# Short Notes

## MICROMORPHY IN NEW FOREST *RUBI*

True-breeding miniature variants ('micromorphs') are known in a number of the microspecies of *Rubus fruticosus* L. agg. and in certain cases these are sufficiently widespread to have been accorded taxonomic recognition, usually at varietal level. They are especially characteristic of scrubby heathland, to which they are presumably an ecotypic adaptation.

It has emerged from recent fieldwork that there is an exceptional concentration of these variants on the western edge of the New Forest (S.Hants., v.c. 11). *R. pyramidalis* Kaltenb. occurs in that area (chiefly, scattered over the Linford district, east of Ringwood) exclusively as its var. *parvifolius* Frid. & Gelert. The analogous variant of *R. nemoralis* Mueller (var. *microphyllus* (Lindeb.) W. C. R. Watson; *R. pistoris* Barton & Riddelsd.), which is seemingly confined to the New Forest as far as the southern half of England is concerned, rises from scarcity in the Forest more generally to become common in the north-western corner, virtually to the exclusion of var. *nemoralis*. Also in the north-western corner, in one place, a micromorph has been found of – very probably – *R. imbricatus* Hort (the solitary bush is unfortunately too stunted for certainty). Further south, patches of a diminutive version of the Pennine species *R. furnarius* Barton & Riddelsd. occur in three widely separated localities focussed on Burley. Finally, a micromorph of *R. errabundus* W. C. R. Watson which is thinly distributed throughout the Forest becomes particularly plentiful in the north-western corner and further south on Rockford and Little Castle Commons.

Recent palynological work (Barber 1975, 1981; Clarke & Barber 1987) has established that the central part of the Forest, at least that area round Mark Ash, has had a continuous woodland cover throughout the last 10,000 years. The history of the peripheral areas is less susceptible to that approach, but the near-absence there of Neolithic finds and the abundance of Bronze Age ones are sufficient to indicate a significant amount of clearance in the latter period. Subsequent avoidance of these areas in the Iron Age is attributed to soil deterioration causing the abandonment of pastures and extensive reversion to heathland. Only persistent grazing, browsing and burning can have prevented this heathland from reverting to woodland in its turn (Tubbs 1968; Barber in litt. 1989).

The restriction of the high incidence of *Rubus* micromorphy, which is indicative of intense selection pressure, just to the Forest's western periphery would seem to suggest that some special factor or factors, anthropogenic or otherwise, conducive to the persistence of low thorny scrub have operated there from which the other peripheral areas have been relatively free. Whatever the explanation for the anomaly, it is one that historical ecologists need to take into account.

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## YELLOW IVY BROOMRAPE

In 1979 Mrs A. A. Butcher found apparent *Orobanche hederae* Duby growing abundantly on ivy at The Police House, Alresford, N. Hants., v.c. 12, only it was bright yellow. Unfortunately the whole

colony, with its ivy, was completely destroyed the next year; but this year Mr F. J. Rumsey has identified it from a pressed specimen as indeed *O. hederae*. The ivy was identified by Dr H. A. McAllister as *Hedera hibernica* (Kirchner) Bean cultivar Hibernica (Irish Ivy).

In 1988 I realised that the same plant had been growing for years in two of the canons' gardens at Winchester, v.c. 11, also on Irish Ivy. A visit to the British Museum taught me that this yellow variant should be referred to forma *monochroma* G. Beck, not yet recorded from Britain. It is simply an albino.

This year, 1989, Mrs Butcher found a fresh, small colony in Alresford, not far from the old one, and again on *H. hibernica* cv. Hibernica.

Possibly emanating from trouser turn-ups, a single spike appeared in the garden of Dr F. Rose in Liss, v.c. 12, shortly after the Alresford police garden find, but never again. All the ivy in this garden is *H. helix* L.

Alresford and Winchester are only about 16 km apart. The interesting question is: did the *H. hibernica* originally come from the same nursery and bring with it the yellow Ivy Broomrape?

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## A NEW COMBINATION IN *COCHLEARIA* (CRUCIFERAE)

In the forthcoming identification manual for the British and Irish Cruciferae, edited by T. C. G. Rich, I use the name *Cochlearia pyrenaica* DC. to include those plants usually placed in *C. officinalis* L. subsp. *alpina* (Babington) Hooker. This necessitates the following new combination:

**Cochlearia pyrenaica** DC. subsp. **alpina** (Babington) Dalby, **comb. nov.**
*C. officinalis* L. β *alpina* Babington, *Man. Brit. bot.* 27 (1843).

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## CHROMOSOME NUMBERS IN TWO *LIMONIUM* SPECIES

*Limonium vulgare* Mill. and *L. humile* Mill. (Plumbaginaceae) are found in salt marshes around the coast of Britain, sometimes growing together in the same marsh. Both have different breeding systems, *L. vulgare* being dimorphic (for pollen and stigma) and self-incompatible, while *L. humile* is monomorphic and self-compatible. This pollen/stigma dimorphism is present throughout the Plumbaginaceae and, in *Limonium*, the two pollen morphs differ by having either a coarsely reticulate exine (A type) or a finely reticulate exine (B type). The stigma morphs differ in cell shape, the so-called 'cob' stigma having the appearance of a corn cob, while the papillate ('pap') stigma possesses cells with protuberant papillae. Plants of *L. vulgare* have either an ACob or BPap morph combination, while monomorphic *L. humile* plants have a morph combination of APap. Previous chromosome counts show that *L. vulgare* is a tetraploid with 2n=36 (Wulff 1937; Baker 1953; Rodrigues 1953). *L. humile*, from Blakeney Point, was counted as 2n = 36 by Choudhuri (1942) but this was based on only one count from one plant. Erben (1979), using European material, recorded a mitotic count of 2n = 54, indicating that *L. humile* is a hexaploid.

