Mibora minima - one of the earliest-flowering grasses in Wales (see p. 16)
(Illustration from Sowerby's 'English Botany')
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Most back issues of the BSBI Welsh Bulletin are still available on request (originals or photocopies). Please enquire before sending cheque (made payable to BSBI Wales), @ £2 per issue, which includes p & p, to - Dr G. Hutchinson, Department of Biodiversity & Systematic Biology, National Museum & Gallery, Cathays Park, Cardiff CF10 3NP, specifying the issue number, or year (which would have to include the season or month). Large runs - price negotiable.
Those who have already ordered copies in advance will have their order honoured at the previous cost of £1 per issue including p & p.

Publication date of last BSBI Welsh Bulletin (No. 75) - January 2005.
Several people have commented on how much extra time I will have, now that my term as BSBI President has come to a close. I well remember when I first started the Carmarthenshire Flora Project (way back in 1981), how much time I seemed to have (a 9 to 5 job certainly helps in that respect). Times have, of course, changed and I look back on how I found time to do the things that I wanted to do such as getting out to do fieldwork, doing a spot of gardening, spending time with the family or just relaxing! Well I don't see any sign of that situation returning: it seems to me that the greatest robber of my (and many other people's) time is the computer.

I agree that we can now produce flawless plans and reports, we can interrogate hundreds of thousands of records at the touch of a button and we can view and re-touch all our digital photographs with great abandon. But we never had to spend hours and hours inputting records (a quick note on an index card would suffice in the past), we were able to spend time admiring our prints from Boots rather than wading through hundreds of mediocre digital photos on screen, agonizing over which to delete, knowing that most of those kept would never see the light of day from the hard-disc again. Reports have to be perfect: Heaven help us if we get the font, the point-size or the formatting wrong - and what was so bad about having hand-drawn maps to illustrate the typed text – all mask the importance of getting the content correct in the first place. We all seem to be slaves to the dreaded machine and I cannot see my 'new found freedom' allowing me to spend any more time doing the things I want to do!

Of course, the incredible progress that Bob Ellis has made with Local Change has been greatly facilitated by the 93% of Vice County Recorders who submitted their data by computer. But the time saved by Bob in not having to input other people's records, has been more than matched by the sum of all the individual Recorders' computing time. It seems that gone are the days when to be Vice County Recorder was a totally enjoyable occupation, there is now a very large helping of drudgery in the form of data input. In the near future, I guess that hand-held computers for direct record-input in the field will become the norm, but for the time being, my experience is that they are more bother than their worth – unreliable, short battery life, will not link with GPS, can't see screen in bright light, etc., etc., but no doubt their day will come. In the mean time, I congratulate Bob on his progress, as he recently demonstrated at the Ferryside AGM, and look forward to the presentation of the results at the Shrewsbury Recorders' Conference and subsequent publication of the report.

There has been a generally favourable reception for the colour pages in the centre of recent Welsh Bulletins. If contributors have appropriate photographs to illustrate articles or plant records, we would be very happy to consider them for publication. This, of course is another way of asking you to submit text which might be of interest to the membership: this issue has a very large and interesting content, but recently we have been scratching to fill the pages!

I look forward to seeing you at the Welsh Annual General Meeting at Lampeter in June: the programme promises to be of outstanding interest and includes an excellent opportunity to learn more about aquatic plants from Richard Lansdown.

Finally my apologies for failing to include in the last Welsh Bulletin, Peter Benoit's Hybrid Sedge exhibit in the list of exhibits at the 2004 Welsh Exhibition Meeting in Llangollen.

Richard Pryce
24 May 2005
The 43rd WELSH ANNUAL GENERAL MEETING & 23rd EXHIBITION MEETING of the BSBI COMMITTEE FOR WALES at ST DAVID'S COLLEGE, LAMPETER, 
FRIDAY 17th to SUNDAY 19th JUNE 2005

has the strong theme of aquatic plants and habitats. There are two afternoon sessions for identifying 
water-plants indoors (with particular attention to difficult groups, eg. Callitriche and water crowfoots) 
and field visits to explore a range of freshwater (and terrestrial) sites, including lakes, rivers, pools and 
marshy grassland. The University’s Old Hall is a very well-lit and attractive Exhibition space and 
there will be a wide range of posters and displays.

FRIDAY 17th

2.00 pm Setting up posters and Summerfield Books, visit to Founders’ Library collection of rare 
botanical books (subject of Bill Condry’s 1997 “From Herbals to Floras: Illustrated 
Botanical Works in the Founders’ Library”).

4.00 pm Afternoon tea and introductory Taxonomic Workshop on Aquatic Plants with Richard 
Lansdown (freshwater habitat specialist and author of the forthcoming Callitriche 
Handbook), concentrating on key characters and techniques. Problematic specimens 
welcome.

7.00 pm Evening meal in the College Refectory.
8.00 pm Exhibition in Old Hall and local excursion, plus social gathering.

SATURDAY 18th

8.00 am Breakfast in the Refectory (collect pack-lunch).
9.30 am Excursions to Denmark Farm and Caeau Blaen Dyffryn Plantlife Reserve. Denmark Farm is 
an ambitious restoration scheme illustrating conservation in partnership with farming and it 
has developed a surprisingly rich flora (particularly aquatic plants) in formerly 'improved' 
grassland. The Plantlife reserve is a particularly good unimproved pasture with a small area 
of mire and an abundance of Platanthera chlorantha and P. bifolia and Carex verticillatum, 
with Dactylorhiza spp. and Carex spp. (plus hybrids) and more uncommon plants such as 
Rodochiton lunaria and Viola lutea.

3.00 pm St St. David’s College: afternoon tea and advanced work in aquatic plant identification. 
Welsh Committee meeting then Welsh AGM in the Old Hall.

6.00 pm Illustrated talk on the Ceredigion Flora by Arthur Chater (BSBI Recorder for Ceredigion, 
v.c.46).

7.00 pm Evening meal in the College Refectory.
8.00 pm Illustrated talk by Ray Woods: “A year in the life of a conservationist.”
9.00 pm Further taxonomic work in the Exhibition hall for dedicated practitioners.

SUNDAY 19th

8.00 am Breakfast in the Refectory (collect pack-lunch).
9.30 am Excursions to Teifi Pools and the Tregaron floodplain. The first excursion takes in a series 
of low-nutrient, stony-bottomed lakes (some highly modified as reservoirs) in a wild and remote 
upland site. These have recently been accepted as internationally important sites for the Shoreweed 
community (Littorelletea) and for populations of Floating water-plantain, Luronium natans. Both 
species of Quillwort (Isoetes lacustris and I. echinospora) occur here with the possibility of their 
hybrid. The second party will look at a range of lowland, mesotrophic habitats (including exposed 
mud, poached areas and marshy grassland alongside the raised bog) but the floodplain –part of a 
National Nature Reserve – is strongly influenced by the nearby upland catchment. Notable species 
include Persicaria minor, Elatine hexandra and Luronium natans (in an unusual river habitat).

Excursions should finish after lunch (in the field), although there may be a short walk back to our 
transport and opportunities for further visits later.

Guests wishing to attend the Exhibition or field visits only should note that Conference fees will 
apply.

For further details contact:
Andy Jones Tel: 01970 821119 (day) 01970 617182 (evenings) a.jones@ccw.gov.uk
CALENDAR OF MEETINGS 2005

Full details and procedure for booking are available in the BSBI Year Book for 2005.

SAT 30th APR - SOUTH GOWER COAST, GLAMORGANSHIRE (v.c. 41) - M. Howells
FRI 13th - SUN 15th MAY - BSBI AGM, FERRYSIDE, CARMARTHENSHIRE (v.c. 44)
SAT 4th JUN - PENCOED, GLAMORGAN (v.c. 41) - G. Barter
SAT 11th JUN - CRAIG Y RHIWARTH, BRECONSHIRE (v.c. 42) - M. Porter
FRI 17th - SUN 19th JUNE - WELSH AGM and EXHIBITION MEETING, LAMPETER and associated field meetings (v.c. 46)
SAT 9th JUL - PRESTATYN, FLINTSHIRE (v.c. 51) - G. WYLLIIE & J. Phillips
SAT 23rd JUL - YSGOLION DUON, CAERNARVONSHIRE (v.c. 49) - W. McCarthy & S. Thomas
SAT 3rd SEP - TRAETH LLIGWY, ANGLESEY (v.c. 52) - N. Brown

PETER BENOIT'S ANNIVERSARY: A CORRECTION

An item in the last BSBI Welsh Bulletin 75: 11 (Winter 2004/2005) referred to my "tenure as first and only Vice County Recorder for Merioneth (v.c.48)". To get the record right I wish to point out that in fact the late Mr A. E. Wade, then Assistant Keeper of the Dept. of Botany, National Museum of Wales, was BSBI Recorder for all the Welsh vice-counties (including Merioneth) for some years before I was appointed Recorder for Merioneth in 1954. See B.E.C. 1946-47 Rep., 205 (1948). BSBI Year Book 1953, p. 79 (1953) and Proceedings BSBI 1: 570 (1955).

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AN EARLY OBSERVATION OF RANUNCULUS TRIPARTITUS DC.?

In the diary of Samuel Brewer for the year 1727 (Hyde, 1930), there is a curious observation which, perhaps, anticipates later scientific discoveries. On April the 6th, travelling from Llanfaethlu in Anglesey (SH3186) to Bangor, Caerns, he notes: "the first thing I observed in the way, was in the water a little before we came to Llêchgynfarwydd [Llêchcynfarwy; SH3881] a Ranunculus in flower and fruit".

There are probably only two or three water-buttercups in fruit this early in the year and Brewer would, no doubt, have been familiar with both Round-leaved and Ivy-leaved Crowfoot (*Ranunculus omiophyllus* and *R. hederaceus*). The more likely species would be Three-lobed Water-crowfoot, *R. tripartitus* (which, to this day, is one of the most notable plants of Anglesey) but more than 80 years would pass before De Candolle came to describe this species as new to science.

It does not seem as if any specimens of this plant came to attention of Brewer's principal correspondents – or, at least, there are no Anglesey crowfoots in the Dillenian herbarium, OXF – but searches in other botanical collections might still be worthwhile. And there could be another extant – though less provable – link with this record, near to Llêchcynfarwy. It is interesting that, in a vice-county where *R. tripartitus* was, until recently, thought to be extinct, at least two populations have now resurfaced in SH38.

Reference


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A WEEK'S BRAMBLING IN EAST PEMBROKESHIRE

The bramble flora of so much of England and Wales has been investigated so extensively in recent years that it has become increasingly hard to identify areas that are still notably underworked. Curiously, in view of its accessibility, the eastern half of Pembrokeshire has long stood out as one of those - in marked contrast to the acidic half with its well known affinities with Cornwall floristically, which has not only attracted a steady trickle of batologists over the years, but even had a resident one in its south-west corner in the person of the late Tommy Warren Davis. The disdaining of the eastern half has presumably been because of its larger areas of calcareous soils and clay, which makes it look hardly less likely to be productive of a reasonable degree of species diversity than that notorious Rubus desert, Cambridgeshire. It is somewhat ironical, therefore, that just about the only bramble specialist who has left evidence in herbaria of ever having collected in the area should have been a botanist from Cambridge: the far-roaming Babington. But in his case it was probably not the flora that was the lure but that other lifelong passion of his, the antiquities. He was in fact a devoted member of the Cambrian Archaeological Association, the committee of which he chaired for as long as 30 years.

It was consequently only with considerable misgivings that my wife and I chose the Tenby district as our centre of operations for a week's Pembrokeshire immersion in July 2004. But while the antiquities more than came up to expectations, the brambles, to my great surprise, wildly exceeded them. Admittedly, the number of species turned out to be as limited as I had feared. The unconiferised parts of Rhode Wood at Saundersfoot, for example, the area's largest tract of reasonably natural-looking oakwood, a high canopy Quercetum with holly understorey, proved to be entirely carpeted with thousand upon thousand of bushes of scarcely anything but R. aequalidens, a western species which is a Pembrokeshire speciality. Trefloyne Wood, above Penally, proved hardly any better, with just that and two other species, in equal plenty. And the only green lane at the start of the moorland that there was time to walk along yielded only eight; half of those scarce at best. This is poor compared with England and Wales in general.

