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776. VIOLA TRICOLOR SUBSP. CURTISII

Violaceae

Martyn Rix

Summary. The dwarf perennial seaside or sandhill pansy, *Viola tricolor* L. subsp. *curtisii* (Forst.) Syme is illustrated and described. The history of its discovery by William Curtis, founder of this magazine, is given, and its relationships and nomenclature are considered.

This very attractive pansy was first described and illustrated by Edward Forster in the second supplement to Sowerby and Smith's *English Botany* in 1831. Edward Forster (1765–1849) was a banker, who became treasurer of the Linnean Society in 1816, and is commemorated in *Luzula forsteri* (Smith) DC, and *Sedum forsterianum* Smith. On his death, his herbarium was bought by Robert Brown, so his specimens are now in the Natural History Museum (Boulger, 1900). The second supplement to *English Botany* was published in full in 1834, but the plate of *Viola curtisii* is engraved with the date June 1831, so may have been published on that date. Forster's text notes that the illustration and description were taken from a plant collected by William Curtis at Braunton Burrows, in North Devon, (Fig. 1), and cultivated in his garden in Kensington. In 1861, J. T. Syme reduced *V. curtisii* to a subspecies of *V. tricolor*, and this combination is still generally accepted. Subspecies *curtisii* differs from subsp. *tricolor* mainly in its stoloniferous perennial rather than annual habit and its preference for sand dunes or dune-like habitats.

DISTRIBUTION. *Viola tricolor* subsp. *curtisii* is a common constituent of the sand-dune flora of the north and west coasts of Britain and Ireland. It is absent from the south coast of England, and, in SW England (apart from old records from the Lizard peninsula, near Land's End and on Tresco) it is found only on Braunton Burrows, at Northam and Instow just across the estuary, and on neighbouring dunes at Woolacombe. From the South Wales dunes at Kenfig, and northwards it is common and found all round the coasts of Wales, England and Scotland, as far south as Northumberland, with an isolated record at Spurn point. There are also some specimens from inland in England, notably on the sandy soils of the Breckland south of Thetford. (BSBI, 2012).

In Ireland *Viola tricolor* subsp. *curtisii* is found on dune systems all round the coast, and has been recorded inland on the gravelly shores of Lough Neagh.

In continental Europe, subsp. *curtisii* is recorded from the Channel coast of France through Holland to the Baltic, where it occurs commonly on the coasts of Denmark, less commonly in southern Norway and Sweden and on the south coast east to Poland, and to Russia around St Petersburg. It is recorded inland around Brösarp and Degeberga in southern Sweden (Wind, 2010).

ECOLOGY. Subsp. *curtisii* usually grows on semi-stabilised sand dunes. In many areas, and particularly at present on Braunton Burrows, it is very dwarf; most of its habitat is heavily grazed by rabbits, and dominated by creeping plants such as wild thyme, *Thymus praecox* subsp. *arcticus* (E. Durand) Jalas and restharrow, *Ononis repens* L. subsp. *maritima* (Dumort) P. Fourn. In ungrazed areas it grows taller among sparse marram grass (*Ammophila arenaria* (L.) Link).

VARIATION. The description below gives the flower and leaf dimensions of subsp. *curtisii*, taken from measurements of herbarium specimens (herbaria united and K), and published sources (Clapham *et al.*, 1987; Wind, 2010). The flowers vary in colour from pale yellow to deep blue, with bicoloured flowers common in certain areas such as eastern Ireland from Co. Down to Co. Dublin and in Kintyre, on the dunes near Southport, Lancs, and Newborough on Anglesey and near Glamorgan. Breckland inland populations have blue and yellow flowers. In other areas of Britain, the flowers are usually shades of yellow.

Populations with entirely blue flowers are found commonly in continental Europe, e.g. in Holland, Poland and Baltic Russia, and have been called *V. tricolor* subsp. *curtisii* var. *maritima* Schweigg. ex Hagen (Nauenburg, 1991). Populations from the Baltic have also been named as a subspecies of *Viola saxatilis* F.W. Schmidt (= *V. tricolor* subsp. *subalpina* Gaudin), a montane subspecies from southern Europe (N. Spain) to the Carpathians and the Crimea. The similar *V. pesneai* Lloyd, was described from western France, on the outskirts of Nantes, and considered by James Lloyd (1897) to have been introduced with ballast by Dutch sailors.