Mitotic counts were made using root tips from live material collected from marshes throughout the range of *L. humile* in a bid to investigate this discrepancy. Counts of *L. vulgare* were also made and all the results are given in Table 1. Scottish and Irish material of *L. humile* was found to be hexaploid (2n = 54) along with plants from sites in western Wales (Dale and Monkton, Dyfed). At

TABLE 1. MITOTIC CHROMOSOME COUNTS IN POPULATIONS OF *LIMONIUM HUMILE* AND *L. VULGARE*

Counts on the same line are from the same plant, but counts on different lines are from different plants. Figures in brackets give number of cells with that particular chromosome number.

| Species & Locality | Grid reference | 2n |
|---|---|---|
| *L. humile* | | |
| W. Sussex, v.c. 13, Chidham | 41/795.043 | *36(5), 38(2) |
| W. Sussex, v.c. 13, Itchenor | 41/785.010 | *49(1), 54(2) |
| Pembs., v.c. 45, Dale | 12/813.072 | 48(1) |
| | | 50(6) |
| | | 51(1) |
| | | 52(1) |
| | | 54(1) |
| | | 54(4) |
| | | 54(3) |
| Pembs., v.c. 45, Monkton | 12/971.018 | 54(4) |
| Kirkcudbrights., v.c. 73, Creetown | 25/472.585 | 54(1) |
| Kirkcudbrights., v.c. 73, Ross Bay | 25/647.447 | 54(6) |
| S. Kerry, v.c. H1, Dromore Woods | 00/792.673 | 54(2) |
| S. Kerry, v.c. H1, Cromane | 00/70.97 | 54(3) |
| Co. Clare, v.c. H9, Killadysert | 11/280.600 | 54(1) |
| *L. vulgare* | | |
| W. Sussex, v.c. 13, Itchenor | 41/785.010 | 36(3) |
| | | 36(1) |
| | | 36(2) |
| | | *36(1) |
| | | 36(1) |
| | | *36(1) |
| Glam., v.c. 41, Crymlyn | 21/724.933 | 36(3) |

* plants intermediate in morphology between *L. vulgare* and *L. humile*.

Itchenor, W. Sussex, with populations of both *L. humile* and *L. vulgare*, an intermediate APap plant was recorded as having counts ranging from 2n = 49 to two counts of 2n = 54. At Chidham, W. Sussex, an APap plant was recorded as a tetraploid (2n = 36, five counts) with two counts of 2n = 38. This plant, intermediate in morphology, is possibly a backcrossed hybrid. All *L. vulgare* plants from Itchenor have tetraploid counts (2n = 36) as does a plant from Crymlyn, W. Glamorgan.

Certain morphological variants, intermediate between the two species, can be found at sites where both species grow together and these have been reported as hybrids (Salmon 1904; Ockendon 1978). Because of the high morphological variability of *L. vulgare* and the fairly high pollen stainabilities (60–79%) of some intermediates, it was thought that they may simply be morphological variants of *L. vulgare*. Mainly due to the lack of material, the results from the chromosome counts appear inconclusive about this matter. Two intermediate plants from Itchenor, with a *L. vulgare* morph combination (ACob), are indeed *L. vulgare* with counts of 2n = 36.

Variation in chromosome number recorded at some sites may be due to several reasons connected with the specimen preparation procedure. Chromosome fragmentation may have occurred as a result of excessive pressure applied during squashing. This may also have led to cell wall rupture leading to the mixing of the contents of two adjacent cells. The relatively small size of some of the smaller chromosomes may account for some of the low counts as one or more chromosomes may be obscured by a larger one.

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## WILD FIGS BY THE RIVER DON, SHEFFIELD

For a long time the wild figs (*Ficus carica* L.) by the river Don have gone almost unnoticed. Though they are mentioned in surveys of the river (Shaw 1979, 1981) it has taken till now for local botanists to realise that to find fig trees in large numbers is very unusual in Britain. A perusal of county floras has shown that only by the river Avon where it flows through Bristol and by the Thames in London is the phenomenon repeated. In summer 1987, as part of a survey of the industrial Don sponsored by the Nature Conservancy Council, this riverside population of figs was studied.

During the course of preparing vegetation maps of the banks, 35 fig trees were encountered along this 16 km stretch of urban river. From the middle of Sheffield they occur regularly but sparsely up to the Rotherham boundary. In one place they form a tiny wood. Most are rooted in or at the base of retaining walls, one is present on a small island and a few at the eastern end of the survey area are on an earth bank. All are growing under moist, eutrophic conditions, their chief associates being shade-tolerant species typical of river margins, such as *Alliaria petiolata*, *Impatiens glandulifera*, *Ranunculus ficaria*, *Anthriscus sylvestris* and *Poa trivialis*. This is a very different community from that occurring on the dry, rocky hillsides of the Mediterranean which is their native habitat.

