

## Short Notes

### DISCOVERY OF THE HERBARIUM OF T. J. WOODWARD

While recently searching the herbarium of J. A. Brewer (1818-1886) in the museum of the Holmesdale Natural History Club of Reigate (RTE) for specimens distributed through the Botanical Society of London, I was intrigued to find incorporated within it numerous sheets labelled in a different hand and clearly dating from a considerably earlier period. The specimens concerned are at once distinctive through having been left on their original small sheets, which at some later date have been mounted (apparently by Brewer) on larger ones to make them uniform in size with all the rest.

The majority of the sheets are unlocalized and bear no more than a scientific binomial page-referenced to the second edition of Hudson's *Flora Anglica* (1778). The late-eighteenth century date for the collection that this suggests is lent support by the names of contributors of specimens in the few cases where these are given: 'Mr. Crowe', 'D. Turner', 'Dr Goodenough'. The localities point to a person of sufficiently ample means to range widely over England (or at any rate with a sizeable network of botanical correspondents), but at the same time they show a clear concentration in East Anglia, and in Norfolk more particularly. From this last fact one of the active botanical circle in which J. E. Smith moved in his youthful Norwich days seemed very probable; and by a process of elimination Thomas Jenkinson Woodward (1745-1820) quickly emerged as the likeliest candidate. A check of the handwriting on the sheets with that of the many letters from Woodward in the Smith Papers at the Linnean Society subsequently made this identification certain. There proved indeed to be even a letter (Smith Mss. 18.9) in which Smith reports having collected on Ben Lomond the very specimen of *Saxifraga nivalis* which is credited to him from there in the Reigate herbarium. A letter from Woodward to William Curtis in June 1780 (Curtis 1941) further confirms that the second edition of *Flora Anglica* served as his regular text.

Later, when the herbarium was examined more fully, it was found that Brewer had remounted one of the specimens completely, necessitating his relabelling it in his own handwriting. This, uniquely, bears the initials 'T. W.', proving that Brewer was aware of the identity of the herbarium's creator at least to this extent.

Woodward was born in Huntingdon and came of a wealthy landowning background. After graduating from Cambridge with a degree in Law in 1769, he settled in Norfolk and spent the rest of his life as a country gentleman of leisure, first at Ditchingham, near Bungay, and latterly, from 1802, at Diss. Smith, for whom he acted as chief botanical mentor, was later to extol him as "one of the best English botanists, whose skill and accuracy are only equalled by his liberality and zeal in the service of the science" (Smith 1819).

Though not listed by Kent (1958) as a recorded possessor of a herbarium, Woodward's correspondence leaves no doubt that he was energetically engaged in building one up in the years 1780-83. The few specimens at Reigate of his own collecting which bear dates are precisely of this period. Later specimens seem all to have been acquired as gifts from friends, reflecting the known fact that from 1784 onwards his interest shifted very largely to marine algae and fungi. The collection was presumably sold sometime after his death and may have passed through other hands before being acquired by Brewer.

#### ACKNOWLEDGMENTS

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A PROBABLE SIXTEENTH-CENTURY RECORD OF *RUBIA TINCTORUM* L.

Although *Rubia peregrina* L. is widespread in the Isle of Wight, there are very few records of it for Hampshire and all but two of these are for the Beaulieu/Fawley district just across the Solent from Wight (Townsend 1904, A. Brewis pers. comm. 1981). The two other records are from well to the north-east, towards the centre of the county. One of them, for Otterbourne, is on the authority of the mid-Victorian novelist Charlotte Yonge and, though accepted by Townsend (1904), seems open to doubt and is perhaps better disregarded. The other, however, is the 'Madder' record of William Turner (1568): "the farest and greatest that ever I saw groweth in the lane of [sic] besyde Wynchester in the way to Southhampton."

This record of Turner's has long since come to appear geographically anomalous. Because of the very early date, however, the anomaly has readily been explained away as the last fragment of a presumed former north-eastward extension of the natural range of the species within the county.