A long-anticipated trip across to Caldey Island was an early priority. In July 1950 a party of students from King's College, Newcastle spent a week there and enjoyed the rare privilege of wandering at will. With admirable youthful audacity one of their member, later a professor of molecular botany, did not shrink from including brambles in the collections of specimens they jointly brought back. Nigel Hepper, who was also at that party, prior to his distinguished career at Kew (and author of the resulting list of the island's vascular plants published in BSBI Proceedings, 1: 21-36), cannot now recall where those specimens ended up; they were, however, submitted to the then national referee for Rubus, W.C.R. Watson, from whom the names of four species were elicited in addition to R. caesius. One of those, R. silurum must surely have been an error (it does not appear to occur at low levels in this region), while R. tuberculatus was probably assumed to be the identity of an undescribed member of that same section and series with rather similar armature which is common in coastal Pembrokeshire and extends eastwards at least to Gower. I felt sure I could do better, despite restriction to the mere third of the island to which the public are admitted, which luckily contains most of the plantations and taller thorny scrub. This last, round the calvary, produced my first bramble, in the very unexpected shape of R. subinermoides, a common species of south-east England previously recorded from Wales only in its extreme south-east corner; it has no doubt been brought to the island by migrant thrushes or warblers attracted by the mass of sloes in the autumn. Elsewhere, however, only six more species (plus three undescribed members of the taxonomically underinvestigated section Corylifolii) came to light, all of them more or less widespread on the neighbouring mainland. For the record, these were R. aequalidens, R.
altiarctuatus, R. leyanus, R. rossensis, R. rubritinctus and R. ulmifolius. Surprisingly only one was on the list of the 1950 party, the ubiquitous R. ulmifolius, but it could well be that most or all of the others have come in during the intervening half-century, as the plantations must have increased in height and extent very considerably in that period. The one 1950 species that I failed to find, the strongly western R. dunoniensis, is probably lurking among the gorse on the cliffs (as at Manorbier, further along the opposite coast), but those were outside my range. That combined score of nine is not at all bad considering that the amount of ground suitable for bramble species other than R. ulmifolius is so limited.

A hurried visit to the National Trust’s Lydstep headland in a gale yielded one of the only two species new for Wales that I recognised in the field during the week. This was R. purbeckensis, a doubly pleasing find because it also closes what has appeared a puzzling gap between the two halves of this species’ British Isles range: Devon to the Isle of Wight on the one hand and the eastern side of Ireland on the other. Accompanying it on the headland was the sole clump of R. perdigiotus that I saw all week - inexplicably, as that is thought of as no less of a south-west Wales speciality than R. aequalidens. Two further finds of R. purbeckensis were later made at Manorbier, along a cliff-top hedge and on a brackeny footpath just north of the castle. The other addition to the Welsh list that was no less familiar, R. cissburiensis, must be an accidental introduction, perhaps a relic of a picnic by holidaymakers from England, for the clump in question is on a high bank facing the beach car-park at Freshwater East. Another species with a south-eastern range in Britain as a native, like R. subinermoides, this one is an aggressive spreader and has lately been found plentiful on abandoned railway banks in the hinterland of Liverpool, where it has been widely grown for its particularly tasty fruit.

A more distant foray to Pembroke Town produced a mere N.C.R. in comparison: R. largificus, astonishingly abundant over the one-time flood-bank of earth along the south-west side of Lower Common (now a public park). This species is known elsewhere in Wales only in one or two places along the lower Teifi valley, whence it was perhaps introduced long ago to this spot in transported soil. Otherwise it appears to be more or less restricted to south-east England and a few scattered areas in Ireland - another puzzling distribution.

Though I had my suspicions about the identity of several brambles encountered during the week, resolving those had to wait for my return from holiday, followed by sessions in the Natural History Museum and finally the referral of an ultimate hard core of doubtfuls to Alan Newton during the winter. It was only at one or other of those stages that some further startling discoveries emerged. By far the best, it turned out, has been R. lettii, hitherto assumed to be endemic to the northern half of Ireland and one glen in the Isle of Man. South-eastern Pembrokeshire is one of the last areas in Britain that a plant with such a distribution could have been expected to turn up, yet I came across it in three widely-separated places: in quantity along the green lane mentioned earlier (in the hill country above Gumfreston at SN104025-6), a smaller amount in the old Scotsborough estate woodland just west of Tenby - accompanied by a bush of R. bowdiccaea, a south-west Wales rarity - and a further two bushes on the east margin of Rhode Wood at Saundersfoot. More thorough searching will almost certainly turn it up elsewhere in the area and maybe in the western half of the county as well. After a dozen seasons combing Cardiganshire for Rubi, however, Arthur Chatier and I can feel fairly sure that we have never come across it there, for the ultra-long patent needle-like rachis prickles combine with general hairiness to render this member of series Vestiti especially distinctive.

Growing with R. lettii in that same green lane, in greater quantity, was another species that I had gone to that likely-looking site expressly to search for, following my discovery of two
gatherings of it earlier in the year in the herbarium at Cambridge. One of those, by Babington in 1851, was labelled vaguely “Tenby”, but the other, in 1907 by S. H. Bickham, was localised just slightly more encouragingly as a hedge on the border between the pastures and the moorland above that town. Bickham’s gathering alone had been seen by Rogers and recognised by him as a Welsh Marches speciality that nowadays goes by the name of *R. euanthimus*; the late Beverley Miles had come across the sheet in the 1960s and confirmed that determination, but unfortunately his death occurred before he could publish this as an N.C.R. Though I at first thought that my attempt at refinding Bickham’s locality had been in vain and that I had come away with some quite other bramble, Alan Newton eventually pointed out that my disappointment was baseless: I had collected the right plant after all, though whether the locality was Bickham’s remains anyone’s guess. This is a major westward extension to the range of what has previously seemed a rather narrow British endemic, the nearest other find having been in the Cardiff area. I subsequently saw a solitary clump of it on the north-east margin of Rhode Wood at Saundersfoot, so it descends to the coast and Babington may even have seen it at Tenby itself.

Similarly rescued from doubt was *R. eboracensis*, a mainly East of England species hitherto known in Wales only from Denbighshire. A patch of this grew in the open at the south end of the path through the Scotsborough estate woods, where it looked as if it might be a recent arrival. More shamefully, I had failed to recognise as *R. raduloides*, another N.C.R., a bramble in colony strength on hedgebanks at Pentre Galar (SN176307), encountered as we finally drove out of the county on our departure northwards.

There was still one final ‘unknown’ left over that for a time stumped not only me but two of my fellow specialists as well. A late-flowering eglandular bramble, its pink flowers were only starting to unfold and that combined with its (to me) unfamiliar coarseness camouflaged its identity. Eventually, after another go, Alan Newton unmasked it as *R. pylonensis*, a western species commonest in Devon (as its specific epithet hints) but increasingly being detected in parts of Ireland and Normandy - thus another ‘stepping stone’ find, linking two portions of a widely disjunct range. Its only previous Welsh discoveries have been in Brecon. It seems to be widespread and locally frequent on wood margins in the south-east of Pembrokeshire and must surely be waiting to be found in the western half of the county too.

A culminating tally of eight N.C.R.s, three of them for species new for Wales and one new for Great Britain, is a remarkable pioneer haul for an area so outwardly uninviting for the batologist. Yet there is doubtless more there yet to be found - and certainly more entities among them, as in every other county, that will remain defiantly nameless, like that one at the edge of the lawn in front of the County Library ...

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RECORDING IN CAERNARFONSHIRE, V.C. 49

In 2004, a programme of meetings began to record in tetrads (2x2 km squares), and to try to update records of scarce species towards a county rare plant register. Following a notice in the Welsh Bulletin, four members contacted me, and we settled in to a regular group of five, augmented on most meetings by a further two or three. Much useful recording was achieved and we learnt a good deal from the experience and enjoyed ourselves as well! Some of the highlights are described here.

We began in April by searching the area around Bodfean on the Lleyn peninsula for *Teesdalia nudicaulis*, which we found easily in good numbers, thanks to Ann Connolly’s detailed notes, on sandy banks and lanesides and in an old sand-pit. *Montia sibirica*, found at the edge of woodland by Sam Thomas, was a new record for SH33.
In May we recorded in a tetrad in Penmaenmawr which included a working quarry, finding Filago minima and Sagina subulata, and, on the steep sides of the quarry face, a fine stand of Dryopteris oreades.

The June meeting saw us at Cors Gyfelog, a fine wetland reserve with relatively little damage through drainage, where we were joined by C.C.W. warden Les Colley. Many sedges were recorded including Carex lasiocarpa and C.limosa, and we were pleased to see Osmunda regalis. Many orchids included Dactylorhiza incarnata ssp.pulchella, a new square record, and a visit during August was pencilled in for the future to look for Hammarbya paludosa, which is known to be here.

Our July meeting to Glaslyn marsh was thwarted by a huge padlock on the entrance gate, which I later found was due to a farmers’ feud! However, on moving along the coast to Black Rock Sands, we were rewarded with a single plant of Erodium lebellii on disturbed sand-dunes, and just two plants of Epipactis palustris in a tiny patch of duneslack, the relentless march of caravan parks having destroyed what must have once been a fine site. Ophioglossum vulgatum still survived, and a willowherb found by Sam was a useful update of Epilobium roseum.

A hilly tetrad in Capel Curig was visited in August, with good records being made for Hymenophyllum wilsonii, Carex paniculata and, again, Dryopteris oreades. A boggy area gave us Rynchospora alba and Menyanthes trifoliata.

In September, we met at Ystymllun marsh, now largely drained, but in a reed-fringed pool we were thrilled to find a wonderful display of flowering Utricularia australis, new to several of the group. Nearby were Baldellia ranunculoides, Osmunda regalis and Bidens cernua. A hedgerow was festooned with Calystegia sepium, determined by Jean Green as ssp. roseata, and the hybrid gorse Ulex europaeus x U. gallii was on a rocky outcrop, whilst the rush which dominated the meadows was the hybrid Juncus x surrejanus (J. acutiflorus x J. articulatus).

Meetings will continue in 2005, a programme is included here and anyone is welcome to join us.

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BSBI recording in Caernarfonshire, vc 49 (2005).

Here are details of this year’s remaining meetings; please contact me to share transport.
Please bring lunch and boots or wellies.

JUNE 10th Friday 10.30am Bryncir
We will follow footpaths near the Afon Wen and Afon Dwyfach to look at species- rich marshy and flushed grassland. Meet in small car-park behind the livestock market (not held on Fridays), at SH 480 446, if full there is a lay-by just outside the village to the north.

JULY 5th Friday 10.30am Moel y Gest, Porthmadog
A mainly acidic hill with hopefully interesting wet flushes and crags. Meet in the industrial estate on Ffordd Penamser (opposite footpath sign) on the A497 at SH 561 389.

AUGUST 12th Friday 10.30am Dyffryn Nantlle
A previously unexplored area which has been described as promising. We will explore the area around the two farms of Tal y Mignedd. Meet in the car-park at Rhyd Ddu SH 571 525, but do not pay as we shall probably move on.

SEPTEMBER 9th Friday 10.30am Migneint
Wet moorland to the west of Llyn Conwy, we will search for Andromeda polifolia (Bog-rosemary) not seen here for some years in this, its only site. Meet at roadside near a white post, there are parking spaces on west side of the road, at SH 765 453.

May be reached via Penmachno or Ysbyty Ifan.
NOTE ON MELITTIS MELISSOPHYLLUM IN PEMBROKESHIRE, V.C. 45

1. Background
Bastard Balm (Melittis melissophyllum) or Y Wenynog is a nationally scarce flowering plant that has most of its remaining Welsh populations in the county of Pembrokeshire (v.c. 45). This attractive perennial is still found at five locations in Pembrokeshire but is only found as a native in two other Welsh counties, surviving in single locations in Cardiganshire and Carmarthenshire. It is a continental southern plant at its geographical limits in West Wales and has a southern and western distribution in the rest of Britain being most frequent in Devon and Cornwall. It is not in Ireland and its remaining Cardiganshire location is the most northerly in Britain. This site at Coed Cwm Du in the Ceri valley supports a very small colony on a south-east facing wooded slope. It has been known from the Ceri valley since 1924 (Arthur Chater pers. comm.). In the ‘New Atlas’ (K. Walker, in Preston et al. eds, 2002) it was recorded, between 1987 and 1999, as native from seventy 10-km squares in Britain but only six of these were in Wales.