Flower size also varies and the largest flowers, around 2.5 cm across, are reported in scattered localities in Ireland, on the dunes



Plate 776 *Viola tricolor* subsp. *curtisii*

SHEILA MANNES-ABBOTT

at Mullaghmore in Co Sligo, at Gorteen Bay near Roundstone, at Lahinch in Co Clare, and in Ballybunion, Co Kerry (Webb & Scannell, 1983); these may be the result of introgression from *V. lutea* (see below). The flowers of specimens from the type locality at Braunton Burrows are generally smaller, around 2 cm across.

Leaves vary greatly in shape on the same plant through the season; early leaves may be almost round and deeply crenate; by late season the leaves are much narrower, and generally less lobed, with a cuneate base (Fig. 1). In a flowering specimen collected in mid-April in Ty croes, Anglesey, the leaves are round and deeply crenate, while the central lobes of the stipules are spatulate, with entire margins.

RELATIONSHIP WITH *VIOLA LUTEA*

Early 20th century botanists such as J. G. Baker (1834–1920) and his son E. G. Baker (1864–1949) who studied this group in detail, considered that the large-flowered Irish dune pansies were either *Viola lutea* Huds. or hybrids between subsp. *curtisii* and *V. lutea*, and they were given the name *V. symei* J. G. Baker, based initially on specimens from Mullaghmore, Co Sligo (Drabble, 1930). The uncertainty of whether *curtisii* was closer to *tricolor* or to *lutea* was to some extent resolved when their chromosome numbers were counted: *curtisii* $2n = 26$; *tricolor* $2n = 26$; *lutea* $2n = 48$ (Clausen, 1921; Fothergill, 1944; Pettet, 1964). The variation of *V. lutea* and the relationship between subsp. *curtisii* and *V. lutea* are also discussed by John Raven in *Mountain Flowers* (Raven & Walters, 1956). Chromosome numbers in hybrids between *V. lutea* and *V. tricolor* vary between $2n = 24$ and $2n = 58$, so it seems possible that *V. lutea* may have been involved in the evolution of *curtisii* at some stage (Fothergill, 1944). The populations at Lahinch in Co Clare are close to the well-known locality for *V. lutea* in grassy meadows on top of the cliffs of Moher, and in some maps are included as records of *V. lutea* (Webb & Scannell, 1983); there are no recent records of inland populations of *V. lutea* either in Co Sligo or in Co Kerry, which also has large-flowered populations of subsp. *curtisii*.

Viola lutea and *V. tricolor* are usually separated by their ecological preferences, with *V. lutea* growing in grassy upland meadows on neutral or slightly alkaline soils. *V. lutea* can also have yellow or blue (var. *amoena* Henslow) flowers. Flower size usually quoted is 1–2.5 cm vertically for *V. tricolor* and 2–3.5 cm for *V. lutea*, while subsp. *curtisii* is considered to be generally smaller than subsp. *tricolor*, seldom more