Recently, historical evidence has come to light of the one-time cultivation in central Hampshire of the superficially similar *R. tinctorum* L. Detailed study of the occupational bynames in an 1148 survey of Winchester has led to the identification of two 'waranchiers', or dealers or dyers in Madder, living in the city at that time; and the name occurs again in a Fine of 1207 (Biddle & Keene 1976). The presence of Madder traders need not imply that they obtained their commodity locally, but it happens that there are several references to the cultivation of the plant in the fourteenth century around Alresford and Winchester (Vanderzee 1807; D. J. Keene in press). It is known that the widespread recommencement of Woad-growing in England in the second half of the sixteenth century had its reflection in the Winchester area, and it is more than likely that Madder benefited from this same economic impulse there too (D. J. Keene pers. comm. 1981). The balance of probability is thus in favour of the plant seen by Turner having been a relic of, or even a stray from, one of these putative contemporary *R. tinctorum* crops. At the very least his record can no longer be referred to *R. peregrina* without an indication of serious doubt.

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THE DISTRIBUTION OF *CAREX MARITIMA* GUNN. IN BRITAIN

Primarily circumpolar in both the arctic and the antarctic, and in both the Eurasian and the American continents, *Carex maritima* Gunn. (*C. incurva* Lightf.) is also found in the mountains of

the Alps, Caucasus, Himalaya, Rockies and Andes. In Britain it is wholly maritime, for in its one elevated station (in Orkney) it is probably an introduction. It is known in four types of habitat. The largest surviving British colonies (Invernaver, Northton) are on open, damp sand, and it frequently occurs at the mouth of a stream debouching on to the beach (Melness, Europie). But it is also found, usually as the taller var. *erecta* Lange, in wet slacks (St Fergus, Barvas) with quite dense but easily penetrable vegetation (*Hydrocotyle*, *Carex nigra*, *Agrostis stolonifera*), as well as in turf beside rock pools (Scullomie, Borve).

By the end of the nineteenth century this sedge had been recorded from over thirty localities around the northern coasts of Britain, but in approximately two thirds of these it has not recently been seen. The main reason for this apparent decline is ecological change. To anyone who has seen the plant at Inverness lacing several acres of ground with its long rhizomes it might seem to be as indestructible as *C. arenaria*; but in fact it cannot survive more than minimal competition, and in addition requires a plentiful supply of fresh water. Some of the links where it was once abundant have been reclaimed by the piping of the runnels that formerly provided natural irrigation; while on the coasts of Moray and Nairn it would seem that dry sand blown from the dunes has buried the wet slacks inland of them where the sedge used to flourish.

It must also be admitted that *Carex maritima* is easily missed. Certainly in June the dark globular heads of spiky utricles, crooked over on comparatively stout glaucous stalks, catch the eye; but by mid-July most of the utricles may well have been shed, and the narrow leaves are few and inconspicuous. Furthermore the plants are sometimes extremely small: at Dornoch, for example, they are seldom more than 2 or 3 cm tall.

It is probable that seeds of *C. maritima*, like those of some other coastal plants, may long remain dormant, yet ready to originate a new colony when suitable conditions recur. This sedge may well appear or reappear on coasts anywhere north of the Mersey and the Tyne, and should be watched for in any of the habitats described above.

All recorded British stations, with the exception of those in Orkney and Shetland, have been visited by me since 1970. They are listed below, and the present status of the sedge in each is indicated by the letters A=1 to 20 plants, B=21 to 100, C=101 to 1,000, D=over 1,000. For post-1960 Orcadian records I am indebted to Miss E. R. Bullard (*in litt.* 1980), and for similar Shetland records to R. C. Palmer and W. Scott. Where the sedge has not been refound the date of, and authority for, the last sighting are given. The authenticity of herbarium specimens cited is confirmed by me, although it would be almost impossible to confuse *C. maritima* with any other sedge.

S. Lancs., v.c. 59: 34/3.1, Southport, 1877, **BIRM**.

S. Northumb., v.c. 67: 45/3.6, Tynemouth, 1877 (Heslop-Harrison *et al.* 1938); 45/3.7, Seaton Sluice, 1938 (Heslop-Harrison *et al.* 1938), and seen by several observers c. 1950. There is some doubt about both these records. The first, said to have been made by T. Robson, was never reported until 60 years later, and no specimen has been traced; and, for the second, some who saw the plant in the early 1950s thought that it was an introduction.

Cheviot, v.c. 68: 46/0.4, Goswick, 1962, G. A. Swan field record at B.R.C.; Holy Island, the Snoek (B); 46/1.4, Holy Island, Keel Head, 1961, G. A. Swan field record.

