiore Boelii*, *H. medio nigrum flore minore Boelii*, *H. lanosum* [these four are from seeds receiued from Mr Coys 1620], *Blitum spinosum*, *Geranii Boeticae species Boelii* (gathered by Boelius in Spain), *Antirrhinum minus flore Linariae luteum inscriptum*, *L. minor aestiua* [seeds of these two from William Coys], *Scorpioides multiflorus Boelii*, *S. siliqua crassa Boelii*, *Silibum minus flore nutante Boelii* [gathered by Boelius in Spain], *Aracus maior Boeticus Boelii*, *Legumen pallidum Vlissiponense*, *Nonii Brandonii*, *Vicia Indica fructu albo*, *Astragalus marinus Lusitanicus Boelii* [from seeds gathered in the garden of my good friend John Parkinson in London 1616], *Faba veterum serratis foliis Boelii* [gathered by Boelius in Boetica], *Pisum maculatum Boelii* [brought by Boelius from Spain], *Lathyrus aestivus flore luteo* July 28, 1621, *L. aestivus Boeticus flore caeruleo Boelii*, *L. edulis Boeticus flore albo Boelii*, *L. aestivus flore miniato*, *L. palustris Lusitanicus Boelii*, *L. aestivus dumetorum Boeticus Boelii*, and *Juniperus sterilis.*

John Parkinson, the eminent Botanist and King's Herbarist, who had a garden in Long Acre, which was often visited by Goodyer, was the author of two important works, the *Paradisus Terrestris* in 1629, which contains a notice of *Pulmonaria*, one of Goodyer's discoveries,

and the *Theatrum Botanicum* of 1640. In this huge volume of 1754 pages Pulteney says about 3800 plants are enumerated. Parkinson adds his tribute to John Goodyer, whom on page 708 he misspells Gordier—"a great lover and curious searcher of plants who hath found in our countrey many other plants not imagined to grow in our Land. I wish that there were many more of his minde, that not hindering their affaires at spare times would be industrious to search out and know what the ground bringeth forth, where their occasions are to be." Here he quotes Goodyer as being the discoverer of *Geranium saxatile* = *G. lucidum.*

In 1650 William How, a London physician, published anonymously his *Phytologia Britannica*, which is an alphabetical Flora of Britain, and practically the first general Flora. Under *Fagus* (p. 40) "Mr Goodyer says I found one much varying in his leaves, some were whole as those of the ordinary others much jagged or divided." We may presume this grew in Hampshire. How's own copy is more fully described later on. See also *Flora Berks.* lcvii.

Merrett's *Pinax* of 1666 contains many notes from Goodyer. In the Preface there is this handsome tribute. Ds Goodyer Hantoniensis vir incomparabilis, a siquis alius, acerrimi judicii, maximacq.: industriae, imo paucis auctoribus posponendus sive exactas descriptiones sive accuratas distinctiones animadverteris, uti cuivis *Gerardum* emaculatum consulenti facile patebit. Is enim erat qui maximam partem dicto libro et Mercuriis supra memoratis communicavit, uti ex litteris hinc indemissis constat quarum me participem fecit Ds Yauldon Goodyeri nepos uti etiam Manuscriptorum ejus ex quibus quaedam in hoc tractatulo me mutuo accepisse in progressu operis liquebit.

The species in the *Pinax* contributed by Goodyer include:—

p. 5. "*Alsine flosculis conniventibus* found by Mr Goodyer in Hampshire and by him properly named Blinks." The second British record, Ray having previously recorded (*Catal. Cant. App.* of 1663) the plant now known as *Montia verna* (*M. fontana*).

p. 7. "*Anagallis aquat. flore parvo viridi caule rubro* in a great ditch neer the Moor at Petersfield." The first record of *Ludvigia apetala* (*Isnardia*).

p. 10. "*Aria Theophrasti fol. obtusis* Pin. 45. At Sandrish in Kent." A form of *Pyrus Aria.*

p. 24. "*Caucalis minor semipedalis* Ger. 1023. Hujus tantum meminit sub finem descriptionis quintae. Amongst wheat plentifully neer Petersfield Mr Goodyer who call'd it *Caucalis pumila segetum.*" The first British record of *Caucalis arvensis* Huds.

p. 45. "*Geranium Columbinum fol. magis dissectis, pediculis longissimis flore magno.* In several places in Hampshire." The first British record of *Geranium columbinum* L.

