

BOTANICAL SOCIETY OF THE BRITISH ISLES

# WELSH BULLETIN

*Editors : R. D. Pryce & G. Hutchinson*

**No. 76, June 2005**



*Mibora minima* - one of the earliest-flowering grasses in Wales (see p. 16)  
(Illustration from Sowerby's 'English Botany')

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Publication date of last BSBI Welsh Bulletin (No. 75) - January 2005.

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EDITORIAL

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.

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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 *Carum verticillatum*, with *Dactylorhiza* spp. and *Carex* spp. (plus hybrids) and more uncommon plants such as *Botrychium 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:

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## CALENDAR OF MEETINGS 2005

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

SAT 30<sup>th</sup> APR - SOUTH GOWER COAST, GLAMORGANSHIRE (v.c. 41) – M. Howells

FRI 13<sup>th</sup> - SUN 15<sup>th</sup> MAY - BSBI AGM, FERRYSIDE, CARMARTHENSHIRE (v.c. 44)

SAT 4<sup>th</sup> JUN - PENCOED, GLAMORGAN (v.c. 41) – G. Barter

SAT 11<sup>th</sup> JUN - CRAIG Y RHIWARTH, BRECONSHIRE (v.c. 42) – M. Porter

FRI 17<sup>th</sup> - SUN 19<sup>th</sup> JUNE - WELSH AGM and EXHIBITION MEETING, LAMPETER and associated field meetings (v.c. 46)

SAT 9<sup>th</sup> JUL - PRESTATYN, FLINTSHIRE (v.c. 51) – G. Wynne & J. Phillips

SAT 23<sup>rd</sup> JUL - YSGOLION DUON, CAERNARVONSHIRE (v.c. 49) – W. McCarthy & S. Thomas

SAT 23<sup>rd</sup> JUL - SAT 30<sup>th</sup> JUL - GLYNHIR MANSION, LLANDYBIE, CARMARTHENSHIRE (v.c. 44) – R.D. Pryce

SAT 3<sup>rd</sup> 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 6<sup>th</sup>, 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 Llechgynfarwydd [Llechcynfarwy; 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 Llechgynfarwy. 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

Hyde, H.A. (1930) *Samuel Brewer's Diary: a Chapter in the History of Botanical Exploration in North Wales*. Supplement to Report of Botanical Society and Exchange Club for 1930.

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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. Trefloyno 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.*

*altiarquatus*, *R. leyamus*, *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. dumnoniensis*, 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. perdigitatus* 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 bracken 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. largiflucis*, 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 Gurfreston at SN104025-6), a smaller amount in the old Scotsborough estate woodland just west of Tenby - accompanied by a bush of *R. boudiccaae*, 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 Chater 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. euanthinus*; 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 refining 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. phlymensis*, 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 Llleyn 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 *Rhynchospora 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 10<sup>th</sup> 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 8<sup>th</sup> 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 12<sup>th</sup> 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 9<sup>th</sup> 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 hedgebanks 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 Eghwysrwrw 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 relict 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 *Euonymus 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, Eglwysrwr – 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. *M. 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 *M. 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 – Lancych, Abercych – 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 *M. melissophyllum* was refound 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  $\pm$  0.96 ( $n=11$ ), 3.08  $\pm$  0.95 ( $n=12$ ) and 2.60  $\pm$  1.5 ( $n=5$ ) seeds per flower. They estimated the mean and maximum number of flowers per square metre ( $m^2$ ) in this population to be c.10 and c.60, giving corresponding seed outputs of 29.8 and 179 seeds per  $m^2$ . 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/nutlets – 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 breeding mares and winter 300 sheepe and 200 cattell well and sufficiently, beside swyne which may be kepte there....Also the panage of hogges, 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 Devonald 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 relict 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 correspondence attached to the herbarium sheet: 'I took my cutting 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-gigfran, 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 preceeding the species name indicates that this plant was listed as an associate in that number of the 17 population forms).

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

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.

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## 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 Dniepr River region, Ukraine – although, interestingly, these plants appear to be sometimes biennial and occasionally up to 18cm tall (Rozhevits & 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).

<i>Mibora minima</i> subsp. <i>littorea</i>	<i>Mibora minima</i> subsp. <i>minima</i>
Spikelets overlapping	Spikelets not overlapping
Spikelets >2.5mm	Spikelets <2.5mm
Basal leaf sheaths 2-3(3.5)mm	Basal leaf sheaths 1.5-2(3)mm
Basal pedicel 0.2-0.5 x 0.2-0.4mm	Basal pedicel 0.1-0.2 x 0.2(-0.3)
Basal pedicel conspicuously rugose	Basal pedicel smooth to slightly rugose

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.2mm diameter or slightly less; basal pedicels: very approximately 0.2 x 0.2mm) 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.

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## WELSH PLANT RECORDS – 2003-2004

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 2<sup>nd</sup> 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 in at least one of the Welsh vice-counties

†, ‡, ¶ before the record: to indicate a species which although a native, archaeophyte or neophyte in at least one of the Welsh vice-counties, is not so in the locality recorded

[ ] 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 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, Aberhoewy 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, Trevethin, 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, Pencarreg, Barmouth, Gwynedd LL42 1BL

CAERNARFON, v.c. 49; Mrs W.N. McCarthy, 5 Tyn-y-coed, Great Orme, Llandudno, Conwy LL30 2QA

DENBIGH, v.c. 50; Mrs J.A. Green, Coed Duon, Tremeirchion, St Asaph, Denbighshire LL17 0UH

FLINT, v.c. 51; Dr G. Wynne, Gwylfa, Lixwm, Holywell, Flintshire CH8 8NQ

ANGLESEY, v.c. 52; Dr 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. *Hyperzia selago* (Fir Clubmoss) (Cnwpfwsogl Mawr). 1 plant with 8 branches, 5cm tall, with *Epilobium brunnescens* & *Conocephalum conicum*, 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. 3<sup>rd</sup> extant site.
- 1/3.1. *Lycopodium clavatum* (Stag's-horn Clubmoss) (Cnwpfwsogl Corn Carw). Under leggy heather, on old track, through forestry, near head of valley, head of Cwmcarn, ST257.957, S.D.S. Bosanquet & G. Motley, 2004. 2<sup>nd</sup> extant site.
- +10/2.1. *Trichomanes speciosum* gametophyte (Killarney Fern) (Rhedynen Wrychog). In deep hole in sandstone outcrop, behind large tuft of *Blechnum*, E bank of Grwyne Fawr, Cefn-coed, SO258.268, S.D.S. Bosanquet, 2004.
- +44/1.2. *Amaranthus hybridus* (Green Amaranth) (Chwyn Moch Gwyrdd). Probably 10s of thousands of plants, in large field, Bayfield, Chepstow, ST520.933, W. Harding, 2004, det T.G. Evans, conf. E.J. Clement.
- 66/1.36. *Pyrola rotundifolia* subsp. *maritima* (Round-leaved Wintergreen) (Coedwyrdd 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 4,3,4,4,4,3,3,4,5,4,3,3,4; 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: 8,8,8,8,7,7,7,7,8mm 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.
- 75/17.1. *Sanguisorba officinalis* (Great Burnet) (Llysyrlys). 1 plant on W side & 2 plants on E side of cycle track, S of Blaenavon, SO255.079 & 259.079, T.G. Evans & C. Titcombe, 2004. This species is suffering a loss of habitat in v.c. 35.
- \*75/21.12×17. *Rosa* × *molletorum* (*R. canina* × *R. mollis*) (a hybrid rose). 1 plant on grassy bank of cycle track, S of Blaenavon, SO263.075, T.G. Evans, 2004, det. R. Maskew. 1<sup>st</sup> record.
- 75/21.17. *Rosa mollis* (Soft Downy-rose) (Rhosyn Deilen Feddal). 1 large bush on grassy bank, near stream and small waterfall on edge of cycle track, S of Blaenavon, SO259.079; 1 bush on grassy bank, E end of viaduct, Abersychan, SO263.043; both T.G. Evans, 2004, conf. R. Maskew.
- 75/21.18. *Rosa rubiginosa* (Sweet-briar) (Drysen Bêr). 1 plant on grassy bank E end of viaduct, Abersychan, SO263.043; 1 bush, path side high up on grassed over stony ground, Cwmynscoy Quarry (disused), ST284.994, both T.G. Evans, 2004, conf. R. Maskew.
- 77/14.4. *Vicia sylvatica* (Wood Vetch) (Ffugbyysen y Wig). 3×1m patch, pathside Thicket Wood, Rogiet, ST445.888, T.G. Evans & C. Titcombe, 2004.
- +77/19.19a. *Trifolium incarnatum* (Crimson Clover) (Meillionen Ysgarlad). Matthew Picard's allotment, Machen, ST209.892, M. Picard, 2003, conf. J. Woodman.
- 116/6.4. *Anchusa arvensis* (Bugloss) (Bleidd-drem). 3 plants on steep stony slope facing south on Carboniferous Limestone, Caerwent Quarry (disused), ST472.896, T.G. Evans & C. Titcombe, 2004. Becoming sporadic and uncommon in v.c. 35.
- 121/2.1. *Littorella uniflora* (Shoreweed) (Beistonnell). Large areas near high water, NW corner of Llandegfedd Reservoir, ST322.999, C. Titcombe, 2004.
- +125/2.2. *Orobancha rapum-genistae* (Greater Broomrape) (Gorfanc Mwya). 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. 1<sup>st</sup> record since 1979, the dried up flowers could have originated in 2003 or 2004.
- +135/30.1. *Filago vulgaris* (Common Cudweed) (Edafeddog). c.6 plants, on coal waste spread to make a car park, Railway Museum, Blaenavon, SO234.094, T.G. Evans & C. Titcombe, 2004.
- +153/54.2. *Brachypodium pinnatum* (Tor-grass) (Breichweltl y Twr). c.50m of interrupted patches, side of cycle track (asphalted disused rail track), Talywain, SO260.039, T.G. Evans & C. Titcombe, 2004. 1<sup>st</sup> record in western half of v.c. 35.
- 153/63.1b. *Molinia caerulea* subsp. *arundinacea* (Purple Moor-grass) (Glaswellt y Gweunydd). 1 patch, N edge, at high water level, of Llandegfedd Reservoir, SO326.001, C. Titcombe, 2004, det T.G. Evans; +Numerous patches, sandy heath in open part of wood on ORS, Trellech Beacon, SO5160.0543, C. Titcombe & T.G. Evans, 2004.

- 162/13.1. *Platanthera chlorantha* (Greater Butterfly-orchid) (Tegeirian Llydanwydd). 23 flowering plants in unimproved paddock, (free of horses in 2004), Shirefield, ST466.897, T.G. Evans, 2004.
- +162/14.1. *Anacamptis pyramidalis* (Pyramidal Orchid) (Tegeirian Bera). 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. 1<sup>st</sup> record for the western half of v.c. 35.
- 162/20.3. *Orchis morio* (Green-winged Orchid) (Tegeirian y Waun). >100 flowering plants in unimproved paddock over Carboniferous Limestone, Shirefield, ST466.897, T.G. Evans & S.J. Tyler, 2004. A large increase in numbers for site.