Westmorland, v.c. 69: 34/3.7, Humphrey Head, 1971, Miss E. J. Harling, **BM**, not refound despite repeated searches, and now probably destroyed by the construction of a sea-wall.

E. Lothian, v.c. 82: 36/3.7, between Cockenzie and Preston Pans, 1867, **K**; 36/4.7, Longniddry, 1858, **OXF**.

Fife, v.c. 85: 37/4.0, Dumbarrie, Largo Links, 1865, **E**, and reported 1884, C. Howie; 37/4.2, Tentsmuir, 1946, **STA**, and reported still there c. 1960, R. M. M. Crawford; 37/5.1, St Andrews Links, 1911, **STA**.

Angus, v.c. 90: 37/5.3, Buddon Burn, 1956, Miss U. K. Duncan field record, marsh now invaded by *Phragmites*; 37/7.5, Mains of Usan, 2 places (A,B).

Kincardines., v.c. 91: 37/8.8, Garron point, Stonehaven, 1868, **BM**, and still there 1966, M. Wenham field record at B.R.C.; 37/9.9, Muchalls, 1874, **OXF**.

S. Aberdeen, v.c. 92: 38/9.0, Aberdeen Old Links, 1871, **BM**.

N. Aberdeen, v.c. 93: 38/9.6, Pitsligo parish, c. 1903 (Trail 1904); 48/0.2, Foveran Links, 1968 (J. A. Forster *in litt.* 1972); Forvie Links, 1956, **herb. A. O. Chater**; Slains Castle, 1889, **GL**; 48/0.5, Links of Strathbeg (Dickie 1860); 48/0.6, Fraserburgh (Trail 1904); 48/1.5, between St Fergus and Rattray Head (C).

- Banffs., v.c. 94: 38/3.6, Bellie parish (Craib 1912); 38/6.6, Banff, pre-1900, W. S. Bruce, but not seen by Craib (Craib 1912).
- Moray, v.c. 95: 28/9.6, near Brodie Castle, 1864, **E**; 38/0.6, mouth of the Findhorn, 1832, **GL**; 38/1.6, sands west of Burghhead, 1835, **E**; Rose Valley, 1834, **BM**; 38/3.6, Speymouth near Gordon Castle, 1909, **GL**.
- Nairns., v.c. 96b: 28/8.5, sands west of Nairn, 1833, **OXF**; 28/9.5, one mile east of Nairn, 1898, **BM**, **E**.
- E. Ross, v.c. 106: 28/8.8, Morrigh More, Tain, 1971, Miss U. K. Duncan field record; 28/9.8, Portmahomack, 1842, **BM**.
- E. Sutherland, v.c. 107: 28/8.8, Dornoch Links (B); 29/9.0, Brora (Anthony 1976, but probably derived from Hooker 1821).
- W. Sutherland, v.c. 108: 29/3.6, Keoldale (Anthony 1976, but no authority cited); 29/5.6, Melness (B); 29/6.6, Scullomie (B); Torrisdale (C); 29/6.6 & 7.6, Invernaver (D); 29/7.6, Farr Bay (B).
- Caithness, v.c. 109: 29/9.6, Reay Links (B); 39/1.6, near Thurso, 1910, **CGE**, may be the same as 39/2.6, Dunnet Links (B); 39/2.7, between Dunnet and Mey, 1958, **K**; 39/3.5, Keiss Links (B); 39/3.6, Keiss Links (B); Auckingill (Grant & Bennett 1890, but probably derived from Hooker 1821); 39/3.7, Duncansby (B).
- Outer Hebrides, v.c. 110: 08/7.6, islets off Kirkibost, N. Uist, 1898, **BIRM**, **K**; 08/9.8, Berneray, west side, 1939, **K**; 08/9.9, Taoibh Truath, Northton (D); 18/0.9, near Scarista, 1941, **BM**, **K**, might be the preceding or the following locality; Borve (B); Loch Cistavat (Heslop-Harrison & Morton 1951); Seilebost, river-bank below Loch Carran, 1969, Mrs J. W. Clark field record, not refound 1971 or 1981; 19/2.4, near Shawbost, 1959, J. W. Heslop-Harrison field record at B.R.C.; 19/3.5, Barvas, 3 places (B,C,C); 19/5.6, Europie (B).
- Orkney, v.c. 111: 39/2.9, Rackwick Burn, Hoy, 1925, **K**, **OXF**, still there post-1960 (C); 39/4.9, Bu' Burray, post-1960 (B); 57/2.1, Skail, Mainland, post-1960 (B); 57/2.2, Boardhouse Links, Birsay, 1883, **BM**, **K**; 57/4.1, Wideford Hill, St Ola (Bullard 1968); 57/4.3, near Manse Loch, Egilsay, post-1960 (B); 57/4.4, Noltland, Westray, post-1960 (B); 57/4.5, Papa Westray, several places, post-1960; 57/5.0, Newark, Dearness, Mainland, 1921, **BM**, **E**, **K**; Sandside, Dearness, post-1960 (B); 57/6.4, Loch Bea, Sanday, 1898, **BM**; Whitemill Bay, Sanday, post-1960 (B); 57/7.4, Càta Sand, Sanday, 1883 (Johnston 1895), and still on Plain of Fidge, post-1960 (C); 57/7.5, Linklett, North Ronaldsay, 1981, (C).
- Shetland, v.c. 112: 68/3.1, Quendale, 1969, **OXF**; Spiggie, 1956, **OXF**; 68/3.3, West Burra, 1974 (A); 68/4.1, Sumburgh, 1956, W. Scott field record at B.R.C.; 68/4.8, West Sandwick, 1980 (C); 68/6.9, Links of Tresta, Fetlar, 1958, **OXF**; 69/6.1, Norwick Burn, Unst, 1974 (A).

