†**Lolium multiflorum* Lam. Italian Rye-Grass
Introduced. Frequently naturalised; the Football fields. Fl. 5-9.

Agrostis tenuis Sibth. Common Bent
Native. It is this, and not *A. canina* L., as stated, which occurs on the Hill. Fl. 6-8.

†*Poa compressa* L. Flattened Poa
Native. Top of an old wall, Sudbury Hill, 1958 (D.H.K.). Fl. 5-6.

†*P. angustifolia* L.
Native. Common on top of old walls as at Grove Hill, Byron Hill Road, Harrow Park, etc. (D.H.K.). Fl. 5-6.

REFERENCES

HARLEY, R., 1953, *Flowers and Ferns of Harrow*. London.
HORTON, W. R. G., 1948, Report on Wild Flowers, 1947, *Ann. Rep. Harrow School N.H.S.*, **3**, 3-18.

PINK-FLOWERED CALYSTEGIAE OF THE CALYSTEGIA SEPIUM COMPLEX IN THE BRITISH ISLES

By R. K. Brummitt and V. H. Heywood

The *Calystegia sepium* complex has received little attention from taxonomists in this country until recent years, when it has been realised that in addition to the native *C. sepium* (L.) R. Br. there are other forms, presumed to have been introduced as garden plants, now extensively naturalised. Lousley (1948) first drew attention to the widespread occurrence in this country of *C. silvatica* (Kit.) Griseb., a native plant of the Mediterranean region, differing from our native *C. sepium* principally in having overlapping, saccate, obtuse bracteoles and longer floral parts. He also commented briefly on a similar form with rose-coloured corollas distributed by nurserymen in Holland as *C. sylvestris* "var. *roseus* Sims", and occasionally found in this country. This plant has frequently been referred to as *C. dahurica* (Herbert) G. Don, and Walters and Webb (1956) in a further discussion of it adopted this name. They also mentioned other pink-flowered forms of unknown relationships such as *C. sepium* var. *americana* (Sims) Kitag. It appears now that there has been some confusion in the taxonomy of the group, in which the considerable natural variation throughout the north temperate zone has been complicated by the spread of introduced plants. We have recently undertaken a detailed investigation of the whole complex on a world-wide basis, and although this is not yet complete it seems desirable at present to attempt to clarify some of the misunderstandings, and to discuss the application of the name *C. dahurica* (Herbert) G. Don.

The original description of *Convolvulus dahuricus* Herbert (1825) is accompanied by an illustration in which the bracteoles are clearly of the non-overlapping, flat, acute type found in *C. sepium*, and Herbert comments that the flower is smaller than that of *C. sepium*. The pink-flowered form resembling *C. silvatica* and now commonly referred to *C. dahurica* (Herbert) G. Don differs markedly from this description in these two characters, bracteole shape and floral dimensions, which appear to be most significant in the taxonomy of the group. This plant is characterised by broad overlapping bracteoles which are strongly saccate at the base and obtuse or truncate at the apex, and by the floral parts considerably longer than those of our native *C. sepium* (corolla over 50 mm., stamens over 27 mm. from receptacle, anthers 6-7 mm., style 28-37 mm. from receptacle to stigma base), and we accordingly exclude it from *C. dahurica* (Herbert) G. Don. Its affinity appears to be rather with *C. silvatica*, and Hylander (1949) in considering *Calystegia* in

Scandinavia, called it provisionally *C. sylvestris* f. *rosea* without any indication of authority or description. However, it differs from *C. silvatica* not only in the colour of the corolla but in having small hairs on the stem and often on the petiole and peduncle also, leaves with a rather matt appearance, peduncles with at least one repand margin, and other characters. No other name appears to be available for this plant, which is therefore without a legitimate designation.

In the most recent account of *Calystegia* in this country, given in Clapham, Tutin and Warburg (1959), both *C. silvatica* and *C. "dahurica"* are treated as subspecies of *C. sepium*. However, *C. silvatica* and *C. sepium* are sympatric over a wide area in the Mediterranean region and we find little evidence of intermediates between them there or in this country. Similarly we find no evidence of intermediates between either of these two and *C. "dahurica"*. We therefore prefer to maintain them as three distinct species, and now name the third species legitimately for the first time.

Calystegia pulchra Brummitt & Heywood, *sp. nov.*

C. sylvestris f. *rosea* Hylander, *Bot. Not.*, **1949**, 148-156; *Förteckning över Nordens Växter* 1, *Kärlväxter*, 107, Lund (1955), *nom. nud.*

C. sepium subsp. *dahurica* (Herbert) Webb & Walters, in Clapham, Tutin & Warburg, *Excursion Flora of the British Isles*, 302, Cambridge (1959), *comb. non rite public., non C. dahurica* (Herbert) G. Don.

