

PLANT NOTES

30/T. **Tsuga heterophylla** (Raf.) Sarg. 1898, *Silva N. Amer.*, **12**, 73; *Pinus canadensis* sensu Bong., 1833, in *Mém. Acad. Sci. St. Petersb.*, **2**, 163, non L., 1767; *Abies heterophylla* Raf., 1830, *Med. Fl.*, **2**, 182. 5, S. Som.; Smith's Combe, East Quantoxhead, regenerating vigorously in plantation, A. D. & O. M. Hallam (1959, *Proc. Som. Arch. & N.H.S.*, **103**, 95). 16, W. Kent; Kilndown Wood, near Goudhurst, two small saplings, 1960, F. ROSE and C. A. STACE, conf. J. LEWIS. Tree to 70 m. with short usually pendulous branches forming a narrow-pyramidal head; buds globose-ovoid, obtuse; branchlets yellow-brown changing to dark red-brown, pubescent for 5 to 6 years, and with long pale hairs while young. Leaves linear, 6-18 mm. long, rounded at apex, shining dark green and grooved above with broad white bands beneath. Cone sessile 2-2.5 cm. long; scales obovate, longer than broad, puberulous outside.

Native of N. America from S. Alaska to Idaho and California. Introduced to Britain in 1851.

The two Kentish plants were small, the larger being about a metre high, and they appeared well established in semi-natural woodland; occurring in the higher, drier part of the wood, on somewhat podsolised Tunbridge Wells Sand, which supported a typical dry acid woodland flora. The most frequent and conspicuous species in the immediate neighbourhood were:—

<i>Quercus robur</i> -d.	<i>Blechnum spicant</i>
<i>Castanea sativa</i> co-sub.-d.	<i>Scrophularia nodosa</i>
<i>Betula pubescens</i> co-sub.-d.	<i>Potentilla erecta</i>
<i>Taxus baccata</i>	<i>Teucrium scorodonia</i>
<i>Pteridium aquilinum</i>	<i>Solidago virgaurea</i>
<i>Rubus</i> spp.	<i>Luzula pilosa</i>

Dallimore and Jackson (1931, *Handbook of Coniferae*) state that the species is easily propagated from seed; and the plants in question probably arrived from Bedgebury Pinetum, which is only 3 km. away. Later in the same day, in the Pinetum itself, several small seedlings of this species, a few cm. high, were noted.—C. A. STACE.

34/C. **Chamaecyparis lawsoniana** (Murr.) Parl., 1864, in *Ann. Mus. Stor. Nat. Firenze*, **1**, 181; *Cupressus lawsoniana* A. Murray, 1855, in *Edinb. New Philos. J.*, new ser., **1**, 299. 16, W. Kent; small copse, Tunbridge Wells, several seedlings, c. 20-30 cm. high, established by an old neglected driveway near fruiting specimens of parent trees, 1958, C. A. STACE. 17, Surrey; self-sown seedlings on a wall near Queen's Cottage, Royal Botanic Gardens, Kew, E. Milne-Redhead (1959, *Lond. Nat.*, **38**, 21). 21, Middlesex; old wall, Harrow, a young tree; old wall, West Drayton, several seedlings, D. H. Kent (1959, *Lond. Nat.*, **38**, 21). Tree to 60 m. In cultivation usually a narrow-pyramidal tree furnished to the ground with branches; bark reddish-brown, divided into round scaly ridges; branchlets flattened, frond-like, arranged in horizontal planes: leaves closely appressed, acute or acutish, glandular,

bright green to glaucous, marked below with often indistinct white streaks: staminate flowers crimson: cone globose, 8 mm. across, reddish-brown and bloomy; scales 8, with thin, acute, reflexed bosses; seeds 2-4 on each scale, broadly winged.

Native of western N. America. Introduced to Britain in 1854. Many garden forms are known.

The Kentish specimens grew in acid heathy soil. *Quercus robur* was dominant, with *Rhododendron ponticum*, *Betula pubescens*, *Calluna vulgaris*, *Deschampsia flexuosa* and *Potentilla erecta*.

It would be interesting to hear, from other members, of any conifers which they have seen self-sown in this country, in addition to the five non-native species mentioned by Dandy (1958, *List of British Vascular Plants*).—C. A. STACE.