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## A NEW BRAMBLE FROM SCOTLAND

There is a widespread bramble in central Scotland which requires a name. It was noticed by W. H. Mills in 1953 between Allan Water and Dounè, W. Perth, v.c. 87. W. C. R. Watson, misled no doubt

by the vivid stem colour, determined the specimen (now in CGE) as *R. iodnephes* W. C. R. Watson. If he had been able to study the living bush he would have seen that it belongs quite certainly to his section *Triviales*. In 1965 it was found by B. A. Miles near Bridge of Allan, Stirling, v.c. 86, and in 1966 by myself in the same locality. Since then it has been seen by myself and others in many parts of central Scotland. It is known from the following vice counties: 77, 85–89, 98–100.

***Rubus pictorum* E. S. Edees, sp. nov.**

Turio arcuatus, obtuse angulatus, rubro-violaceus, interdum parum pruinosis, glabrescens, aciculis glandulisque stipitatis brevibus et brevissimis satis numerosis instructus, aculeis aculeolisque 0.5–8.0 mm longis (sed vulgo non inter se abeuntibus), haud ad angulos tantum dispositis, rectis vel leviter curvatis copiose armatus. Folia pedata; foliola 3–5, imbricata, superne primo strigosa, subtus pilis simplicibus brevibus numerosis vestita; foliolium terminale c. 9×7 cm, late ovatum, breviter acuminatum, basi emarginatum vel cordatum, subaequaliter serratum vel biserratum, planum, petiolo proprio triplo longius; folia infima subsessilia; petiolus foliolis infimis longior, aculeis curvatis munitus. Ramus florifer vix flexuosus, pilosus, aciculis glandulisque stipitatis satis brevibus praeditus, aculeis numerosis (2–)4(–6) mm longis subpatentibus vel curvatis armatus. Inflorescentia e ramulis brevibus, inferioribus distantibus, superioribus confertis composita. Flores usque ad 3 cm diametro; sepala griseo-viridia, albo-marginata, glandulosa, aculeolata, patentia vel erecta vel laxa reflexa; petala c. 11×8 mm, alba vel dilute rosea, late ovata, nonnunquam apice emarginata, ad marginem glabra, contigua; stamina alba stylos pallidos vix superantia; carpella et receptaculum glabrum.