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

- +4/1.7. *Equisetum sylvaticum* (Wood Horsetail) (Marchrawn y Coed). In flush on northern slope of Cefn Bryn, SS497.908, Q.O.N. Kay, 2004.
- +14/3.1. *Oreopteris limbosperma* (Lemon-scented Fern) (Marchredynen y Mynydd). +Cefn Bryn Moormills, SS505.913; +Cefn Bryn near Perriswood, SS501.894; both Q.O.N. Kay, 2004.
- +‡19/1.1. *Azolla filiculoides* (Water Fern) (Rhedynd y Dwr). On damp waste ground, Newton Nottage, SS841.774, A.S. Lewis, 2003.
- +‡20/1.2. *Abies grandis* (Giant Fir) (Ffinwyddden Fawr). In mixed plantation, Mill Wood, Penrice, SS484.877, A.S. Lewis, 2004.
- +‡20/5.1. *Larix decidua* (European larch) (Llarwydden Ewrop). In mixed plantation, Mill Wood, Penrice, SS485.878, Q.O.N. Kay, 2004.
- +23/1.1. *Taxus baccata* (Yew) (Ywen). In mixed plantation, Mill Wood, Penrice, SS485.878, Q.O.N. Kay, 2004.
- \*‡26/2.3. *Nuphar advena* (Spatter-dock) (Lilïau'r-dwr Melyn Deilsyth). Large clump in shallows of former ornamental pond, Sketty Hall, Swansea, SS623.943, A.S. Lewis, 2003. 1<sup>st</sup> record.
- +27/1.1. *Ceratophyllum demersum* (Rigid Hornwort) (Cyrddail). In large pond, Mill Wood, Penrice, SS493.882, A.S. Lewis, 2004.
- +‡30/1.3. *Papaver atlanticum* (Atlas Poppy) (Pabi'r Atlas). +On disturbed sandy waste, Broughton, Gower, SS419.929; +On sandy waste and on roadsides in village, Horton, Gower, SS47.85; both A.S. Lewis, 2004.
- +33/1.3. *Ulmus minor* (Small-leaved Elm) (Pren Llwyd). +Mynydd Garngoch, single tree by road, SS601.985, A.S. Lewis, 2003; +S of Castell-du, SN585.023, 2004; +Near Penmaen, SS528.886; both Q.O.N. Kay, 2004.
- +36/2.1. *Parietaria judaica* (Pellitory-of-the-Wall) (Murllys). Above salt-marsh near Castell-du, SN583.018, Q.O.N. Kay, 2004.
- +‡37/1.1. *Juglans regia* (Walnut) (Coeden Cnau Ffrengig). One young tree on marginal ground at Eastcliff, Pennard, SS556.874, A.S. Lewis, 2004.
- +39/4.5×6. *Quercus* × *rosacea* (*Q. petraea* × *Q. robur*) (a hybrid oak). +Oxwich Point, SS512.849, 2003; +Hambury Wood LNR, Landimore, SS469.929, 2004; +Edge of Cefn Bryn, SS491.897, 2004; Graig Trewyddfa, SS666.971, 2004; all Q.O.N. Kay.
- +43/1.6. *Chenopodium rubrum* (Red Goosefoot) (Troed yr Ŵydd Ruddog). On waste ground by Mumbles Road, Norton, Swansea, SS614.887, A.S. Lewis, 2003.
- +‡43/1.8. *Chenopodium polyspermum* (Many-seeded Goosefoot) (Troed yr Ŵydd Luos-hadog). Scarce weed of arable field, South Pilton, Gower, SS443.868, A.S. Lewis, 2004.
- +‡43/1.11. *Chenopodium urbicum* (Upright Goosefoot) (Troed-yr-Ŵydd Syth-ddail). Scarce on disturbed ground (soil possibly imported), Ynysforgan, Swansea, SS677.993, A.S. Lewis, 2003. 1<sup>st</sup> recent record.
- +43/3.4. *Atriplex longipes* (Long-stalked Orache) (Llygwyn Hirgoes). Salt-marsh near Castell-du, SN583.022, Q.O.N. Kay, 2004.
- +43/3.6. *Atriplex littoralis* (Grass-leaved Orache) (Llygwyn Arfor). +On driftline, by Nicholaston Pill, SS514.879, A.S. Lewis; +On drift-line, at Crymlyn Burrows, SS723.932, C.R. Hipkin; both 2003.
- +45/3.1d. *Montia fontana* subsp. *chondrosperma* (Blinks) (Gwlyddyn y Ffynnon). +Northern end of Foxhole Slade, SS439.862; +Mary Ball's Well, Llanmadoc Hill; both Q.O.N. Kay, 2004.
- +46/17.4. *Spergularia rubra* (Sand Spurrey) (Troellys Coch). Pasture on coal spoil, Gelli-orllwyn Farm, Llanmorlais, SS531.951, A.S. Lewis, 2004.
- +51/1.7. *Hypericum maculatum* (Imperforate St John's Wort) (Eurilnys Mawr). Mumbles Hill. SS627.833, B. Stewart, 2003.

- +54/2.1. *Lavatera arborea* (Tree-mallow) (Hocyswydden). On sea wall by estuary, Loughor, SS565.983, A.S. Lewis, 2004.
- +55/1.3. *Drosera intermedia* (Oblong-leaved Sundew) (Gwlithlys Hirdail). +Scarce in *Sphagnum* flushes with abundant *D. rotundifolia*, Cefn Bryn N of Perriswood, SS501.894; +Cefn Bryn NW of Nicholaston, SS516.888; both Q.O.N. Kay, 2004.
- \*57/1.4×7. *Viola riviniana* × *V. lactea* (a hybrid dog-violet). Oxwich Point, SS512.849, Q.O.N. Kay, 2003. 1<sup>st</sup> recent record.
- +61/1.2. *Populus tremula* (Aspen) (Aethnen). Pwlldu, SS573.872, A.S. Lewis, 2003.
- +62/10.1. *Matthiola incana* (Hoary Stock) (Murwyll Coesbren). Mumbles Head, SS635.872, A.S. Lewis, 2003.
- +‡62/11.4. *Barbarea verna* (American Winter-cress) (Berwr Tir). +On road verge, Loughor, SS563.979; +On demolition site of former Osborne Hotel above Rotherslade Bay, Mumbles, SS610.874; both A.S. Lewis, 2004.
- +62/12.3. *Rorippa islandica* (Northern Yellow-cress) (Berwr Melyn y Gogledd). +On muddy pond-side, Mynydd Garngoch, Penllergaer, SS611.983, 2003; +In damp field gateway, Stafford Common, Gowerton, SS590.973, 2004; both A.S. Lewis.
- \*‡62/18.2. *Alyssum saxatile* (Golden Alison) (Alysum Aur). On wall of ruin, Waungron, SN590.021, P.V. & A.S. Lewis, 2004. 1<sup>st</sup> record.
- +62/22.3. *Erophila glabrescens* (Glabrous Whitlowgrass) (Bystwn Llyfn). On newly formed low dunes near New Slack, Whiteford Burrows, SS432.942, Q.O.N. Kay, 2004.
- +‡62/24.1. *Camelina sativa* (Gold-of-pleasure) (Cyddlin). Street pavement, in central Neath, SS750.968, C.R. Hipkin, 2003.
- \*‡71/HYD.mac. *Hydrangea macrophylla* (Common Hydrangea) (Trillew ar Deg). Well established in woodland near High Pool, Newton, Mumbles, SS601.886, A.S. Lewis, 2004. 1<sup>st</sup> Welsh record.
- +72/2.1. *Ribes rubrum* (Red Currant) (Rhyfon Coch). +Pittsog's Wood, Penrice, SS493.874; +Hedgebanks W of Pontlliw, SN608.013; +Allt-y-Graban Lane, SN603.021; all Q.O.N. Kay, 2004.
- +‡73/3.1. *Sempervivum tectorum* (House-leek) (Llysiau Pen Tai). Persistent on old stone wall, Newton Farm, Llanrhidian, SS499.916, A.S. Lewis, 2004. 1<sup>st</sup> recent record.
- \*‡74/3.1. *Bergenia crassifolia* (Elephant-ears) (Clustiau Eliffant). On waste ground above the E bank of River Tawe, Swansea, SS662.735, A.S. Lewis, 2004. 1<sup>st</sup> record.
- +‡74/7.1. *Tolmiea menziesii* (Pick-a-back Plant) (Crudlys). In woodland, eastern Clyne Common, Swansea, SS605.899, 2003; +In deciduous woodland, Willoxton Cwm, Lunnun, Gower, SS545.899, 2004; both A.S. Lewis.
- +75/9/5. *Potentilla argentea* (Hoary Cinquefoil) (Pumbys Arian-ddail). ‡On open, well-drained bank of Afon Lliw, Gorseinon, SS593.981, A.S. Lewis, 2003.
- +75/17.1. *Sanguisorba officinalis* (Great Burnet) (Llysyrllys). Several plants on recently cleared rough ground, Pilton Green, Gower, SS445.872, A.S. Lewis, 2004.
- +‡75/21.1. *Rosa multiflora* (Many-flowered Rose) (Rhosyn Llusoed). Apparently spontaneous at former landfill site, Clyne Valley, Swansea, SS610.923, A.S. Lewis, 2003.
- +‡75/21.9. *Rosa virginiana* (Virginian Rose) (Rhosyn Virginia). In scrub on old landfill site, Clyne Valley, Swansea, SS613.921, A.S. Lewis, 2004. 1<sup>st</sup> record as a neophyte.
- +75/21.15. *Rosa micrantha* (Small-flowered Sweet-briar) (Rhoslwyn Pêr). +Five bushes on vegetated shingle behind beach, Pwll-du, SS573.872, A.S. Lewis, 2003 & 2004, det. R. Maskew; +Limestone scree, Mumbles Hill, SS626.873, A.S. Lewis, 2003.
- +75/21.18. *Rosa rubiginosa* (Sweet-briar) (Drysen Bêr). Apparently spontaneous at a former landfill site, Clyne Valley, Swansea, SS614.917, A.S. Lewis, 2003.
- +‡75/22.13. *Prunus lusitanica* (Portugal Laurel) (Coeden Llawr-sirianen Portiwgal). +In woodland, SS618.905, Blackpill, Swansea, A.S. Lewis; +Bird-sown on limestone cliff-scrub, Mumbles Hill, SS626.875, B. Stewart & A.S. Lewis; both 2004.
- +‡75/22.14. *Prunus laurocerasus* (Cherry Laurel) (Llawr-sirianen). Locally dominant and spreading in shrub layer, Mill Wood, Penrice, SS487.883 & SS492.883, Q.O.N. Kay, 2004.
- \*‡75/27.hup. *Malus hupehensis* (Hupeh Crab) (Coed-afalau Surion Hupeh). Bird-sown, in Clyne Valley, Swansea, SS613.920 & SS614.920, A.S. Lewis, 2003, det. Teifion Davies. 1<sup>st</sup> record.
- +‡75/32.10. *Cotoneaster salicifolius* (Willow-leaved Cotoneaster) (Cotoneaster Dail Helyg). +Spontaneous at former landfill site, Clyne Valley, Swansea, SS611.922, 2003; +One small plant in limestone cutting, The Knab, Mumbles, SS626.876, 2004, det. J. Fryer; both A.S. Lewis.
- +‡75/32.34. *Cotoneaster bullatus* (Hollyberry Cotoneaster) (Cotoneaster Deilgrych). Crymlyn Burrows, Swansea, SS723.933, A.S. Lewis, 2003.