53/M. **Berberis manipurana** Ahrendt, 1939, *Kew Bull.*, 1939, 262; *B. knightii* Hort., non K. Koch; *B. xanthoxylon* Schneider, 1918, *Osterr. Bot. Zeitschr.*, 67, 27; *B. hookeri* var. *latifolia* Bean, 1921, *Trees and Shrubs Hardy in the British Isles*, 1, 243. 16, W. Kent; Tunbridge Wells Common, one large bush, known for many years, and presumably bird-sown, K. E. BULL, det. at KEW. Evergreen shrub 3 m. high; stems erect, angled. Leaves elliptical, green, very glossy on the upper surface, paler beneath, 12 to 75 mm. by 15-30 mm. with 9-12 short spines on each side. Pedicels 10-15 mm. long; flowers pale yellow, 12 mm. across, the sepals tinged with red. Fruit oblong, 10 by 5 mm., tapering towards the end, black-purple, sometimes with a greyish bloom, persistent; style absent.

Native of Himalaya, long cultivated in British gardens where it has been much confused with *B. wallichiana* DC., a related species which may not be in cultivation.—D. H. KENT.

207/9. **LATHYRUS PALUSTRIS** var. **pilosus** (Cham.) Ledeb., 1843, *Fl. Rossica*, 1, 686; *L. pilosa* Cham., 1831, in *Linnaea*, 6, 548. 6, N. Som.; swampy hollow in sand-dunes, Berrow, 1958, D. Munro-Smith, det. N. Y. Sandwith (1959, C. I. & N. Y. Sandwith, *Proc. Bristol Nat. Soc.*, 29, 430). This variety differs from the European plant in having a copious, curly pilosulous pubescence on all its vegetative parts. It is common in both N. America and N. Asia, and is assumed to be a recent introduction at Berrow where the native form of *L. palustris* has never been found and would be most unlikely to occur.

226/M. **Prunus mahaleb** L., 1753, *Sp. Plant.*, 474. C. I. & N. Y. Sandwith (1958, *Proc. Bristol Nat. Soc.*, 29, 345) report the occurrence of this taxon as a naturalised species in a wood between Tregony and Tresillian, E. Cornwall, v.c. 2, 1936, and as a single small tree on the slope of the Downs opposite the Zoological Gardens, Clifton, W. Glos., v.c. 34, 1958 (the tree here is referred to f. *pendula* Dippel). Specimens from each locality have been deposited in Herb. Kew.

The following description is taken from Rehder, A., *Manual of Cultivated Trees and Shrubs*, edition 2. New York, 1956. Tree to 10 metres tall, with short stem and spreading branches forming a loose

head; young branchlets tomentulose; leaves orbicular to broad-ovate, 3-6 cm. long, obtusely short-acuminate, rounded or subcordate at base, callously serrulate, pubescent along the midrib beneath, otherwise glabrous; petioles 1-2 cm. long; flowers white, 1.5 cm. across, fragrant, in 6-10 flowered racemes 3-4 cm. long, with small leaf-like bracts at base; sepals ovate, entire, shorter than calyx-tube: fruit about 6 mm. across, black.

A native of S.-E. Europe and W. Asia, the species has long been cultivated and is used as a stock for grafting cherries. It is also extensively cultivated in France in connexion with the cherry-pipe industry.
—D. H. KENT.

237/D. **Crassula decumbens** Thunb., 1794, *Prodri. pl. Cap.*, 54; *Bulliarda trichotoma* Ecklon & Zeyher, 1837, *Enum.*, 290. 1b, Isles of Scilly; Seaways, St. Mary's, February 1959 (*Hb. Kew, Hb. Lousley*), April 14, 1959, H. G. Morgan (*Hb. Mus. Brit., Hb. Kew*); weed in bulbfields near Bants' Carn, St. Mary's, May 19, 1959, J. E. Lousley, 840 (*Hb. Mus. Brit., Hb. Kew, etc.*). A slender, glabrous, fleshy annual, 5-12 cm. tall. Stems pale, yellowish at first, turning reddish later, usually flaccid and decumbent, and sometimes rooting at the nodes, stiffer in dry exposed places, much branched from the base and above. Leaves opposite, slightly connate, 4-7 mm. long, lanceolate, subacute. Flowers numerous, axillary, on pedicels equalling or shorter than the leaves but elongating to 5-15 mm. in fruit. Sepals 4, acute, c. 2 mm. long, divided almost to the base, turning red in fruit. Petals 4, acute, pale pink, shorter than the sepals. Nectariferous scales red, obtuse, as wide as the ovaries. Ovaries with many ovules. Native of S. Africa.

