

## PLANT NOTES

Compiled by the late A. J. WILMOTT.

160/4. *LOTUS ULIGINOSUS* Schkuhr. 2. E. Cornwall; R. Fowey near Dozmary Pool, September 1948. A curious, submerged form with green, irregularly twisted stems and minute leaves about 1 cm. apart,  $1\frac{1}{2}$ -2 mm. long. Not flowering. It was more extreme than Glück's forma *submersus* (Glück, H., 1911, *Biologische und morphologische Untersuchungen über Wasser- und Sumpfgewächse*, 3, 93), which was found wild in a small pond in the Solitude near Erlangen (October 1907), and also produced experimentally at Heidelberg by sinking a land plant in a pot in 60 cm. deep water from July 5th to the 25th, 1899. In Glück's experiment completely submerged shoots with 4-10 internodes developed in the axils of former aerial leaves. Some of these shoots were unbranched, in others they had 1-3 lateral branches. The length of the shoots was reduced to about  $\frac{1}{2}$ - $\frac{2}{3}$  that of corresponding shoots in the land form. The submerged internodes were semi-transparent and very brittle, while the aerial internodes were dark green. The submerged leaves were similar to the aerial leaves but much smaller. These leaves were 3-7 mm. long and 3-6 mm. broad, and internodes 5-20 mm. long.—A. H. G. ALSTON.

†170/4. *Coronilla glauca* L., 1754, *Cent. Pl.*, 1, 23. 3, S. Devon; naturalised on the cliff below Rockend, Torquay, March 1949, E. F. WARBURG. A well-known greenhouse plant, only capable of being grown out of doors in the warmer parts of England. A shrub up to 50 cm. high. Leaves glaucous, imparipinnate, with 2-3 pairs of obovate leaflets; stipules small, linear-lanceolate, caducous. Flowers yellow, 5-8 in umbels. Pods with 2-3 oblong articulations. Native of the Mediterranean Region. The plant was growing among *Phlomis fruticosa* L. which was present in much greater quantity. It was evidently coming up from self-sown seed. It doubtless originated in a neighbouring garden though the parent plants were not traced. The general vegetation was hawthorn scrub, though other species—some of them alien (e.g. *Quercus Ilex* L.)—were also present.—E. F. WARBURG.

†566/20. *SALVIA REFLEXA* Hornem., 1807, *Enum. Pl. Hort. Hafn.*, 1, 34; Gams, 1927, in Hegi, *Ill. Fl. Mittel-Europa*, 5 (4), 2477, fig. 3331, 1 (stamens); Epling, 1938-9, *Repert. Sp. Nov.*, Beihefte, 120, 102, pl. 13, fig. 29 (stamens); Moldenke, 1949, *American Wild Flowers*, 297.

*S. lanceolata* Brouss., 1805, *App. Elench. Pl. Hort. Monsp.*, 15; Jacquin, 1811-1813, *Eclogae Plantarum*, 1, 22, t. 13; non *S. lanceolata* Lam., 1791; *S. lanceifolia* Poir., 1817, in Lam., *Encycl. Suppl.*, 5, 49;

Britton & Brown, 1913, *Ill. Fl. Northern States and Canada*, ed. 2, 3, 130, fig. 3632.

18, S. Essex; waste ground, Dagenham, August 1949, N. Y. SANDWITH [Ref. No. 3508]. An erect, much branched annual, 2-3 ft. high. Leaves linear-oblong or linear, 2-4 cm. long and 0.5-1.3 cm. wide, subentire, remotely crenate-serrate, greyish hoary, faintly foetid. Flowers in narrow, interrupted, spike-like inflorescences, 2-3 in each verticillaster. Calyx 4-6 mm. long, widely gaping in fruit. Corolla small, less than 1 cm. long, very pale bluish-mauve, almost whitish-mauve.