Stem arching, bluntly angled, becoming a deep purple or violet red, sometimes slightly pruinose, glabrescent with sparse short to medium chiefly simple hairs and with a variable number of short and very short stalked glands and longer gland-tipped acicles; prickles and pricklets very numerous, occurring all round the stem, 0.5–8.0 mm, the pricklets often abruptly narrowed from a swollen base, the main prickles more gradually tapered, patent or declining or slightly curved, sometimes grading into pricklets but usually distinct, coloured like the stem throughout or with yellow point. Leaves pedate; leaflets 3–5, contiguous or imbricate, mid-green, glabrescent above with sparse adpressed short to medium simple hairs, soft beneath with numerous short to medium simple hairs; terminal leaflet c. 9×7 cm, broadly ovate, with an acuminate apex 1–1.5 cm and emarginate or cordate base, more or less evenly serrate or biserrate, flat, the petiolule c. 1/3 as long as the lamina; basal leaflets subsessile; petiole longer than the basal leaflets, coloured like the stem, with sparse to numerous short to medium chiefly simple hairs, some sessile and subsessile glands, sparse to numerous short stalked glands and acicles, a few longer pricklets and c. 20 curved prickles 3–5 mm. Flowering branch with 3-foliolate leaves below and usually one (or more) simple (often trifid) leaves above, not leafy to the apex; inflorescence with a short cylindrical extension above the leaves, the upper and middle peduncles 2–5-flowered and 2–3 cm, and one or more distant axillary peduncles usually much shorter than their leaves; rachis nearly straight, purplish-red in the sun, with numerous short to medium simple and tufted hairs, some underlying stellate hairs, numerous short stalked glands and short to medium sometimes gland-tipped acicles and pricklets and numerous subpatent or declining or curved prickles (2–)4(–6) mm; pedicels with dense stellate hairs, numerous short simple hairs, numerous stalked glands and gland-tipped acicles varying from very short to medium and many patent or slightly curved acicular prickles 1–3 mm. Flowers c. 2.5–3 cm in diameter; sepals greyish-green, white-bordered, with numerous stellate and short simple hairs, dense on the margin, and numerous short and very short stalked glands and acicles, short- or long-pointed, patent with erect tips to loosely reflexed; petals c. 11×8 mm, white or pale pink, broadly ovate or elliptical, sometimes humped, often notched or erose, glabrous on the margin, more or less contiguous; stamens level with or slightly exceeding styles, filaments white, anthers glabrous; styles pale yellow; young carpels glabrous; receptacle glabrous.

HOLOTYPE: Crianlarich, Mid Perth, v.c. 88, 2/10/1972, Miss C. W. Muirhead no. 72/69 (herb. E.S.E. no. 20737).

*R. pictorum* resembles *R. intensior* in many ways, but there are important differences. (1) The stem prickles of *R. intensior* are slender and straight and grade imperceptibly into pricklets which differ from them only in size: the stem prickles of *R. pictorum* are broad-based, often curved and usually

distinct from the much smaller bulbous-based pricklets. (2) The rachis prickles of *R. intensior* are slender and patent and for the most part much longer than those of *R. pictorum*, and the pricklets and acicles more obviously unequal. (3) The leaflets of *R. intensior* are more finely toothed and the leaf petiole is usually about as long as the basal leaflets, though this character is variable; in *R. pictorum* the serrations are broader and the petiole often considerably longer than the basal leaflets. (4) In *R. pictorum* the stamens are often level with the styles and the petals white or pale pink; in *R. intensior* the stamens usually exceed the styles and the petals are always white. (5) Stem colour is difficult to describe, but the stems of *R. intensior*, when unshaded, are bright brick red without the purple or violet tint of *R. pictorum*.

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### THE STORY OF *CYMBALARIA TOUTONII* A. CHEV.

Several variants of *Cymbalaria muralis* Gaertn., Mey. & Scherb. are known. The most remarkable is *C. toutonii* A. Chev. Its history chronologically is as follows.

1. On 11th October, 1936, Jean-Baptiste Touton (1881–1972) of 14, Rue d'Ernée, Laval, France, showed specimens of "une variété écologique de Linaire (*Linaria cymbalaria*)", which he had collected from three similar plants among a normal population on a wall at Laval (Anonymous 1938).

2. Chevalier (1937) published the name '*C. Toutoni*' for this plant (foliis caulinaribus biformis, profunde inciso-trilobatis, basi acute cuneiforme vel trifoliolis petiolulatis, foliolis integris lanceolatis), based on specimens collected in May and June, 1936, and illustrated them.