This species was first observed by Mr. G. Baines, County Advisory Officer for Scilly of the National Agricultural Advisory Service, in February 1959 as an abundant weed in bulbfields at Seaways, and material supplied by him was sent through Mr. H. G. Morgan to Kew for identification. At this date it was more or less fully grown but not in flower, but the collection of material in flower and fruit on April 14 enabled Mr. R. D. Meikle to identify it as *C. decumbens*. In May I found it in four bulbfields near Bant's Carn, where it grew in abundance on sandy soil with the usual bulbfield weeds and associated especially with *Montia perfoliata*. It was common at the sides of tracks, and is no doubt spreading on the wheels of farm implements and trucks.

As is the case with a number of other aliens in Scilly, it is not easy to make convincing suggestions on the mode of introduction. A great many South African plants are grown in Tresco Abbey Gardens and it may have been brought in with these, but at present I have no evidence to support this. Its ability to thrive in the islands is explained by the rarity of frost so that it can grow through the winter on damp sand as in its native habitat in South Africa. Of our native species it is most closely allied to *Crassula tillaea*, which grows on sand, flowers in the spring, and also turns red as it fruits, but *C. decumbens* is distinguished at a glance by its pedicelled flowers, more slender looser

habit, and greater size. It seems likely to spread rapidly through the abundance of seed produced but is too small a plant to offer serious competition to the crops with which it occurs as a weed.—J. E. LOUSLEY.

392/B. **Symphytum bulbosum** Schimp., 1825, in *Flora*, 8, 17-22. 9, Dorset; in great abundance by stream, Abbotsbury, April 17, 1938, J. E. LOUSLEY and A. W. GRAVESON (*Hb. Lousley, Hb. Kew*).

A sparsely hispid perennial. Rhizome slender, elongate with subrotund tubers. Stem 30-50 cm. tall, simple or bifid, slender, flexuous, not winged, rough to the touch. Lower leaves ovate, 7-10 cm. long, rounded at the base, with petioles about equaling the blade; middle caudine leaves ovate-lanceolate, 12-17 cm. long, acute, narrowed at the base to a winged petiole 6-8 cm. long; upper leaves smaller, acute, sessile, slightly decurrent. Calyx divided for $\frac{2}{3}$ of its length into narrow, lanceolate, acute lobes. Corolla yellowish-white, 8-10 mm. long, with small erect lobes much exceeded by the narrow lanceolate scales. Native from Greece and the western Balkans through Istria, southern Switzerland and Italy to S. France, Sicily and Corsica; naturalised in Germany and Austria.

This species has been much confused with *S. tuberosum* L., but may be distinguished at a glance by the exserted lanceolate corolla scales. The slender widely spreading rhizome bears brown tubers about the size of hazel nuts at intervals, whereas the rhizome of *S. tuberosum* is irregularly knobby, and swollen at the base of the stem.

The specimens on which this note is based were collected in April 1938, when Mr. A. W. Graveson took me to see what we assumed to be a puzzling variant of *S. tuberosum* growing in abundance by the stream near Abbotsbury Swannery. A specimen from this gathering at Kew was correctly identified by Miss P. Lewis, and Mr. N. Y. Sandwith drew my attention to this in April 1959. With the aid of my directions he was able to confirm that the plant is still flourishing in the original habitat, and that there were carpets of it over a considerable area in the adjacent woodland of Abbotsbury Gardens.

Mr. Graveson's first knowledge of this plant dates back to May 4, 1927, when a piece was brought to him by one of his pupils. A tuber was transferred to the school garden at Beaminster in 1928, where it is still flourishing, and he saw it at Abbotsbury himself in 1931, 1936, 1938 and 1959. It seems likely that *S. bulbosum* has been at Abbotsbury for a very much longer time. In the second edition of the *Flora of Dorsetshire*, *S. tuberosum* is given for Abbotsbury on the authority of "Miss Hawkins" and the first record cited as "Mansel-Pleydell, 1891" (Mansel-Pleydell, 1895). A search by D. H. Kent, N. D. Simpson, and myself has failed to trace a published record of 1891 but the habitat given in the *Flora* as "damp places and by the sides of streams" is appropriate for the Abbotsbury station for *S. bulbosum*. As there is no other evidence that *S. tuberosum* ever occurred there, as the two species have been so often confused, and as from present knowledge *S. bulbosum* apparently occurred in great abundance from the first, it is reasonable to accept its establishment as dating back to 1891. Its origin here is clearly that of a planted garden plant, but it has spread

outside cultivation and maintained itself in competition with native species for at least 32, and probably 68 years.

I am greatly indebted to N. Y. Sandwith and A. W. Graveson for help in the preparation of this note.