There are two previous records of this species from Britain, one from Fritton, Norfolk, in *B.E.C. 1928 Rep.*, p. 634 (1929), the other from Sibbertoft, Northants, in *B.E.C. 1938 Rep.*, p. 53 (1939). The second record was published under the name *Salvia lanceolata* [in black type] Willd., *Enum.*, 37 (1809). This was misleading and inaccurate: not only was the plant not new to the British list, but Willdenow should not have been cited as the author of the name, since he was not describing a new species but was listing and describing *S. lanceolata* Brouss.

This species is a member of Epling's Section *Glareosae* of the large Subgenus *Calosphace*, which is wholly American and has not otherwise been represented in the *British Plant List*, although many of the showy species (e.g. *S. patens* Cav., *S. farinacea* Benth., *S. splendens* Sellow, *S. fulgens* Cav.) are well known in cultivation. *S. reflexa* itself is anything but a garden plant, and is a common weed on plains and mesas of the Central United States, extending southwards to Texas and Arizona and thence as far as Central Mexico. Dr Moldenke, who calls it "Rocky Mountain Sage," remarks that it is of special interest because of the medicinal properties attributed to it. *S. reflexa* has occurred frequently as an adventive in Central Europe, being introduced with grass-seeds and grain. At Dagenham it was growing near *Hibiscus Trionum* L., which has become a common weed in the United States. Jacquin's lovely coloured plate (*loc. cit. supra*) gives a perfect representation of *S. reflexa*, but the corollas of the Dagenham specimens were much paler.—N. Y. SANDWITH.

+593/4. *HERNIARIA CINEREA* DC. (not "Lam. & DC." as printed in *B.P.L.*). This species, which differs from *H. hirsuta* L. in its ashy-grey appearance, in the ascending ends of the branches, and in the sepals having longer subequal stiff hairs and not ending in a bristle, has been correctly identified and reported from several localities. It seems, however, that all records of *H. hirsuta* from Burton-on-Trent, Staffs., v.-c. 39, should be referred to this species. The following material from that town is all *H. cinerea*:—

Herb. Lousley: on gravel heaps near Bass's Brewery, August 29, 1936, J. E. Lousley.

Herb. R. C. L. Burges: dry gravelly place, Shobnall Road, August 29, 1936, and loose asphalt, Shobnall Road, September 1945, R. C. L. Burges.

Herb. Druce, Oxford University (all det. E. F. Warburg): in plenty on the railway siding and waste ground, 1926, *Druce & Curtis* (det. Thellung as *H. hirsuta*, April 1927); Burton-on-Trent, July 1930, *G. C. Druce*; Burton (no date), *G. C. Druce*.

The records for *H. hirsuta* in *B.E.C. 1931 Rep.*, 468, 1932, and *B.E.C. 1943-4 Rep.*, 816, 1948, should be amended to *H. cinerea*.—J. E. LOUSLEY.

615/6-8. *Polygonum* spp. 23, Oxon; a colony similar to that reported in the 1946-7 Plant Notes in a field at Freeland, Oxon, in September 1948. So completely had the sown crop failed that I wondered if by any chance the *Polygonum* was the crop and some use had been found for it. It was a beautiful sight; the plants averaged about 3 ft. in height and individuals ranged in colour from pale green to deep cherry-red. *P. lapathifolium* predominated, with *P. nodosum* running it fairly close. *P. Persicaria* was not abundant. At the lower end of the field the *Polygonum*s thinned out and there was a certain amount of *Brassica alba*. Along the path at the top end there was also a quantity of *P. Convolvulus*.—B. M. C. MORGAN.