All the trees are well-grown specimens with numerous stems so they appear like globular shrubs up to 8 m high and rather more across. In the Mediterranean they have a stout, single trunk. One result of this growth form is that trees at the base of river walls are efficient at trapping flood debris and silt, so small shoals build up around them. Decumbent lower branches then root in this silt so that uncertainty may arise as to how many trees make up the clump. This can usually be settled by observing leaf shape, size, texture and colour which differ considerably from tree to tree. It is unusual for trees in Britain to spread vegetatively from branches taking root.

The phenology of the figs during the 1987 season was as follows. Leaf expansion occurred during the last few days of May with certain buds opening to reveal small, hard, pear-shaped, green figs. These swelled and grew softer until mid-July when many fell off. In early September a second crop of green figs was produced which also swelled, softened and fell off by mid-October when the leaves were shed. The 'fruits' never opened and could not have been pollinated in any case as the necessary fig wasp does not occur in Britain. Most fig cultivars, however, can ripen their fruits in the absence of fertilisation. Those observed aborted before they were fully ripe. The canopy was retained for 152 days, which compares with 159 for ash, 194 for oak and 212 for beech.

The trees have proved difficult to age. Coring showed close, well marked growth-rings but, on counting, these gave ages of 100–130 years, despite not being taken from the very base. A problem is that these ages are sometimes greater than those of the retaining walls on which the specimens are growing. During 1987 the trees showed more than one flush of leaf expansion so it seems likely that in these fig trees growth rings do not correspond to annual rings. The multiple stems with no clear leader make even crude estimates of comparative age from girth measurements difficult. By observing extension growth as indicated by girdle scars it is thought that most of the figs will be at least 60–70 years old.

The origin of the figs is known – seeds derived from sewage. During rainy periods combined storm and foul water sewers become overloaded and raw sewage enters the river as it has done for hundreds of years. I have found that seeds from both dried and fresh figs bought in Sheffield germinate readily and, if further proof is needed, when testing the seed bank in 1 kg of silt collected from by the river, 15 tomato, six strawberry, one citrus and one fig plant grew. All are known to be sewage plants, the seeds of which survive a passage through the human gut. Pear (*Pyrus communis*) and apple (*Malus domestica*) on islands and shoals in the river probably have a similar provenance. In the light of these findings alternative suggestions that the figs have been planted or originated from prunings tipped into the river higher upstream (cuttings root readily) seem less likely. The genotypic variability of the local trees also mitigates against such a derivation.

Why figs should have established in such numbers by the river Don is enigmatical. Sewage enters most of our larger rivers and the consumption of figs is not restricted to Sheffield. Field evidence points to a possible explanation. The trees only occur at the eastern end of the city, yet sewage is deposited along the river throughout its length. This suggests a possible connection with heavy industry. The other significant factor is that no young fig trees were encountered, so it appears that conditions are no longer suitable for their establishment. These two observations, coupled with the Mediterranean distribution of the species, has led me to postulate that the period when the figs established coincided with the height of the steel industry. At that time river water was used for cooling purposes and the Don ran at a constant 20°C (the maximum permitted temperature); it was this special microclimate that enabled the trees to establish in such numbers. Following the decline of the steel industry, river temperatures have returned to normal, but the mature trees are able to survive.

It has recently been brought to my attention by B.S.B.I. members that naturalised fig trees also occur in the vicinity of a power station on the river Aire below Leeds and in the dead-end section of a canal in Liverpool which was once heated by discharges from Tate & Lyle's sugar refinery.

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## *CREPIS PRAEMORSA* (L.) TAUSCH, NEW TO WESTERN EUROPE

In July 1988, while attempting to refind *Crepis mollis* in northern Westmorland (v.c. 69), I came across a small fruiting colony of an unfamiliar *Crepis* growing on a low bank at the edge of a hayfield. A single stem and a basal leaf were collected and pressed (**LANC**, Fig. 1). It was soon evident that the material did not agree with any British species and recourse to *Flora Europaea* (Sell 1976) soon indicated that it was probably *C. praemorsa* (L.) Tausch subsp. *praemorsa*, and this was confirmed by examination of material at **BM** and **MANCH**.

*Crepis praemorsa* is a wide-ranging Eurasiatic species which extends from Manchuria to south-eastern Norway, eastern Denmark, easternmost France and northern Italy. Its discovery in Westmorland is therefore of considerable interest, being not only the first British record but also the first in western Europe. The specimen was subsequently shown at the Glasgow and London B.S.B.I. Exhibition Meetings in November 1988.

The most striking features of this species, clearly evident in Fig. 1. are the long, obovate and minutely apiculate rosette leaves, the very long and slender scape, to 65 cm, and the numerous small capitula. The two rows of involucral bracts are unusual in the genus in being eglandular and virtually glabrous. The pappus is white but the strongly ribbed, slender achenes were all abortive in the Westmorland material. This is perhaps not so surprising in view of the extreme isolation of this population.

When the site was visited in 1989 in late June the population consisted of ten plants, most of which


FIGURE 1. Herbarium specimen of *Crepis praemorsa* from Westmorland.

had finished flowering. However, a careful search further along the bank and in an adjacent field revealed about 150 small rosettes which probably belong to this species. The following associates were noted within 1 m of the fruiting plants:

*Alchemilla vestita*, *Anthoxanthum odoratum*, *Avenula pubescens*, *Briza media*, *Carex flacca*, *Centaurea nigra*, *Cynosurus cristatus*, *Dactylis glomerata*, *Festuca ovina*, *F. rubra*, *Geranium sanguineum*, *Holcus lanatus*, *Koeleria macrantha*, *Leontodon hispidus*, *Leucanthemum vulgare*, *Lotus corniculatus*, *Pimpinella saxifraga*, *Plantago lanceolata*, *Poa pratensis*, *Potentilla erecta*, *Ranunculus bulbosus*, *Sanguisorba officinalis*, *Scabiosa columbaria*, *Stachys officinalis*, *Trifolium pratense*, *Urtica dioica*.