It is an endemic European plant found from Germany, Poland and the Ukraine south to central Spain and Greece. Its Latin name is derived from Greek for honey “melitta” on account of the abundant nectar it produces in its large flowers and its attraction for bees. In Greece, and in south-east Europe as a whole, it is reported to favour the damp shady places of woods in hills and mountains (Polunin, 1980). Further north in Europe it favours forests on steep slopes with south facing sun-traps where tree cover and plant cover is sparse and it is particularly associated with dry open woodlands of White Oak (Quercus pubescens) on sunny south-facing slopes (Halliday & Malloch, 1981). In Britain it is usually in the open parts of woodlands and on wooded hedgerows in sheltered valleys, often close to, or within, ancient woodland.

In Pembrokeshire it is our rarest woodland higher plant and is a Pembrokeshire Biodiversity Action Plan Species.

2. Past records in Pembrokeshire
It was one of the first Pembrokeshire plants to be recorded. In the 1805 ‘Botanist’s Guide through England and Wales’ it is listed as ‘Woods about Haverfordwest’ by D. Turner and L.W. Dillwyn and attributed to Rev. John Ray who visited Pembrokeshire, including Haverfordwest, in 1662. This would be one of the earliest records for the species in Britain. Peter Marren, in ‘Britain’s Rare Flowers’ 1999, states that the first record listed for Britain was from a wood near Totnes, Devon, in 1650.

The next record of M. melissophyllum from v.c. 45 was by Bertram Lloyd on 10 Jul 1926: ‘we found two quite separate colonies of Bastard Balm – one in a lane near Berllan and one some way off in a woodland lane above Velindre’. It is still extant at the Berllan site by Pengelli Forest. Bertram Lloyd also noted it on 12 Jun 1928 from another north Pembrokeshire location in the Cych valley: ‘a wayside patch was in full flower in Nant Cych (near Pen-rhiw). We also found it near Eglwyswrw and near Newcastle Emlyn’.

In 1946 F. P. Penfold recorded it in a coastal location on Y Gribin, at Solva. Tommie Warren Davis, the first BSBI recorder solely for Pembrokeshire, refound a ‘plant or two’ at SM80-24- on 26 May 1969 and again on 24 Jun 1972. In 1972 he ‘could find only the one plant, 12 stems but only one in bud’. It was growing in sheltered scrub at the ‘junction between two paths out to the point on the Gribin’ but it has not been seen since.

Another coastal find was by Martin George, on 08 Jun 1960, from sea-cliffs at West Hook Farm, Marloes, SM76-09-: ‘Damp cliff near Deer park, below West Hook Farm with Molinia caerulea, Calamagrostis epigejos, Allium ursinum and Lythrum salicaria, etc.’ Although not seen there since, this seems to be a good record because the indented north-facing cliffs are relatively sheltered and there is relic oakwood on the cliffs to the east.

3. The current Pembrokeshire sites
There are five locations where M. melissophyllum can still be found in Pembrokeshire. A total of 1273 stems, of which 668 were in flower, were counted at four of these locations in 2003. No count was made at Felin-y-gigfran in 2003 but this site only had 9 stems when visited in 2004. The Pengelli sub-colony of Coed Devonald was counted in April 2005 when about 100 stems were found. A detailed description of the populations of M. melissophyllum at each of these five locations follow:
A – Westfield Pill Nature Reserve, Neyland – this is the largest Pembrokeshire population. SM963068 to 964067.

Most of the population is on level ground, just above sea level, and subject to very high light/insolation levels. The rest is east-facing at the toe of, and shaded by, an ancient oakwood.

Stuart Devonald, a local headmaster and well-known naturalist, was the first to locate *M. melissophyllum* at SM968057 on the old railway track at Neyland on 23 Jun 1979 after a mother of one of his pupils drew his attention to the plant. Her son had collected it during a scout forage! About 37 stems, many with flowers, were counted in c.6 x 1 paces on the edge of railway ballast in the partial shade of gorse in a rocky railway cutting. The railway line had been constructed in 1855 and had cut through the steep lower edge of a narrow estuarine oakwood. The woodland is classified as ancient woodland. *M. melissophyllum* was still present in the cutting in 1980 but it disappeared in 1983 when the District Council cleared the scrub from the track during the construction of the Neyland Marina.

The plant was not, however, lost to this general locality because on 21 Jun 1981 Stuart Devonald and Peter Brown found a second population when looking for Small Blue butterflies. A large population was in flower in the scrub on the edge of the same disused line further north at SM964068. On 19 Jun 1984 a few hundred flowering spikes were scattered along 65 paces of track. They were growing on the scrub/bramble margin to the disused line and some were coming up through the ballast. On 07 Jun 1995 Alan Hansen counted 326 stems of which 37 were in flower. Stem height ranged between 13 and 42 cm. and all were in the limestone ballast on the east side of the track compared with 1984 when most were on the west side of the track.

By 12 Jul 2001 the population was spread along 61 x a maximum of 4 paces width on the east side of the old track. The largest plants were amongst bramble under young ash but most were growing amongst species-rich open grassland developed on exposed limestone railway ballast. There were 33 associated plants including *Helictotrichon pubescens* (Downy-oat Grass), *Lotus corniculatus* (Common Bird’s-foot-trefoil), *Linaria repens* (Pale Toadflax) and *Lathyrus nissolia* (Grass Vetchling). It avoided the most trampled part of the footpath. On 29 May 2003 there were 751 stems, of which 391 were in flower. In addition there were a further 23 stems, of which 21 were in flower, on the east facing slope on the woodland side of the track at SM963067. The plant had returned to this western side, where it had been known before 1993, as a response to scrub clearance by the Wildlife Trust in 1994. The total count of 774 stems makes the Westfield Pill colony the largest in Wales.

B – Pen Anglas, National Trust Cliffs near Goodwick – This is a large population recovering from a summer fire. SM951400 to 951399.

The colony is on a 35° east and south-east facing slope and subject to high/moderate light/insolation levels. It is on a sheltered sea-cliff about 10m above sea level. Relict cliff oakwood occurs nearby.

On 18 May 1999 the author and Ann Evans found an abundant population of *M. melissophyllum* at a new location on ungrazed sea-cliffs, owned by the National Trust, north of Fishguard Harbour at SM951400. It was scattered on a stable boulder slope beneath a massive igneous rock outcrop: This part of the sea-cliff faces east and is only exposed to salt-laden winds from the north-east. *Silene uniflora* (Sea Campion) was the only one of the 28 associated plants, found amongst the boulders and bracken, that was a maritime species. There was also a little bramble and blackthorn. Woodland associates included *Primula vulgaris* (Primrose), *Conopodium majus* (Pignut), *Tamus communis* (Black Bryony) and *Stellaria holostea* (Greater Stitchwort).

The discovery of a scarce woodland plant that is usually associated with ancient woodland on a sea-cliff might seem contradictory but many sheltered Pembrokeshire cliffs would have supported woodland and dense scrub before being cleared by man. It seems almost certain that these cliffs would have had woodland of the scrubby wind-pruned type in historic times. In fact the nearest settlement, 350m inland, was the ruined smallholding of Crincoed, which could be translated as ‘withered trees’ (Charles, 1992). The name dates back to at least 1640. A few small severely wind-pruned oak trees persist today on the cliffs close to the *M. melissophyllum* and there is a hanging oakwood with *Corylus avellana* (Hazel) and *Euonymous europaeus* (Spindle) on the cliffs 300m to the south.

On 26 May 2003 the plants were censused. There were 446 stems, of which 236 were in flower, and they were spread along 38 paces of the slope and about 12 paces upslope. An accidental fire burnt all of the cliffs on 22 Jun 2004. A visit the following day revealed 95% blackened soil. One green stem of *M. melissophyllum*, a few part burnt stems and some blackened stems with the remains of nutlets were all that was found. No flush of regrowth was revealed by later visits in 2004 but by 2 Apr 2005 there were 108 young stems. This lack of shoots in 2004 is puzzling as an examination of
the root system of some of the April 2005 stems revealed that most, if not all, of the regrowth was from root mats. These must have survived the fire in less intensely burnt places amongst the boulders but remained dormant through summer and autumn 2004.

C – Adjacent to Pengelli Forest National Nature Reserve, Eglwyswrw – a scattered declining cluster of sub-colonies. SN122402, 122401, 124399, 123398 (tris), 121394 and 119394.

All are hedgebank sites alongside or near ancient woodland of oak except for the garden border and gravel at the dwelling of Coed Devonald. Aspects include most points of the compass with variable light/insolation levels. The sub-colonies range from 60-135m above sea level.

This hedgebank population, scattered along 1km of minor road, adjoins Pengelli Forest NNR, owned by the Wildlife Trust, and one of the largest blocks of ancient woodland in Pembrokeshire. Bertram Lloyd’s Berllan colony was refound in 1969. Tommie Warren Davis’s diary entry for 09 Jul 1969 reads: ‘It occurs from just above the ford across Nant Duad SN118394 to the bend in the road at the top of the hill beyond Panteg Wood, SN124398. I found only 3 plants up the road until the last 50 paces where they were abundant and still mostly in flower though only near the top of their stems, some quite over and hence, perhaps, the scarcity lower down. A very beautiful flower. This is probably where Bertram Lloyd found them ca. 1930.’

On 01 Jun 1978 Mrs. Jean Buchanan found an outlying colony at the dwelling of Coed Devonald during an ancient woodland survey for the Nature Conservancy Council. She counted 66 stems, of which 47 were in flower. The plants were on a hedgebank alongside a garden. In 1988 five clumps were transplanted from the site into a shady glade in the Panteg Wood, part of Pengelli Forest, where they survived until 1999. *Melittis melissophyllum* is still present on the hedgebank at Coed Devonald where there were about 60 stems on 16 Apr 2005. The previous owners had transferred some into a flower border where it seeded into the gravel below the bed. There were at least 24 shoots in the gravel on 16 Apr 2005 and about 14 in the flower border above. Plants grown from the seedlings in the gravel, collected in 1999, are held by the author, Andy Jones and Celia Thomas.

The main population, north of Panteg Wood, has been protected by a Roadside Verge Nature Reserve (RSVR) since the 1970s. A survey by Celia Thomas and Joan Saunders in 1984 counted 143 stems, of which 47 were flowering, in the RSVR and a further 69, of which 37 were flowering, alongside the minor road outwith the RSVR. Unfortunately the population has declined in recent years and in 2004 there were only 18 stems, 5 in flower, in the RSVR and a further 24 stems, 6 in flower, along the rest of the road. An examination of the data reveals a progressive weakening in each remaining clump and minimal recruitment. Some clumps outside the RSVR have been cut as early as 3rd July, by the Highway Authority before the plants have set seed. Within the RSVR dense shade from hedgerow trees has long been recognised as a limiting factor. In 1994 thinning of trees and hedge-laying next to the RSVR appeared to have led to a short-lived improvement in vigour and flowering. Seed production may now be insufficient for seedling germination especially as open conditions with sufficient sunlight are very limited.

D – Felin-y-gigfran, Crosswell – a small declining colony. SN116372.

A hedgebank colony at the top of a steep wooded gorge with ancient oakwood within about 450m. It adjoins a recent deciduous plantation and is north-east facing and subject to very low light/insolation levels. It is at 100m above sea level.

In June 1984 Celia Thomas found a new *Melittis melissophyllum* population on a relict hedgebank at the top of the southern side of the Nevern gorge at Felin-y-gigfran at SN116372. The hedgebank was at the top of a rocky wooded slope and adjoined rough grazing. There were 68 stems, 28 in flower, on 02 Jul 1984. As early as 1985 there was concern that the colony was in danger of being shaded out by re-growth of birch and since then the rough grazing on the less steep land above the break in slope has been planted with deciduous trees. On 11 Jun 1999 there were 52 stems, 12 in flower, but many stems were tiny. The population covered 4 x 4 paces. By 11 Jun 2004 numbers were down to 23 stems, of which only 4 were in flower. Most of the small outlying stems of 1999 were no longer present and the main clump had declined from 11 stems with 8 flowering, to 9 stems with 2 flowering. There was one new flowering stem where no stems were present before so this could have arisen from seed since 1999. Bracken had ceased to be an associate since 1999, almost certainly due to the dense shade, and the shade-loving *Oxalis acetosella* (Wood Sorrel) had appeared as an extra associate.
The decline of this colony by more than two thirds since 1984 is a response to increasing shade now that the young trees established on the south side of the colony have matured. Thinning of the canopy would reverse this decline.