3. A most detailed account of his plant was given by Touton (1940). He first found it on 24th May, 1936, on a north-facing old wall at No. 38 Rue de Paris, and next year had cuttings rooted. He found that the leaves varied in shape, but that the great majority were three-lobed, the flowers differed in shape and were noticeably smaller (7–8 mm long, at most, instead of up to 10 mm) and the seeds were less ovoid. They proved to be 85% viable, and out of 430 sown in 1939, 421 produced plants of *C. toutonii*, which suggested this was a mutant and not a hybrid. The population at Laval had increased by 1939 to six plants, but was still to be found on no other wall.

4. Molliard (1944) claimed that seeds of normal *C. muralis* soaked for two days in a 0.2% colchicine solution produced *C. toutonii*. He died shortly after making his communication, and his assertion has never been put to the test.

5. Chevalier (1947) reported that only a single, miserable, plant remained at Laval in 1940, and that since then even M. Touton had failed to re-find it. But it still grew in Touton's garden and M. Chevalier brought seed from it to the Jardin des Plantes at Paris, where it self-seeded freely among typical *C. muralis*. Unlike the type, it froze in the winter of 1945–46. Chevalier had grown it in several places, but despite extensive searches among millions of plants, had failed to find any other trace of the mutant.

6. Cufodontis (1947) down-graded this taxon to formal status, as *C. muralis* f. *toutonii* (A. Chev.) Cuf., but added that this was without doubt the most striking form—he listed nine in all. He knew, however, of no observations on its genetic behaviour.

7. Quite independently, and unaware of all that had been written earlier in France, Czaja (1960) found a single plant of this taxon on a chalky wall in the experimental garden of the Botanical Institute of the Technical High School at Aachen in Germany in the summer of 1958, and a second in 1959; and he published the name *C. muralis* f. *triloba* Czaja for it. This was subsequently included in the Botanical Institute seed catalogue with a description and illustrations. Prof. Dr. A. T. Czaja (*in litt.* 1980) considered it to be affected by a virus, which persists in the seed, and that this form will reappear whenever the normal form is attacked.

Has this plant been overlooked elsewhere? I have searched in vain for it, but it could easily be missed. Is it a good species, or should it be given only formal status?

## ACKNOWLEDGMENT

Practically all the basic information about this plant came from Dr H. Heine, to whom I am therefore more than ordinarily grateful.

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### THE REDISCOVERY OF THE FEN VIOLET, *VIOLA PERSICIFOLIA* SCHREBER, AT WICKEN FEN, CAMBRIDGESHIRE

The return of a locally extinct species to a former station is always an incident of note, particularly when the absence has been a long one. Such is the case with *Viola persicifolia* Schreber (*V. stagnina* Kit.), lost to Wicken Fen for the last sixty years but rediscovered in 1980. The circumstances of the rediscovery are of particular interest.

The plant was not found growing *in situ*. In May 1980 soil samples were taken from beneath scrub on the Fen for investigation of their viable seed content. The soil was placed in seed trays in an unheated greenhouse. One sample yielded, amongst other seedlings, one identifiable at the time only as *Viola* sp. It was grown on and later identified as *V. persicifolia*, and is now in the care of the Conservation Unit at the University Botanic Garden, Cambridge. The plant has twice produced cleistogamous flowers and set seed. The soil samples were monitored for a total of thirteen months but no further seedlings of *Viola* were recorded.

*V. persicifolia* was abundant at Wicken Fen in the mid-19th century (Babington 1860), but numbers began to decline from about 1875 onwards (Evans 1925). One of its final stations appears to have been Sedge Fen Drove from where it was thought lost by 1900, although it was seen again around 1910 (Evans 1939). The last record seems to have been that of William Farren who saw *V. persicifolia* "near Drainer's Dyke" in June 1916 (communicated verbally to S.M.W. in 1951). On 9th June, 1950, two plants from Wood Walton Fen were experimentally transplanted (by S.M.W.) into a bared peat plot at the eastern end of Wicken Fen. This plot was established to study the behaviour of *Eleocharis* species in different water levels. The transplanted violets made poor growth (although a few cleistogamous capsules were formed), and the plants were recorded as dead on the 13th May, 1951. On 4th June, 1951, a further plant of *V. persicifolia* of Wood Walton origin was planted out, but was removed a few days later. The reason for abandoning the experiment was that some species not present in the immediate surrounding vegetation (notably *Juncus articulatus* and *Carex serotina*) had appeared, apparently from dormant seed, in the experimental plot, and it seemed that this might also happen in the case of the violet.