- +‡75/32.35. *Cotoneaster rehderi* (Bullate Cotoneaster) (Cotoneaster Deilgrych Rehder). Several scattered along edge of woodland, Cwm, Swansea, SS677.959, A.S. Lewis, 2004.
- +‡75/32.40. *Cotoneaster sternianus* (Stern's Cotoneaster) (Cotoneaster Stern). Bird-sown on waste ground, Kittle, SS573.893, A.S. Lewis, 2003 (at first thought to be *C. franchetii*) & 2004; +In scrub on former landfill, Derwen Fawr, Swansea, SS612.921, A.S. Lewis, 2004; both det. J. Fryer.
- \*‡75/32.mai. *Cotoneaster mairei* (Maire's Cotoneaster) (Cotoneaster Maire). Cliff-slope near High Tor, Pennard, 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. 1<sup>st</sup> records.
- +‡75/33.1. *Pyracantha coccinea* (Firethorn) (Llosgddraenen). Bird-sown on dunes and waste ground, Swansea, SS66.92, A.S. Lewis, 2004. 1<sup>st</sup> recent record.
- +‡77/3.1. *Colutea arborescens* (Bladder-senna) (Llwyn Senna). On rough ground, increasing by seed, Loughor, SS571.989, A.S. Lewis, 2004. 1<sup>st</sup> record as a neophyte.
- +77/10.3. *Ornithopus perpusillus* (Bird's-foot) (Troed yr Aderyn). On dry bank beside track, Tankeylake Common, Llangennith, A.S. Lewis, 2003.
- +77/14.6. *Vicia hirsuta* (Hairy Tare) (Corbysen Flewog). Mumbles Hill, SS627.873, B. Stewart, 2003.
- +77/15.8. *Lathyrus sylvestris* (Narrow-leaved Everlasting-pea) (Ytbysen Barhaus Gulddail). Briton Ferry, SS739.940, A.S. Lewis, 2003.
- +‡77/15.9. *Lathyrus latifolius* (Broad-leaved Everlasting-pea) (Ytbysen Barhaus Lydanddail). +Bracelet Bay, SS628.872, A.S. Lewis, 2003; +Wychtree Street area, Morriston, SS672.975, Q.O.N. Kay, 2004.
- \*‡85/2.1. *Aucuba japonica* (Spotted Laurel) (Coeden Frech Felen). Bird-sown seedling in woodland near High Pool, Newton, Mumbles, SS601.886, A.S. Lewis, 2004. 1<sup>st</sup> record.
- +‡91/1.2. *Mercurialis annua* (Annual Dog's Mercury) (Bresych y Cŵn Blynnyddol). Newton Nottage, SS836.774, A.S. Lewis, 2003.
- +‡91/2.1. *Euphorbia exigua* (Dwarf Spurge) (Fflamgoed Fach yr Yd). Abundant weed of cultivated border, near Lidl supermarket, Neath, SS748.964, C.R. Hipkin, 2003.
- +‡91/2.14×wal. *Euphorbia* × *pseudovirgata* (*E. esula* × *E. waldsteinii*) (Twiggy Spurge) (Llaethlys Brigog). Large stand on a grassy bank, Cymmer, SS859.961, A.S. Lewis, 2004.
- \*‡91/2.16b. *Euphorbia amygdaloides* subsp. *robbiae* (Leathery Wood-spurge). Sandy waste, Newton Nottage, SS838.774, A.S. Lewis, 2003. 1<sup>st</sup> record for subspecies.
- +‡93/1.1. *Vitis vinifera* (Grape-vine) (Gwinwydden). Among gorse and willow, Kilvey Hill, St Thomas, Swansea, SS668.935, A.S. Lewis, 2004. 1<sup>st</sup> record as a neophyte.
- +94/2.1. *Radiola linoides* (Allseed) (Gorhilig). On damp, gravelly track, Hardings Down, Gower, SS439.909, A.S. Lewis, 2003.
- +95/1.2. *Polygala serpyllifolia* (Heath Milkwort) (Llysiau'r Groes). Mumbles Hill, SS627.873, B. Stewart, 2003.
- +‡99/1.1. *Acer platanoides* (Norway Maple) (Masarnen Norwy). In mixed woodland, Park Woods, Parknill, Gower, SS538.896, A.S. Lewis, 2003.
- +‡100/1.1. *Rhus typhina* (Stag's-horn Sumac) (Siwmac). Garden throw-out, spreading on disturbed sand-dunes, Llangennith Burrows, Broughton, Gower, SS416.925, A.S. Lewis, 2004. 1<sup>st</sup> record as a neophyte.
- \*‡103/1.17. *Geranium macrorrhizum* (Rock Crane's-bill) (Pig-yr-Aran Wreiddfawr). Large patch in trackside hedge, Horton, Gower, SS472.857, A.S. Lewis, 2004. 1<sup>st</sup> record.
- +‡107/41.3. *Heracleum mantegazzianum* (Giant Hogweed) (Efwr Enfawr). Bishopston Valley, SS573.883, Q.O.N. Kay, 2004.
- +107/43.1. *Torilis japonica* (Upright Hedge-parsley) (Troed-y-cyw Syth). Mumbles Hill, SS627.873, B. Stewart, 2003.
- +108/5.4. *Gentianella amarella* (Autumn Gentian) (Crwynllys Chwerw). Rabbit-grazed limestone grassland, Mumbles Hill, SS627.873, A.S. Lewis, 2003. Long known at this site.
- +‡109/1.1. *Vinca minor* (Lesser Periwinkle) (Perfagl Fach). ‡Wooded grounds of ruin, Cwm Farm, Llanmorlais, SS540.945, A.S. Lewis, 2004.
- +‡110/8.3. *Solanum physalifolium* (Green Nightshade) (Codwarth Gwrydd). ‡Weed of root crop, Broughton, Gower, SS417.923, A.S. Lewis, 2004.
- +‡110/9.1. *Datura stramonium* (Thorn-apple) (Afal Dreiniog). ‡Single plant in farmyard, Kilvrough, Gower, SS560.894, A.S. Lewis, 2004.
- \*‡110/NIC.san. *Nicotiana* × *sanderiae* (*N. alata* × *N. forgetiana*) (Sander's Nicotiana). Several plants on rough ground by playing fields, Sketty, Swansea, SS622.915, A.S. Lewis, 2004. 1<sup>st</sup> record.
- +‡111/3.3. *Calystegia pulchra* (Hairy Bindweed) (Taglys Blewog). Roadside hedge, Thistleboon, SS616.875; cliff scrub, Rotherslade, SS609.874; both A.S. Lewis, 2004.

- +116/1.2. *Lithospermum officinale* (Common Gromwell) (Maenhad Meddygol). In limestone scrub, Mumbles Hill, SS626.873, A.S. Lewis, 2003.
- +‡116/4.3. *Symphytum tuberosum* (Tuberous Comfrey) (Cyfardwf Oddfynog). Near Ynys-y-gerwyn, SS783.999, C.R. Hipkin, 2004.
- \*‡117/1.bon. *Verbena bonariensis* (Argentinian Vervain) (Ferfain yr Ariannin). Many seedlings, some flowering, on walls and pavement, Coed Saeson Crescent, Sketty, Swansea, SS627.930, A.S. Lewis, 2004. 1<sup>st</sup> record.
- +‡118/4.1c. *Lamiastrum galeobdolon* subsp. *argeniatum* (Variegated Yellow Archangel) (Marddanhadlen Felen Arianddail). Hedgebank by parking place on lane, Mill Wood, Penrice, SS493.883, A.S. Lewis, 2004.
- \*‡118/13.sac×nep. *Nepeta × faassenii* (*N. racemosa* × *N. nepetella*) (Garden Cat-mint) (Mintys-y-Gath yr Ardd). ‡On stone wall, Langland Bay, Mumbles, SS607.874, A.S. Lewis, 2004. 1<sup>st</sup> record.
- +‡118/23.3. *Mentha spicata* (Spear Mint) (Mintys Ysbigog). Rough ground by ruins, Mumbles Head island, SS635.872, A.S. Lewis, 2003.
- +‡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.
- +‡123/4.2. *Ligustrum ovalifolium* (Garden Privet) (Pryfet yr Ardd). Persistent in grounds of ruined cottage on southern slope of Llanmadoc Hill, High Penmynydd, SS438.925, Q.O.N. Kay, 2004.
- +‡124/1.2. *Verbascum virgatum* (Twiggy Mullein) (Tewbannog). Many plants on waste ground in village, Gileston, ST019.670, A.S. Lewis, 2004.
- \*‡124/16.18. *Veronica peregrina* (American Speedwell) (Rhwyddlwyn Tramor). Weed of flower beds and open ground, Margam Park, SS799.862, A.S. Lewis, 2004. 1<sup>st</sup> record.
- +124/16.24. *Veronica hederifolia* (Ivy-leaved Speedwell) (Rhwyddlwyn Dail Eiddew). Allt-y-Graban Lane, SN602.021, Q.O.N. Kay, 2004.
- \*‡124/17.1×ell. *Hebe × lewisii* (*H. salicifolia* × *H. elliptica*) (Lewis's Hebe) (Hebe Lewis). One large bush on waste ground, East Bank Way, St. Thomas, Swansea, SS662.933, A.S. Lewis, 2004. 1<sup>st</sup> record.
- +124/23.1. *Parentucellia viscosa* (Yellow Bartsia) (Gorudd Melyn). Several plants in new dune slack, below Cwm Ivy Tor, SS432.942, Q.O.N. Kay, 2003.
- +125/2.8. *Orobanche hederæ* (Ivy Broomrape) (Gorfanc Eiddew). One spike on cultivated ivy, Cannisland Park, Gower, SS565.900, A.S. Lewis, 2003.
- +130/6.7b. *Galium mollugo* subsp. *erectum* (Upright Hedge-bedstraw) (Briwydden Syth). Mumbles Hill, SS627.873, B. Stewart, 2003.
- +‡131/2.3. *Viburnum tinus* (Laurustinus) (Tinws). One well-established bush on a steep limestone cliff, Mumbles Hill, SS625.875, A.S. Lewis, 2003. 1<sup>st</sup> recent record.
- +‡131/6.2. *Lonicera nitida* (Wilson's Honeysuckle) (Gwyddfid Wilson). At edge of woodland, Mill Wood, Penrice, SS485.878, Q.O.N. Kay, 2004.
- +‡131/6.4. *Lonicera xylosteum* (Fly Honeysuckle) (Gwyddfid 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.
- +‡131/6.6. *Lonicera japonica* (Japanese Honeysuckle) (Gwyddfid Japan). Cliff scrub, West Cliff, Pennard, Gower, SS552.874, A.S. Lewis, 2004.
- \*‡131/6.tat. *Lonicera tatarica* (Tartarian Honeysuckle) (Gwyddfid y Tartar). Well-established shrub in dune grassland, Pennard Burrows, SS552.888, A.S. Lewis, 2003. 1<sup>st</sup> record.
- +‡135/22.1. *Lactuca serriola* (Prickly Lettuce) (Gwylaeth Bigog). Open stony ground at Cold Knap, Barry, ST099.665, A.S. Lewis, 2003.
- +135/24.1. *Mycelis muralis* (Wall Lettuce) (Gwylaeth y Fagwyr). Roadside by shore at Loughor, SS563.981, Q.O.N. Kay, 2004.
- +‡135/35.1. *Inula helenium* (Elecampane) (Marchalan). Middle Killay, SS585.923, A.S. Lewis, 2003.
- \*‡135/43.1. *Erigeron glaucus* (Seaside Daisy) (Amrhydlwyd 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. 1<sup>st</sup> records.
- +‡135/43.4. *Erigeron karvinskianus* (Mexican Fleabane) (Cedowydd y Clogwyn). Naturalised on walls, Dyfed & Gnoll Park Roads, Neath, SS757.975, C.R. Hipkin, 2003.
- +135/43.6. *Erigeron acer* (Blue Fleabane) (Cedowydd Glas). Open stony ground at Cold Knap, Barry, ST099.665, A.S. Lewis, 2003.
- \*‡135/45.3. *Olearia 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. 1<sup>st</sup> Welsh record?

- +135/48.3. *Tanacetum vulgare* (Tansy) (Tanclys). ‡On waste ground, Trewyddfa, Morriston, SS669.971, Q.O.N. Kay, 2004.
- \*‡135/55.1. *Anthemis punctata* subsp. *cupaniana* (Sicilian Chamomile) (Camri Arfor). On pavement, Dunvant, SS593.938, A.S. Lewis, 2003. 1st 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'. 1<sup>st</sup> record.
- +135/62.1.×10. *Senecio* × *albescens* (*S. cineraria* × *S. jacobaea*) (a hybrid ragwort). +‡On top of old stone wall near Guildhall, Swansea, SS645.924; +‡On top of stone wall, Rotherlslade, Mumbles, SS610.874; both A.S. Lewis, 2004.
- +135/62.12. *Senecio erucifolius* (Hoary Ragwort) (Creulys Llwyd). On waste ground above the E bank of the Tawe, Swansea, SS662.735, A.S. Lewis, 2004.
- +‡135/71.3. *Petasites albus* (White Butterbur) (Alan Bach). Stouthall, Reynoldston, SS475.892, A.S. Lewis, 2003.
- +‡135/GUI.ab. *Guizotia abyssinica* (Niger) (Olewlys). In 'conservation strip' in arable field, Middleton, Gower, SS423.875, A.S. Lewis, 2003.
- \*‡135/HEL/bra. *Helichrysum bracteatum* (Everlastingflower). On rough ground by river, Loughor, SS565.983, A.S. Lewis, 2003. 1<sup>st</sup> record.
- +‡147/2.1. *Lysichiton americanus* (American Skunk-cabbage) (Pidyn-y-gog Americanaidd). Shaded streambanks and wet woodland, spreading eastwards along the Coalbrook outside Margam Park, SS814.848, A.S. Lewis, 2004.
- +148/1.1. *Spirodela polyrrhiza* (Greater Duckweed) (Llinad Mawr). Splott Farm, St Donat's, A.S. Lewis, 2003.
- +‡152/6.1. *Scirpoides holoschoenus* (Round-headed Club-rush) (Clwbfrwynen Bengrwn). On waste ground above the E bank of the Tawe, Swansea, SS662.735, B. Stewart, 2004.
- +152/8.2. *Isopleis cernua* (Slender Club-rush) (Clwbfrwynen Eiddi). Upper edge of salt-marsh W of Wern-ffrwd, Gower, SS509.941, Q.O.N. Kay, 2004.
- +152/16.41. *Carex distans* (Distant Sedge) (Hesgen Bell). Upper edge of salt-marsh, Oxwich NNR, Gower, SS515.878, Q.O.N. Kay, 2004.
- +152/16.51. *Carex caryophylla* (Spring Sedge) (Hesgen Gynnar). Locally frequent in dry grassy moorland, Cefn Bryn, SS50.91, Q.O.N. Kay, 2004.
- +152/16.55. *Carex pilulifera* (Pill Sedge) (Hesgen Bengron). +Locally frequent on well-drained acid soil, Cefn Bryn near Cae-forgan, SS501.913; +Pengwern Common, SS538.923; both Q.O.N. Kay, 2004.
- +153/16.2. *Puccinellia distans* (Reflexed Salt-marsh-grass) (Gwellt-y-Morfa Atblygedig). +Locally frequent in upper salt-marsh, Whiteford Point, SS437.943; +Wern-ffrwd, SS509.941; +Crofty, SS523.957; +S of Castell-du, SN582.018; all Q.O.N. Kay, 2004.
- +‡153/17.3. *Briza maxima* (Great Quaking-grass) (Crydwellt Mwya). +‡Street pavement, Westernmoor, Neath, SS579.967, C.R. Hipkin, 2003; +‡Pavement weed, Hen Parc Lane, Upper Killay, Swansea, SS591.923, A.S. Lewis, 2004.
- +153/18.12. *Poa nemoralis* (Wood meadow-grass) (Gweunwellt y Coed). In woodland, Widegate & Bishopston Valley, SS567.881 & SS572.875, Q.O.N. Kay, 2004.
- 153/30.1. *Trisetum flavescens* (Yellow Oat-grass) (Ceirchwellt Melyn). Mumbles Hill, SS630.873, B. Stewart, 2001.
- +‡153/68.1. *Echinochloa crus-galli* (Cockspur) (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.
- +‡153/71.san. *Digitaria sanguinalis* (Hairy Finger-grass) (Byswellt Blewog). Garden weed, Cannisland Park, Parkmill, SS565.899, A.S. Lewis, 2004.
- +‡158/23.1. *Muscari neglectum* (Grape-hyacinth) (Clychau Dulas). +Hendrefoilan, SS612.937, A.S. Lewis, 2003; +E of Llandewi, SS461.891, Q.O.N. Kay, 2004. 1<sup>st</sup> record as a neophyte.
- +‡158/23.4. *Muscari comosum* (Tassel Hyacinth) (Clychau Dulas Tuswog). On fixed dunes, Delvid Burrows, Gower, SS423.931, A.S. Lewis, 2003.
- +‡158/24.3. *Allium roseum* (Rosy Garlic) (Garleg Gwridog). On ledge of limestone cliff, Crawley Bluff, Nicholaston, SS517.880, M. Davies, 2004, conf. A.S. Lewis.
- +‡158/24.7. *Allium triquetrum* (Three-cornered Garlic) (Cenhinen Drichornel). Locally frequent on roadsides, Newton Nottage, SS836.774, A.S. Lewis, 2003.
- +158/24.16. *Allium vineale* (Wild Onion) (Garleg Gwyllt). In old chapelyard on hill, Hermon Chapel, Crofty, Gower, SS533.954, A.S. Lewis, 2004.