E - Lancyh, Aberey - a small vulnerable colony. SN260382.
A north-west facing hedgebank in a sunken lane with ancient woodland within 200m. It is subject to moderate light/insolation levels and is 50m above sea level.

It was not until 12 Jun 1994 that *Melittis melissophyllum* was found on the Pembrokeshire side of the Cych valley on the side of a moderately steep minor road at SN260382. Val Kirby had spotted its showy flowers in the hedgebank from horseback! It was 66 years to the day since Bertram Lloyd had first reported it from the Cych. In addition to this Pembrokeshire colony, it grows on the wooded rocky bank of a steep minor road, 500m away, on the opposite side of the valley in Carmarthenshire at SN264384. One plant had 7 stems when counted by Richard and Kath Pryce on 30 Apr 2005 and they found a second plant some 8 paces away to the north-east, on the same bank, having just two stems. A specimen in the NMW herbarium at Cardiff was collected from here on 24 Jun 1948 by Mrs. Isabel Murray.

In 1998 Alison Wheeler counted the Pembrokeshire colony which had 16 stems in 3 clumps and all but one stem had flowers. In 2003 there were 14 stems in a 1m x 1.75m patch on the steep stone/slate faced hedgebank but only 5 were in flower and by 2004 there were 17 stems with 3 in flower. This small roadside population was being cut in June or July of each year by the Highway Authority before the seed had ripened. Not only was this preventing new plants from becoming established from seed but it was weakening the existing plants. In 2003 the author met with the County Council Biodiversity staff and Highways to arrange for cutting to be postponed until September of each year.

4. Some observations on floral biology and seed production and dispersal
Observations on the Pembrokeshire colonies have shown that new shoots from the extensive and matted root systems emerge in late March. The first flower buds have been found in mid April and can still be found unopened in shady inland situations as late as early July. June is the peak flowering month but flowers have been found as early as 18th May on the coast at Pen Anglas, and 28th May at Pengelli when one large flowering stem had 40 to 45 flowers. The latest date of flowering was 13th July 1979 at the southern Westfield Pill site. On fertile soil the larger flowering stems are 40-45 cm in length, with some as large as 60 cm or more, but they will flower as short as 12 cm in the railway ballast at Westfield Pill.

By late June developed ovaries have been observed and unripe ovaries are abundant by mid July. The first seed drop has been noted by the end of July but infertile ovaries have been seen as late as 27th September. The proportion of Pembrokeshire flowers that produce viable seed has only been studied at Westfield Pill. Dr. Quentin Kay and Rosemary John studied 3 plants on 30 Jun 1994 and had means of 3.27 +/- 0.96 (n =11), 3.08 +/- 0.95 (n=12) and 2.60 +/-1.5 (n=5) seeds per flower. They estimated the mean and maximum number of flowers per square metre (m²) in this population to be c.10 and c.60, giving corresponding seed outputs of 29.8 and 179 seeds per m². Extrapolating from these figures the population at Westfield Pill could today be producing very roughly 3,000 to 18,000 seeds per annum. Pollination has only been observed once, by the author, when a bumble-bee *Bombus terrestris*, was seen visiting flowers at Westfield Pill on 29 May 2003.

The large seeds/outlets – 4 per flower - seem unlikely to be able to travel far but would fall in the vicinity of the parent plant. On steep slopes the seeds would perhaps move downslope and in hotter southern climates in Europe they would be able to find open areas parched by the summer sun and suitable for autumn/winter germination. In our cooler climate optimum conditions for establishment and growth would perhaps originally have been around small screes associated with rock outcrops, or around glades created by fallen trees on wooded slopes or in open areas at the toe of a wooded valley where undercut by a stream or river. Transport of seed or rootstock downstream during floods might be one mode of more distant dispersal, but none of the current Pembrokeshire sites offers such opportunities.

The only seedlings found in Pembrokeshire were at Coed Devonald where seeds dropped onto gravel, germinated and prospered. Two of these seedlings were potted up in June 1999 and by June 2001 they were multi-stemmed flowering plants.
It has been suggested (Ian Morgan pers. comm.) that wild boar may once have helped recruitment of young plants by disturbance of the soil within woodland. In historical times winter grazing of woodlands, when M. melissophyllum is dormant, could also have been beneficial. Such grazing would have maintained glades and disturbed the soil ready for seedling germination and growth the following year. In 1594, George Owen described Pengelli Forest as follows: ‘...will somer 30 breedinge mares and winter 300 sheepe and 200 cattell well and sufficiently, beside swyne which may be kepte there...Also the panage of hoggges, bees and hony....’

A possible mechanism for dispersal along roadsides would be for the seeds to be accidentally carried with mud or soil on the tyres of vehicles and this could well have occurred at Pengelli in recent years. In the past, small-scale clearance and extraction using horses might well have provided opportunities for plants to both flourish in the glades and for their seed to be transported in the autumn and winter along rides to other open areas or to roadsides and hedgebanks adjacent to woodlands. The large seeds could have been carried on cartwheels, dragged along with timber or even transported on horses’ hooves especially in the era before forest tracks were surfaced and when minor roads were unmetalled. Seed longevity, in Britain, is apparently not yet known but in the 'New Atlas' M. melissophyllum is reported to have reappeared after scrub clearance and coppicing.

M. melissophyllum is a rare woodland and ancient hedgebank plant that is a poor competitor and suffers from poor seed dispersal. It requires the high light levels found in woodland glades and edges and on hedgebanks. Yet for some reason it seems to have difficulty surviving at any distance from woodland and scrub habitats. The two sites where colonisation is known to have occurred are both on stony ground: gravel at Coed Devilard and railway ballast at Westfield Pill. Perhaps freely drained stony ground is ideal for survival of seeds, for germination and for survival of seedlings in the oceanic conditions of West Wales. Maybe it does not like the combination of lots of moisture and cool temperatures. Whatever the reasons the plant is undoubtedly a relict of a time when deciduous woodland was more widespread in Wales. It may also have benefited from the way small-scale woodland work, in the era before the advent of state-funded, modern forestry practices, would have ensured a cycle of closely adjoining glades within woodlands. The recent replanting of many ancient woodland sites with conifer plantations would also have reduced light levels within the woods and on boundary banks.

In England there is evidence, from the New Forest, that M. melissophyllum cannot tolerate heavy grazing. The huge increase in numbers of grazing animals in Wales in recent decades might have eliminated any populations on the external boundary banks of coniferised sites and confined other hedgebank populations to the highway face of roadside banks. With the replacement of the traditional roadside ‘lengthsman’ by modern verge cutting machinery these relic roadside populations are even more vulnerable to summer cutting that weakens growth and reduces seed production. Comments about damage from roadside cutting date back as early as 23 Aug 1947 when D. James wrote to Dr Hyde at NMW about a Carmarthenshire population near Newcastle Emlyn. Dr. George Hutchinson has supplied the following extract from the correspondance attached to the herbarium sheet: ‘I took my cuttine in June and unfortunately the road people have since been doing their trimming of the roadsides and cut down the herbage, but I can see the fresh young shoots coming through.’

5. Priorities for active management

Only two of the extant Pembrokeshire sites have viable populations. One is a Wildlife Trust reserve and the other is in the ownership of the National Trust. The other three sites do not seem to have the ‘critical mass’ to generate enough seed production or enough vegetative growth to survive without positive management intervention. Some of the declining Pengelli Forest cluster of sub-colonies are covered by a Roadside Verge Nature Reserve alongside a woodland NNR, but further efforts are needed to arrest the decline at this site. The other roadside site is now subject to a special cutting regime but is so tiny as to be vulnerable to chance events. The fifth extant site, at Felin-y-gigfian, is in private ownership and its long-term survival is dependent on increasing the ground light levels by thinning the canopy.

STEPHEN EVANS
Botanical Society of the British Isles Recorder for Pembrokeshire
22nd April, 2005
Appendix

1. List of Associated plants – derived from 17 population forms (where the number preceding the species name indicates that this plant was listed as an associate in that number of the 17 population forms).

<table>
<thead>
<tr>
<th>Number</th>
<th>Species</th>
<th>Number</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Rubus fruticosus</td>
<td>4</td>
<td>Blechnum spicant</td>
</tr>
<tr>
<td>13</td>
<td>Stellaria holostea</td>
<td>4</td>
<td>Crataegus monogyna</td>
</tr>
<tr>
<td>12</td>
<td>Galium aparine</td>
<td>4</td>
<td>Dryopteris dilatata</td>
</tr>
<tr>
<td>12</td>
<td>Geranium robertianum</td>
<td>4</td>
<td>Geum urbanum</td>
</tr>
<tr>
<td>12</td>
<td>Hedera helix</td>
<td>4</td>
<td>Quercus petraea</td>
</tr>
<tr>
<td>10</td>
<td>Dryopteris filix-mas</td>
<td>4</td>
<td>Rosa agg.</td>
</tr>
<tr>
<td>9</td>
<td>Dactylis glomerata</td>
<td>4</td>
<td>Solidago virgaurea</td>
</tr>
<tr>
<td>9</td>
<td>Lonicera periclymenum</td>
<td>4</td>
<td>Umbilicus rupestris</td>
</tr>
<tr>
<td>8</td>
<td>Potentilla sterilis</td>
<td>4</td>
<td>Veronica chamaedrys</td>
</tr>
<tr>
<td>8</td>
<td>Silene dioica</td>
<td>3</td>
<td>Anthyllis vulneraria</td>
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<td>8</td>
<td>Teurcium scorodonia</td>
<td>3</td>
<td>Betula pubescens</td>
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<td>7</td>
<td>Arrhenatherum elatius</td>
<td>3</td>
<td>Circaea lutetiana</td>
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<tr>
<td>7</td>
<td>Brachypodium sylvaticum</td>
<td>3</td>
<td>Corylus avellana</td>
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<tr>
<td>7</td>
<td>Hyacinthoides non-scripta</td>
<td>3</td>
<td>Digitalis purpurea</td>
</tr>
<tr>
<td>7</td>
<td>Prunus spinosa</td>
<td>3</td>
<td>Fraxinus excelsior</td>
</tr>
<tr>
<td>7</td>
<td>Pieridium aquilinum</td>
<td>3</td>
<td>Holcus lanatus</td>
</tr>
<tr>
<td>6</td>
<td>Stachys officinalis</td>
<td>3</td>
<td>H. mollis</td>
</tr>
<tr>
<td>6</td>
<td>Taraxacum agg.</td>
<td>3</td>
<td>Oxalis acetosella</td>
</tr>
<tr>
<td>6</td>
<td>Fragaria vesca</td>
<td>3</td>
<td>Primula vulgaris</td>
</tr>
<tr>
<td>5</td>
<td>Heracleum sphondylium</td>
<td>3</td>
<td>Ranunculus ficaria</td>
</tr>
<tr>
<td>5</td>
<td>Lapsana communis</td>
<td>3</td>
<td>R. repens</td>
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<tr>
<td>4</td>
<td>Acer pseudoplatanus</td>
<td>3</td>
<td>Rumex acetosa</td>
</tr>
<tr>
<td>4</td>
<td>Anthoxanthum odoratum</td>
<td>3</td>
<td>Tamus communis</td>
</tr>
</tbody>
</table>

In addition there were 19 other species that were listed as growing with *M. melissophyllum* in two population forms and 44 species that occur on a single population form. Because of their low frequency of association they have not been listed.

2. References


Lusitanian affinities in Welsh Early Sand-grass?

Andy Jones

Early Sand-grass, *Mibora minima*, belongs to the Suboceanic Southern-temperate element in the British flora (Preston & Hill, 1997), with a distribution centred on western France and Iberia. It is a tiny and ephemeral species of coastal dunes and inland, on disturbed, sandy grassland. There is also a disjunct population reported from the Dnieper River region, Ukraine — although, interestingly, these plants appear to be sometimes biennial and occasionally up to 18 cm tall (Rozevits & Shishkin, 1963). They are perhaps taxonomically distinct. In Portugal the plants of dunes and ruderal inland habitats have also been described as two distinct "raças" or varieties — 'var. littorea (Samp.)' and 'var. Desvauxii (Lg.)' respectively — and, in a recent paper (Ortiz et al, 1998), these are both raised to distinct subspecies.