+615/25. *Polygonum cognatum* Meisner, 1826, *Monographiae Generis Polygoni Prodrromus*, 91. On July 31, 1948, I took R. Graham and D. McClintock to see the plant discovered by G. C. Brown at Hythe Quay, Colchester, v.-c. 19, in 1925, and subsequently named by Dr Thellung *P. cognatum* Meisn. var. *alpestre* (C. A. Mey.) (see *B.E.C. 1925 Rep.*, 1062; *1926 Rep.*, 275; *1928 Rep.*, 924). It persisted in about the same quantity as when I first saw it in 1936. On the following day at Felixstowe Docks, E. Suffolk, v.-c. 25, I found with Mr McClintock a large (c. 1 × 2 metres) patch of a prostrate *Polygonum* near railway lines which at first sight seemed likely to belong to a different species. From the Colchester plant it differed in being more closely appressed to the ground, in the shorter (c. 5 mm.) internodes, in the leaves being shorter, acute and linear-lanceolate (c. 15 × 2.5 mm. as compared with c. 30 × 12 mm. average) and in the flowers being more conspicuous. Examination of a long series of *P. cognatum* from India and the Orient in Herb. Kew showed that the species is very variable and that the Colchester and Felixstowe plants could be matched by extreme specimens of the series connected by many intermediates. British material in my own collection and elsewhere was also found to show some corresponding variation.

The Felixstowe plant agrees with *P. ammanioides* as described and illustrated by Jaubert & Spach, 1844, *Ill. Pl. Orient.*, 2, 28, t. 119. These authors also illustrate (t. 118) *P. alpestre* C. A. Meyer, 1831, *Verz. Pfl. Cauc.*, 157, which is the Colchester plant.

A later account of the genus by Meisner (1856, in De Candolle, *Prodr.*, 14, 96) contrasts the two plants as varieties of *P. cognatum* as follows:—

- a *alpestre*, pedicellis calyce brevioribus, caulibus elongatis (pedalibus et ultra), foliis plerumque majoribus.

$\gamma$  *ammanioides*, pedicellis calycem subaequantibus, caulibus elongatis, foliis minoribus saepius anguste lanceolatis acutis, brevius petiolatis. In Persiae . . . .

Boissier (1879, *Fl. Orient.*, 4, 1037-8) treated *P. alpestre* C. A. Mey. as a species, of which he treated *P. ammanioides* as a variety.

Pending further research the two plants should stand in *B.P.L.* as follows:—

- 615/25. *P. cognatum* Meisn.  
 a. *alpestre* (C. A. Mey.) Meisn.  
 b. *ammanioides* (Jaub. & Spach) Meisn.

Other British material referable to var. *ammanioides* has been collected at intervals from Westerley Wear, Kew Green, Surrey, v.-c. 17, by various collectors (e.g. *A. B. Jackson*, 1917, in *Hb. Lousley*). Although less extreme than the Felixstowe plant this can hardly be separated from it. The *Polygonum* was established at this locality from before 1872 (1872, *J. Bot.*, 10, 338) until destroyed by construction of tennis courts in 1923 (*B.E.C. 1928 Rep.*, 924). The *Polygonum cognatum* which has long been established at Wetmore Road railway sidings, Burton-on-Trent, Staffs., v.-c. 39, is intermediate between the two varieties (*J. E. Lousley*, August 29, 1936, in *Hb. Lousley*).

It is evident that the leaves on the extremities of the branches of var. *ammanioides*, as seen late in the season, are much narrower than the earlier lower leaves. But even when allowances are made for this seasonal variation, the constancy of the Kew and Colchester plants as collected over a long period and the remarkable difference between the two varieties suggests that they may have a genetic basis.—*J. E. LOUSLEY*.

637/2. *URTICA URENS* L.; composition of stinging fluid. [Emmelen, N., and Feldberg, W. (1947, *J. Physiol.*, 106, 440-455) have shown, by physiological tests, that the fluid in the stinging hairs of *U. urens* contains histamine (0.02-0.01%) and acetylcholine (over 1%), besides a third unidentified component having similar (smooth-muscle-contracting) properties. Histamine is responsible for the "triple response" (reddening, wheal, flare) to the skin; as well as the residual itching sensation; acetylcholine by itself has little irritant action, but in combination with histamine it produces an immediate stinging pain. The effects of a nettle sting can be approximately imitated by pricking a solution of histamine and acetylcholine into the skin, so that the function of the third component is not clear; doubtless it reinforces the effect of the other two. Histamine and acetylcholine were also detected in the nettle leaf tissue, where it may be formed and later transported to and concentrated in the hairs.]