The grassland is only lightly grazed and the dominant species in this small area were *Centaurea nigra*, *Festuca rubra* and *Plantago lanceolata*. The soil is limestone drift, pH 6.6. There is nothing particularly distinctive about this vegetation although a short, damper and more open turf a metre or two away supported *Carex ornithopoda*, *Gymnadenia conopsea*, *Pinguicula vulgaris* and *Primula farinosa*. *C. praemorsa* apparently occurs in rather similar sites on the Continent – rather dry banks and field margins, although in central Europe it is also found by the margins of submontane woodland.

One's natural instinct when confronted with such an isolated occurrence is to suspect introduction but this seems highly unlikely. The site is a piece of unimproved grassland in a remote corner of the county and within a short distance of relict occurrences of such rarities as *Bartsia alpina*, *Carex capillaris*, *Epipactis palustris* and *Polygala amara*.

ACKNOWLEDGMENT

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## THE FIRST RECORD FOR *VACCINIUM ULIGINOSUM* L. VAR. *PUBESCENS* (WORMSK.) HORNEM. FROM THE BRITISH ISLES

*Vaccinium uliginosum* L. var. *pubescens* (Wormsk.) Hornem. differs from the typical variety in that the leaves are puberulent beneath. It was not recorded from the British Isles until Blake (1915) drew attention to two collections of it in **BM**. The earlier of these is from the herbarium of J. Sowerby. The sheet contains several sprigs, only one of which has been determined as var. *pubescens* Lange by Blake (J. M. Mullin, pers. comm.), and "is without data of any sort" (Blake 1915). The Sowerby collection is marked as having served as the original for plate 581 in *English Botany* (Smith & Sowerby 1799; Blake 1915). The second collection in **BM** was made by E. S. Marshall, near Kingshouse, Argyll, on 27 June 1888.

Blake (1913, 1915) attributed the epithet *pubescens* to Lange but this is incorrect, and the relevant synonymy is set out below.

**Vaccinium uliginosum** L. var. **pubescens** (Wormskjold) Hornemann, *Nomenclatura Florae danicae* Hafnia (Copenhagen) 73 (1827). *V. pubescens* Wormskjold, in *Flora Danica* **9** (26): 4, t.1516 (1816). *V. uliginosum* var. *pubescens* Lange in *Consp. fl. Groenl. Medd. Gronl.* **3**: 90 (1880), nom. superfl.

The variety was described from Greenland; it is commoner there and in North America than it is in Europe. Further work is required to establish whether this plant deserves to be recognized as a distinct variety; it may be better treated as a forma (N. K. B. Robson, pers. comm.).

Despite the lack of information on Sowerby's herbarium sheet, it has been possible to identify the locality from which his material originated. Smith & Sowerby (1799) say of *V. uliginosum* in *English Botany* "It has hitherto been observed only in Westmorland and Cumberland except the highlands of Scotland. We rec'd. wild specimens from The Rev. Mr Harriman and Mr Oliver whose favours we have had occasion to so often acknowledge". Research by the author on the botanical exploration and floristic recognition of Upper Teesdale (in prep.) demonstrates that John Harriman and William Oliver sent Smith and Sowerby plants for *English Botany* from Upper Teesdale. Oliver sent Sowerby specimens of *V. uliginosum* in flower in 1798 (see Note 1). As far as the exact locality is concerned, Backhouse Jnr (1844), referring to a meeting between Backhouse Snr and Oliver in 1811 (see Note 2), indicated that the site was near a farm-house called Moor Riggs: "In a moist meadow near a cottage on the top of a neighbouring hill, we rediscovered *Vaccinium uliginosum* which had been *gathered* (my italics) there 30 years previously, by the late Dr Oliver and James Backhouse (Snr): it is confined to very small space, and we could see no traces of either flowers or fruit." This locality is confirmed by N. Winch, who wrote in his own copy of *The botanist's guide through the counties of Northumberland and Durham* (Winch *et al.* 1805) (in the library of the Linnean Society of London), "In bogs at Moor Riggs near Middleton Teesdale. D. J.B." "J.B." is James Backhouse Snr. Backhouse Jnr (1884) later stated that a lead-miner, John Binks, discovered the species in Upper Teesdale.

Another collection of *V. uliginosum*, probably from the same locality, was gathered by S. Hailstone at "Walkers Hill, Moor Riggs, Durham" in 1824 (**YRK**). The latest Ordnance Survey map (1:25000) shows Walker Hill Plantation just north-west of East Moor Riggs Farm. *V. uliginosum* has not been seen at this site by any living botanist (W. A. Sledge, pers. comm.).

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NOTES

1. Letter from John Harriman to James Sowerby dated 4 June 1799 in Sowerby Correspondence in the General Library, British Museum (Natural History).
2. Letter from James Backhouse Snr to Nathaniel Winch dated 25 July 1811 in Winch Correspondence at The Linnean Society of London.