**Characteristics of Dune and Inland Early Sand-grass (after Ortiz et al, 1998).**

<table>
<thead>
<tr>
<th><em>Mibora minima</em> subsp. <em>littorea</em></th>
<th><em>Mibora minima</em> subsp. <em>minima</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Spikelets overlapping</td>
<td>Spikelets not overlapping</td>
</tr>
<tr>
<td>Spikelets &gt;2.5 mm</td>
<td>Spikelets &lt;2.5 mm</td>
</tr>
<tr>
<td>Basal leaf sheaths 2-3(3.5) mm</td>
<td>Basal leaf sheaths 1.5-2(3) mm</td>
</tr>
<tr>
<td>Basal pedicel 0.2-0.5 x 0.2-0.4 mm</td>
<td>Basal pedicel 0.1-0.2 x 0.2-0.3 mm</td>
</tr>
<tr>
<td>Basal pedicel conspicuously rugose</td>
<td>Basal pedicel smooth to slightly rugose</td>
</tr>
</tbody>
</table>

The authors note that *Mibora minima* subsp. *littorea* seems to have a very restricted world range (essentially northwest Iberia) but could extend to coastal populations further north. They recommend that "more detailed future studies of material from the western coasts of France and Great Britain will be necessary to determine whether the sand-dune populations of these areas should be assigned to the same taxon as the sand-dune populations of the northwest Iberian Peninsula".

Early Sand-grass from both Gower and Anglesey does have clearly imbricate spikelets and also (less obviously) rough-textured pedicels but the pedicel and basal leaf sheath measurements are much less certain. In a very small sample of 3 plants from Aberffraw and 3 from near Valley these both seem to be in the smaller range (basal leaf sheaths: c.2 mm diameter or slightly less; basal pedicels: very approximately 0.2 x 0.2 mm) but these characters are hard to measure with any degree of certainty and the two size-classes in the description also significantly overlap. A slightly clearer picture emerges from the spikelet-length character but here, in a sample of 35 specimens from Aberffraw and near Valley, they seem to all fall outside the clear boundaries for 'subspecies *littorea*'. Despite the observation in Ortiz et al that "some individuals from Anglesey show mean spikelet length of 3 mm" there were none in this (rather small) sample and all were below 2.5 mm (approaching 2.0 mm average). Eight specimens were in the 1.5-2.0 mm range and twenty-seven specimens in the 2.0-2.5 mm range. There is probably a need for more detailed and statistical work but, at least in Anglesey, *Mibora minima* seems to have overlapping spikelets less than 2.5 mm in length. These are intermediate between the described characteristics of 'subsp. *littorea*' and 'subsp. *minima*'.

These observations accord closely with those of the BSBI Grasses Referee at Kew, where material from Anglesey was sent for comment. Dr T.A. Cope (pers. comm.) notes that "measurements of the British material indicate that the spikelet length varies in accordance with normal distribution and shows no recognisable cut-off point between the two elements" and, whilst this is not conclusive, he "would still resist giving the segregate any formal recognition".

If dune variants do not necessarily merit subspecies recognition across their range, their overlapping spikelets might still help to distinguish native plants. Cope also notes (pers. comm.) that the introduced material from Hampshire, Dorset and Suffolk does not have overlapping spikelets and this may help to elucidate the questionable origins of recently-discovered *Mibora* in Lancashire (Preston et al, 2002).

**Acknowledgements:** Thanks to Ian Bonner and Alan Hale with help collecting material from Anglesey and Dr T.A. Cope for taxonomic comment.

**References**


Welsh Plant Records are compiled by Gwynn Ellis, 41 Marlborough Road, Roath, Cardiff, CF23 5BU, from reports of BSBI vice-county Recorders to whom records should preferably be sent. Plants are listed for each vice-county in the order of D.H. Kent’s List of Vascular Plants of the British Isles (1992) and Supplements 1 & 2 (1996 & 2000), the number in those lists preceding the name, so that names changed since 1996 can be given without giving the former name. Latin names also follow Kent (1992) and Supplements 1 & 2 or, if not in that list, the Vice-county Census Catalogue (2003), the 2nd edition of C.A. Stace’s New Flora of the British Isles (1997), E.J. Clement & M.C. Foster’s Alien Plants of the British Isles (1994) or T.B. Ryves, E.J. Clement & M.C. Foster’s Alien Grasses of the British Isles (1996). Authorities for Latin names are not given unless the name is not in any of these works. English names are those in English Names of Wild Flowers ed. 2 (1986) by Dony et al. or, if not in that list, Stace (1997), Clement & Foster (1994) or Ryves, Clement & Foster (1996). English names enclosed by square brackets do not occur in any of these books but are included in Davies & Jones (1995). Welsh names at present are those in Dafydd Davies & Arthur Jones’ Welsh Names of Plants (1995) but will change to those in Planhigion Blodeuol, Conwydd a Rhedyn, published by Cymdeithas Edward Llwyd (2003) in the near future.

The following symbols are used:

* to indicate a new v.c. record
+ to indicate a new or updated hectad record
† indicates archaeophyte; ‡ indicates neophyte; † indicates casual
†, ‡, † before the species number: to indicate that the species is regarded as an archaeophyte, neophyte or casual
†, ‡, † before the record: to indicate the species which although native, archaeophyte or neophyte in at least one of the Welsh vice-counties
[ ] to indicate that the record, previously published in error, should be deleted
+ to indicate an update to a rare or scarce taxon
Ø to indicate that the taxon is now believed to be extinct in the locality cited

In general, only records which update the Vice-county Census Catalogue (2003) or the New Atlas of the British & Irish Flora (2002) will be listed. Other records are included at the discretion of the vice-county recorder. The minimum grid reference is to a hectad but, if supplied by the recorder, references to a 1km or even a 100m square may be included. A letter in parentheses following a grid reference indicates a tetrad.

The following vice-county Recorders from 1/1/2005 are:

MONMOUTH, v.c. 35; Mr T.G. Evans, La Cuesta, Mounton Road, Chepstow, Monmouthshire NP16 5BS
GLAMORGAN, v.c. 41 (West); Dr Q.O.N. Kay, West Cwm Ivy, Llanmadoc; Gower, Swansea SA3 1DG
GLAMORGAN, v.c. 41 (East); Mr J. Woodman, c/o CCW, Unit 4, Castelton Court, Fortran Road, Cardiff CF3 0LT
BRECON, v.c. 42; Mr M. Porter, Aberhoowy Farm, Cyffredyn Lane, Llangynidr, nr Crickhowell, Powys NP8 1LR
RADNOR, v.c. 43; Dr D.R. Humphreys, Knill Court, Knill; nr Presteigne, Powys LD8 2PR
CARMARTHEN, v.c. 44; Mr R.D. Pryce, Trevesen, School Road, Pwll, Llanelli, Carmarthenshire SA15 4AL
PEMBROKE, v.c. 45; Mr S.B. Evans, Glan-y-Mor, Dinas Cross, Newport, Pembrokeshire SA42 0UQ
CARDIGAN, v.c. 46; Mr A.O. Chater, Windover, Penyrangor, Aberystwyth, Dyfed SY23 1BJ
MONTGOMERY, v.c. 47; Mrs M. Wainwright, Troy, 1 Green End, Oswestry, Shropshire SY11 1BT
MERIONETH, v.c. 48; Mr P.M. Benoit, Cenarreg, Barmouth, Gwynedd LL42 1BL
CAERNARFON, v.c. 49; Mrs W.N. McCarthy, 5 Ty’n-y-coed, Great Orme, Llandudno, Conwy LL30 2QA
DENBIGH, v.c. 50; Mrs J.A. Green, Coed Duon, Tremerchion, St Asaph, Denbighshire LL17 0UH
FLINT, v.c. 51; Dr G. Wynne, Gwylla, Lixwm, Holywell, Flintshire CH8 8NQ
ANGLESEY, v.c. 52; Mr N.H. Brown, Treborth Botanic Garden, University College of North Wales, Bangor, Gwynedd LL57 2RQ and Mr I.R. Bonner (all correspondence to Dr Brown).
MONMOUTH, v.c. 35 (comm. T.G. Evans)

1/1.1. *Huperzia selago* (Fir Clubmoss) (Cnwpfwsogl Mawr). 1 plant with 8 branches, 5cm tall, with *Epilobium brunnescens & Conocelyphum comicum*, on top of small sandstone rock in middle of stream, almost at tree limit, St. Mary's Vale, Sugar Loaf, SO272.175, S.D.S. Bosanquet, 2004. 3rd extant site.


66/1.36. *Pyrola rotundifolia* subsp. *maritima* (Round-leaved Wintergreen) (Coedwyrd Crynddail). 50 flowering plants, among young trees, on edge of disused limestone quarry, S end of Lasgarn Wood, SO272.031, S. Williams, 1999, det. Julian Branscombe, 2004, det. to subsp. *F. Rumsey*. Colin Titcombe and I did some observations on the colony of 13 flowering stems: the number of scale leaves were 4,3,4,4,4,3,4,5,4,3,3,4; anther lengths of 5 plants, 2.0, 2.1, 2.0, 2.0, 1.9mm; sepal shape; all 3 characters pointed strongly towards subsp. *maritima*. Style length for 10 plants were: 8,8,8,7,7,7,7,8,8,8mm strongly suggesting subsp. *rotundifolia*, leaf shape varied between the two subspecies. Fred Rumsey's reply 'Oh dear! It would seem that you have one of the rather too many populations which blur the boundaries between these two taxa. On balance I think I would refer it to subsp. *maritima*, largely on scale leaf number'. I enter this detail because the site, being far from the sea and on the wooded limestone would lead one to expect it to be subsp. *rotundifolia*. TGE.


75/21.18. *Rosa rubiginosa* (Sweet-briar) (Drysen Bër). 1 plant on grassy bank E end of viaduct, Abersychan, SO263.043; 1 bush, path side high up on grassed over stony ground, Cwmnyscoy Quarry (disused), ST284.994, both T.G. Evans, 2004, conf. R. Maskew.


121/2.1. *Littorella uniflora* (Shoreweed) (Beisontonn). Large areas near high water, NW corner of Llandegfdd Reservoir, ST322.999, C. Titcombe, 2004.

+125/2.2. *Orobanchus rapum-genistae* (Greater Broomrape) (Gorfane Mwyaf). 6 and 5 flowering spikes under two broom bushes on steep bank between A4042 and R. Usk, NE of Brynglas, Newport, ST313.903, C. Titcombe & T.G. Evans, 2004. 1st record since 1979, the dried up flowers could have originated in 2003 or 2004.


+153/54.2. *Brachypodium pinnatum* (Tor-grass) (Breichwelt y Twr). 0.5m of interrupted patches, side of cycle track (asphalted disused rail track), Talywain, SO260.039, T.G. Evans & C. Titcombe, 2004. 1st record in western half of v.c. 35.


+162/14.1. *Anacamptis pyramidalis* (Pyramidal Orchid) (Tegeirian Bern). 1 large flowering plant, in bushes (Birch, *Salix caprea* & *S. cinerea*), on coal waste, N of Railway Museum, Blaenavon, SO233.096, C. Titcombe & T.G. Evans, 2004. Colin was turning up branches to look at underside of leaves for insects and revealed the orchid which would otherwise have remained completely hidden. 1st record for the western half of v.c. 35.


GLAMORGAN, v.c. 41 (comm. Q.O.N. Kay & J.P. Woodman)


+‡20/1.2. *Abies grandis* (Giant Fir) (Ffinydwydden Fawr). In mixed plantation, Mill Wood, Penrice, SS484.877, A.S. Lewis, 2004.


+62/12.3. Rorippa islandica (Northern Yellow-cress) (Berwr Melyn y Gogledd). +On mucky pond-side, Mynydd Garnogoch, Penllergaer, SS611.983, 2003; +In damp field gateway, Stafford Common, Gowerton, SS590.973, 2004; both A.S. Lewis.


+73/3.1. Sempervivum tectorum (House-leek) (Llysiau Pen Tai). Persistent on old stone wall, Newton Farm, Llanrhidian, SS499.916, A.S. Lewis, 1st recent record.

†74/3.1. Berberis crassifolia (Elephant-ears) (Chistiau Blffiant). On waste ground above the E bank of River Tawe, Swansea, SS662.735, A.S. Lewis, 1st recent record.