p. 56. *Gramen Paniceum procumbens, seu chamae paniceum palustre.* In a Lane and watery places, and Ditches near Petersfield." The identify of this is doubtful. Merrett may have confused it with another species. In *Fl. Hampshire* it is referred to *Digitaria sanguinale* Scop., but the habitat is most unusual unless brought by grain to a flour mill.

p. 56. "*Gramen Paniceum Bearded Panick grass* Ger. 16. By a rivolet side near Petersfield, Hampshire, Mr Goodyer." Suggested in *Fl. Hampshire* to be the alien grass *Panicum Crus-galli* L.

p. 70. "*Lathyrus maior angustifol. flore pallide rubro.* Hampshire." The first record for that county of *Lathyrus sylvestris* L.

p. 84. "*Oenanthe angustifolia* Lob. At East How in the Parish of Subberton seven miles from Petersfield, Hampshire." In the *Flora of Hampshire* this is referred to *Oe. silaifolia.* From Goodyer's MS. we find that he found it in a hedgerow in flower on June 18, 1620. From its habitat I am inclined to refer it to *Oe. Lachenalii* Gmel. which still grows in that area, and for which it is the earliest British evidence. It may be the same as *Oe. angustifolia* Lob. found between Margate and Sandwich, recorded in Johnson's *Kent* 1632, which is the earliest published record.

p. 99. "*Pulmonaria folii Echii* Bugloss Cowslip" is the *Pulmonaria angustifolia* already recorded by him in *Gerard.*

p. 100. "*Quercus serotina, procerior foliis fructuq. minoribus* Dor-Oak, plentiful on Linwood Hill in Bramshaw Parish, Wilts." *Quercus Robur* L. agg.

p. 103. "*Rapistrum aliud non bulbosum* p. 862 in the broad street by Whitechappel." Parkinson's plant is queried in *Flora of Middlesex* as the Turnip! Most likely Goodyer's plant was the alien *Bunias orientale.*

p. 103. *Rapunculus sylv. flore rubro albescente.* In the pastures and hedge sides on the north west of the Moor not far from the great

bog neer Petersfield." The earliest British record of *Campanula patula* L.

p. 103. "*Rapunculus corniculatus montanus* Ger.," and 117, "*Taxus tantum florens* Ger. 1370," are already recorded by Goodyer in *Gerard.*

p. 125. "*Vicia Bathoniensia, vel maxima sylvatica.* In Smoakhall Wood by the Bath, and at the Devizes in Wiltshire Mr Goodyer." First Wiltshire record of *Vicia sylvatica* L. The Bath locality is mentioned in Johnson's *Mercurius* of 1634.

Guilhaume Boel or Boellius so frequently mentioned by Goodyer, Johnson and Parkinson, was a native of Lisbourne. He travelled in search of new plants to Tunis, Barbary, Portugal and Spain, and in 1633 appeared to be a resident in Lisbon. In one place Parkinson refers to him as Dr Boel (*Theat.* 173), and (*l.c.* 1064) says that certain species of *Lathyrus* were brought from Spaine by Boel and imparted to Mr Coys of Stubbers, near Romford in Essex, whose rich garden Goodyer his great friend visited, but Parkinson adds, "they were given to Mr Coys in love, as a lover of rare plants, but to me of debt, for going into Spaine almost wholly on my charge hee brought mee little else for my mony, but while I beate the bush another catcheth and eateth the bird: so that while I with care and cost sowed them yearely hoping first to publish them, another that never saw them unless in my garden, nor knew of them but by a collaterall friend, prevents me, whom they knew hae their descriptions ready for the Presse." This doubtless refers to Johnson's publishing so many of Boel's discoveries in Gerard's *Herbal.* The "collaterall" friend may be Goodyer. In the *Theatrum* p. 1108 there is this interesting note:—Writing of Trefoils, probably *T. lappaceum* and *T. stellatum*, he says "both these sorts Boel brought with him out of Spaine, in the year 1608 and entituled them *Trifolium Vesicarium*, which he gathered there with about two hundred other sorts of seeds, besides divers other rare plants, dried and laide betweene papers, wherof the seeds were not ripe, of all which seeds I had my part, and by sowing them saw the faces of a great many excellent plants but many of them came not to maturitie with me, and most of the other wherof I gathered ripe seed one yeare by unkindly yeares that fell afterwards have perished likewise." This early reference to a Hortus Siccus is worth bringing to light.