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## THE SHASTA DAISY

The Shasta Daisy was introduced into cultivation in British gardens early in the nineteenth century and has been known as a naturalized or established escape for well over half a century. Although referred to *Chrysanthemum maximum* Ramond, most 'wild' British material differs considerably from native Pyrenean plants by being taller (1–1·5 m), and more robust with thickish, coarsely serrate, oblanceolate leaves up to 30 cm long, and capitula up to 10 cm or more in diameter. *C. maximum* is shorter in stature (up to 1 m) and less robust, with thinner, entire to dentate, oblanceolate basal leaves up to 30 cm long, and capitula 6–8 cm in diameter.

Bergmans (1939) and Ingram (1975) considered the cultivated plant to be a hortal hybrid between *Leucanthemum lacustre* (Brot.) Samp. and *L. maximum* (Ramond) DC., with which I agree. I have seen material of the hybrid from v.cc. 1, 9, 11, 17, 21, 23, 28, 59 and S, and, although *L. maximum* appears to be rarely cultivated, I have seen a gathering from v.c. 59.

**Leucanthemum** × **superbum** (Bergmans ex J. Ingram) Kent, **comb. nov.**
*Chrysanthemum* × *superbum* Bergmans, *Vaste Planten en Rotsheesters*, 2nd ed., 218 (1939), *nom. nud.*; Bergmans ex J. Ingram in *Baileya* **19**: 167 (1975).
*Leucanthemum lacustre* (Brot.) Samp. × *L. maximum* (Ramond) DC.
*Chrysanthemum maximum* hort., non Ramond in *Bull. Soc. Philomatique de Paris* **2**: 140 (1800).
*Leucanthemum maximum* hort., non (Ramond) DC., *Prodr.* **6**: 46 (1838).

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## *RUBUS STENOPETALUS* LEF. & MUELL. IN BRITAIN

The sole British specimen available determined as *R. stenopetalus* by Watson (Everleigh Ashes, v.c. 8, 7.7.1949, *W. Watson*, **SLBI**) was compared with material from the locus classicus (*Bat. Eur.* 342, Bois de Tillet, pres Vaumoise, Valois, 1860, *Questier*, **MANCH**) by E. S. Edees and myself in 1974 and 1976. Our opinion was that while the two exhibited some similarities, their identity was not conclusively shown, especially in view of the statement by Grose (1957) that the gathering represented the sole British occurrence.

On a visit to Wiltshire in 1986 I collected a distinctive bramble, which I was unable to name, at two localities; more recently D. E. Allen has compared specimens collected by himself in several Hants. localities, some previously determined as *R. hylophilus* Rip. ex Genev., with collections of W.L.W. Eyre in the 1900s mostly named *R. thyrsoideus* by W. M. Rogers, and has suggested that these are a good match for another sheet of *Bat. Eur.* 342 in **BM**.

Now that a good range of specimens from different habitats is available, it is clear that the British and French plants belong to the same taxon and that *R. stenopetalus* can be maintained in the British list. It seems that this bramble has a particular liking for clay soils capping chalk where it occurs as solitary bushes or small brakes. At Stockton Down it was accompanied by *Calluna vulgaris* and other heathy species. Muller (1859), however, refers to the habitat at its French locality, where it was rare, as sandy soil.

I have seen the following exsiccatae:
*V.c. 8*
Stockton Down, few bushes, GR 31/96.36, 1.8.1986, *A. Newton* (**herb. A.N.**).
Sunton Heath, few bushes, GR 41/26.53, 1.8.1986, *A. Newton* (**herb. A.N.**).
*V.c. 11*
Tytherley Common, one bush, GR 41/27.28, 7.7.1987, *D. E. Allen* (**herb. D.E.A.**).

*V.c. 12*

Itchen Wood, one bush, GR 41/52.53, 1.8.1986, *D. E. Allen* (**BM**). Bellevue plantation, Popham Beacons, GR 41/53.44, 13.8.1983, *D. E. Allen* (**herb. D.E.A.**).
Stratton Park, Micheldever, one clump, GR 41/54.42, 21.7.1975, *D. E. Allen* (**BM**).
Wolston Copse, Upton, colony, GR 41/3.5, 2.8.1986, *D. E. Allen* (**herb. D.E.A.**).
Hassock Copse, Lunnway Inn, Northington, GR 41/53.36, 1900, *W. L. W. Eyre* (**BM**).
Hassock Copse, frequent, GR 41/53.36, 7.8.1978, *D. E. Allen* (**BM**).

D. E. Allen sends the following supplementary information: "I have seen the following additional exsiccata of *R. stenopetalus* from v.c. 12:
Stratton Park, growing freely, GR 41/54.41, 1898, *W. L. W. Eyre* (**HME**).
Itchen Common, GR 41/52.35, [no date], *W. L. W. Eyre* (**HME**): det. Rogers as ?*R. pulcherrimus* × *rusticanus*.
Lawn Wood, GR 41/53.38, 3.9.1907, *W. L. W. Eyre* (**HME**).
Harewood Forest, GR 41/41.44, 26.7.1968, *E. S. Edees 20157* (**NMW**).

I also have field records from three further localities in v.c. 12: Micheldever Wood, GR 41/53.36 (frequent), Cobley Wood, GR 41/52.44 (scattered), and Long Copse, between Stockbridge and Crawley, GR 41/39.35 (two bushes). As at present known, the distribution is L-shaped, running from the north of Wiltshire down to the Hampshire border north-west of Andover and thence due east to the woods of the Micheldever area, which appear to be its headquarters."