†74/7.1. Toltznea merzii (Pick-a-back Plant) (Crudlys). In woodland, eastern Clyne Common, Swansea, SS605.899, 2003; +In deciduous woodland, Willoxtom Cwm, Lunnun, Gower, SS545.899, 2004; both A.S. Lewis.


†75/22.13. Prunus lusitanica (Portugal Laurel) (Coedenn Llawr-sirianen Portiogal). +In woodland, SS618.905, Blackpill, Swansea, A.S. Lewis; +Bird-sown on limestone cliff-scree, Mumbles Hill, SS626.875, B. Stewart & A.S. Lewis; both 2004.


**Welsh Plant Records - 2003-2004 - Glamorgan**

+75/32.35. **Cotoneaster rehderi** (Bullate Cotoneaster) (Cotoneaster Deilgrych Rehdfer). Several scattered along edge of woodland, Cwm, Swansea, SS677.959, A.S. Lewis, 2004.

+75/32.40. **Cotoneaster sternianus** (Stem’s Cotoneaster) (Cotoneaster Stern). Bird-sown on waste ground, Kittle, SS573.893, A.S. Lewis, 2003 (at first thought to be *C. franchetti*) & 2004; +In scrub on former landfill, Derwen Fawr, Swansea, SS612.921, A.S. Lewis, 2004; both det. J. Fryer.

+75/32.mai. **Cotoneaster maiæ** (Maire’s Cotoneaster) (Cotoneaster Maire). Cliff-slope near High Tor, Pnennod, SS555.872; det. J. Fryer; +Bird-sown in scrub on eastern side of River Tawe, St Thomas, Swansea, SS662.937; both A.S. Lewis, 2004. 1st record.

+75/33.1. **Pyrocanna rubra** (Firethorn) (Lljosgddraenen). Bird-sown on dunes and waste ground, Swansea, SS66.92, A.S. Lewis, 2004. 1st recent record.

+77/3.1. **Colutea arborescens** (Bladder-senna) (Llwyn Senna). On rough ground, increasing by seed, Loughor, SS571.989, A.S. Lewis, 2004. 1st record as a neophyte.


+93/1.1. **Vitis vinifera** (Grape-vine) (Gwinwydden). Among gorse and willow, Kilvey Hill, Swansea, SS668.935, A.S. Lewis, 2004. 1st record as a neophyte.


+111/3.3. **Calystegia pulchra** (Hairy Bindweed) (Taglys Blewog). Roadside hedge, Thistleboon, SS616.875; cliff scrub, Rhosbells, SS609.874; both A.S. Lewis, 2004.
+118/23.3.4. Mentha × villosa (M. spicata × M. suaveolens) (Apple-mint) (Mintys Lletgrwn). +Middle Killay, SS585.923, 2003; +Garden throw-out established on sand-dunes, Broughton, Gower, SS420.923, 2004; both A.S. Lewis.
+131/2.3. Viburnum tinus (Laurustinus) (Tinws). One well-established bush on a steep limestone cliff, Mumbles Hill, SS625.875, A.S. Lewis, 2003. 1st recent record.
+131/6.4. Lonicera xylosteum (Fly Honeysuckle) (Gwyddid Syth). Introduced in limestone woodland where it is now well-established and increasing, southern part (Betty Church LNR) of Cwm Ivy Wood, A.S. Lewis, 2003.
†135/43.1. Erigeron glaucus (Seaside Daisy) (Amryhuwlwyd Arfor). Large patch, c.7×2m, on fixed dune, Port Eynon, Gower, SS470.853; +On sea wall, Langland Bay, Mumbles, SS607.874; both A.S. Lewis, 2004. 1st records.
*†135/45.3. Oleara traversii (Ake-ake) (Llygad-y-Dydd Travers). One large tree, in flower, on a low cliff, at Bracelet Bay, Mumbles, SS628.872, A.S. Lewis, 2003. 1st Welsh record?


*135/58.pal. Leucanthemum paludosum. Established in brick paving at Swansea Marina for about five years, SS662.926, A.S. Lewis, 2004, det. E.J. Clement, who described the population as ‘the first established colony in Britain’. 1st record.


+148/1.1. Spirodela polyrhiza (Greater Duckweed) (Llinad Mawr). Splt Farm, St Donat’s, A.S. Lewis, 2003.


+153/68.1. Echinochloa crus-galli (Cockspar) (Cibogwellt Rhydd). ‡ In ‘conservation strip’ in arable field, Middleton, Gower, SS423.875, A.S. Lewis; ‡ On a street pavement, in central Neath, SS751.970, C.R. Hipkin; both 2003.


+158/32.1. Galanthus nivalis (Snowdrop) (Eirlys). +In hedgebank of lane S of Cliffor Farm, SS501.920; +In hedgebank of lane near Prysg Farm, SS511.920; both Q.O.N. Kay, 2004.
+159/2.5. Stylochlaena involuta (Pale Yellow-eyed Grass) (Sisirinchiwm Melyn Mawr). Several flowering plants, source unknown, as pavement weed near Guildhall, Swansea, SS643.923, A.S. Lewis, 2004. 1st record.

BRECON, v.c. 42 (comm. M. Porter)

+40/2.3. Altmus cordata (Italian Alder). Planted c.10 yrs at edge of pasture, 1km E of Llanbedr, SO252.203, M. & C. Porter, 2003.
+45/3.1a. Montia fontana subsp. fontana (Blinks) (Gwlyddyn y Flymmyn). +Small stream in rough grassland, Aberhyddnant, 3km W of Crâi, SN867.238; +Springhead flush, 1.5km S of Pant-y-lyn, SO031.450; +Western Wales bracken (Pteridium aquilinum subsp. pteridoides) (Pteridiwm Addu'r Mynydd). \( +\)Roadside verge, near Glall-rhyd, 1.5km SW of Libanus, SN985.241, M. & C. Porter, 2003.

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+46/5.3. *Stellaria palida* (Lesser Chickweed) (Gwlydd y Tywod). +Base of castle walls, Tretower, SO185.212; +Edge of path, Crickhowell, SO212.183; both, M. & C. Porter, 2004. 2nd records & 1st since 1957.


+46/22.1. *Saponaria officinalis* (Soapwort) (Sebonllys). ‡Beside road near river, Pont Felin Crai, SN882.235, 2003; +Road verge, Llanbedr, SO238.204, 2004; both M. & C. Porter.


‡53/1.7. *Malva neglecta* (Dwarf Mallow) (Hocys Bychan). ‡Rubble, waste ground beside house, Fenni-fach Lane, Brecon, SN034.289, C. Dyson, 2004. 1st record for 50yrs.


†63/1.1. *Roseda luteola* (Weld) (Melengu). +Disturbed road bank, Dowlanogoch, Brecon, SO057.279, 2003; +River shingle, 1km NE of Glasbury, SO190.402, 2004; both M. & C. Porter.

Brecon


†73/5.5. *Sedum telephium* (Orpine) (Berwr Taliesin). +Rocky bank beside stream, 1km SW of Rhiwnant, SN893.614, 2003; +Hedgebank, Pentrebach, SN823.334, 2004; +Lane bank, near Pentrebach, SN909.332, 2004; all M. & C. Porter.


†75/3.1×3. *Spiraea × pseudosalicifolia* (*S. salicifolia × S. douglasii*) (Confused Bridewort). +Lane hedge, 1km NW of Beulah, SN916.520; +Hedge, 0.5km NE of Crickadarn, SO094.424; +Scrub on limestone, Blackrock, Cwm Clydach, SO217.127, herb. MP; all M. & C. Porter, 2003.


†75/19.15. *Alchemilla mollis* (Robust Lady's-mantle). +Forestry track, 1km N of Cwmgiedd, SN790.125, 2003; +Beside farm track, 1km NW of Pont-faen, SN989.349, 2003; +Waste ground in temporary car park, Llandulas, SN878.413, 2003; +Road verge, track near A470, Nant-ddu, SO002.153, 2003; +Roadside, Irfon Bridge, Abergwnesyn, SN854.524, 2004; all M. & C. Porter.


Littorella uniflora (Shoreweed) (Beisennoll). W shore near entry of Afon Tarthwyni, Tal-y-bont reservoir, SO100.198, 2003; Margin of reservoir, near Garnlydan, SO173.133; both M. & C. Porter, 2004.


†124/7.1. Antirrhinum majus (Snapdragon) (Safn y Llew). Disturbed ground on bank of Afon Twrch, Ystradownen, SN756.125, M. & C. Porter, 2003.


†133/1.2. Valerianella carinata (Keeled-fruitled Comsald) (Llysiau’r Oen Rhychiog). +Road verge, 1km NE of Glyntawe, SN850172; +Base of wall, Brecon (Cradoe Road), SO040290; both M. & C. Porter, 2003.


*†135/74.1. Ambrosia artemisifolia (Ragweed) (Bratlys). †Edge of garden path (possibly from birdseed), 3km SW Brecon, SO022.261, C. Allum, 2003, herb. MP. 1st record.


7. (left)  
*Cephalanthera longifolia* (Narrow-leaved Helleborine): a fine specimen at Llanberis (Caerns).  
Photo: Trevor Dines.

8. (below)  
Plantlife volunteers take a gentle approach to managing *Cephalanthera longifolia* at Llanberis during the Padarn Workday.  
Photo: Trevor Dines.
- 152/16.3. Carex vesicaria
- 152/16.4. Carex montana
- 152/16.5. Carex pendula
- 152/16.6. Carex minus
- 152/16.7. Carex spicata

Welsh records -


+ 152/16.9a. Carex divulsa subsp. divulsa (Grey Sedge) (Hesen Lwydlas). Lane verge, 0.5km E of Llanbedr, SO246.200, M. & C. Porter, 2004.


*158/33.3x5. Narcissus \times incomparabilis (N. poeticus \times N. pseudonarcissus) (Nonesuch Daffodil). +Road verge, Llyswen, SO132.380; +Road verge, Garth, SN954.495; +Road verge, Brecon, SO066.278; all M. & C. Porter, 2002. 1st & subsequent records.


*159/8.ang\times7. Crocus \times stellaris (C. angustifolius \times C. flavus) (Yellow crocus). +Grassland, churchyard, Ystradgynlais, SN787.100; +Waste ground, Penderyn, SN945.085; both M. & C. Porter, 2004. 1st records.


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CARMARTHEN, v.c. 44 (comm. R.D. Pryce)


*4/1.3. Equisetum variegatum var. wilsoni (Variegated Horsetail) (Marchrawn Amrywic). Large patches, c.20m\times5m (approx.) in calcareous flushed area on floor of disused Carboniferous Limestone Quarry, near kilns, Pentregrwensiaid Quarry, Llandybie, SN608.163, I.K. Morgan & R.N. Stringer, 2003, NMW & herb. CNP, conf. C.N. Page. 1st record for variety outside Killarney, Ireland (teste CNP).


**40/2.3. *Alnus cordata* (Italian Alder). Wind-blown seedling in garden, Coronation Road, Llanelli, SS514.999, I.K. Morgan, 1996; self-sown plants, Cynheidro, SN492082, I.K. Morgan, 2000; *Seedlings, between Andrew Street & Mill Lane, Llanelli, SS509005, I.K. Morgan, 2003; one self-sown seedling near planted trees of this species, Bodran Felin, Llāmpumsaint, SN4217.2907, M. Godfrey, H. Slade, K.A. Cottingham & R.D. Pryce, 2003. Hectads for which introduced plants have been recorded are SN41, SN61 and SN73.


+66/1.3b. *Pyrola rotundifolia* subsp. *maritima* (Round-leaved Wintergreen) (Coedwyrd Cynaddail). *One plant only in dominant *Pyrola minor* under birch scrub, near Ashpits Pond between Pwll & Burry Port, SN463.012, G.M. Kay & BSBI group; +63 plants in flower on largely bare ground with very little top soil, Tumble Community Woodlands, SN539.123, G. Moss, C. Cheffings & M. Godfrey; both 2004.


+77/16.3. *Ononis spinosa* (Spinny Restharrow) (Tagaradr Pdigog). *Subsoil bnd, former opencast site, Ffōs-las, Trimsaran, SN453.062; 1999; *Several large plants on restored ground, site of former power station, Burry Port, SN449.002, 2004; both I.K. Morgan. 1st & 2nd records.


**91/2.16b. Euphorbia amygdaloides** subsp. **robbiae** (Leathery Wood-spurge). Along 10m of hedgebank, near Parc Hendre, Capel Hendre, SN600.113, 2000; +Along 3m of roadside, Felinfoel, Llanelli, SN515.023, 2002; both I.K. Morgan. 1st & 3rd records for subsp.