REFERENCES

- BUCKNALL, C., 1913, A Revision of the Genus *Symphytum*, Tourn., *J. Linn. Soc.*, **41**, 543-545.
 HEGI, G., 1927, *Ill. Fl. Mittel-Europa*, **V/3**, 2228-9.
 MANSEL-PLEYDELL, J. C., 1895, *The Flora of Dorsetshire*, Ed. 2, 215.
J. E. LOUSLEY.

544/R. *Centaurea repens* L., 1763, *Sp. pl.*, ed. 2, 1293; *C. picris* Pall., Willd., 1804, *Sp. pl.*, **3**, 2302; *Acroptilon repens* (L.) DC., *Prodr.*, **6**, 663.

36, Hereford.; railway siding, Hereford, 1959, Mrs. L. WHITEHEAD (*Hb. Kew*, det. R. D. MEIKLE; *Hb. Lousley*).

A creeping perennial spreading by horizontal roots to form dense patches. Stems erect, about 40 cm. tall, much branched from the base; leaves alternate, narrowly oblong on the main stems, linear-lanceolate on the branches, the lower with distant acute teeth, the upper smaller and entire. Heads solitary, terminating the stems and branches; involucre about 1 cm. wide, ovoid, silvery in bud. Outer phyllaries rounded-ovate, greenish with broad hyaline entire margins, the inner serrulate. Flowers numerous, all tubular, purplish; achenes obovoid with a deciduous pappus of stiff rough bristles.

Native from S. Russia and Asia Minor to Persia, Afghanistan and Baluchistan. Widely naturalised in Canada, U.S.A., S. Africa and Australia. Adventive in Austria (*Hb. Kew*) and Scandinavia (Hylander, 1955).

Mrs. Whitehead first noticed this alien on a railway siding at Hereford in 1950, when it was already well established. It has persisted through very rough treatment ever since, and now forms a patch about a yard square with a few shoots a little away from the main group. In most summers it has been cut down or burnt over, but in the autumn of 1959 good flowering specimens were available, and one of these was sent to Kew for identification.

C. repens is one of the world's most aggressive weeds and it is surprising that it has not appeared in Britain earlier. In eastern Canada it was first found in 1933 and in western Canada in 1928. It is now widely distributed in southwestern Manitoba, Saskatchewan and Alberta, and is quite common in south-central British Columbia. Several infestations are known in southern Ontario (Frankton, 1955). The seed was introduced with alfalfa seed from Turkestan in which Russian knapweed sometimes occurs in great quantity (Groh, 1940). The chromosome number has been determined on Canadian material as $2n=26$, a basic chromosome number not yet recorded for other sections of the genus *Centaurea*, a fact which appears to support the erection of the monotypic genus *Acroptilon* Cass. (Moore & Frankton, 1954).

In the United States *C. repens* is naturalised from Michigan to

Washington, south to Missouri, Texas and southern California. Here again it is one of the group of unwelcome weeds brought in with Turkestan alfalfa (Hensel & Harling, 1922). An example quoted by Rogers (1928) illustrates the reckless way in which great quantities of the seed of this dangerous plant were formerly imported. He writes: "In March 1928, there was released from the Denver Custom-house approximately 50,000 pounds of Turkestan alfalfa seed, imported from Russia. About 25,000,000 seeds of Russian knapweed were brought in with this alfalfa seed. This is enough to produce a perfect stand on at least 5,000 acres of land".

In South Africa, *C. repens* was first recorded from Graaff-Reinet in 1915. By 1938 it had taken a firm hold in several districts of Cape Province, and was known in the Orange Free State and Transvaal. "No satisfactory method of eradication has been devised; ploughing breaks up the rhizomes and each piece left in the soil may produce a fresh plant" (Phillips, 1938). In Australia it occurs in Victoria, where it has been designated as *C. picris* under the Noxious Weeds Act since 1907 (Ewart, 1930), Queensland, New South Wales, and South Australia (designated under the Noxious Weeds Acts, 1931-39). In the latter it was first noticed at Renmark in 1930 (Richardson, 1933), and by 1957 was an aggressive weed widespread in the settled districts (Black, 1957).

A number of species known to be wool aliens have appeared at Hereford in recent years, and it is likely that a seed dropping from a truck containing wool or shoddy which had originated from South Africa or Australia may account for its presence on the railway siding. *C. repens* thrives under dry conditions and Hereford is probably too far west for it to spread from this initial introduction. If it should appear on the eastern side of England the authorities would be wise to take steps to exterminate it at an early stage. Relatively small sums spent on a study of the weeds of the world, and the means by which they are introduced, could have saved many countries in the past from vast expenditure in trying to cope with infestations once they had become established.