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## *POTAMOGETON FILIFORMIS* PERS. IN ANGLESEY

Two species in *Potamogeton* subgenus *Coleogeton* Reichenb. occur in Great Britain: *P. pectinatus* L., characterised by open stipular sheaths and fruits over 3 mm long with a ventral beak, and *P. filiformis* Pers., with tubular sheaths and fruits less than 3 mm long with an apical beak. *P. pectinatus* is widespread but *P. filiformis* has a northern distribution. In Scotland it is most frequently found in lowland lakes and reservoirs, often near the sea, but it also grows in pools, flooded quarries, ditches, streams and rivers. In addition to its Scottish localities, *P. filiformis* is known from a single site in northern England, Rayburn Lake, Netherwitton, v.c. 67, and from Anglesey in Wales. Its occurrence in Anglesey, some 200 km south of the Northumbrian locality, is particularly interesting. It is not, however, clear from the available literature whether *P. filiformis* is still present there. Roberts (1982) stated that "recent records require confirmation", an opinion quoted by Ellis (1983). In view of this uncertainty I recently reassessed the Anglesey records of this species.

The first specimens of *P. filiformis* from Anglesey were collected at Cors Bodeilio by the Rev. H. Davies. A flowering specimen collected in May 1798 and a fruiting plant gathered in 1800 survive in **BM** and **NMW** respectively. Unfortunately the label on the specimen at **BM** was almost completely burnt away when the Natural History Museum was blitzed in 1940 (cf. Preston 1988), but the details of the locality had been recorded in J. E. Dandy's card index as "N. E. end of Cors Bodeilio". In Davies' day the taxa we now know as *P. filiformis* and *P. pectinatus* were not separated by British botanists (e.g. Hudson 1762, 1798; Smith 1800) although the variable *P. pectinatus* was sometimes split into more than one species. Davies named his plant *P. pectinatum* and published the record under this name (Davies 1813). The **BM** specimen was identified as *P. filiformis* by Arthur Bennett in 1883; the sheets at **BM** and **NMW** were both determined as this species by J. E. Dandy and G. Taylor. I have examined both specimens and agree that they are *P. filiformis*.

Further *P. filiformis* was collected (again as *P. pectinatum*) by W. Wilson on 16 July 1826 from the "southern lake of Llyniau Llanfihangel yn Nhywyn". Wilson noted that "it grew some of it out of the

water on the wet sandy shore, the lake being very low, owing to the dry summer". The specimen at **BM** bears ripe fruit; it was determined as *P. filiformis* by J. E. Dandy and G. Taylor and undoubtedly represents this species. According to Dandy's card index there is further material of this collection at **MANCH** and **K**. The Llynnau Llanfihangel yn Nhowyn, or Valley Lakes, are a group of lakes approximately centred on grid reference 23/320.770. It is not clear which of them Wilson intended by his phrase "southern lake".

The only subsequent records of *P. filiformis* from Anglesey are based on two specimens collected by R. H. Roberts in 1960, determined by J. E. Dandy and deposited at **BM.** The details are:

1. Llyn Llygeirian (S.W. side), Llanrhyddlad, GR 23/345.897, *R. H. Roberts*, 23 October 1960, det. J. E. Dandy, 1960, with note "leaf-sheaths tubular!".
2. Small pool by railway, Llangaffo, GR 23/435.692, *R.H. Roberts*, 18 December 1960, det. J. E. Dandy, 1961.

R. H. Roberts was unable to refind *Potamogeton filiformis* at either locality and so came to doubt the accuracy of these determinations. Both specimens are vegetative, and although collected at different sites they are fairly similar. I have examined them carefully and in my opinion they are not *P. filiformis*, but are a rather lax form of *Scirpus fluitans* L. Mr A. O. Chater has also examined the specimens and agrees that they are undoubtedly *S. fluitans*. *Scirpus fluitans* and *Potamogeton filiformis* are superficially similar in vegetative structure. Dandy was, of course, well aware of this similarity and occasionally had to determine as *Scirpus fluitans* material mistakenly sent to him in the belief that it belonged to *Potamogeton*. It is almost inconceivable that Dandy, whose determinations of *Potamogeton* are normally not only reliable but definitive, could have mistaken the two species. However I have had to conclude that he did so. It seems that even Dandy was no exception to David's (1981) dictum that "there is no botanical authority, however august, who has not been guilty of the grossest errors".

In conclusion, *Potamogeton filiformis* was collected at Cors Bodeilio (GR 23/5.7) by H. Davies in 1798 and 1800, and from Llynnau Llanfihangel yn Nhowyn (GR 23/3.7) by W. Wilson in 1826. Subsequent records from Anglesey are erroneous. Although *P. filiformis* may yet be rediscovered there, it seems more likely that it is now extinct. The species was more widespread in the last (Weichselian) glacial period than it is today (Godwin 1975), and the Anglesey populations were perhaps relicts dating from this time.

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## SOME NEW COMBINATIONS IN THE BRITISH FLORA

In Rich & Rich (1988) I used the following invalid names and combinations and take this opportunity to validate them.

**Pseudotsuga menziesii** subsp. **glaucescens** (Schwerin) P. D. Sell, **comb. nov.**
*P. taxifolia* subsp. *glaucescens* Schwerin in *Mitt. Deutsch. Dendrol. Ges.* **1922**: 61 (1922).
*P. glaucescens* sensu Bailly in *Rev. Hort.* **1895**: 88 (1895), quoad descript. exclud. basionym.