Histamine is a compound which is normally present in very small quantities in animal cells. Certain stimuli—notably the presence of a foreign protein—cause an accumulation of excessive (although still very small) amounts of histamine in the cells, and lead to various reactions

on the part of the body. The most interesting of these are "allergic" manifestations such as nettlerash, hay-fever, asthma, etc., which may be provoked violently by a seemingly tiny stimulus; they can also be produced directly by administration of histamine. Acetylcholine is a substance, having somewhat similar properties, and believed to be involved in the mechanism of transmission of impulses along the nerves.

Acetylcholine and particularly histamine appear to be of rare occurrence in the vegetable kingdom; both are present in ergot, and acetylcholine is reported to occur in *Capsella*. How the combination originated in the nettle must be a matter for speculation; it is conceivable that they are normally present in plants, as in animals, in connection with protein degradation or synthesis, and that the nettle gained an evolutionary advantage when it became possessed of unusually high concentrations of the two compounds in its hairs. It would be interesting to know whether other stinging plants, e.g. in the *Loasaceae*, function by the same agency, and also what is the agent in certain *Myosotis* and *Primula* which cause allergic reactions in many individuals.

It has for some time been recognised that the sting of a nettle involved the release of histamine in the cells affected, but until the publication of this paper it was believed that this was a response of the cells to some allergen in the stinging fluid. Emmelen and Feldberg have now shown that the mechanism is much simpler. The stinging fluid of wasps and bees is believed to contain a protein, which provokes release of histamine by the cells in the stung area. The notion that both nettle and wasp stings are due to formic acid is still popularly current, but appears never to have had much foundation on experimental evidence. The idea probably arose from the fact that ants contain appreciable amounts of this acid, and that it is corrosive and irritant, but as Emmelen and Feldberg point out, its effect is not like that of a sting.—  
D. P. YOUNG.

669/"10":  $9 \times 10^2$  "ORCHIS MACULATA SUPERBA": Dombroin, [Rev.] H. H., 1866, *The Floral Magazine*, 5, plate 308. The plate is good, and shows one of the hybrids between a spotted and a marsh orchis, probably *O. ericetorum* (Linton) E. S. Marshall crossed with *O. purpurella* T. & T. A. Steph. "The normal type of the plant we here figure is by no means rare, but the variety *superba* has only been lately brought into notice; we learn, from the firm of Messrs Osborn and Son, of Fulham, by whom it was exhibited, that 'it was found growing wild in Ayrshire, but where and by whom we do not know, it having passed into our hands through the respected firm, the Messrs Samson, of Kilmarnock. It is perfectly hardy . . . exhibited at the scientific meeting of the Royal Horticultural Society . . . it was awarded a first-class certificate'."

It shows the hybrid vigour so characteristic of hybrids between *O. ericetorum* and *O. praetermissa*, the tuft of large bracts under the spike being a feature of such hybrids, in my own experience. As *O. praetermissa* does not occur in Ayrshire, being replaced by *O. purpurella*, often in the form formerly called *O. praetermissa* var. *pulchella*, one must

presume the parentage suggested above. Attention is called to the plate as the book is rare, and although the triverbal name is at present illegitimate, it is possible that usage may later legitimise such names.—A. J. WILMOTT.

669/11 × 674(3)/1. ORCHICOELOGLOSSUM on the Wiltshire Downs. In his article printed in Part IV of this Journal, Mr Grose suggests that the presence of "ring spots" on the leaves may indicate the influence of a marsh orchid. I consider this view entirely mistaken, and that "ring spots" are characteristic of *Orchis Fuchsii*, in which the "blobs"—as I call the large maculae—are very commonly paler in the centre and often so pale as to produce the ringed appearance.