- +‡158/28.1. *Tristagma uniflorum* (Spring Starflower) (Ser-flodyn y Gwanwyn). In sandy grassland, Horton, Gower, SS476.856, A.S. Lewis, 2003. 1<sup>st</sup> recent record.
- +‡158/32.1. *Galanthus nivalis* (Snowdrop) (Eirlys). +In hedgebank of lane S of Cilifor Farm, SS501.920; +In hedgebank of lane near Prysg Farm, SS511.920; both Q.O.N. Kay, 2004.
- \*‡158/32.4b. *Galanthus plicatus* subsp. *byzantinus* (Pleated Snowdrop) (Eirlys Deilblyg). Naturalised and spreading in deciduous limestone woodland, Cwm Ivy Wood, Gower, SS440.937, A.S. Lewis, 2004. 1<sup>st</sup> record.
- \*‡159/2.5. *Sisyrinchium striatum* (Pale Yellow-eyed Grass) (Sisirinchiwm Melyn Mawr). ‡Several flowering plants, source unknown, as pavement weed near Guildhall, Swansea, SS643.923, A.S. Lewis, 2004. 1<sup>st</sup> record.
- \*‡160/4.1. *Phormium tenax* (New Zealand Flax) (Llin Seland Newydd). Self-sown, mature plants on sea cliff, Little Langland, Mumbles, SS609.874, A.S. Lewis, 2004. ?1<sup>st</sup> Welsh record.

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

- +5/1.1. *Ophioglossum vulgatum* (Adder's-tongue) (Tafod y Neidr). Road verge, S of Usk Reservoir, SN829.282, M. & C. Porter, 2004.
- +7/1.1. *Cryptogramma crispa* (Parsley Fern) (Rhedynen Bersli). One clump on sandstone cliff, Fan Gyhirych, SN88.19, T. Rich & P.A. Smith, 2004.
- +11/1.3. *Polypodium cambricum* (Southern Polypody) (Llawredynen Gymreig). Stone walls, Tretower, SO185.212, M. & C. Porter, 2004.
- +14/2.1. *Phegopteris connectilis* (Beech Fern) (Rhedynen y Graig). steep, wooded, river bank, 1km NW of Pont-faen, SN990.351, M. & C. Porter, 2003, M. Porter.
- +16/4.1. *Gymnocarpium dryopteris* (Oak Fern) (Llawredynen y Derw). +Streamside rock, 2km SE Llyn y Fan Fawr, SN849.204; +Wall crevices, near Garnlydan, SO172.139; both M. & C. Porter, 2004.
- +17/3.8. *Dryopteris carthusiana* (Narrow Buckler-fern) (Marchredynen Gul). +Marsh, 2.5km W of Llaneglwys, SO043.379; +Marsh, Banc-y-celyn, SO051.472; both M. & C. Porter, 2004.
- \*‡20A/CRY/jap. *Cryptomeria japonica* (Japanese Red-cedar) (Cedrwyllydden Goch Japan). ‡Planted trees in forestry plantation, Nant Tresglen, Halfway, SN838.332, M. & C. Porter, 2003. 1<sup>st</sup> record.
- +28/3.2. *Helleborus viridis* (Green Hellebore) (Pelydr Gwyrdd). Shaded streambank, 2km SE Llanigon, SO231.383, M. & C. Porter, 2003.
- +28/13.24. *Ranunculus peltatus* (Pond Water-crowfoot) (Crafanc y Llyn). W shore, Talybont Reservoir, SO100198, M. & C. Porter, 2003.
- +28/16.1. *Aquilegia vulgaris* (Columbine) (Blodau'r Sipsi). ‡Roadside verge, near Glan-rhyd, 1.5km SW of Libanus, SN985240, M. & C. Porter, 2003.
- +‡29/2.1. *Mahonia aquifolium* (Oregon-grape) (Llwyn Oregon). Hedge on edge of plantation, near Bryn-wern Hall 2km S of Newbridge-on-Wye, SO007560, M. & C. Porter, 2003.
- +‡30/1.5a. *Papaver dubium* subsp. *dubium* (Long-headed Poppy) (Pabi Hirben). River bank, 1km NE of Glasbury, SO190.402, M. & C. Porter, 2004.
- +‡30/1.5b. *Papaver dubium* subsp. *lecoqii* (Yellow-juiced Poppy) (Pabi Sudd Melyn). Disturbed soil, Pant-y-celyn Chapel, SN998.417, M. & C. Porter, 2004.
- +30/2.1. *Meconopsis cambrica* (Welsh Poppy) (Pabi Cymreig). ‡Hedge, Penderyn, SN945.084, M. & C. Porter, 2003.
- +31/4.1. *Ceratocarpus claviculata* (Climbing Corydalis) (Mwg y Ddaear Gafaelgar). Scrub beside lane, 1km SW of Libanus, SN985.241, M. & C. Porter, 2003.
- +‡36/1.2. *Urtica urens* (Small Nettle) (Danhadlen Leiaf). Sandy ground, rough pasture, Talybont-on-Usk, SO114.234, M. & C. Porter, 2004.
- +‡36/3.1. *Soleirolia soleirolii* (Mind-your-own-business) (Mam Miloedd). +Roadside ditch, Llanfilo, SO119.334; +Riverside wall and rocks, Hay-on-Wye, SO230.427; both M. & C. Porter, 2004.
- +‡40/2.3. *Alnus cordata* (Italian Alder). Planted c.10 yrs at edge of pasture, 1km E of Llanbedr, SO252.203, M. & C. Porter, 2003.
- +43/1.6. *Chenopodium rubrum* (Red Goosefoot) (Troed yr Wydd Ruddog). Dunhill on road verge, 2km N of Upper Chapel, SN998.424, M. & C. Porter, 2004.
- +‡43/1.8. *Chenopodium polyspermum* (Many-seeded Goosefoot) (Troed yr Wydd Luos-hadog). Dunhill on road verge, 2km N of Upper Chapel, SN998.424, M. & C. Porter, 2004.
- +45/3.1a. *Montia fontana* subsp. *fontana* (Blinks) (Gwlyddyn y Ffynnon). +Small stream in rough grassland, Aberhyddnant, 3km W of Crai, SN867.238; +Springhead flush, 1.5km S of Pant-y-llyn, SO031.450; +Wet