**Cedrus libani** subsp. **atlantica** forma **glaucissima** P. D. Sell, **nom. nov.**
*C. atlantica* var. *glauca* Carrière, *Traité gén. Conif.*, 2nd ed., 374 (1867), non *C. libani* var. *glauca* Carrière, *Traité gén. Conif.* 284 (1855).

**Cedrus libani** subsp. **deodara** (D. Don) P. D. Sell, **comb. nov.**
*Pinus devdara* Roxb., *Hort. Bengal.* 69 (1814), nom. nud.
*Pinus deodara* D. Don in Lamb., *Descr. Pinus* **2**: 8 (1824).

**Cryptomeria japonica** subsp. **sinensis** (Miq.) P. D. Sell, **stat. nov.**
*C. japonica* var. *sinensis* Miq. in Sieb. & Zucc., *Fl. Jap.* **2**: 52 (1870).

**Fumaria muralis** subsp. **boraei** var. **major** (Boreau) P. D. Sell, **comb. nov.**
*F. bastardii* var. *major* Boreau in Duchartre, *Rev. Bot.* **2**: 359 (1847).

**Pilosella peleteriana** subsp. **subpeleteriana** (Naegeli & Peter) P. D. Sell, **comb. nov.**
*Hieracium peleterianum* subsp. *subpeleterianum* Naegeli & Peter, *Hier. Mittel-Eur.* **1**: 129 (1885).

**Pilosella praealta** subsp. **thaumasia** (Peter) P. D. Sell, **comb nov.**
*Hieracium magyaricum* subsp. *thaumasium* Peter in *Bot. Jahrb.* **5**: 284 (1884).

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## THE TYPIFICATION AND NOMENCLATURE OF *ERICA MACKAIANA* BAB.

In volume 1 on page 158 of *Companion to the Botanical Magazine*, Hooker (1835) discusses the discovery of a new *Erica* from Ireland which is provisionally (but not validly) given the name *Erica mackaii*.

The species was validly described as *E. mackaiana* on page 181 of *Flora Hibernica* (Mackay 1836), the authorship being attributed to C. C. Babington both in the authority of the name "*E. mackaiana* Babington" and after the description "Bab. MSS", and by Babington (1836) himself on page 456, vol. 17 of *Transactions of the Linnean Society of London* in the same year. Neither publication refers to the other. The descriptions are identical except that one is in English and one in Latin. I have been unable to find out which was published first, but J. E. Dandy, in his manuscript of citations which go with the *List of British Vascular Plants* (Dandy 1958), gives only *Flora Hibernica*, suggesting he had come to that decision.

The locality in *Flora Hibernica* is given as "On the declivity of a hill by the roadside within three miles of Roundstone, Cunnamara; Mr. W. M'Calla". Hooker also gives the finder of the plant as M'Calla. In *Trans. Linn. Soc. Lond.* the locality is given as Craigha Moira, Connemara (Babington 1836).

Both Babington's descriptions would be based on the specimens collected by him in 1835. In the herbarium at Cambridge (**CGE**) there are five sheets that can be regarded as syntypes.

1. *Erica* (*biformis* [crossed out]) *Mackaiana*, Craigha Moira, Connemara, 2 Sept. 1835, taken to the place and plant by W. McCalla of Roundstone. Herb. C. C. Babington [All in Babington's handwriting].
2. *Erica* (*biformis* [crossed out]) *Mackaiana*, Craigha Moira, Connemara, 2 Sept. 1835, Herb C. C. Babington [All in Babington's handwriting].
3. *Erica Mackaiana*, *Erica biformis*, Craigha-moira, Connimara, 4 Sept. 1835, *C. C. Babington*. Mus. Henslow [In Henslow's handwriting].
4. *Erica biformis*, Croiga Moira, Cunnamara, west of Ireland, Aug. 1835, Ex Herb. C. C. Babington [In an unknown hand].
5. *Erica biformis* Babington, Cunnemara, Ireland Babington, E. tetralicis vix var. Herb. C. M. Lemann [In an unknown hand].

It would appear from Babington's diary (Babington 1897, p. 46), and from the two specimens in his handwriting the only day on which he actually looked at *Erica mackaiana* (in the company of Messrs McCalla and Lingwood) was on 2 September, despite the fact he says "August" in *Trans. Linn. Soc. Lond.* (Babington 1836). The dates on the other sheets are probably wrong. I have selected sheet one as the lectotype. Sheet 2 certainly and probably sheets 3, 4 and 5 are isolectotypes. Specimens given by Babington to Mackay (see *Flora Hibernica*) and probably to other botanists would also be isolectotypes.

All five sheets are morphologically similar and fit the original description with the exception that the leaves are lanceolate or oblong-lanceolate, not ovate. All have glandular hairs on the margins of the leaves, the stems, and the calyx. I think we must assume that this leaf-shape is what Babington called ovate.