The new station for *V. persicifolia* at Wicken is at least 400 metres from any of the late records, and 1,300 metres from the 1950/51 experimental plots. The sample site has been overgrown by fen carr for at least fifty years, and is inaccessible and probably unvisited. It is unlikely that the seed came from plants introduced thirty years ago because of the distance between sites. It seems much more

probable that it had remained buried and viable for more than sixty years. Survival of seed over a long period in fenland habitat recalls the rediscovery in 1972 of *Senecio paludosus* (Walters 1974). This species was believed extinct in Britain since at least the early 1900s and its survival was thought to be due to dormant seed.

It is of course possible that *V. persicifolia* seed was introduced more recently to the Fen, or even into the soil sample after collection. The remoteness of the nearest known station, Wood Walton Fen, Cambs., more than twenty miles distant, and the inaccessibility of the randomly selected sample site, make the former unlikely. The soil sample was removed from Wicken directly to an agricultural research station in Cambridge where introduction was equally unlikely. The total surface area of soil removed from Wicken Fen for the investigation that produced the specimen was less than 0.6 m<sup>2</sup> and consisted of ninety samples taken from an area of more than 10 ha. It is likely, therefore, that further seed of the Wicken stock of *V. persicifolia* exists, and might germinate if habitat conditions were suitable.

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A NEW AND CURIOUS FORM OF *ERICA VAGANS* L.

An abnormal form of *Erica vagans* L. was found by the writer near Kynance Farm on the Lizard peninsula, W. Cornwall, v.c. 1, on 28th September, 1977. By the following year, the site had been ploughed and the plant destroyed. A cutting had, however, been taken, and this form is now in cultivation in my garden. Specimens were exhibited at the Royal Horticultural Society's Show and submitted to its Scientific Committee on 11th August, 1981.

Its tiny green flowers consist only of a double calyx (eight sepals instead of the usual four) and the female parts (ovary and style). There are no stamens and no corolla.

It is quite different from 'Viridiflora', which was first found on the Lizard about 1909 by Mr P. D. Williams. This has quantities of pale green bract-like growths, which take the place of flowers, although an occasional pale floret sometimes appears. It has been grown in gardens ever since, and has a great appeal for flower arrangers. Similar examples were found in 1977 and 1979, and it had been collected in France in 1897.

Forms analagous to my plant, all named *anandra*, are known in *E. ciliaris* (apparently unpublished), *E. cinerea* (named by Druce in 1913), *E. umbellata* (named by Lange in 1863) and *E. tetralix* (named by L.-C. Richard in 1917). They agree in lacking at least anthers and, mostly, also corollas and stamens, but are not identical. *Calluna vulgaris* f. *diplocalyx* J. Jansen (named in 1935) also has a double calyx in place of the corolla, and no stamens. But such a form seems hitherto unrecorded in *E. vagans*, and merits a name.

*Erica vagans* L. f. *anandra* Turpin, f. nov.

A typo floribus minutis ex 8 (2×4) sepalis et pistillo tantum compositis, staminibus et corolla destitutis, differt.

HOLOTYPE: Garden at Cottswood, West Clandon, Surrey, v.c. 17. 24/10/1981. P. G. Turpin (BM).



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## FRANKENIA LAEVIS L. IN MID GLAMORGAN

*Frankenia laevis* is a procumbent perennial found within the upper zones of saltmarshes, particularly where a sandy or gravelly substratum allows free drainage. In the British Isles it occurs locally as a native species between the Wash and the Solent, though there is an isolated population in Anglesey, v.c. 52 (Roberts 1975) and the species has been introduced into N. Devon, v.c. 4 (Brightmore 1979). The distribution of the species within Europe is chiefly south-western, extending from southern Italy to the Atlantic coasts of Spain, Portugal and France; it occurs on two of the Channel Islands and reaches its northermost limit in Anglesey (Brightmore 1979).

The population of *F. laevis* in Anglesey reported by Roberts (1975) is of interest because it was some 230 miles removed from the next nearest locality of the species then known. However, a second outlying site was discovered in July 1981 when the author found *F. laevis* growing in a saltmarsh in Mid Glamorgan, Glam., v.c. 41, during a Nature Conservancy Council funded vegetation survey. The identification of the species was confirmed by R. G. Ellis of the National Museum of Wales. Two separate colonies were subsequently discovered growing within the same area of saltmarsh, the exact location of which has been withheld for reasons of security.