GOODYER'S LIBRARY.

By his will, made shortly before his death in the spring of 1664, he bequeathed to "Magdalen College in Oxon to be kept entirely in the College library of the said College for the use of the said college," the greater part of his library, except his book of Chirurgery called "Ambrose Barry," which he left to one of the witnesses to his will, "John Westbrook, gentleman." The books now bear the inscription, "Ex dono Joh. Goodyer generosi." This generous donation was probably due to his friendship with William Browne, the joint author with Bobart and others of the Catalogue of the Oxford Physic Garden. This William Browne may have been connected with the William Brown who lived at East Hoo whom Goodyer mentions in his note on *Oenanthe angustifolia*, dated 1620, that is before the Magdalen man was born. The reference to the books in Magdalen College is:—"A.D. 1664. Johannes Goodyer generosus idemque Botanicus celeberrimus libros sequentes (qui fere universos &c. &c. herbariae tractentes complectuntur) ad valorem plus minus 120 lib. amoris ergo moriens Collegio Magdalensi legavit." This collection includes, *inter alia*, the following Botanical works. In some instances several books are bound together. Many contain notes or references in Goodyer's hand, others have the date of acquisition, the price he paid for them, and the cost of binding. A few are worm eaten, some have been rebound, but on the whole they are in excellent condition. They afford evidence of Goodyer's wide range of study, and it is a somewhat remarkable collection to have been made in the troublesome times he lived in. Their possession and the reputation he had as a Botanist protected him from molestation, as although a Royalist, he probably took no prominent part in politics:—Prosper Alpinus 'De Plantis Exoticis' et 'De Plantis Aegypti'; Apuleius 'De Medicaminibus Herbarum,' whence he obtained a figure of *Saxifraga* for Johnson's *Herball*; Jacob Bauhin 'De Aquis Medicatis' and 'Hist. Pl.' 3 vol. 1619; Kaspar Bauhin 'Catalogus Pl. circa Basil'; 'Phyto pinax'; 'Animadversiones'; 'Theatri Botanici' 1620 (bought for 3/6); an interleaved copy of the 'Pinax'; Basil Besler 'Hortus Eystettensis'; and 'Fasciculus'; H. Bock (Tragus) 'De Stirpium'; Otto Brunsfels 'Herbarum & Onamosticon'; Caesalpinus 'De Plantis' (bought 17 Nov. 1627 for 4/-); Camerarius 'Opuscula de Rustica'; Adrian Collaert 'Florilegium'; Fabio Colonna 'De Stirpium et minus cognitis de Plantis,' with its

beautiful examples of printing and plates bearing the imprimatur 'Fr. Gregorius' whose plants are now in the adjacent Fielding Herbarium at Oxford. It cost Goodyer 16/-. William Coles 'Art of Simpling.' The title page is dated 1656, but Goodyer notes that he paid 1/4 for it in 1655. Coles, an Oxfordshire man, was the author of 'Adam in Eden.' Clusius (De l'Ecluse) 'De Stirpibus'; 'Exoticorum' of the Plantin press cost 16/-; Jacques Cornut 'Canadensium Plantarum'; Costaeus 'De Universali Stirpium natura'; Valerius Cordus 'Annotationes in Dioscoridis,' 1551; Eurichius Cordus 'Botanologicon'; Dioscorides 'Materia Medica' and an interlinear MS. translation; also an Aldine edition 1499. The edition of 1558 he purchased in 1654 for 5/. Dodoens '*Herbal*'—several editions in French, Belgian, Latin, as well as Lyte's English edition. Goodyer gave 20/- for the 1616 copy and 3/- at Basingstoke for the 'Cruyterbuch.' Theo. Dorstenius 'Botanicon' 1540; L. Durante 'Herb. Nuovo'; Dr Everard (Everaerts Gilles) 'Panacea on the wonderful Vertues of Tobacco when taken in a Pipe,' date 1659, but bought by Goodyer in 1658. The possession of this and Neander's book on tobacco suggests that Goodyer preferred rather to fume than fret. Ferrari 'Flora,' 1641; Fuchs 'Historia,' 1642, with its beautiful plates; Konrad Gesner 'Cat. Pl.', 'Historia', 'De Stirpibus' and others; 'The Greate Herball,' represented by two copies; Jacob Horst 'Herbarium' 1630; [How] 'Phytologia'—this, the author's interleaved copy, is of exceptional interest; Thos. Johnson 'Mercurius Botanicus'; Gerard's 'Herbal' 1633; H. P. Knight 'Florae Paradise,' 1608, bought in 1632 for 6d, a work not mentioned in Pritzel or Jackson; Langham 'Garden of Health,' 1633, bought in 1657 for 4/-; Lobel 'Stirpium,' 1576, 1605, and the Belgian edition; the 'Adversaria' cost him 9/6, and the 'Cruyterbuch' of 1581, bought in 1622, 6/-; Adam Lonitzer 'Naturalis Historiae'; Lovell 'Hist. of Animals and Minerals,' 1661, cost 6/-; Johann Neander 'Bacmanum Tobacologia,' 1626, given to Goodyer by Dr Richard Downes; Nicolo Marogna 'Commentary on Dioscorides,' 1617; Battol. Maranta 'Methodi,' 1559; P. Matthioli 'Commentary on Dioscorides Compend. de Plantis.' The 1583 edition of Matthioli cost 20/-. Camerarius' edit. is coloured throughout. The 'Adversus of Melchioris,' Guilandini, 1568, cost 4/6 and the binding 1/2 in 1655. John Parkinson 'Paradisus Terrestris,' with notes for the 'Theatrum' of 1640