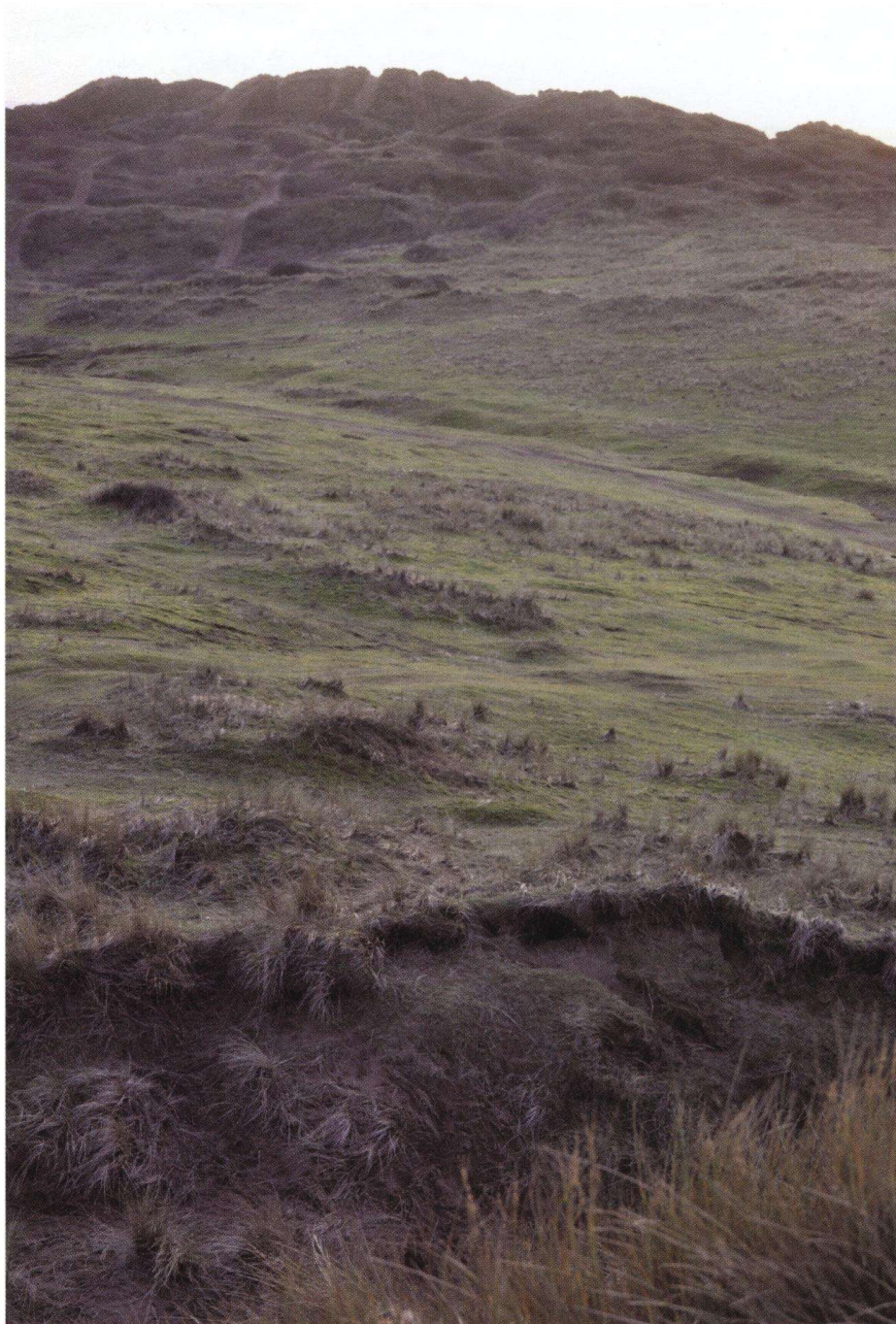


Fig. 1. Semi-stabilised dunes in winter, with marram grass and golden *Tortula ruraliformis* (Besch.) Ingham, at Branton Burrows, in North Devon, type locality of *Viola curtisii* Forster. Photograph Martyn Rix.



Fig. 2. *Viola tricolor* subsp. *curtisii*. A, habit, $\times 1$; B, lowest petal with spur, $\times 1.5$; C, stamens, $\times 5$; D, immature capsule, $\times 1$; E, l.s. flower, $\times 1$; F, upper and lateral petals, $\times 1$. Drawn by Sheila Mannes Abbott from plants growing at Branton Burrows, Devon.

than 2 cm. Flowers of *V. lutea* also tend to have longer spurs, 2–3 times as long as the appendages, while spurs of subsp. *curtisii*, are often twice as long or rather more (Clapham *et al.*, 1987). In addition to the differences in flower, there is a distinction in habit: the compact, leafy stems of *V. lutea* seldom have more than one flower, while by late summer, a stem of subsp. *curtisii* will have had 2–6 flowers: early-season specimens of subsp. *curtisii* are very similar in habit to *V. lutea*.