The maculation on the leaves of marsh orchids is of such differing types that it is misleading to refer to all the markings as "spots." For that reason I have in my notes distinguished between "dots," such as the tiny marks common in some forms of *O. purpurella* T. & T. A. Steph., "spots," larger markings up to about one-eighth of an inch diameter, "blobs," the larger markings so common in *O. Fuchsii* ("oval transverse blobs") and in *O. mascula*, and "blotches" for the confluent blobs which are sometimes to be found in *O. occidentalis*.

I have expressed the opinion that ring-spots in marsh orchids indicate the influence of *O. Fuchsii* (1946, *B.E.C. 1943-44 Rep.*, 687-689), and, as I have never yet seen any locality where "*O. pardalina* Pugsl." can be found growing pure, continue to hold that view, which seems true of all the ring-spots which I have seen on marsh orchids. I think there is little doubt that Mr Grose's plant is *Coeloglossum viride* × *Orchis Fuchsii*.—A. J. WILMOTT.

753/51. CAREX BIGELOWII Torr. ex Schwein. f. **infuscata** (Drejer) Nelmes, comb. nov.; *C. saxatilis* L. f. *infuscata* Drejer, 1841, *Rev. Caric. Bot.*, 43; *C. rigida* Gooden. f. *juncelliformis* Almquist apud Neuman, 1901, *Sverig. Fl.*, 707.

97, Westernness; on Rois-bheinn (Roshven), near Lochailort, a single large tuft, 3rd September, 1949, J. E. RAVEN.

I have not seen Drejer's type nor his original description, but Mr John Raven's plant agrees with the description of forma *infuscata* in Kükenhal's monograph of the *Caricoideae* (1909, *Engler Pflanzenreich*, IV, 20, 301): "Culmus gracilior. Folia angustiora erecta. Spiculae tenuiores laxiores." The more erect and narrower leaves and the smaller, laxer spikes give this Westernness plant a facies clearly distinct from typical *C. Bigelowii*. This species, however, is a rather variable one, and until this critical group of *Carices* is better known one must restrain an inclination to raise forma *infuscata* to varietal rank.—E. NELMES.

872-876. CHARACEAE. As the determination of charophytes ordinarily requires microscopical examination material that is fresh or preserved in a tube of weak formalin is much preferred. If fresh, speci-

mens should be enclosed in a tin with the surplus water drained off. Some fruiting portions should be included if possible.

Where it is only feasible to preserve dried specimens small portions might well be kept separately for examination purposes; this will avoid soaking off pieces from a mounted specimen.—G. O. ALLEN.

872-876. CHARACEAE. With reference to the note in the *B.E.C. 1943-44 Report*, p. 659, about seventeen sets have been prepared with the help of Mr L. C. Lyon under the title of "British Charophyta—slide series 1—1949."

Each set comprised 24 slides. The species consisted of *Nitella opaca* Ag. ♂ ♀, *N. flexilis* Ag., *N. spanioclema* Gr. & B.-W., *N. translucens* Ag., *N. mucronata* Miq. var. *heteromorpha* Kuetz., *Tolypella intricata* Leonh., *T. prolifera* Leonh., *T. glomerata* Leonh., *T. nidifica* Leonh., *Chara canescens* Lois., *C. vulgaris* L., *C. vulgaris* var. *longibracteata* Kuetz., *C. hispida* L., *C. contraria* Kuetz., *C. contraria* var. *hispidula* Br., *C. aculeolata* Kuetz., *C. aspera* Willd. ♂ ♀, *C. fragifera* Dur. ♂ ♀, *C. delicatula* Ag., *C. delicatula* var. *barbata* (Gant.) Gr. & B.-W., *C. delicatula* var. *annulata* (Wallm.) Gr. & B.-W.

Distribution included British Museum, Kew, South London Bot. Inst., Edinburgh, Oxford, Cambridge, Leeds, Cardiff, Aberystwyth, Cape Town, New York and Kingston (Rhode Island).—G. O. ALLEN.