he paid on Aug. 24, 1640, 36/-, the binding being 3/- extra; Crispin du Pas 'Garden of Flowers'—a rare work, 1614, cost 10/-; Giovanni Pona 'Plantae . . . Baldo Monte,' 1617. There is also a volume 'Contarini Monte Baldo,' with many notes, bought for 9/- in April 1629; [Ray] 'Catal. Pl. Cantab.' 1660, bought in May of that year for 2/6. This contains an interesting MS. note to the effect that its authors were Mr John Nid and Mr John Wray. The information was supplied by John Maplecroft of Cambridge, then tutor to the son of the Earl of Northumberland. This Maplecroft is mentioned in my note on Samuel Corbyn's 'Cat. of Cambridge Plants' of 1657 (*Journ. Bot.* 76, 1912). Paul Reneaulme 'Spec. Hist. Pl.' 1611. For this Dr How paid the bookseller, Mr Allestree of Paul's Churchyard, 4/6, on Aug. 11, 1653; Ruellius 'De Natura Stirpium'; Julius Scaliger 'De Plantis'; Kaspar Schwenckfelt 'Stirp. et Fossil. Silesiae,' 1600; Adrian Spiegel 'Isagoges'; Karl Stengel 'Hortensis'; Tabernaemontanus 'Kreuterbuch,' 1625, bought of W. How by Octavius Pulleyn for 54/-, Sep. 6, 1655. Emanuel Sweert 'Florilegium.' Of Theophrastus there are several editions. The 'Animadversiones,' 1625, cost 1/6, the binding 1/2, Jun. 8, 1665; William Turner 'English Herball,' to which Goodyer has supplied an index; and Johannes Vesting 'De Plantis Aegyptiis,' 1638.

GOODYER'S MSS.

The MSS. include the actual descriptions of the Ferns which are printed verbatim in Johnson's *Gerard*. These are dated July 4 and 6, 1633, and refer to *Dryopteris dilatata*, *D. Filix-mas* var. *affinis*, *Polystichum lobatum* (or with greater probability to *P. setiferum* Woynar, *P. angulare* Kit.), and *Dryopteris Thelypteris*. There are also full descriptions of *Sium repens*, dated 27 Aug. 1619, which allude to the sessile inflorescence "growing at ye jointes . . . of the stalks umbell fashion, after ye manner of *Caucalis nodosa echinata semine Bauhini* (*C. nodosa*) . . . this groweth plentifully by ye lake and riverside at Droxford. . . . The leaves grow in or above the water all ye yere." This doubtless refers to *Apium nodiflorum* Reichb. f., for which, unless it is Turner's Water Parsley, it is the earliest British evidence. He clearly distinguishes it from "*Pastinaca aquatica minor*, *Sium Odoratum* Tragis, the *Apium palustre* of Fuchs." Of this he says the leaflets "are opposite against another fast to ye