CULTIVATION. There are few records of cultivation of subsp. *curtisii* following Curtis's flowering of it in London in the 1790s. It was grown by some alpine enthusiasts such as F. J. Hanbury 'along the sandy edges' of a path in his fantastic rock-garden at Brockhurst near East Grinstead, Sussex. He grew a number of rare native British plants in addition to alpiners and chasmophytes from other parts of the world. (Hanbury, 1917). There should be no difficulty in cultivating

this species in a neutral, sandy soil, though the coastal habitat would suggest that it might be intolerant of summer heat and drought. In the wild the seeds are dispersed by ants (Oostermeijer, 1989).

Viola tricolor* subsp. *curtisii (E. Forst.) Syme in Sowerby, Engl. Bot. ed. 3, 2: 26 (1865).

Viola curtisii E. Forster, Engl. Bot. Suppl. 2: t. 2693 (1831). Type: Devon: a cultivated specimen from Curtis's garden in Brompton, London, originally from Braunton Burrows. Forster (BM).

Viola pesneaui Lloyd, Fl. Ouest. France ed. 3: 43 (1876). Type: France: Loire-Inf. Délestaye de Couëron (not located).

Viola symei Baker, Thirsk, Bot. Exch. Rep. (1859): 8 (1859). Type: Co. Sligo, dunes at Mullaghmore Syme (BM).

Viola tricolor var. *maritima* Schweigg. ex K.G. Hagen, Chloris Boruss.: 80 (1819). Type: Russia: Königsberg, i. pr. Ostseestrand bei Lochstädt, 7.6.1874, C.G. Baenitz s.n. (isotype designated by Nauenberg, M).

Viola tricolor subsp. *maritima* (K. G. Hagen) Hyl. Nomenklatorische und systematische Studien über nordische Gefäßpflanzen: 243 (1945).

Viola saxatilis subsp. *curtisii* (E. Forster) Kirschner & Skalicky, Preslia 61(4): 317 (1989).

DESCRIPTION. Stoliferous *perennial*, with branching and shortly creeping underground stems, from a deep rootstock. *Stems* 3–15(–30) cm, slender, ascending or spreading, often purplish. *Leaves* alternate; petiole as long as or slightly longer than the lamina; lamina broadly ovate, deeply crenate early in the season, obtuse apex, 5–10 × 3–7 mm, 1.25–2 times as long as wide; becoming ovate-lanceolate to narrowly elliptic, acute, 9–16 × 3–7 mm, 1.5–5 times as long as wide. *Stipules* ciliate, palmipartite, with linear lateral lobes and a spatulate, linear or falcate central lobe. *Peduncles* slender, 2× to 3× longer than the leaves. *Flowers* 2–6 per stem, pale to deep yellow, blue and yellow, all blue or rarely white or pinkish, with dark lines on the lower three petals, 1.8–2.5(–2.7) cm vertically. *Sepals* 5–7 mm, linear, acute with blunt appendages 1–1.8 mm. *Petals* 5, upper pair erect, overlapping or divergent, obovate, rounded, 7.5–13.5 × 4–8.5 mm, 1.5–2.2 times as long as wide; lateral petals spreading, shorter than the upper; lowest petal obovate, rounded or emarginate, 8–14 × 4–10 mm, 1.2–2 times as long as wide; spur straight, 3–5 mm long exceeding to twice (or 3×) as long as the appendages. *Stamens* 5. *Style* capitate, papillose, with a distinct flap. *Capsule* acute, splitting into three segments, 4–7.5 cm long. *Seeds* pale straw-coloured, ovoid, 1.5–2.5 mm long. $2n = 26$.

DISTRIBUTION. Britain and Ireland, NW France to Holland and Denmark and the southern Baltic to Russia.

HABITAT. Semi-stable sand dunes on the coast; rarely inland on sandy soils or gravelly lakeshores.

FLOWERING TIME. May to August.

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