**100/1.1. Rhus typhina** (Stag’s-horn Sumach). Two well established trees on edge of open moorland, Cefn coed uchaf, Carreg Dwn near Llandyfan, SN652.174, A. & V. Lewis, 2004. 1st record away from gardens.

**102/1.4. Oxalis exilis** (Least Yellow-sorrel) (Suran Felen Leiaf). +Weed at base of wall, Heol Waun-y-clun, Trimsaran, SN452039, 1998; +Garden weed, Dinefwr Court, Llandeilo, SN614.225, 2002; both I.K. Morgan, 1st & 2nd recent records.


**108/6.2. Gentiana pneumonanthe** (Marsh Gentian) (Crynlylys y Rhos). Near Llannon, Llanelli, SN54.08, J. Motley, 1840, Motley’s MS Flora, seen by H.C. Watson and included in *Top. Bot. II*: 592. 1st record. Considered an error by R.F. May & by R.G. Ellis in *Flowering Plants of Wales* (1983) but both IKM & RDP consider that Motley would not have misidentified such a species. Suitable habitat would have occurred in the area at the time -- and still occurs albeit now rank and overgrown.


**118/13.1. Nepeta cataria** (Cat-mint) (Mintys y Gath). +Pavement weed opposite entrance to council recycling depot, Trostre, Llanelli, SS523.994, I.K. Morgan, 2003. 2nd record, first for a self-sown plant. The first record refers to what is assumed to have been an introduction, noted by Mrs A.M. Pell in the Capel Hendre area, SN51V, in c.1977.

**124/1.1. Verbascum blattaria** (Moth Mullein) (Gwyfynog). +One plant only (white flowered) in disturbed ground/rubbble, WDA Delta Lakes site, Machynlys, Llanelli, SS508.984, A. & V. Lewis, 2004. 2nd & 1st recent record.


**124/20.2. Euphrasia rivularis** (Snowdon Eyebright) (Effros yr Wyddfa). Flushed, slightly base-rich mountain grassland, Cwm Clydach, Mynydd Du, SN739195, A.O. Chater et al., 2004, NMW.


**Welsh Plant Records - 2003-2004 - Carmarthen**


+162/16.1. *Gymnanthus conopsea* (Fragrant Orchid) (Tegeirian Për). +Marshy meadow S of River Gwendraeth Fach, near Torcoed Fawr, Llandyndelyn, SN476.143, M. Godfrey, C. Tero & S. Woodward; +c 10 plants in...

PEMBROKE, v.c. 45 (Comm. S.B. Evans)


+10/2.1 gam. *Trichomanes speciosum* gametophyte (Killarney Fern) (Rhedynen Wychog). +In a deep hole near southern end of a large rock outcrop in ancient woodland, Pen Glyn, Minwear Wood, SN063.138; +4×1cm patch in deep crevice in low slate outcrop in woodland, Top of Allt Felfed, just SE. of Dol-felfed, Llangoiman, SN112.252; both S. Bosanquet, 2003.


+53/1.6. *Malva pusilla* (Small Mallow) (Hocys Blodau Bychan). gFoot of drainpipe on pavement, New Street, St David’s, SM754.253, D. Dupree, 2003. 1st. recent record but casual only.

+57/1.4×7. *Viola riviniana* × *V. lactea* (a hybrid dog-violet). Rare on burnt coastal heath, Strumble Head, SM989.413, S.P. Chambers, 2004.


Welsh Plant Records - 2003-2004 - Pembroke


+69/6.3. *Anagalis minima* (Chaffweed) (Corfrilys). Winter flushed tracks in acid grassland, ENE of Mairanog-ganol, Pontyglaesier, SN141.345, S.B. & A.E. Evans, 2002. Very tightly sheep grazed; *Moenchia erecta* was amongst the associates.


+118/1.5×6. *Stachys × ambigua* (*S. sylvatica × S. pahustris*) (Hybrid Woundwort) (Briwlys Crossryw). Hedgebank, Petrol Station, E of St David’s, SM765.252, D. Dupree, 2003.


*+158/24.3. Allium roseum (Rosy Garlic) (Garleg Gwridog). Edge of minor tarred parking embayment just inland from foreshore, E side of Angle Bay, SM897.020; at foot of and outside the wall of the churchyard by the tarred road, Bosherton Church, SR965.948 both K.J.S. Devonald, 2004.


CARDIGAN, v.c. 46 (comm. A.O. Chater)


+18/1.2. Blechnum cO/datum (Chilean Hard-fern). Naturalised colony 7×5m in wooded dingle, Penglais, Aberystwyth, SN593.820, A.O. Chater, 2004, NMW. 1st record.


Welsh Plant Records - 2003-2004 - Cardigan


116/15.1. *Myosotis scorpioides* (Water Forget-me-not) (Ysgorpionlllys y Gors). River bank, by Afon Teifi 2km SW of Lampeter, SN56.46; River bank, by Afon Brefi, Llwyn, Llanddewi Brefi, SN64.54; both D. Broughton, 2004.


†129/1.9. *Campanula portenschlagiana* (Adria Bellflower) (Clychlys Adria). Naturalised on roadside wall, Figure Four, SN58.776, A.O. Chater, 2004.


137/3.1. *Luronium natans* (Floating Water-plantain) (Dwr-lyiad Nofiadwy). In river, N side of Pont Llanio, SN652.569, D. Broughton, 2004. The furthest down the Teifi that *Luronium* has been found.


†151/1.25. *Jancus inflexus* (Hard Rush) (Brwynen Galedd). Waste ground, S of caravan site, Borth, SN608.935, A.D.Q. Agnew, 1975, ABS.


MONTGOMERY, v.c. 47 (comm. Mrs M. Wainwright)


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MONTGOMERY, v.c. 47 (comm. Mrs M. Wainwright)


+135/74.1. Ambrosia artemisiifolia (Ragweed) (Bratlys). #Garden, a bird seed alien with Linum bienne, Phalaris canariensis & Raphanus raphanistrum; Llanidloes, SN95.852, M. Oliver, 2003. 1st record.

152/16.57. Carex limosa (Bog-sedge) (Hesgen Eurwerdd). Open peaty areas, Trannon Moor, SN911.975, C. Forster Brown, 2003. Important, because most records date from the 1980s and many of the habitats are now lost, e.g. Llanbrynmair Moors is now planted.


*154/1.4. *Sp arganium natans* (Least Bur-reed) (Cleddlys Bach). 150-200 plants with *Sphagnum papillosum* & *S. palustre* in peaty depression in blanket bog, Trannon Moor, SN911.975, C. Forster Brown, 2003, photo & spec. with MW. 1st record. An important surviving habitat threatened only by the proximity of Trannon wind-farm.

**MERIONETH, v.c. 48 (comm. P.M. Benoit)**


*47/8.1b. *Rumex acetosella* subsp. *pyreaticus* (Sheep’s Sorrel) (Suran yr Yd). In quantity on roadside banks at Llanddwyywe, SH15.2, P.M. Benoit, 2003. 1st record. This is the common subspecies in v.c. 48: subsp. *acetosella* is known only from sandy ground at Morfa Harlech, SH5.3, Morfa Dyffryn, SH15.2 and the Dysynni Broadwater, SH5.0.


74/5.15. *Saxifraga granulata* (Meadow Saxifrage) (Tormaen Gwyn y Gweunydd). A few plants, evidently self-sown from somewhere, amongst a closed carpet of *Sedum album*, occasional *S. acre* and rare *S. spurium* on a pitched turf roof of one of the buildings at the Centre for Alternative Technology, near Corris, SH7.0, S.P. Chambers, 2003.


+107/25.1. Contium macelatum (Hemlock) (Cegiden). Waste ground below Harlech Castle, SH5.3, P.M. Benoit, 2004. Update from 1971 in a locality that has been known at least since 1953.


*124/13.3 x 14. Linaria × dominti (L. purpurea × L. repens) (a hybrid toadflax). Several plants with both parents on platform, Barmouth railway station, SH61.25, P.M. Benoit, 2003. 1st record.


+131/2.2. Viburnum lantana (Wayfaring-tree) (Gwirllmynwynedd). ‡By the Mawddach long-distance footpath (disused railway track), near Penmaenpool, SH7.1, P.M. Benoit, 2004. 2nd record & 1st since Atlas Br. Fl., p. 264, 1962. (Bodowen, near Barmouth, SH6.1, P.M. Benoit). Both records were of ‘alien’ occurrences.


*151/1.26 x 20. Juncus × kern-reichgeltii (J. effusus × J. conglomeratus) (a hybrid rush). In quantity with both parents in a meadow near Ystumtwadaeth, Dolgellau, SH7.2, P.M. Benoit, 2002. 1st record.

+152/2.2a. Trichophorum cespitosum subsp. germanicum with proliferating spikes (Deergrass) (Clwbfrwynen y Mawn). Path up to Bwic h Tyddiad from the east, SH66.29, P.M. Benoit, 2003. Has the stem section and basal sheaths of subsp. germanicum.

152/3.3. Eleocharis uniglumis (Slender Spike-rush) (Sbigfrwynen Un Plisgyn). Base-rich boggy field in Islawdref, SH7.1, P.M. Benoit & A. Seddon, 2001. 1st Merioneth record from an inland (alt. 106m), non-saline habitat of a species that is common in the saltmarshes.


+152/16.18. Carex diotica ( Dioecious Sedge) (Hsgen Ysgar). One large patch in bog in Dinam valley, Llandrillo, SJ03.3, P.M. Benoit & S.E. Stille, 2004. Male with usually one utricle at the base of the spike.


152/16.69. Carex bigelowit (Stiff Sedge) (Hsgen Ddu). Summit of Cader’Fronwen (alt. 784m), SJ03.3, S.E. Stille, 2003. Rare in v.c. 48 and only on the highest summits.


+77/126.1×2. *Ulex europaeus × U. gallii* (a hybrid gorse). +Heathy outcrop in wet field, Ystumllyn, Criccieth, SH52.38, S. Thomas; +Edge of field near beach, Aber, SH65.73, W. McCarthy & M. Stead; both 2004.
+92/1.1. *Rhamnus cathartica* (Buckthorn) (Rhafnwydden). Wooded hillside, Bryn Maelgwyn, Llandudno, SH79.80, W. McCarthy, 2004. 1st record for over 100 years and only known extant site.


+‡153/PAN nil. *Panicum milleaeum* (Common Millet) (Miled). Seed contaminant in maize field, Pydew, SH80.79; Maize field, Bodefon, Llandudno, SH80.81; both W. McCarthy, 2004.


*‡159/5. *Iris unguicularis* (Algerian Iris). Limestone grassland, near St Petrock's, Great Orme, SH76.82, W. McCarthy, 2004. 1st Welsh record.


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DENBIGH, v.c. 50 (comm. Mrs J.A. Green)


Welsh Plant Records - 2003-2004 - Denbigh

+†37/1.1. Juglas regia (Walnut) (Coeden Cnau Ffrenig). +Lane in wooded valley, Wigfair, SJ027.710, T. Grey-Hulse; +Lane in wooded valley, Rhewl, SJ107.600, J.A. Green; both 2004.
*†61/1.3ita. Populus nigra 'Italia' (Lombardy Poplar) (Popysen Lombardy). ¥Planted near farm, Bangor on Dee, SH393.439, J.A. Green, 2003. 1st record.
2003-2004


FLINT, v.c. 51 (comm. G. Wynne)


+103/1.15. *Geranium pusillum* (Small-flowered Crane’s-bill) (Pig yr Aran Mânflodeuog). Garden borders on imported soil, Foresters Hall, High St, Bagillt, M. Midgley, 2002.


†72/2.4. *Ribes sanguineum* (Flowering Currant) (Rhyfon B1odeuog). Old spoil heap, Parys Mountain, SH42.90, E. Wagstaff; +Old spoil heap, Parys Mountain, SH439.899, I. Bonner & E. Wagstaff, both 2004. 1st & 2nd records as neophyte. 


*123/23.1. *Parentucellia viscosa* (Yellow Bartsia) (Gorudd Melyu). Beside new A55 dual carriageway, Caergeiliog, SH306.796, R. Birch, 2004. 1st record (1st recorded in 2003); very localised, habitat is diminishing; unclear if introduced (casual) or native.