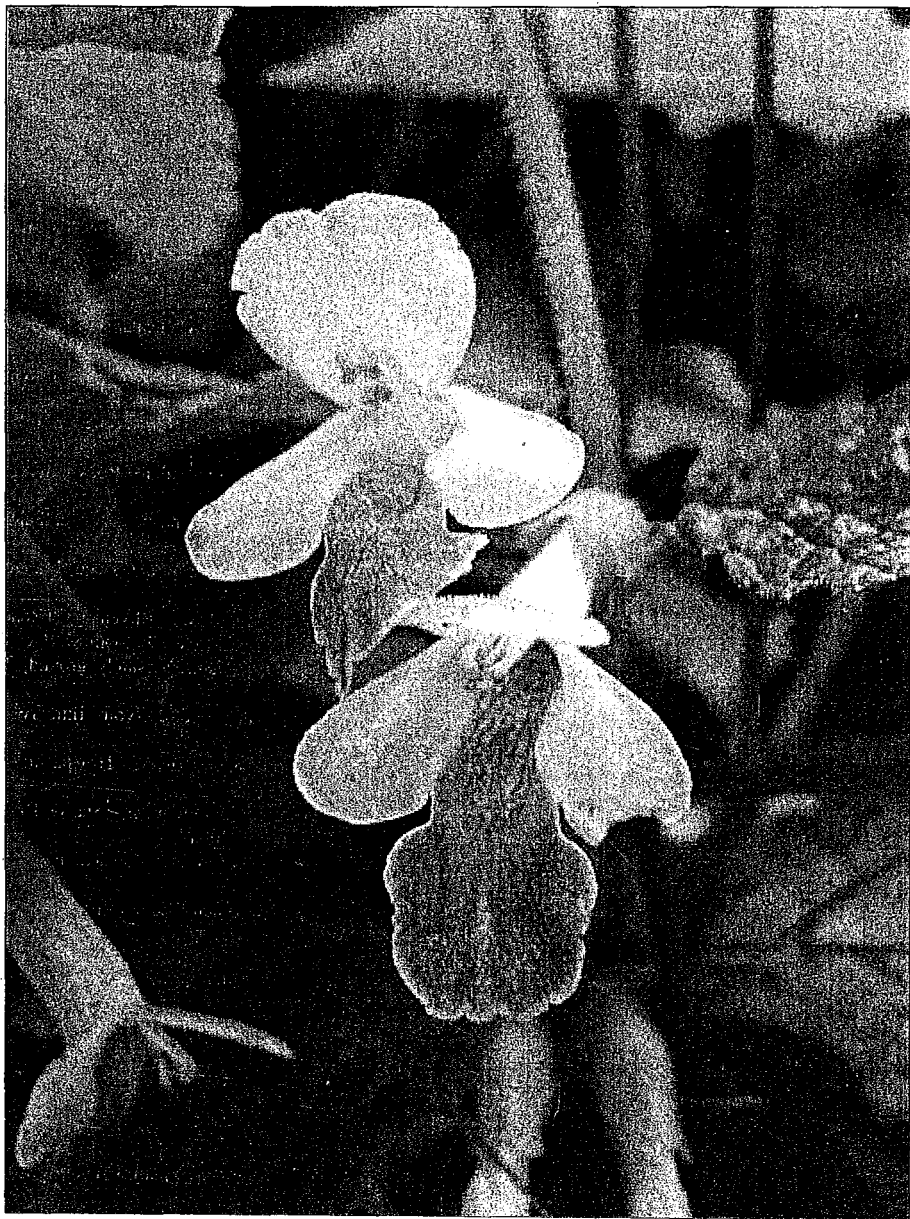


- rocks by river, bank of R. Wye, 1.5km SE of Erwood, SO109.420; all M. & C. Porter, 2003; +Forming 'lawn' on shaded river bank, 4km SE of Builth Wells, SO067.486, M. & C. Porter, 2004.
- +45/3.1b. *Montia fontana* subsp. *variabilis* (Blinks) (Gwlyddyn y Ffynnon). Flush in rough grassland, Nant-ystalwyn, Afon Tywi, SN805.575, 2003; +Shingle beside stream, 4.5km NE Ystradowen, SN772.161, 2004, both M. & C. Porter.
- +45/3.1d. *Montia fontana* subsp. *chondrosperma* (Blinks) (Gwlyddyn y Ffynnon). Short grazed turf nr. track, N of Hay Bluff, Black Mountains, SO239.371, M. & C. Porter, 2003.
- +46/5.3. *Stellaria pallida* (Lesser Chickweed) (Gwlydd y Tywod). +Base of castle walls, Tretower, SO185.212; +Edge of path, Crickhowell, SO212.183; both, M. & C. Porter, 2004. 2<sup>nd</sup> records & 1<sup>st</sup> since 1957.
- +†46/7.3. *Cerastium tomentosum* (Snow-in-summer) (Clust Llygoden y Felin). Stone walls, Llywel, SN870.300, M. & C. Porter, 2004.
- +46/7.10. *Cerastium diffusum* (Sea Mouse-ear) (Clust Llygoden Arfor). Hill pasture, Moel Penderyn, SN938.086, M. & C. Porter, 2004.
- +46/10.3. *Sagina subulata* (Heath Pearlwort) (Corwlyddyn Mynawydaidd). Alongside ride in conifer plantation, Nant-yr-hwch 3km NE of Abergwesyn, SN879.550, M. & C. Porter, 2003.
- +46/10.7b. *Sagina apetala* subsp. *erecta* (Annual Pearlwort) (Corwlyddyn Anaf-flodeuog). Stonework of Dam, Cantref Reservoir, SN997.154, M. & C. Porter, 2003.
- +46/17.4. *Spergularia rubra* (Sand Spurrey) (Troellys Coch). +Stony track, Track in Nant Rhiwnant, SN892.607, 2003; +Field gateway, Hay-on-Wye, SO225.419, 2004; both M. & C. Porter.
- +†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.
- +†47/1.3. *Persicaria wallichii* (Himalayan Knotweed) (Clymog yr Himalaya). Waste ground, Brynmawr, SO185.116, A. & V. Lewis, 2004.
- +†47/5.3. *Fallopia baldschuanica* (Russian-vine) (Taglys Tibet). Derelict building, Pont Felin Crai, SN881.235, M. & C. Porter, 2003.
- +†53/1.7. *Malva neglecta* (Dwarf Mallow) (Hocys Bychan). ‡Rubble, waste ground beside house, Fenni-fach Lane, Brecon, SO034.289, C. Dyson, 2003. 1<sup>st</sup> record for 50yrs.
- +57/1.5. *Viola reichenbachiana* (Early Dog-violet) (Gwilydd y Goedwig). Deciduous woodland, 2km NW Cefn-coed-y-cymmer, SO020.094, M. & C. Porter, 2004.
- +57/1.11. *Viola lutea* (Mountain Pansy) (Fioled y Mynydd). Hill grassland, Banc-y-celyn, SO055.463, M. & C. Porter, 2004.
- +61/2.1.1. *Salix pentandra* (Bay Willow) (Helygen Beraroglaidd). Lane hedge, 1.5km NE of Llanfihangel Nant Bran, SN955.349, M. & C. Porter, 2004.
- +61/2.9×11. *Salix × holosericea* (*S. viminalis* × *S. cinerea*) (Silky-leaved Osier) (Helygen Dail Sidan). River bank, 3km SE Builth Wells, SO066.490, M. & C. Porter, 2004.
- +61/2.11×12. *Salix × multinervis* (*S. cinerea* × *S. aurita*) (a hybrid willow). +Rough grassland, edge of common, Comin-cefn-poeth, c.1km NW of Cilmeri, SN992.518, 2003; +Lane hedge, near Pant-y-celyn Chapel, SN995.420, 2004; +Plantation, 2km SW Llaneglwys, SO044.374, 2004; all M. & C. Porter.
- +†62/8.1. *Hesperis matronalis* (Dame's-violet) (Disawr). +Wide verge and ditch, Nant Tresglen, Halfway, SN834.328; +Rough grassland, N end of Cantref Reservoir, SN993.163; both M. & C. Porter, 2003.
- +†62/11.4. *Barbarea verna* (American Winter-cress) (Berwr Tir). Waste ground, near Railway Station, Garth, SN953.494, M. Richards, 2001.
- +†62/13.1. *Armoracia rusticana* (Horse-radish) (Rhuddygl Poeth). Roadside verge, N of Cantref Reservoir, SN992.165, M. & C. Porter, 2003.
- \*†62/14.1. *Cardamine bulbifera* (Coralroot) (Deintwraidd). Introduced to shady hedgebank, field side of hedge, 1.5km N of Cwmdu, SO181.252, S. Leitch & S. Juniper, 2003. 1<sup>st</sup> Welsh record.
- +†62/16.1. *Aubrieta deltoidea* (Aubretia) (Obrisia). Road bank (near chapel), Llanwrthwl, SN977.634, M. & C. Porter, 2003.
- +62/22.2. *Erophila verna* (Common Whitlowgrass) (Llys y Bystwn). +Roadside, Sennybridge, near Rhyd-y-briw Church, SN919.289, 2003; +Waste ground, Penderyn, SN945.085, 2004; +Stone walls, Tretower, SO185.212, 2004, all M. & C. Porter.
- +†62/38.1. *Hirschfeldia incana* (Hoary Mustard) (Cedw Penllwyd). +Roadside verge, Glyntawe, SN845.164, 2003; +Road verge, Battle, SO011.309, 2004, both M. & C. Porter.
- +†63/1.1. *Reseda luteola* (Weld) (Melengu). +Disturbed road bank, Dorlangoch, Brecon, SO057.279, 2003; +River shingle, 1km NE of Glasbury, SO190.402, 2004; both M. & C. Porter.
- +64/1.1a. *Empetrum nigrum* subsp. *nigrum* (Crowberry) (Creiglys). Moorland, Banc-y-celyn, SO051.472, M. & C. Porter, 2004.

- +65/13.4. *Vaccinium vitis-idaea* (Cowberry) (Llys Coch). Submontane heath, 2km E of Cwmdru, SO199.237, M. & C. Porter; +Sandstone cliffs, Fan Gyhirych, SN88.19, T. Rich & P.A. Smith; both 2004.
- \*†69/3.1. *Cyclamen hederifolium* (Cyclamen) (Bara'r Hwch). Lane bank, 1km SW of Hay-on-Wye, SO222.417, M. & C. Porter, 2004. 1<sup>st</sup> record.
- +†69/4.5. *Lysimachia punctata* (Dotted Loosestrife) (Trewynyn Brych). +Churchyard, Gwenddwr, SO065.432; +River bank, Cwmgiedd, SN788.117; both 2003; +Waste ground, Llaneglwys, SO060.387, 2004; all M. & C. Porter.
- +†72/2.4. *Ribes sanguineum* (Flowering Currant) (Rhyfon Blodeuog). Waste ground, Llaneglwys, SO060.387, M. & C. Porter, 2004.
- +†73/3.1. *Sempervivum tectorum* (House-leek) (Llysiau Pen Tai). Old stone walls, New Forest Farm, 3km E of Llanigon, SO247.396, M. & C. Porter, 2004.
- +73/5.1. *Sedum rosea* (Roseroot) (Pren y Ddannoedd). †Churchyard, Gwenddwr, SO065.432, M. & C. Porter, 2003.
- +†73/5.4. *Sedum spectabile* (Butterfly Stonecrop) (Briweg Iar Fach yr Haf). +Chapel yard, Llwyn Madoc, SN893.537, 2004; +Waste ground, Hay-on-Wye, SO230.424, M. & C. Porter, 2004.
- +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.
- +†73/5.7. *Sedum spurium* (Caucasian-stonecrop) (Briweg Rwsieg). Stone walls, Hay-on-Wye, SO230.424, M. & C. Porter, 2004.
- +73/5.11. *Sedum forsterianum* (Rock Stonecrop) (Briweg Cymreig). †Dry-stone wall, Blaen-y-cwm, SO252.282, M. & C. Porter, 2004.
- \*†74/8.1. *Tellima grandiflora* (Fringe-cups) (Clychau'r Clawdd). Shaded hedgerow, Darren, Llangattock, SO202.162, A.S. Lewis, 2004. 1<sup>st</sup> record.
- +†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 Crickadam, SO094.424; +Scrub on limestone, Blackrock, Cwm Clydach, SO217.127, herb. MP; all M. & C. Porter, 2003.
- +75/9.13b. *Potentilla erecta* subsp. *strictissima* (Tormentil) (Tresgl y Mochl). +Road bank, Cwm Dyfnant, SN904.431; +Roadside bank, 2km S of Beulah, SN921.491; both M. & C. Porter, 2003.
- +75/9.14. *Potentilla anglica* (Trailing Tormentil) (Tresgl Ymlusgol). Roadside bank, 3km NE of Abergwesyn, SN883.543, M. & C. Porter, 2003.
- +75/9.14×15. *Potentilla × mixta* (*P. erecta* × *P. reptans* or *P. anglica* × *P. reptans*) (Hybrid Cinquefoil). Road bank, 2km S of Beulah, SN921.490, M. & C. Porter, 2003.
- +75/15.2. *Agrimonia procera* (Fragrant Agrimony) (Llys y Dryw Peraroglus). Wide verge and ditch, Nant Tresglen, Halfway, SN834.328, 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, Abergwesyn, SN854.524, 2004; all M. & C. Porter.
- +75/21.13b. *Rosa caesia* subsp. *vosagiaca* (Glaucous Dog-rose) (Rhosyn Llwydwyrdd). Scrub, near Cantref Reservoir, SN996.157, M. & C. Porter, 2003.
- +75/28.24. *Sorbus torminalis* (Wild Service-tree) (Cerddinen Folwst). A single tree in hedge & several small plants on lane bank below, 0.5km E. of Llanbedr, SO246.201, M. & C. Porter, 2003.
- +†75/32.21. *Cotoneaster horizontalis* (Wall Cotoneaster) (Cotoneaster y Mur). +Forestry plantation near car park, 2km. S. of Abergwesyn, SN856.507; +Roadside wall, Llanwrthwl, SN977.637; both M. & C. Porter, 2003.
- +77/10.3. *Ornithopus perpusillus* (Bird's-foot) (Troed yr Aderyn). Sandy ground, rough pasture, Talybont-on-Usk, SO114.234, M. & C. Porter, 2004.
- +77/14.1. *Vicia orobus* (Wood Bitter-vetch) (Pysen y Coed). Bank of lane, 2.5km NE of Halfway, SN847.352, M. & C. Porter, 2003.
- +79/2.4. *Myriophyllum alterniflorum* (Alternate Water-milfoil) (Myrddail Bob yn Ail). Moorland stream, 4km NW of Upper Chapel, SN991.423, M. & C. Porter, 2004.
- +81/1.3. *Lythrum portula* (Water-purslane) (Troed y Gywen). W shore, Talybont Reservoir, SO100.198, M. & C. Porter, 2003.
- +85/1.1. *Cornus sanguinea* (Dogwood) (Cwytros). Lane hedge, 1.5km. W of Llangammarch Wells, SN922.469, M. & C. Porter, 2003.
- +92/2.1. *Frangula alnus* (Alder Buckthorn) (Brewwydden). †Planted in new wood, near Llandefaclog-fach, SO022.322, M. & C. Porter, 2004.