middle ribbe without any foot stalk . . . the flowers grow on ye toppes of ye branches in umbells of colour white . . . It groweth plentifully in ye river by Droxford 2 July 1620." This is *Sium erectum* Huds., and the first evidence of it as a British plant. Here is also a description of the *Pastinaca aquatica maxima* (*Sium latifolium*) which he gathered at Oxford in 1622, as well as of "*Sium alterum Olusatri facie* found at Moor Park in the ponds," afterwards recorded in Johnson's *Gerard*, where the plate evidently represents the poisonous *Cicuta virosa* L., the earliest British reference. The locality is not the Irish Moor Park, but the one near Rickmansworth in Herts., although Goodyer's record has received no mention in the Flora of that county. The plant existed in that station in 1813. Goodyer must have specialised in the Umbelliferae for he added *Sium erectum*, *Apium nodiflorum*, *Cicuta virosa*, *Oenanthe Lachenalii*, *Carum segetum*, *Caucalis arvensis*, and *C. nodosa* to the British flora. There are other notes by Goodyer referring to *Scorpioides Matthioli Matth.* 895. Gerard hath it not. 16 July 1621. *Rubia spicata Cretica Clusii*, 10 July 1621; *Phalaris minor Boetica Boelii semine nigra et semine albo*, 20 July 1621; *Phalaris bulbosa Boelii*, 20 July 1621; *Valeriana mexicana* with descr. 21 July 1621; *Phyteuma monspeliensium* Ger. p. 918, 21 July 1621; *Malva flore amolo Boetica aestiva*, 21 July 1621; *Polygonum alterum pusillo vermiculato*, 3 Sep. 1621. (This refers to *Frankenia laevis* L.); and *Cachrys Quercinis*; *C. Juglandis*; *C. Castaneae*, 28 April and 9 May 1622. Another MS. is an 'Alphabetical List of Plants,' with references to Gerard and Parkinson. This may be of such as he had seen or had growing in his garden. It contains a few scattered records of localities, as "*Alliaria Lob.* 530, Ger. 650. At Droxford [called] Herbe John"—our Jack-by-the-Hedge = *Sisymbrium Alliaria* Scop., the first county record, and an interesting explanation of its common vernacular name. "*Apium crispum* Ger. 361 Idsworth 17 Feb. 1622." This refers to the Crisped or Curled Parsley which doubtless he saw growing in Idsworth Park garden, near Havant in Hampshire. "*Caput Gallinaceum Belgarii* in flower 24 July 1624 Langford to Stapleford in Wilts by ye way on south side of ye river [Wiley]," the plant being *Onobrychis viciifolia* Scop. "*Corona fratrum.* I found it wild in Hampshire in a field called Marborne near by Habridge being ye land of Wm. Maldon and in ye next field to it 29 June 1629." [This is the locality whence he recorded the

Limodorum] = *Cirsium eriophorum*. *Dentaria bulbifera* in a wood at Mayfield 6 Aug. 1634. This precedes Parkinson's record from the same place in 1640 = *Cardamine bulbifera* Cr. "*Fumaria claviculata* South Sea in flower 30 Aug. 1621." The earliest record for Hampshire of *Capnoides claviculata* (*Corydalis*). "*Lunaria minor* Ger. 228 21 May 1618. I found it at Droxford in a wood by . . .", the first Hampshire record of *Botrychium Lunaria* Sw. "*Menthrastrum montanum* Droxford in ye stonewall." This is dubious. "*Sium Olusatrum folio* by Moor Park and at [?] Denham in Hertford." Denham on the Colne is in Bucks., but the name is not quite clearly written. The plant is *Cicuta virosa* L. His other MSS. include 'Cat. Plant. Horti Dalfidiae,' 'Index Plant. Alphabet,' 'Fasc. descr. Plant.'

The interesting and valuable interleaved copy in Goodyer's library of How's *Phytologia* is enriched with a large number of MS. notes, mostly in How's own hand. These include many from William Brown of Magdalen College and from John Goodyer. On the first page in Goodyer's hand is "Rec. 30 Apr. 1659" (How died 30 Aug. 1656). Under this in another hand is "Rec: of Mr Goodier (so he also signs a letter) for Mr Bold's use." Whether this has any reference to the purchase of other material belonging to How is only conjecture. After it came into the possession of Goodyer with other MSS. he wrote in it the following notes:—

p. 2. "*Acetosa maxima*" is added.

p. 4. "*Alsine aquatica verna* Springe chick weed" is added.