C. dahurica auct., *non* (Herbert) G. Don.

A *C. sepium* partibus floralibus majoribus, bracteolis valde saccatis apice late obtuso vel truncato facile distinguitur. A *C. silvatica* (Kit.) Griseb. corollis inter venas roseis, caulibus nec non saepius pedunculis atque petiolis pubescentibus pedunculis saepius margine repando recedit.

Caules volubiles usque ad 5m., parce pubescentes vel interdum basin versus glabri. Lamina glabra apice acuminata, lobis basalibus truncatis 2-angulatis, sinu oblongo lateribus parallelis. Pedunculus petiolum sed non laminam superans, saepius ad basin pubescens, margine repando. Bracteolae glabrae interdum ciliatae ad basin valde saccatate, ad venam centralem plicatae atque marginibus superpositis, apice late obtusae rotundatae vel truncatae, ampliatae 16 mm. lat. excedentes. Sepala glabra, 14-18 mm. longa. Corolla rosea, venis extra pallidioribus, (48-) 55-75 mm. longa. Stamina 27-33 mm. longa a receptaculo usque ad apicem antherarum; antherae 6-7 mm. longae. Stylus stamina superans, 28-37 mm. longus a receptaculo usque ad basin stigmatis.

Aerial stems climbing up to 5 m., sparsely pubescent or becoming glabrous at the base. Lamina with matt appearance, glabrous, the apex acuminate, the basal lobes truncate, two-angled, the sinus oblong, parallel-sided. Peduncle exceeding the petiole but not the lamina, usually pubescent at the base, with at

least one repand margin. Bracteoles glabrous, sometimes ciliate, strongly saccate at the base, folded down the midrib and overlapping, apex broadly obtuse, round or truncate, more than 16 mm. broad when opened out. Sepals glabrous, 14-18 mm. long. Corolla pink, the veins paler on the outside, (48-) 55-75 mm. long. Stamens 27-33 mm. from receptacle to anther apex; anthers 6-7 mm. long. Style exceeding stamens, 28-37 mm. from receptacle to base of stigma.

Holotype: Earlstown, near St. Helens, v.c. 59. Hedge beside main St. Helens-Earlstown road, near Sankey Brook, 33/558948, coll. R. K. Brummitt (59.737), 9.9.1959 (Herb. Kew).

Paratypes: Wavertree Nook, Liverpool, v.c. 59; scrambling over waste ground between houses in Northway, 33/398899; coll. R. K. Brummitt (59.657), 28.8.1959 (LIVU). Wallyford, near Musselburgh, v.c. 83; hedge on S.W. side of road between village and railway, 36/369724; coll. J. Cullen & R. K. Brummitt (59.298), 8.9.1958 (LIVU). Cat Hole, near Mold, Flints., v.c. 51; hedge beside new road, 20 m. from A494, 33/205627, alt. 700-750 ft.; coll. Mr and Mrs J. M. Brummitt, snr., 15.9.1958 (LIVU). Ystad, Skåne, "Sophög", Sweden; coll. Per-Edwin Wallén, 2.9.1939 (LD).

It should be noted that *C. pulchra* may frequently produce an abnormally short flower among normal ones of the dimensions given. These short flowers may approach those of *C. sepium* in size, but the bracteoles remain quite distinct.

The origin of *C. pulchra* is obscure and it is known at present only as a garden plant and presumed garden escape in Ireland, Great Britain, Holland, Germany, Denmark and Sweden. It is not represented as a native plant in any of the major herbaria in Great Britain, and nothing has been traced of its introduction into Europe. The earliest herbarium specimens we have seen are both dated 1867; Twickenham Park, v.c. 21, 19th August 1867, W. T. Dyer (BM) (a poor specimen, cited by Lousley (1948) as the earliest record for *C. silvatica,* but almost certainly *C. pulchra*); Skåne, Helsingborg "i den branta kanten vid vägen till Helsan", 31.7.1867, C. Reuterman (GB)—from England and Sweden respectively. Other early records are:—From Great Britain: From a hedge at Easter Duddingston (Edinburgh), v.c. 83, 1884, Arch. Gray (E); in hedges at Rockcliffe on the shore of Rough Firth, Kirkcudbrightshire, v.c. 73, 13th July 1899, Charles Bailey (MANCH). From Scandinavia: Karlskrona, 1874, H. G. Lubeck (C, LD, and GB); Skurup, Skåne, July 1891, C. Lofvänder (LD); Denmark, Sjalland, "ruderat ved Jagtvejen", 22.9.1900, K. Wiinstedt (C). It is described as a garden plant under the name *Calystegia dahurica* in the *Gardeners' Chronicle* by Lynch (1910), with a photograph taken in the Botanic Garden, Cambridge. The first reference to it in literature as a naturalised plant appears to be a note by Waterfall (1918), when it was named as *Convolvulus*

dahuricus by Thellung. It is now established apparently throughout the British Isles, and in some districts may be the commonest of the three species.