REFERENCES

- BLACK, J. M., 1957, *Flora of South Australia*, Ed. 2 (Rev. E. L. Robertson), **4**, 936. Adelaide.
 EWART, A. J., 1930, *Flora of Victoria*. Melbourne.
 FERNALD, M. L., 1950, *Gray's Manual of Botany*, Ed. 8, 1544. New York.
 FRANKTON, C., 1955, *Weeds of Canada*, 168-169. Ontario.
 GROH, H., 1940, Turkestan Alfalfa as a medium of weed introduction, *Scientific Agriculture*, **21** :1, 36-43. Ottawa.
 HENSEL, R. L. & HARLING, E. P., 1922, Russian knapweed; a new weed in Kansas, *Kans. Agric. Exp. Sta. Circ.*, **94**.
 HYLANDER, N., 1955, *Förteckning över Nordens Växter: I, Kärlväxter*, 135.
 MOORE, R. J. & FRANKTON, C., 1954, Cytotaxonomy of three species of *Centaurea* adventive in Canada, *Can. J. Bot.*, **32**, 182-186.
 PHILLIPS, E. P., 1938, *The Weeds of South Africa*, **64**. Pretoria.
 RICHARDSON, J. M., 1953, Weeds of S. Australia: Creeping Knapweed, *J. Agr. S. Austr.*, **56**, 538-9.
 ROGERS, C. F., 1928, Canada thistle and Russian knapweed and their control, *Colorado Exp. Sta. Bull.*, **348**, 22-30.

J. E. LOUSLEY.

PLANT RECORDS

Compiled by E. C. WALLACE

Records are for the year 1959 where no date is given.

The following signs are used:—

- § before the *L.B.V.P.* number: to indicate that the paragraph contains information necessitating a correction to an annotated copy of the *Comital Flora*.
- † before the *L.B.V.P.* number: to indicate that the plant is not a native species in the British Isles.
- ‡ before the record: to indicate a species which, though native in some parts of the British Isles, is not so in the locality recorded.
- * before the record: to indicate a new vice-county record, not published previously to this issue of the *Proceedings*.
- ‡ before the record: to indicate a record additional to an annotated copy of the *Comital Flora*, but published elsewhere prior to the issue of the *Proceedings* in which it appears.
- [] enclosing a record: to indicate doubt as to the validity of the record, either of identification or locality.

It will be useful if, in future, National Grid Co-ordinates, made as accurate as is thought advisable, are added to all records. These will not be published, but the original cards containing them will be filed, and may be made available for reference.

V.c. 90, Forfar. The following additions should be made to the *Comital Flora* of plants recorded from the county by the late R. H. & M. Corstorphine, Arbroath (Herb. R. H. & M. Corstorphine, Queen's College, Dundee, and Corstorphine MS):—

4/4. *Equisetum variegatum* Schleich. ex Weber & Mohr, 46/22c. *Ranunculus aquatilis* subsp. *pseudofluitans* (Syme) Clapham, 66/6b. *Fumaria muralis* subsp. *boreai* (Jord.) Pugs., 72/1. *Diplotaxis muralis* (L.) DC., 72/2. *D. tenuifolia* (L.) DC., 98/4. *Barbarea verna* (Mill.) Aschers., 110/1. *Camelina sativa* (L.) Crantz, 111/1. *Descurainia sophia* (L.) Webb ex Prantl, 136/2. *Sagina ciliata* Fr., 141/2. *Arenaria leptoclados* (Reichb.) Guss., 154/9. *Chenopodium ficifolium* Sm., 162/2. *Tilia cordata* Mill., 163/4. *Malva neglecta* Wallr., 168/9. *Geranium pyrenaicum* Burm. f., 170/2. *Oxalis corniculata* L., 191/2. *Melilotus officinalis* (L.) Pall., 220/3(3). *Alchemilla filicaulis* Buser, 222/1. *Sanguisorba officinalis* L., 227/2. *Cotoneaster simonsii* Bak., 227/4. *Cotoneaster microphyllus* Wall. ex Lindl., 232/4(1). *Sorbus intermedia* (Ehrh.) Pers., 233/1. *Pyrus communis* L., 235/2b. *Sedum telephium* subsp. *fabaria* Syme, 258/2. *Circaea intermedia* Ehrh., 261/1. *Hippuris vulgaris* L., 285/1. *Apium graveolens* L., 310/1. *Pastinaca sativa* L., 319/15. *Euphorbia esula* L., 325/14. *Rumex sanguineus* L., 340/1. *Castanea sativa* Mill., 342/1. *Populus alba* L.,