p. 10. "*Arctium montanum et Lappa minor Galeni* Lob. Buttonburre Mangerfield in Master Langlies yard." This is not referred to in *Fl. Hampshire*. "June 4, 1659, Mr Geo. Burton of Petersfield, Schoolmaster, gathered his imagined *Pulmonaria Gallica Lobelii* on Ladle Hill in flower and brought it to J. G. ye 4 of June 1659. It is *Jacobaea Pannonica* 2 Clus. C. Bauh. p. 131 (68) and it is *Jacobaea angustifolia* in his book p. 280.

p. 20. "*Cannabis spuria altera flo. purp.* In agris. Netle Hempe. *Cannabis spuria altera sylvestris, Lamium quorundam* Lob. Icon. p. 527." First record for Hants. of *Galeopsis Tetrahit* L., var. *bifida* (Boenn.)

p. 54. "*Gramen palustre Cyperoides* Lob. Ger. Great Cyperus grasse."

p. 130. "*Viola sive Jacea tricolor sylvestris parva.* In agris. Wild pansie" = *Viola tricolor* L.—presumably from Hampshire.

The following notes are inserted by How on the authority of Goodyer to whom he thus alludes on the front page "Gaine I was for Goodyer's Plants and that ye like for Brownes, Lobell [a line here is struck through]."

"*Filago minor* Lob. neere Petersfield" = *Filago minima* Pers. and first record for Hants. Doubtless from Goodyer.

"*Hieracium montanum* at Mangerfield in Mr Langtons yard." [See above Mr Langlies yard].

"*Gramen spartium capillaceo folio minimis* Ger. em. [30] Ericet. Hampshire." See Merrett *Pinax* p. 58, where it is given for Hampstead Heath. "*Quercus natalitiis Di virens* ye Christmas Green oake (p. 1646), neere ye Castle of Malwood, Hampshire, wh. I went to view it and caused it to be paled about." A form of *Quercus Robur* which bears a few green leaves shortly before Christmas. This is given in Parkinson's *Theatrum Botanicum* p. 1646, 1640, under the title "Christide Greene Oake," but is omitted in the *Flora of Hampshire*, for which county it is the earliest evidence.

"*Serpillo foetidum Goodyeri* on ye chalkie downs 2 or 3 miles from Petersfield." See Merrett's *Pinax* p. 112, 1666 = *Thymus Serpyllum* L. forma. Earliest Hampshire reference.

"*Pimpinella Saxifraga maxima* and *P. Saxifraga major foliis dissectis* in Hampshire." *P. major* Huds. is not definitely included in the *Flora of Hampshire*, nor is there any reference to this record under *P. Saxifraga*.

"*Erynus Matth.* in Hampshire."?

"*Sambucus lacinatis foliis* Dr Jolyff neere Winchester." = *S. nigra* L., var. *laciniata* L. (Given in Merrett's *Pinax* 109, as near Bristol).

p. 21. Under *Cardamine flosculis minoribus, sive impatiens* Wm. How adds this note "Dr Johnson was mistaken in saying yt it was *Sium minimum* Alp. I have both ye plants. I admonished him of this error but he lived not to amend it, J. Goodyer."

p. 35. "*Dryopteris Trag.* Tree-fern. It growes on a bottome called Rogers Deane in ye parish of Faringdon, Hampshire, about a mile and halfe from ye church, a furlong from one John Trybes dwelling house on ye north east part of ye house about 2 miles from Alton about a mile north east from Dogford Wood. Great antient beeches kept ye sunne from shining on ye Plants. Ann. 1654 many of those trees were cut downe. The Plants . . . were short ye leaves growing on short stemms neere ye grait as Tabernaemont.

pictureth it, 501 tom. 2 under ye title of *Filicula petraea fem.* 3 Those yt. grew vnder ye trees were much higher agreable to Tragus figure p. 538, John Goodyer."

p. 45. "Park. des. of *Genista spinosa minor* p. 1003 accords not with ye least furze . . . beares no leaves at all, they are but the first sproutings of ye thorns or prickles as of ye great furze (bee what hee will yt writes ye contrary). . . . I cannot find from whence Park. rec. his fig. I suppose it was made by imagination. J. Goodyer."