- \*†93/2.1. *Parthenocissus quinquefolia* (Virginia-creeper) (Dringwr Fflamgoch). Established for 15 years on stone walls of bridge, Llangynidr, SO152.202, M. & C. Porter, 2004. 1<sup>st</sup> record.
- +†94/1.2. *Linum usitatissimum* (Flax) (Llin Amaeth). Laneside ditch, 5km W of Llanddew, SO041.308, M. & C. Porter, 2002.
- +†102/1.3. *Oxalis corniculata* (Procumbent Yellow-sorrel) (Suran Felen Orweddol). +Churchyard path and stone crevices, Alltmaur, SO073468, 2003; +Pavement, Craig-y-nos Country Park, SN840.155, 2004; both M. & C. Porter.
- +†103/1.1. *Geranium endressii* (French Crane's-bill) (Troedrudd Ffrengig). Waste ground along Afon Twrch, Ystradoweu, SN756.125, M. & C. Porter, 2003.
- +103/1.10. *Geranium columbinum* (Long-stalked Crane's-bill) (Pig yr Aran Hirgoesog). Roadside bank, near Penwyllt, SN848.151, M. & C. Porter, 2004.
- +†103/1.14. *Geranium pyrenaicum* (Hedgerow Crane's-bill) (Pig yr Aran y Gwrych). Road verge, Nant-ddu, SN999.152, M. & C. Porter, 2004.
- +†105/1.4. *Impatiens glandulifera* (Indian Balsam) (Jac y Neidiwr). River bank, Bank of Afon Twrch near Ystradowen, SN756.124, M. & C. Porter, 2003.
- +107/34.2. *Carum verticillatum* (Whorled Caraway) (Carwas Troellog). Moorland flush, Waen Hirwaun, SO049.456, M. & C. Porter, 2004.
- +108/5.4a. *Gentianella amarella* subsp. *amarella* (Autumn Gentian) (Crwynllys Chwerw). Mountain pasture on limestone, Llangattock Quarries, SO198.158, M. & C. Porter, 2003.
- +†110/8.7. *Solanum tuberosum* (Potato) (Taten). Waste ground, Llaneglwys, SO060.387; +†River shingle, 1km NE of Glasbury, SO190.402; both M. & C. Porter, 2004.
- +†111/3.3. *Calystegia pulchra* (Hairy Bindweed) (Taglys Blewog). +Waste ground near car park, Brecon, SO047.285, 2003; +River bank, Upper Cwmwtrch, SN759.107, 2004; both M. & C. Porter.
- +†111/3.4. *Calystegia sylvatica* (Large Bindweed) (Taglys Estron). Hedge and wall of bridge, 2km NE of Abergwesyn, SN874.537, M. & C. Porter, 2003.
- +†113/2.1. *Nymphoides peltata* (Fringed Water-lily) (Ffaen Gors Eddiog). Pool, S of Llanelly Hill, SO217.113, M. & C. Porter, 2004.
- +†116/3.1. *Pulmonaria officinalis* (Lungwort) (Llys yr Ysgyfaint). River bank, Builth Wells, SO035.515, M. & C. Porter, 2004.
- +†116/4.1×2. *Symphytum* × *uplandicum* (*S. officinale* × *S. asperum*) (Russian Comfrey) (Cyfardwf Glas). Derelict garden, Abergwesyn, SN854.527, M. & C. Porter, 2003.
- +†116/8.1. *Pentaglottis sempervirens* (Green Alkanet) (Llys y Gwrid). Waste ground under viaduct, near Cefn-coed-y-cymmer, SO022.086, M. & C. Porter, 2004.
- +118/6.5. *Galeopsis bifida* (Bifid Hemp-nettle) (Penboeth Lleiaf). Rough grassland, 1km NW of Cilmerly, SN996.520, M. & C. Porter, 2003.
- +118/10.4. *Scutellaria minor* (Lesser Skullcap) (Cwcwll Bach). Flush in hill grassland, Tor y Foel, SO111.201, M. & C. Porter, 2004.
- +†118/16.1. *Melissa officinalis* (Balm) (Gwehynddail). Rough grassland, N end of Cantref Reservoir, SN993.163, M. & C. Porter, 2003.
- +†118/23.1×2×3. *Mentha* × *smithiana* (*M. arvensis* × *M. aquatica* × *M. spicata*) (Tall Mint) (Mintys Coch). Shingle bank of River Wye, 1km N of Newbridge-on-Wye, SO012.593, M. & C. Porter, 2003.
- +†118/23.3. *Mentha spicata* (Spear Mint) (Mintys Ysbigog). Rough grassland, N end of Cantref Reservoir, SN993.163, M. & C. Porter, 2003.
- \*†118/LAV.int. *Lavandula* × *intermedia* (*L. angustifolia* × *L. latifolia*) (Garden Lavender) (Lafant). Pavement, Hay-on-Wye, SO229.426, M. & C. Porter, 2004. 1<sup>st</sup> record.
- +121/2.1. *Littorella uniflora* (Shoreweed) (Beistonnell). W shore near entry of Afon Tarthwyni, Talybont Reservoir, SO100.198, 2003; +Margin of reservoir, near Garnlydan, SO173.133; both M. & C. Porter, 2004.
- +†122/1.2. *Buddleja davidii* (Butterfly-bush) (Llwyn Iâr Fach). River bank, Builth Wells, SO038.515, M. & C. Porter, 2004.
- +†123/3.1. *Syringa vulgaris* (Lilac) (Leilac). Hedges, Glyn Tarell, SN985.246, M. & C. Porter, 2003.
- +†124/1.9. *Verbascum nigrum* (Dark Mullein) (Pannog Tywyllddu). ‡Open stony waste, Pen-y-wern Wood, 1km S of Aberyscir, SO001.292, A. & V. Lewis, 2004.
- +124/2.2. *Scrophularia auriculata* (Water Figwort) (Gorneth y Dwr). Grassland/scrub on bank of Afon Twrch near Ystradowen, SN756.125, M. & C. Porter, 2003.
- +†124/4.2×3. *Mimulus* × *robertsii* (*M. guttatus* × *M. luteus*) (Hybrid Monkeyflower). Afon Irfon, 3km E of Garth, SN980.492, M. & C. Porter, 2003.

- +‡124/7.1. *Antirrhinum majus* (Snapdragon) (Safn y Llew). Disturbed ground on bank of Afon Twrch, Ystradowen, SN756.125, M. & C. Porter, 2003.
- +‡124/8.2. *Chaenorhinum minus* (Small Toadflax) (Gingroen Bychan). Landscaped spoil heaps on old coal mine, 1km NE of Ystradowen, SN757128, M. & C. Porter, 2003.
- +‡124/13.4. *Linaria repens* (Pale Toadflax) (Gingroen Gwelw). River bank, 1km NE of Glasbury, SO184.404, M. & C. Porter, 2004.
- +‡124/16.19. *Veronica agrestis* (Green Field-speedwell) (Rhwyddlwyn Gorweddol). Waste ground, Llaneglwys, SO060.387, M. & C. Porter, 2004.
- +124/20.7. *Euphrasia nemorosa* [Woodland Eyebright] (Llygad Effros). Grass verge, 1km W of Llaneglwys, SO052.388, M. & C. Porter, 2004.
- +124/20.9. *Euphrasia confusa* [Dwarf Eyebright] (Effros Bach Gliniog). +Hill grassland, Esgair Garthen, S. of Claerwen Reservoir, SN83.64; +Bank of disused railway, now pasture, 1km N of Newbridge-on-Wye, SO012588; both M. & C. Porter, 2003.
- +124/24.2b. *Rhinanthus minor* subsp. *stenophyllus* (Yellow-rattle) (Cribell Felen). Road bank, Cwm Dyfnant, 2km. S of Cefn-gorwydd, SN904431, M. & C. Porter, 2003.
- +125/1.1. *Lathraea squamaria* (Toothwort) (Dantlys). Deciduous woodland, 2km NW Cefn-coed-y-cymmer, SO020.092, M. & C. Porter, 2004.
- \*‡129/1.10. *Campanula poscharskyana* (Trailing Bellflower) (Clychlys Ymlusgol). Established over 20 years on lane bank, 1km NE Llangynidr, SO165.198, M. & C. Porter, 2004. 1<sup>st</sup> record.
- +129/1.12. *Campanula trachelium* (Nettle-leaved Bellflower) (Clychlys Danadl). Lane bank, 1km NE of Llangynidr, SO161205, M. & C. Porter, 2003.
- +130/6.1. *Galium boreale* (Northern Bedstraw) (Briwydden Fynyddig). Sandstone cliffs, Fan Gyhirych, SN88.19, T. Rich & P.A. Smith, 2004.
- +130/6.7b. *Galium mollugo* subsp. *erectum* (Upright Hedge-bedstraw) (Briwydden Syth). Roadside bank, 1.5km NW of Llywel, SN863313, M. & C. Porter, 2003.
- +130/6.9. *Galium sternerii* (Limestone Bedstraw) (Briwydden y Garreg Galch). Rock outcrops, hill grassland, 2km E of Cwmdru, SO200.235, M. & C. Porter, 2004.
- +‡131/6.4. *Lonicera xylosteum* (Fly Honeysuckle) (Gwyddfid Syth). Lane hedge, near Pant-y-celyn Chapel, SN993.421, M. & C. Porter, 2004.
- +133/1.1. *Valerianella locusta* (Common Cornsalad) (Llysiau'r Oen). ‡Garden weed, Llangorse, SO137.274, D. Mitchell, 2004.
- +‡133/1.2. *Valerianella carinata* (Keeled-fruited Cornsalad) (Llysiau'r Oen Rhychiog). +Road verge, 1km NE of Glyntawe, SN850172; +Base of wall, Brecon (Cradoc Road), SO040290; both M. & C. Porter, 2003.
- +134/1.1. *Dipsacus fullonum* (Wild Teasel) (Crib y Pannwr). ‡Disturbed sandy ground, Talybont-on-Usk, SO114.234, M. & C. Porter, 2004.
- +135/2.1. *Carlina vulgaris* (Carline Thistle) (Ysgallen Siarl). Shore of reservoir, 1km SW of Elan Village, SN924.643, M. & C. Porter, 2004.
- +135/31.1. *Antennaria dioica* (Mountain Everlasting) (Edafeddog y Mynydd). Hill pasture, Moel Penderyn, SN940.090, M. & C. Porter, 2004.
- +‡135/58.lac\*max. *Leucanthemum* × *superbum* (*L. lacustre* × *L. maximum*) (Shasta Daisy) (Llygad Ych Mawr). Waste ground, Brynmawr, SO185.114, A. & V. Lewis, 2004.
- +‡135/59.1. *Matricaria recutita* (Scented Mayweed) (Amranwen). Edge of track, near Llandefaelog-fach, SO026.321, M. & C. Porter, 2004.
- +‡135/62.13. *Senecio squalidus* (Oxford Ragwort) (Creulys Rhydychen). Edge of track, Nant-ddu, SO002.150, M. & C. Porter, 2003.
- +135/62.17. *Senecio sylvaticus* (Heath Groundsel) (Creulys y Rhosydd). +Cleared woodland, near Llandefaelog-fach, SO026.321; +Disturbed sandy ground, Talybont-on-Usk, SO114.234; both M. & C. Porter, 2004.
- +‡135/71.2. *Petasites japonicus* (Giant Butterbur) (Alan Gawr). River bank where Afon Irfon joins Afon Wye, Builth Wells, SO033515, S.P. Chambers, 2003.
- \*‡135/74.1. *Ambrosia artemisiifolia* (Ragweed) (Bratllys). ‡Edge of garden path (possibly from birdseed), 3km SW Brecon, SO022.261, C. Allum, 2003, herb. MP. 1<sup>st</sup> record.
- +‡135/79.1. *Helianthus annuus* (Sunflower) (Blodau'r Haul). ‡River bank, Builth Wells, SO038.515, M. & C. Porter, 2004.
- \*‡135/80.1. *Galinsoga parviflora* (Gallant-soldier) (Galinsoga). Edge of path, Crickhowell, SO212.183, M. & C. Porter, 2004, herb. MP. 1<sup>st</sup> record.

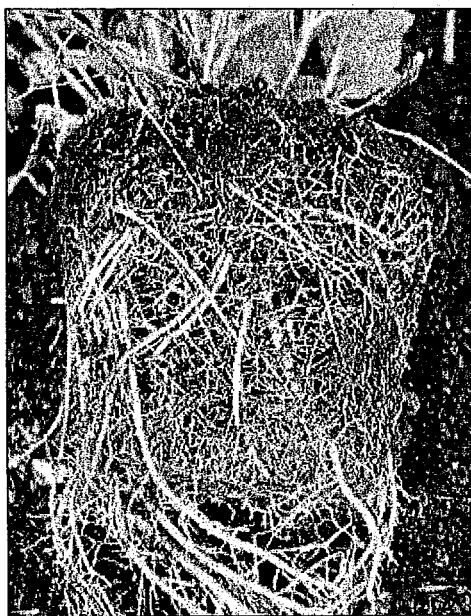


1. *Melittis melissophyllum* (Bastard Balm). Photo: Stephen Evans.



2

3



4



5

2. *Melittis melissophyllum* (Bastard Balm)  
at Pen Anglas sea-cliff, SM951.400.  
Photo: Stephen Evans.

3. *Melittis melissophyllum* (Bastard Balm),  
new shoot in burnt ground at Pen Anglas  
SM951.400.  
Photo: Stephen Evans.

4. *Melittis melissophyllum* (Bastard Balm),  
plant derived from seedling from gravel  
at Coed Devonald, SN122.401.  
Photo: Stephen Evans.

5. *Campanula persicifolia* (Peach-leaved  
Bellflower) (on left) growing with  
*Campanula poscharskyana* (Trailing  
Bellflower) on top of old stone boundary  
wall, Llanelli, Carm. SN514.004 (see  
Welsh Plant Records).  
Photo: Richard Pryce, June 2003.

6. *Veronica peregrina* (American  
Speedwell), Pont Bacas, Bynea, Carm.  
SS553.983 (see Welsh Plant Records).  
Photo: Richard Pryce, April 2002.



6



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.