Hooker (1838) validly published *E. mackaii* in the fourth edition, page 158 of *The British Flora*, but in citing *E. mackaiana* as a synonym he made it an illegitimate name. The full synonymy is as follows:–

**Erica mackaiana** Bab. in Mackay, *Fl. Hibern.* 181 (1836); in *Trans. Linn. Soc. Lond.* **17**: 456 (1836).
Lectotype: Craigha Moira, Connemara, 2 Sept. 1835, *C. C. Babington* (**CGE**), designated here.
*E. mackaii* Hooker, *Compan. Bot. Mag.* **1**: 158 (1835), nom. provis., non rite publ.; *Brit. Fl.*, 4th ed. 158 (1838), superfl. nom. illegit. pro *E. mackaiana* Bab.
*E. tetralix* subsp. *mackaiana* (Bab.) Syme in Sowerby, *Eng. Bot.*, 3rd ed. **6**: 38 (1866).
*E. ciliaris* subsp. *mackaiana* (Bab.) Moore & More, *Contrib. Cyb. Hibern.* 183 (1866).
*E. tetralix* subsp. *mackaii* Hooker fil., *Stud. Fl. Brit. Is.* 233 (1870), superfl. nom. illegit. pro subsp. *mackaiana* (Bab.) Syme via basionymum.

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## NEW ZEALAND SPECIES OF *HYDROCOTYLE* (APIACEAE) NATURALISED IN BRITAIN AND IRELAND

Ten species of *Hydrocotyle* (nine indigenous, one naturalised) are treated in the most recent volume of the *Flora of New Zealand* (Webb, Sykes & Garnock-Jones 1988). Four of these have become

locally common lawn weeds in New Zealand (Webb 1982, 1984). The genus still presents taxonomic difficulties with as many as six taxa included in the *H. novae-zeelandiae* complex, and the *H. moschata*/*H. microphylla* complex as yet not fully resolved.

In the most recent edition of the *Flora of the British Isles*, Tutin (1987) accepts only one naturalised species, *H. moschata* G. Forster; this is endemic to New Zealand and has established in lawns and grassy banks on Valencia Island, south-western Ireland.

Examination of herbarium material from **RNG** has revealed that two further New Zealand taxa are naturalised in Britain. Both collections on sheet 5,82/4 (Lawn at Parkhill, Arbroath, Angus, v.c. 90, *U.K. Duncan*, Aug 1961; Spontaneous weed in garden, W. Cornwall, *Miss Wood*, comm. D. McClintock, 1968) represent *H. novae-zeelandiae* DC. var. *montana* Kirk. Both these collections had been identified as *H. microphylla* Cunn. another New Zealand species. The leaves of *H. novae-zeelandiae* var. *montana* are similar to those of *H. microphylla* but *H. novae-zeelandiae* var. *montana* differs in having very stout stolons, much larger fruits, and a higher chromosome number. Var. *montana* also differs from *H. novae-zeelandiae* var. *novae-zeelandiae* in chromosome number (Webb & Beuzenberg 1987) and will be treated as a distinct species when a revision of this complex is completed.

Sheet 5,82/3 comprises four collections. The first, from Valencia Island, represents typical New Zealand *H. moschata* G. Forster. The other three collections (Covering lawn of 26, Broadwater Down, Tunbridge Wells, W. Kent, v.c. 16, *K. E. Bull*, 1958; Cult. ex lawn 26, Broadwater Down, Tunbridge Wells, W. Kent, v.c. 16, *D. McClintock*, May–July 1959; 16th green and nearby on Kelburn Golf Course, Largs, Ayrshire, comm. *D. McClintock*, 21 July 1953) had been variously determined as *H. sibthorpioides* Lam., *H. microphylla* Cunn., and *H. moschata* G. Forster. These three collections represent a small-leaved variant indigenous to northern areas of the North Island of New Zealand and belonging to the *H. moschata*/*H. microphylla* complex. Such plants are presently referred to *H. moschata* but differ from the typical variant of that species (represented by the Valencia Island plants) in the smaller, less dissected leaves and in having hairs usually only on the upper surface of the lamina. This taxon also appears similar to *H. microphylla* which is, however, usually clearly distinguished from both variants of *H. moschata* by its rounded leaf teeth and glabrous upper and lower lamina surfaces. Both kinds of *H. moschata* and *H. microphylla* have a chromosome number of 2n = 48 (Webb & Beuzenberg 1987). The small-leaved variant of *H. moschata* has been recognised in New Zealand for some time and annotations on herbarium specimens indicate that British botanists have also recognised that it differs from the *H. moschata* found on Valencia Island and described by Tutin (1987). However, it is not always easy to distinguish this taxon from *H. moschata* sensu stricto and *H. microphylla* and so it remains unclear what taxonomic recognition if any it should be given.

Some 50% of the 1470 dicotyledons, gymnosperms and pteridophytes naturalised in New Zealand have come from Europe and undoubtedly most have come directly or indirectly from Britain (Webb, Sykes & Garnock-Jones 1988). It is pleasing to see *Hydrocotyle* making some attempt at reciprocity. Further species of *Hydrocotyle* may be naturalised in Britain and Ireland, and those species recorded in this note may well have wider distributions. I am willing to examine any material of naturalised *Hydrocotyle*.

### KEY TO PENNYWORTS (*HYDROCOTYLE*) WILD IN BRITAIN AND IRELAND

1. Leaf lamina peltate, glabrous ..... *vulgaris*
1. Leaf lamina with deep basal sinus, glabrous or hairy ..... 2.
2. Leaf teeth crenate; fruit 2–3·5 × 1·8–2·5 mm ..... *novae-zeelandiae* var. *montana*
2. Leaf teeth serrate; fruit 1·3–1·5 × 1–1·3 mm ..... 3.
3. Leaf lamina hairy on upper and lower surface ..... *moschata* sensu stricto
3. Leaf lamina hairy on upper surface only ..... *moschata* 'small-leaved variant'

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