†135/43.1. *Erigeron glaucus* (Seaside Daisy). Well established near ramp to shore, with fine patch of *Crambe maritima*, at foot of cliff, Church Bay, SH300.893, I. Smith, 2004, letter to Nigel Brown.


*158/23.2. *Muscaria armeniacum* (Garden Grape-liaicht) (Clychau Glas yr Ared). Roadside, lay-by, between Benllech and Marianglas, SH513.842, J. Hawksford, 1993; Roadside, Trefdraeth, SH40.70; Apparently well established on roadside, well away from habitation, near Penatraeth, SH15.777; both I. Bonner, 2004. 1st & subsequent records.

Narrow-leaved Helleborine (Caldrist Culddail) in Wales

In this edition of the Plantlife Wales Newsletter, I want to look in detail at one of the more difficult species in the Back from the Brink programme of species recovery. Unlike Deptford Pink (Dianthus armeria), which we looked at last time, Narrow-leaved Helleborine (Cephalanthera longifolia) presents us with few problems when it comes to management.

*C. longifolia* is in my opinion one of our most attractive orchids, producing tall, lax spikes of large white flowers at the end of May and beginning of June. It is a rhizomatous perennial, usually growing in open woodland and on woodland edges. This species has been well studied in England, where populations have been the subject of detailed examination and management by Plantlife since 1989. Annual population counts are available for many sites, and some have benefited greatly from direct management action. However, Welsh (and indeed Scottish) populations have not received similar attention, and a general overview of the status of this species in Wales has not been available until now. Although some populations have been monitored, this has generally been on an ad hoc basis, and records of others have not been widely available since the late 1970s. There are also significant differences between English and Welsh populations; in England, for example, it occurs in woodland with a strongly calcareous substrate, often chalk. In Wales, however, its sites are predominantly acidic.

Plantlife Flora Guardians have been working on this species for a few years now, and I’d therefore like to summarise the current status of *C. longifolia* in Wales, report on their work, and place our populations in a wider British context.

**Status in Britain**

*C. longifolia* is now distributed from S.E. England (Hampshire, Surrey and Sussex) through Gloucestershire, Worcestershire and Herefordshire, and then up the west coast of Wales and Scotland north to Sutherland. It has, however, declined significantly across its range, especially in England, and it is now extinct in many counties in northern England. Since 1987 it has been recorded from only 41 of the 162 hectads (10-km squares) for which records exist and it appears on the New Red List as Vulnerable, having previously been recognised as Nationally Scarce.

**Inventory of Welsh populations**

To start our work on this species in Wales, we needed a complete and up-to-date inventory of all known sites. Records were compiled from the Threatened Plants Database, the Biological Records Centre, various county Floras and from the County Rare Plant Registers for Monmouthshire and Anglesey. These records were corrected and amended where necessary through correspondence with Vice-county Recorders.

A lot of records needed clarification. Many historical records were for populations wrongly attributed to incorrect or misleading locality names; the many records for “Harlech”, for
example, referred to a single population at Eisengrug, 3 miles away, while one for "Dinas Mawddwy" probably related to the Arthog population, some 15 miles away (indeed, Peter Benoit considers that the recorder may have been staying at a guest house in Dinas Mawddwy when the record was made!).

The following is an inventory of all Welsh \textit{C. longifolia} populations that I have traced, with details of the first and last year plants were recorded at each site. Note that, of the 11 sites, only 4 are currently extant (i.e., they still have plants), and that \textit{C. longifolia} has become extinct in three Welsh Vice-counties (Monmouthshire, Cardiganshire and Montgomeryshire).

<table>
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<tr>
<th>Vice County</th>
<th>Locality</th>
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<th>Last recorded</th>
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<td>1920</td>
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<td>SH5881</td>
<td>1832</td>
<td>2004</td>
<td>T. D. Dines</td>
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<td>Anglesey</td>
<td>Newborough</td>
<td>SH3964</td>
<td>1881</td>
<td>2004</td>
<td>I. R. Bonner</td>
</tr>
</tbody>
</table>

**Extant Populations**

The four extant populations have been recorded on-and-off over the years, with the Anglesey and Aberdovey populations being the most regularly monitored. However, we are now aiming to monitor all populations every other year, and to this end they were surveyed in detail in May and June 2003. Those in Merionethshire and Caernarfonshire were visited during a Plantlife survey with Flora Guardians (Plantlife volunteers), while the Anglesey one was recorded by Ian Bonner and myself.

A total of 170 plants were counted across all four sites. The proportion of flowering plants, non-flowering plants and plants with flower spikes grazed off within each population is shown in the following graph, and each population is then discussed in more detail.
Aberdovey, Merionethshire
This remarkable population is spread out over a kilometre of roadside woodland and railway track to the east of Aberdovey. Plants were first recorded here in 1927, when 60 were counted. More recently, Peter Benoît recorded 58 plants in 1978 and Sheila Kelly has undertaken valuable yearly counts of plants from two sub-populations since 1996. In 2003 we recorded 130 plants in seven sub-populations. Of these, 75 (58%) were flowering. The woodland, predominantly composed of *Quercus petraea* (Sessile Oak) forming an open canopy, is on a steep, south-facing, rocky slope. Some populations are entirely within the woodland, but most plants occur in dappled shade on the woodland edges, especially where light levels are highest alongside roads, walls, paths, tracks and the railway. *Corylus avellana* (Hazel) and *Sorbus aucuparia* (Rowan) were other frequent canopy species, the former being especially frequent beside the road.

As mentioned above, Sheila Kelly has recorded plants from two parts of the population for the last nine years. Her counts for one sub-population are shown below, and indicate that the population is probably stable overall, at least since 1999.

![Aberdovey - totals for one sub-population](image)

Arthog, Merionethshire
This small population beside the Mawddach estuary was first reported in 1920. After apparently being re-found by a member of the North Wales Naturalists' Trust in 1977, Peter Benoît recorded 1 plant in 1978 and 5 plants in 1998. We recorded 20 plants in 2003, of which only 4 (20%) were in flower. The plants were scattered in a linear colony beside the old railway track of what is now the Mawddach Trail. *Quercus petraea* (Sessile Oak) again formed the predominant canopy tree, with occasional *Sorbus aucuparia* (Rowan), and these provided dappled shade from the banks either side of the former railway track.

Llanberis, Caernarfonshire
*C. longifolia* has been recorded from various locations in the Llanberis area since 1832. However, from 1956 it was unrecorded until rediscovered by Wendy McCarthy in 1992. It appears that the species is somewhat mobile within the woodland beside Llyn Padarn; older records are located in different parts of the site and several different sub-populations have been seen by various people over the last few years.
Seventeen plants were recorded from two of these sub-populations in 2003, one deep in *Quercus petraea* (Sessile Oak) woodland near the Quarry Hospital (originally found by Sam Thomas in 2001) and one beside Llyn Padarn next to the tourist railway line. We failed to find plants at the site of two other sub-populations. Of the 17 plants, 8 (47%) were flowering but another 5 (29%) had had their flower spikes grazed off, probably by goats (of which there is a very large population in this woodland).

**Newborough, Anglesey**
This unusual population was first recorded from pine woods at Newborough in 1983. Despite some initial confusion over its exact location (leading to it being recorded erroneously in two 10-km squares), it is the most closely monitored population in Wales, although it is also the smallest! Between 1 and 4 flowering spikes have been recorded almost every year since its discovery.

In 2003, 3 plants were recorded growing in sand under an open canopy of *Pinus nigra* (Corsican Pine) and *Pinus contorta* (Lodgepole Pine). All three plants were robust and flowering well.

**Associated Species and Habitat**
Species occurring within 30cm of *C. longifolia* plants at each site were recorded. At the Aberdovey, Arthog and Llanberis sites, associated species were characteristic of dry acidic woodland. Of the 27 species recorded from these three sites, *Festuca rubra* (Red Fescue), *Hedera helix* (Ivy), *Lonicer a periclymenum* (Honeysuckle), *Lotus corniculatus* (Bird's-foot-trefoil), *Luzula multiflora* (Heath Wood-rush), *Luzula pilosa* (Hairy Wood-rush), *Rubus fruticosus* agg. (Bramble), *Teucrium scorodonia* (Wood Sage) and *Veronica serpyllifolia* (Thyme-leaved Speedwell) were common to all three, while *Agrostis stolonifera* (Creeping Bent), *Anthoxanthum odoratum* (Sweet Vernal-grass), *Geranium robertianum* (Herb Robert), *Melica uniflora* (Wood Melick), *Pieridium aquilinum* (Bracken), *Ulex europae* (Gorse) and *Umbilicus rupestris* (Navelwort) were found in two of the three sites. The only other noteworthy species were *Melampyrum pratense* (Common Cow-wheat) at the Aberdovey site and *Luzula pilosa* (Hairy Wood-rush) at the Arthog site.

The Newborough site, which occurs on calcareous wind-blown sand over an acidic substrate in a pine plantation, appears to be unique in Britain. It is the only Welsh population growing on a basic substrate. The plants grow in association with *Salix repens* (Creeping Willow) and *Rubus caesius* (Dewberry), along with *Carex arenaria* (Sand Sedge), *Dactylis glomerata* (Cock’s-foot), *Holcus lanatus* (Yorkshire-fog) and *Tragopogon pratensis* (Goat's-beard). The possibility that this population was an accidental introduction with the pines cannot be discounted, but neither can the scenario of natural colonisation from the Llanberis population. It is worth noting that *C. longifolia* occurs under pines on coastal sand-dunes in NW France.

In England, all extant colonies occur in beech or oak woodland on chalk or limestone. Although the list of associates is very large, they include many calcicoles and are clearly different from the Welsh populations. Apart from the Newborough population, Welsh *C. longifolia* grows on soils derived from acidic mudstones and siltstones (plants have even been seen growing directly from slate at the Llanberis site). These substrates show little evidence of base-richness (see the fairly consistent list of pretty unremarkable associated species), although those close to the sea will probably experience some enrichment from salt spray.
The Welsh Population in a British Context
The total Welsh C. longifolia population in 2003 was 170 plants. Of these 56% (95 plants) were flowering (although 5 of these had their flower spikes bitten-off). This figure is slightly above that for English populations, where on average 48% of plants flower. Although most Welsh C. longifolia populations are small, the Aberdovey site with 130 plants is, in fact, the second largest in Britain. An exceptional site at Chappets Copse in S. Hants produces around 2700 plants each year, but the next largest is at Lancaut Nature Reserve in West Gloucestershire, with c.112 plants.

Ecology and Habitat Management
Cephalanthera longifolia is a notoriously difficult species to manage. Reasons for this include the fact that we don't understand its ecology very well, that populations take several years to respond to management, and that it is probably very sensitive to such changes in management. The most detailed work has been on populations in the Wyre Forest (Worcestershire), where experimental and monitoring work has been undertaken for Plantlife by Rosemary Winnall. She has found that, although canopy and shrub-layer density (and therefore light levels) regulate flowering in C. longifolia, less than 10% of flowers are actually pollinated and successfully produce seed. Thus, while it is possible to reduce competition (by clearing bramble for example) and to produce a light and open canopy (by removing tree branches), we should also manage appropriately for the bee species that effect pollination. In Wales, however, we don't yet know which species of bee is responsible for pollination.

Of the Welsh populations, that at Aberdovey is large and appears to be thriving. The presence of several sub-populations and the cutting of roadside trees probably ensures the future of the plant here, although continued regular monitoring will be helpful. The Arthog population may be slightly over-shaded as this had the lowest proportion of flowering plants, and is also vulnerable to high use of the Mawddach Trail. However, overhanging trees have recently been cleared from this site by the Snowdonia National Park Authority and it will be interesting to see how the plants respond to this.

The Llanberis population is more difficult as it is both threatened by goat grazing and by scrub encroachment. The goat population has been reduced this year, so this will hopefully benefit the plants. We have also started experimental management work with a volunteer work day to remove brambles and scrub from one of the sub-populations where plants were known to grow a few years ago. This work is very much a "gently-does-it" approach, with a little work each year to see how the plants respond. Unfortunately, at Newborough, similar work by Ian Bonner and Martin Gould of the Forestry Commission led to frustration as plants only appeared in unmanaged areas. We will, however, be keeping a close eye on all our populations now, and hopefully doing some good research to help unravel some of the secrets of this stately orchid.

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