- +‡138/6.1. *Lagarosiphon major* (Curly Waterweed) (Pib-flodyn Crych). +Pond, Craig-y-nos Country Park, SN842.160; +Water trough and small pond, Greenpit Farm, Hay-on-Wye, SO223.414; both M. & C. Porter, 2004.
- +148/1.1. *Spirodela polyrrhiza* (Greater Duckweed) (Llinad Mawr). Oxbow pool, 1km NE of Glasbury, SO185.401, M. & C. Porter, 2004.
- +‡151/1.2. *Juncus tenuis* (Slender Rush) (Brwynen Fain). Road verge, 1.5km SW of Rhayader, SN954.667; +Track in conifer plantation, near Llaneglwys, SO043.379; both M. & C. Porter, 2004.
- +151/1.6. *Juncus foliosus* (Leafy Rush) (Brwynen Ddeilllog). Damp area beside path through plantation, 2km S of Abergwesyn, SN856.508; +Ditches in wet grassland, along track W of Craig Llanerch-y-cawr, SN895.613; both M. & C. Porter, 2003.
- +152/3.5. *Eleocharis quinqueflora* (Few-flowered Spike-rush) (Sbigfrwynen Goch). +Edge of moorland pool, Banc-y-celyn, SO051.472; +Flush in hill grassland, N slope of Tor y Foel, SO111.201; both M. & C. Porter, 2004.
- +152/16.5. *Carex otrubae* (False Fox-sedge) (Hesgen Dywysennog). +Grassy verge beside lane and Afon Giedd, Cwmgiedd, SN788.117; +Wet, rough grassland, below Cantref Reservoir dam, SN998.152; both M. & C. Porter, 2003.
- +152/16.7. *Carex spicata* (Spiked Sedge) (Hesgen Dywysennog Bortffor). Road verge, 3km E of Garth, SN979.492, M. & C. Porter, 2003.
- +152/16.8b. *Carex muricata* subsp. *lamprocarpa* (Small-fruited Prickly-sedge) (Hesgen Bigog Hwyr). +Roadside bank, Hay-on-Wye, SO225.419; +Hedgebank, 3km SE of Hay-on-Wye, SO251.391; both M. & C. Porter, 2004.
- +152/16.9a. *Carex divulsa* subsp. *divulsa* (Grey Sedge) (Hesgen Lwydilas). Lane verge, 0.5km E of Llanbedr, SO246.200, M. & C. Porter, 2003.
- +152/16.29. *Carex vesicaria* (Bladder-sedge) (Hesgen Chwysigennaidd). Edge of pool, 2.5km W of Llaneglwys, SO040.376, M. & C. Porter, 2004.
- +152/16.31. *Carex pendula* (Pendulous Sedge) (Hesgen Bendrymus). +Shaded bank of Afon Giedd, 1km N of Cwmgiedd, SN790.125, 2003; +‡Probably garden escape on lane verge, near Llandefaelog-fach, SO026.321, 2004; +‡Beside forestry track (probably introduced), Esgair Dafydd, SN840.448, 2004; all M. & C. Porter.
- +152/16.44×46. *Carex × fulva* (*C. hostiana* × *C. viridula*) (a hybrid sedge). +Rough grassland, Nant Arban, S of Claerwen Reservoir, SN865.633; +Rough wet grassland, Comin-cefn-poeth, SN988.518; both M. & C. Porter, 2003.
- +152/16.54. *Carex montana* (Soft-leaved Sedge) (Hesgen Feddal). Rocky outcrops, near Craig Cwm Glaisfer, SO148.166, M. & C. Porter, 2004.
- +153/21.1. *Catapodium rigidum* (Fern-grass) (Gwenithwellt Caled). Plantation track, Coed-y-rhaiadr, SN889.102, M. & C. Porter, 2004.
- +‡153/28.5. *Avena sativa* (Oat) (Ceirch). River bank, Builth Wells, SO038.512, M. & C. Porter, 2004.
- +153/35.1. *Aira caryophyllaea* (Silver Hair-grass) (Brigwellt Arian). Lane bank, 1km W of Llaneglwys, SO052.388, M. & C. Porter, 2004.
- +153/39.8. *Agrostis vinealis* (Brown Bent) (Maeswellt y Cwn). Grassy bank, edge of pasture, near river bank, c.0.5km N of Llangoed, SO120406, M. & C. Porter, 2003.
- +‡153/50.7. *Bromus secalinus* (Rye Brome) (Pawrwellt Ller). Around gateway and margins of unsprayed wheat field, NW of Pant-y-cored, SO042331, S.P. Chambers, 2003; +Cleared woodland, near Llandefaelog-fach, SO026.321, M. & C. Porter, 2004.
- \*‡153/ZEa.may. *Zea mays* (Maize) (Indrawn). Two plants near bird feeding station in yard, probably introduced with bird seed, Llangynidr, SO168196, M. Porter, 2003. 1<sup>st</sup> record.
- +‡158/12.2. *Lilium pyrenealium* (Pyrenean Lily) (Cap y Twrc Melyn). Hedgebank in village, Heol Senni, SN927234, M. & C. Porter, 2003. 1<sup>st</sup> recent record.
- \*‡158/24.15. *Allium sphaerocephalon* (Round-headed Leek) (Cenhinen Bengrwn). Waste ground, Brynmawr, SO185.114, A. & V. Lewis, 2004. 1<sup>st</sup> Welsh record.
- +‡158/32.1. *Galanthus nivalis* (Snowdrop) (Eirlys). Hedge near chapel, Cwm Wysg, SN851.283, M. & C. Porter, 2003.
- \*‡158/32.2. *Galanthus elwesii* (Greater Snowdrop). Grassland in churchyard, Ystradgynlais, SN787.099, M. & C. Porter, 2004, herb. MP. 1<sup>st</sup> record.
- \*‡158/33.3. *Narcissus poeticus* subsp. *poeticus* (Pheasant's-eye Daffodil) (Gylfinog Barddol). +Lane verge, Partrishow, SO278.223, 2002; +Road verge, Brecon, SO066.278, 2003; +River bank, Hay-on-Wye, SO230.427, 2004; all M. & C. Porter. 1<sup>st</sup> & subsequent records.

- \*†158/33.3×5. *Narcissus × incomparabilis* (*N. poeticus* × *N. pseudonarcissus*) (Nonesuch Daffodil). +Road verge, Llyswen, SO132.380; +Road verge, Garth, SN954.495; +Road verge, Brecon, SO066.278; all M. & C. Porter, 2002. 1<sup>st</sup> & subsequent records.
- +†159/8.1. *Crocus vernus* (Spring Crocus) (Saffrwm y Gwanwyn). +Grassland in chapel yard, Cwm Wysg, SN851.283, 2003; +Naturalised in churchyard, Trallong, SN965.295, 2003; +River bank, Ystradgynlais, SN786.100, 2004; all M. & C. Porter.
- \*†159/8.2. *Crocus tommasinianus* (Early Crocus). +Lane verge, Llangynidr, SO166.197; +Churchyard: naturalised in grassland, Coelbren, SN850.116; both M. & C. Porter, 2003. 1<sup>st</sup> & 2<sup>nd</sup> records.
- \*†159/8.ang×7. *Crocus × stellaris* (*C. angustifolius* × *C. flavus*) (Yellow crocus). +Grassland, churchyard, Ystradgynlais, SN787.100; +Waste ground, Penderyn, SN945.085; both M. & C. Porter, 2004. 1<sup>st</sup> records.
- +162/10.1. *Hammarbya paludosa* (Bog Orchid) (Gefell-lys y Gors). Boggy ground near stream, 4km NE of Abergwesyn, SN87.56, M. & C. Porter, 2003.
- +162/18.3×5. *Dactylorhiza × latirella* (*D. incarnata* × *D. purpurella*) (a hybrid marsh-orchid). Wet clearing in plantation, Coed-y-rhaiadr, SN886.102, M. & C. Porter, 2004.
- +162/18.4. *Dactylorhiza praetermissa* (Southern Marsh-orchid) (Tegeirian y Gors). Large population in rough fields and pool margin, S of Llanelly Hill, SO217.111, M. & C. Porter, 2004.
- +162/18.5. *Dactylorhiza purpurella* (Northern Marsh-orchid) (Tegeirian y Ffign). +Plantation, Coed-y-rhaiadr, SN892.099; +A few plants in rough fields, S of Llanelly Hill, SO218.113; both M. & C. Porter, 2004.

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

- +*Chara globularis* var. *virgata* (a stonewort). Pwll Ash Lagoon SSSI, SN470.010, A.O. Chater, A. Hale, S.D.S. Bosanquet & R.D.Pryce, 2001, abundant in small pools, det. A. Hale.
- \*4/1.3. *Equisetum variegatum* var. *wilsoni* (Variegated Horsetail) (Marchrawn Amrywiol). Large patches, c.20m×5m (approx.) in calcareous flushed area on floor of disused Carboniferous Limestone Quarry, near kilns, Pentregwenlais Quarry, Llandybie, SN608.163, I.K. Morgan & R.N. Stringer, 2003, NMW & herb. CNP, conf. C.N. Page. 1<sup>st</sup> record for variety outside Killarney, Ireland (teste CNP).
- \*4/1.5×8. *Equisetum × rothmaleri* (*E. arvense* × *E. palustre*) (a hybrid horsetail). Many plants in calcareous flushed area on floor of disused Carboniferous Limestone Quarry, near kilns, Pentregwenlais Quarry, Llandybie, SN608.163, BSBI meeting, col. & det. S. Thomas, 2003, NMW & herb. CNP, conf. C.N. Page. 1<sup>st</sup> confirmed record.
- \*4/1.8pol. *Equisetum palustre* var. *polystachyum* (Marsh Horsetail) (Marchrawn y Gors). Derelict colliery, Emlyn Colliery site, Penygroes, SN579.134, I.K. Morgan, 2003, NMW, conf. G. Hutchinson. 1<sup>st</sup> record of variety.
- +5/1.1. *Ophioglossum vulgatum* (Adder's-tongue) (Tafod y Neidr). About 20 plants in shady area under *Prunus spinosa*, Tireithin, Bancffosfelen, SN494.126, Llanelli Naturalists, 2003.
- +10/1.1. *Hymenophyllum tunbrigense* (Tunbridge Filmy-fern) (Rhedyinach Teneuwe). +Wooded ravine, Glynhir, near Pont-Henri, SN473.103, I.K. Morgan & R.N. Stringer, 2000; +In narrow defile in wooded cwm, SW of Cencoed-uchaf Farm, Cwm Mawr, Llanelli, SN478.031; +Large population on Pennant Sandstone cliff in oak/ash woodland, Allt Troserch, Llangennech, SN547.043, probably the largest population in the v.c.; both S.D.S. Bosanquet, 2002.
- +10/2.1. *Trichomanes speciosum* (gametophyte) (Killarney Fern) (Rhedynen Wrychog). +Streamside N of Duke's Meadow, Pendine, SN241.090, I.K. Morgan, 2001; +NW of Cilmarth, SN403.133, I.K. Morgan & R.N. Stringer, 2001; +Nant Cwm Crymlyn, SN344.177; +Cwmyrarian, SN404.145; both I.K. Morgan & R.N. Stringer, 2002; +Pennant Sandstone rock outcrops in wooded ravine, Cwm Mawr, Llanelli, SN478.029, S.D.S. Bosanquet & I.K. Morgan, 2002.
- +17/3.5. *Dryopteris aemula* (Hay-scented Buckler-fern) (Marchredynen Aroglus). +Wooded ravine, Glynhir near Pont-Henri, SN473.103, 2000; +In deep sink-hole with mature oaks, etc., Marros Mountain, SN200.095, 2002, both I.K. Morgan & R.N. Stringer.
- \*†24SAU/HOU.cor. *Houttuynia cordata*. Brought in with rubble to make track on disturbed ground, Waun-y-gwiall fach, Four Roads, SN446.084, A. Stevens, 2003, det. C.D. Preston from photo. 1<sup>st</sup> Welsh record.
- \*‡28/9.2. *Anemone apennina* (Blue Anemone) (Blodyn y Gwynt Glas). Shrubberies, Llanybyther [sic], Carmarthen, SN41.40, G. Thomas, 1928, LTR, C.A. Stace. 1<sup>st</sup> record.
- \*28/9.hup×vit. *Anemone × hybrida* (*A. hupehensis* × *A. vitifolia*) (Japanese Anemone). One clump on disturbed ground on new embankment, Yspitty, Bynea, SS557.984, A. & V. Lewis, 2004. 1<sup>st</sup> record.