p. 45. *Genista spinosa flore albo* Park. 1003 *G. spinosa major brevibus aculeis* Bauh. Pin. p. 394. This I suppose groweth not in England. Pena Lobel in *Adv.* p. 354 had seene it nowhere but in Prouience wch is a hot countrie, and Lob. lived time enough in England before ye *Adv.* was written to haue observed it if it had growne but half so common as ye lesser Furze. Cam. [erarius] in hort. med. pag. 106 saith 'in fichlibus aggeranda' wch argues yt it will not endure abroad in a cold countrie in ye winter. The Icons yt were made for *Nepa* in *Adv.* p. 354 in Tabern. Ic. p. 408 in *Hist. Lugd.* p. 164 agree not wth ye lesser Furze. Parkinson sayes yt his *Genista spinosa minor* p. 1003 is ye Nepa of Lob. This duly considered I am confident to affirme yt . . . lesser Furze it not . . . resembles. John Goodyer."

p. 53. "*Gr. holosteum Alpinum minimum* Bauh. Prod. male a Johnson's *Holosteum pumilum* non descript. provenit in ericetis. Joh. Goodyer."

p. 54. "*Gramen murorum spica longissima.* On ye walls of Winchester, John Goodyer." *Festuca Myurus.* See Gerard *Em.* p. 30, 1633. New to Science.

p. 81. *Oenanthe angustifolia* Lob. Obs. pag. 420. *Filipendula* Durant p. 188. This 19 of May 1620 I found this wild in East Hoo in ye parish of Subberton [Soberton] about 7 miles from Petersfield in Hampshire in a hedgerow about a Flightshott from ye then dwelling house of Mr William Browne on ye south part of ye said house and ye 28 of June 1620 I saw it there in flower." See Merrett, p. 84. Identified by Townsend (*Flora Hampshire* p. 179) with *Oe. silaifolia*, but surely a very unlikely situation for that pratal species. I strongly suspect it to be *Oe. Lachenalii*, which sometimes grows in ditches, and probably the first British record.

p. 100. "*Pulmonaria maculosa* Ad. Lob. Neer King's Wood in Hampshire." How crosses out the name of "Mr Loggins" and sub-

stitutes "Goodyer Park. Parad. Ter." The plant is *Pulmonaria angustifolia* L., first added to the British Flora by Goodyer. See *Paradisus Terrestris*, p. 248.

p. 129. *Vicia maxima*—the name is changed by How to *V. Maxima sylvatica spicata Bathonensis*—sent by Goodyer. Bauhin's synonym is erased. Doubtless *Vicia sylvatica* L. See Johnson's *Mercurius*.

On the blank pages at the end "*Geranium columbinum foliis magis dissectis pediculis longissimis flore magno.* I found it wild in ye beginning of August 1654, it is not described or pictured yt I can find. The place of growth and day for this and [Erysimum ii.] following. In ye streets neere White Chappell East of Aldgate, London." The plant is *Geranium columbinum* L., which Goodyer first records for Hampshire. See Merrett's *Pinax* 45, 1666.

"*Taxus tantum florens.* In the chalky hills in Hampshire."

"*Erysimum* ii. Tab. grows in ye streets near White Chappell east from Aldgate, London. J. Goodyer." See Merrett *Pinax* 103.

"*Anonymos aquatica rubida, foliis Anagallidis flore luteo.* This groweth in a little lake in a heath neere Petersfield in Hampshire, in a hot summer some parts of ye lake are drie in August, sometimes before, there and then ye flowers are to be seene."

"*Holosteum perpusillum* growes in ye same lake* in ye east part of ye same heath, greene all ye winter under water and flowers when ye water is vanished in August, and sometimes much sooner. I first observed this plant in a pond neere Holburn in ye New Forest in Hampshire. J. Goodyer." = *Ludvigia apetala.* New to Science.

"*The water of this lake this 2 of June 1656 about 4 of ye clock in ye afternoone was well neere as warme as Bath water at Bath in Summersetshire althoug ye day was cloudy."

"*Holosteum Junciifolium repens Goodyeri copiose* . . . in Comit. Surriae juxta Purbright. Goodyer." See Merrett *Pinax* 63, where it reads, "At the bottom of the *Moor* on the east side of Petersfield and in standing waters in and about Stretham Ferry." = *Littorella uniflora*, and the earliest record. His *Holosteum perpusillum* (see above) may be the same plant.

"*Pedicularis flore albo.* Several places in Warwickshire. John Goodyer." = *Pedicularis sylvatica* L. First record for that county.

"*Rosa sylvestris odora Eglanteria oritur a Bathonia.* J. Goodyer MS." Probably *Rosa Eglanteria* L.