The first of these colonies was found growing on a raised area of the marsh composed of shingle and pebbles. This mound reaches 0.5–1 m above the general surface of the marsh, and is covered with a thin layer of silty soil. Topographically, this appears to be a fairly typical site for *F. laevis* (see Brightmore (1979)). The main patch within this colony formed an oval mat approximately 110×80 cm, and was situated somewhat west of south of the centre of the mound; a southerly aspect is apparently preferred by *F. laevis* in Norfolk (Brightmore 1979). This main patch had excluded almost all other plants, as had the colony described by Roberts (1975). Aside from this large patch, there were eleven smaller plants in the colony ranging from patches 30×20 cm to small plants with a few shoots up to 5 cm long. All of these were situated north of the main patch and within about 8 m from its centre. Flowering in the main patch and the larger of the subsidiary patches was profuse, but only occasional in smaller plants. All plants of *F. laevis* within this colony were of a prostrate growth-form. Species associated with this colony are: *Agropyron junceiforme* (very small), *Agrostis stolonifera*, *Armeria maritima*, *Glaux maritima*, *Limonium binervosum*, *Plantago coronopus*, *Puccinellia maritima*, *Spergularia media* and *Suaeda maritima* (rare).

The second colony was found along the drift-line to the rear of the saltmarsh, further west than the first colony. This drift-line occurs at the base of a ridge of low sand-dunes apparently formed upon a shingle bank, which separates different bays of the saltmarsh. The substratum here is of sand. The largest patch within this second colony was growing partly from beneath a large log, which had presumably been deposited by previous spring high tides. This patch measured approximately 75×65 cm, but was growing much taller than the other plants in either colony, reaching 14 cm in height. This colony differs from the other in that there are a further three large patches of *F. laevis* at up to 20 m from the main patch, and which measure about 30 cm in diameter. One of these patches had noticeably fewer flowers than the other patches, all of which flowered profusely. Another of these smaller patches had three very small plants growing close by, and the main patch also had about half a dozen small plants within two metres of its centre; none of these smaller plants was flowering. All of the plants in this colony were distributed about the drift-line. The following species were associated with this colony: *Agropyron junceiforme*, *Agrostis stolonifera*, *Anagallis arvensis*, *Aster tripolium*, *Beta vulgaris* subsp. *maritima*, *Carex arenaria*, *Festuca rubra*, *Limonium binervosum* (rare), *Parapholis strigosa*, *Plantago coronopus*, *P. maritima*, *Puccinellia maritima*, *Spergularia media* and *Suaeda maritima* (rare).

*Frankenia laevis* occurs on the strand-line at Gibraltar Point, S. Lincs., v.c. 53, and Brightmore (1979) states that its occurrence there may be due to seeds floating in water and being deposited on the drift-line. The same could be true of the drift-line colony described above, which could well have originated from seeds set by plants in the first colony. Brightmore (1979) states that stem break-up is not likely to aid the spread of the species naturally, though in cultivation the plant may readily be propagated in this way. The present site is, however, grazed, especially around the first colony, and thus small fragments could possibly be broken off and distributed by the hooves of grazing cattle.

The first-mentioned colony had noticeably redder leaves than the second colony, in which the large patch growing from beneath the log possessed almost entirely green leaves. Brightmore (1979) suggests that, amongst other things, drought causes leaf reddening, and the redder leaves of the first colony may well be brought about by drier conditions due to the thin soil of this site; the second colony is afforded more shelter by the sand-ridge.

The discovery of *Frankenia laevis* in this Mid Glamorgan saltmarsh provides an interesting parallel with its occurrence in Anglesey. As with the Anglesey population, there seems to be no evidence of the species having been introduced, either deliberately or accidentally, though it is possible that seed could have arisen from the population reported by Brightmore (1979) as having been introduced at Saunton, N. Devon. This represents a dispersal distance of some 35 miles. The occurrence of *F. laevis* in such outlying sites suggests that it should be looked for in other suitable habitats outside its normal British range. The frequency of small plants around the larger, well-established patches suggests that the species is increasing its range within the present site. This population and that in Anglesey therefore contrast with populations of the species elsewhere in the British Isles, where they appear to be in decline (Brightmore 1979).

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