Occasional references in literature and on herbarium labels to pink or pink-striped *C. silvatica* not identifiable with *C. pulchra* appear to be due to the development of a pinkish tinge on the outside of the five veins of the corolla. In this country this is of very variable intensity and random occurrence, and is unlikely to be of any taxonomic significance. Beauverd (1931) has described *C. silvatica* var. *zonata* from southern Switzerland (Ticine, near Locarno) having this character.

The question of which plant the name *C. dahurica* may properly be applied to, is rather difficult. Coisy (1845), in De Candolle's *Prodromus,* included as varieties of *C. dahurica* the two central Asian species, *C. pellita* (Ledeb.) G. Don and *C. subvolubilis* (Ledeb.) G. Don, and herbarium specimens of these species are often labelled "*C. dahurica* Choisy". They appear, however, to be quite distinct from Herbert's plant. The "*C. dahurica* Hort. van Houtt" depicted in the *Flore des Serres* (**10**, tab. 1075) is said to differ from *C. dahurica* (Herbert) G. Don in its glabrescence, and is probably referable to *C. sepium* var. *americana* (Sims) Kitag. A good match for Herbert's description has not been found in any material collected in Siberia, from where his plant was assumed to have been introduced, and we prefer at the moment to regard it merely as a part of *C. sepium.* Hay (1956) uses the combination *C. sepium* var. *dahurica.*

It appears probable that pink-flowered forms referable to *C. sepium* have been introduced into the British Isles more than once. The eastern North American pink-flowered plant, var. *americana,* is known to be widely established in Scandinavia (Hylander, 1955), and was stated by Loudon (1844) to have been introduced into this country about 1750. *C. dahurica,* presumably *sensu* Herbert, is recorded by Sinclair (1831) as cultivated in the Botanic Garden at Cambridge, having been introduced from Dahuria, in Siberia, in 1820. The limited herbarium material available suggests that pink-flowered *C. sepium* in this country is now a rather heterogeneous assemblage, possibly including native plants as well as representatives of these early introductions and perhaps the result of their interbreeding with native white-flowered plants. We cannot at the moment offer any definite conclusions regarding the taxonomy of these forms.

The following key may be used to separate the three species (excluding *C. soldanella* (L.) R. Br.) recognised in this country.

Bracteoles not overlapping, flat or somewhat keeled at base, acute at apex; corolla less than 50 mm. long and stamens less than 22 mm. long except in some pink-flowered plants; anthers 4·5-5·5 mm. ..... *C. sepium*

Bracteoles overlapping, saccate at the base, obtuse to truncate at apex; corolla over 50 mm. long; stamens over 25 mm. long; anthers 6-7 mm.

Plant glabrous; corolla white ..... *C. silvatica*

Plant with sparse hairs on stem and usually petiole and peduncle; corolla pink with paler veins outside ..... *C. pulchra*

Further work on this group throughout its range is proceeding and any information or material would be welcomed. Of particular interest would be live material (seeds and rhizomes) of pink-flowered *C. sepium,* distribution records and herbarium material of *C. pulchra,* and any live material and herbarium specimens from outside the British Isles, particularly North America.

We are grateful to Dr. S. M. Walters and Professor D. A. Webb, who first drew attention to these problems, for their generous assistance and advice.

REFERENCES

BEAUVERD, G., 1931, Une Convolvulacée inédite de la flore tessinoise, *Bol. Soc. Ticinese Sci. Nat.*, **1930**, 25.

CHOISY, J. D., 1845, *Convolvulaceae*, in A. de Candolle, *Prodromus Systematis Naturalis Regni Vegetabilis*, **9**, 433.

CLAPHAM, A. R., TUTIN, T. G., & WARBURG, E. F., 1959, *Excursion Flora of the British Isles*, 302. Cambridge.

HAY, R., 1956, ed. W. ROBINSON, *The English Flower Garden*, ed. **16**, 281.

HERBERT, W., 1825, *Bot. Mag.*, **53**, t. 2609.

HYLANDER, N., 1949, *Calystegia silvestris*, en förbisedd Kulturflykting i Sveriges och Danmarks flora, *Bot. Not.*, **1949**, 148-156.

——, 1955, *Förteckning över Nordens Växter*, **1**, Kärlväxter, 107.

LOUDON, J. W., 1844, *The Ladies Flower Garden of Ornamental Perennials*, **2**, 98.

LOUSLEY, J.E., 1948, *Rep. Bot. Soc. & E.C.*, **13**, 265-268.

LYNCH, R. I., 1910, *Gard. Chron.*, **48**, 483.

SINCLAIR, G., 1831, in J. Donn, *Hortus Cantabrigiensis*, ed. **12**, 74. London.

WALTERS, S. M., & WEBB, D. A., 1956, *Proc. B.S.B.I.*, **2**, 22-23.

WATERFALL, C., 1918, *Rep. Bot. Soc. & E.C.*, **5**, 233-234.