- \*†40/2.3. *Alnus cordata* (Italian Alder). \*Wind-blown seedling in garden, Coronation Road, Llanelli, SS514.999, I.K. Morgan, 1996; self-sown plants, Cynheidre, 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, Llampumsaint, 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.
- +†43/1.8. *Chenopodium polyspermum* (Many-seeded Goosefoot) (Troed yr Wydd Luos-hadog). Roadside verge, Carmel Woods NNR, SN605.164, V. & A. Lewis, 2004.
- +57/1.1. *Viola odorata* (Sweet Violet) (Fioled Bêr). Frequent & probably native in hedgerows, E of Dyffryn level crossing, Berwick, Bynea, SS547.984, V. & A. Lewis, 2004.
- 61/2.5. *Salix purpurea* (Purple Willow) (Helygen Gochlas). ‡Scores of plants self sown in cracks in concrete-lined river channel, SW of Ashpits Pond, Burry Port, SN461.008, I.K. Morgan, 2003.
- +62/12.3. *Rorippa islandica* (Northern Yellow-cress) (Berwr Melyn y Gogledd). Farmyard, Acheth, Abergorlech, SN591.348, BSBI Meeting, 2004, det. R.D. Pryce & A.O. Chater.
- \*†62/16.1. *Aubrieta deltoidea* (Aubretia) (Obrisia). Self sown plant in tarmac surfaced lane, off Station Road, Llangennech, SN562.015, R.D. Pryce & K.A. Cottingham, 2003. 1<sup>st</sup> record.
- +66/1.3b. *Pyrola rotundifolia* subsp. *maritima* (Round-leaved Wintergreen) (Coedwyrdd Cryddail). +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.
- +†69/3.1. *Cyclamen hederifolium* (Cyclamen) (Bara'r Hwch). Locally abundant with *C. coum*, on steep roadside bank, Llangathen, SN583.222, V. & A. Lewis, 2001. 2<sup>nd</sup> record.
- \*†73/5.13. *Sedum sexangulare* (Tasteless Stonecrop) (Briweg Diflas). Abundant by track in former opencast site, Tumble Community Woodlands, SN537.126, I.K. Morgan, 1985. Since obliterated by Carm. County Council.
- +75/6.1. *Filipendula vulgaris* (Dropwort) (Crogedyf). ‡Top of hedgebank, Groesffordd, SN232.216, D. Williams & J.A. Green, 2004, conf. H.J. Killick.
- +75/8.61. *Rubus ludensis* (a bramble). In eastern hedgerow of lane just S of junction with lane to Dolhuan Farm, near Farmyard Nurseries, Llandysul, SN426.408, D.E. Allen, A.O. Chater & R.D. Pryce, 1999.
- +†75/11.2. *Fragaria moschata* (Hautbois Strawberry) (Mefusen Fawr). Well naturalised at edge of ravine woodland outside walled garden, Glynhir Mansion, SN640.150, A.O. Chater *et al.*, 2004.
- +77/8.1. *Lotus glaber* (Narrow-leaved Bird's-foot-trefoil) (Troed Aderyn Culddail). ‡On old limestone gravel, Penyfan, Llanelli, SS517.994, J.N. Davies, 2001, NMW, det. G. Hutchinson; ‡Abundant on shale or sub-soil (presumably from seed-mix), Ffos-las partially restored opencast site, Trimsaran, SN457.058, R.N. Stringer, 2004. 1<sup>st</sup> & 2<sup>nd</sup> recent records.
- \*†77/8.2sat. *Lotus corniculatus* var. *sativus* (Common Bird's-foot-trefoil) (Pysen y Ceirw). +Secondary neutral grassland on restored opencast, Tumble Community Woodlands, SN547.132, R.D. Pryce, 2001; +Restored colliery site, Pont-y-clerc Tip, Ammanford, SN617.115, I.K. Morgan, 2004. 1<sup>st</sup> & 2<sup>nd</sup> records of variety.
- +77/15.12. *Lathyrus nissolia* (Grass Vetchling) (Ybysen Goch). ‡SW of Trostre Works, Llanelli, SS525.991, I.K. Morgan, 2002.
- \*+77/16.3. *Ononis spinosa* (Spiny Restharrow) (Tagaradr Pigog). ‡Subsoil bund, former opencast site, Ffos-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. 1<sup>st</sup> & 2<sup>nd</sup> records.
- +†77/19.19. *Trifolium incarnatum* (Crimson Clover) (Meillionen Ysgarlad). ‡North Dock Spit, Llanelli, SS498.993, I.K. Morgan, 2001. 2<sup>nd</sup> record.
- +†77/19.19a. *Trifolium incarnatum* subsp. *incarnatum* (Crimson Clover) (Meillionen Ysgarlad). ‡Paving crack in walled garden, National Botanic Garden of Wales, SN520.181, M. Godfrey & C. Cheffings, 2004. 2<sup>nd</sup> record for subspecies.
- \*†77/22.1. *Laburnum anagyroides* (Laburnum) (Tresi Aur). Several self-sown seedlings from nearby parent tree in back lane at base of wall, behind Walters Road, Llanelli, SN513.000, I.K. Morgan, 2001. 1<sup>st</sup> record for self-sown plants.
- \*†80/1.1. *Gunnera tinctoria* (Giant-rhubarb) (Rheonllys Mawr). Quarry pond (silica), Mynydd y Garreg, SN436.086, A. & V. Lewis, 2004. 1<sup>st</sup> record.
- \*†80/1.man. *Gunnera manicata* (Brazilian Giant-rhubarb) (Rheonllys Pigog). Garden throw-out, with *Crococsmia paniculata*, etc., in riverside woodland, near Clwttau, SN523.229, I.K. Morgan, 2001. 1<sup>st</sup> record.
- +†91/2.10. *Euphorbia exigua* (Dwarf Spurge) (Fflamgoed Fach yr Yd). Chapel yard, Cwm Capel, Burry Port, SN457.002, A. & V. Lewis, 2001, 'several nice plants' subsequently seen by I.K. Morgan on New Year's Eve, 2001, NMW.

- \*†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. 2<sup>nd</sup> & 3<sup>rd</sup> records for subsp.
- \*†91/2.17b. *Euphorbia characias* subsp. *veneta* (Mediterranean Spurge). One plant in rough grassland & several on old walls, between Robinson Street & Old Lodge, Llanelli, SS508.999, I.K. Morgan, 1997. 1<sup>st</sup> record.
- \*†100/1.1. *Rhus typhina* (Stag's-horn Sumach). Two well established trees on edge of open moorland, Cefn coed uchaf, Carreg Dwfn near Llandyfan, SN652.174, A. & V. Lewis, 2004. 1<sup>st</sup> 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. 1<sup>st</sup> & 2<sup>nd</sup> recent records.
- +†102/1.6. *Oxalis stricta* (Upright Yellow-sorrel) (Suran Felen Unionsyth). Naturalised on pavements NE of pub by B4297, Llangennech, SN565.023, I.K. Morgan, 2003, NMW, det. G. Hutchinson.
- \*†103/3.cit. *Pelargonium × citrosium* (Lemon-scented Geranium). One large plant in disused quarry, Mynydd y Garreg, SN435.085, A. & V. Lewis, 2004, herb. AL. 1<sup>st</sup> record.
- \*†107/44.1b. *Daucus carota* subsp. *sativus* (Carrot). Numerous plants on grassy track, Mynydd y Garreg, SN436.084, A. & V. Lewis, 2004. 1<sup>st</sup> Welsh record for subsp.
- +108/3.4. *Centaureum pulchellum* (Lesser Centaury) (Canri Leiaf). +Old quarry, W of Glyngwern, Felinfoel, Llanelli, SN533.024, I.K. Morgan & R.D. Pryce, 2003; +Damp waste ground on derelict/demolished factory site, Morfa de-tinning works, SS518.988, I.K. Morgan, 2004.
- \*108/6.2. *Gentiana pneumonanthe* (Marsh Gentian) (Crwynllys 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. 1<sup>st</sup> 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.
- \*†110/6.per. *Physalis peruviana* (Cape-gooseberry). Several plants with abundant *Lycopersicon esculentum* in disturbed waste ground, Machynys, Llanelli, SS508.982, A. & V. Lewis, 2004. 1<sup>st</sup> record.
- \*†110/NIC.ala×for. *Nicotiana × sanderae* (*N. alata* × *N. forgetiana*) (a hybrid tobacco). On pile of dumped soil/rubble, Morfa Bacas, E of Bryn Carnarvon Farm, Bynea, SS549.982, V. & A. Lewis, 2004. 1<sup>st</sup> record.
- +†115/1.1. *Phacelia tanacetifolia* (Phacelia). ‡Isolated self sown plants in flower beds, National Botanic Garden of Wales, SN520.181, M. Godfrey & C. Cheffings, 2004.
- +†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. 2<sup>nd</sup> 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/rubble, WDA Delta Lakes site, Machynys, Llanelli, SS508.984, A. & V. Lewis, 2004. 2<sup>nd</sup> & 1<sup>st</sup> recent record.
- +†124/4.2×3. *Mimulus × robertsii* (*M. guttatus* × *M. luteus*) (Hybrid Monkeyflower). Wet area in farm yard, Egerwen, SN592.391, BSBI Meeting, 2004, NMW, det. A.O. Chater. 3<sup>rd</sup> record.
- \*†124/16.18. *Veronica peregrina* (American Speedwell) (Rhwyddlwyn Tramor). ‡Disturbed stony waste, Pont Bacas, Bynea, SS553.983, A. & V. Lewis, 2002, NMW, det. T. Davies. 1<sup>st</sup> 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.
- +†129/1.4. *Campanula persicifolia* (Peach-leaved Bellflower) (Clychlys Peatws-ddail). Three clumps on old stone boundary wall-top, back lane of Glenalla Road, Llanelli, SN514.004, I.K. Morgan & R.N. Stringer, 2003, NMW, conf. G. Hutchinson.
- +†129/1.9. *Campanula portenschlagiana* (Adria Bellflower) (Clychlys Adria). Several plants naturalised on brick boundary wall, S side of Iscennen Road, Ammanford, SN626.124, R.D. Pryce, 2004.
- +129/1.11. *Campanula latifolia* (Giant Bellflower) (Clychlys Mawr). +†Garden escape, Dinefwr Court, Llandeilo, SN614.225; +†Waste ground, Morfa, Llanelli, SS521.989; both I.K. Morgan, 2002.
- \*†131/6.tat. *Lonicera tatarica* (Tartarian Honeysuckle). Established, Cross Hands, Llanboidy, SN1.2(W), G.M. Kay, M. Godfrey & S.F. Woodward, 2004. 1<sup>st</sup> record.
- +133/1.2. *Valerianella locusta* (Common Cornsalad) (Llysiau'r Oen). Shingle & gravel bank, Penrhyngwyn, Llanelli, SS516.973, V. & A. Lewis, 2004.
- +134/1.3. *Dipsacus pilosus* (Small Teasel) (Ffon y Bugail). +Edge of woodland, W end of dam, Lower Lliedi Reservoir, Llanelli, SN517.032, B. Gill, 2004, conf. A. & V. Lewis.

- +‡135/1.1. *Echinops sphaerocephalus* (Glandular Globe-thistle) (Ysgallen Bengrwn). On SW facing sandy bank, Pembrey Country Park, SN406.010, I.K. Morgan, 1998.
- +‡135/27.6. *Pilosella aurantiaca* (Fox-and-cubs) (Heboglys Euraid). On wall near pub, Cwmcych, SN275.361, D. Broughton, 2004.
- +135/30.1. *Filago vulgaris* (Common Cudweed) (Edafeddog). Stoney waste ground, Bynea, Llanelli, SS552.986, V. & A. Lewis, 2001.
- +‡135/43.4. *Erigeron karvinskianus* (Mexican Fleabane) (Cedowydd y Clogwyn). +Old stone boundary wall, Llangennech, SN561.013, R.D. Pryce & K.A. Cottingham, 2001; +Garden escape, Dinefwr Court, Llandeilo, SN614.225, I.K. Morgan, 2002.
- \*‡135/50.6. *Artemisia abrotanum* (Southernwood). On old wall, The Plas, Llansteffan, SN348.103, I.K. Morgan, 1993, 1<sup>st</sup> record.
- +‡147/1.1. *Acorus calamus* (Sweet-flag) (Gellesgen Bêr). Large clump, originally introduced, now well established on artificial lake margin, Sandy Water Park, Llanelli, SN496.002, I.K. Morgan, 2001.
- +148/1.1. *Spirodela polyrrhiza* (Greater Duckweed) (Llinad Mawr). In water tanks in walled garden, National Botanic Garden of Wales, SN520.181, J.A. Green, 2004, 3<sup>rd</sup> recent record.
- +148/2.3. *Lemna trisulca* (Ivy-leaved Duckweed) (Llinad Eiddew). +Abundant along 150m of Pembrey canal, NE of Ashburnham Hotel, SN436.009, I.K. Morgan, 2000; +Well established in artificial pond, Mill pond, Dinefwr Park, Llandeilo, SN609.222, M. Godfrey & C. Tero, 2004.
- \*151/1.25×26. *Juncus × diffusus* (*J. effusus* × *J. inflexus*) (Diffuse Rush) (Brwynen Dryledol). Unimproved grassland field, Cross Hands, SN563.133, M. & J. Iliff, 2001; +Rushy field, Gwynn Bach, Four Roads near Kidwelly, SN457.090, C. Cheffings & S. Thomas, 2004; both NMW, 1<sup>st</sup> & 2<sup>nd</sup> records.
- +‡152/6.1. *Scirpoides holoschoenus* (Round-headed Club-rush) (Clwbfrwynen Bengrwn). One clump amongst *Juncus inflexus* in disturbed ground of former grazing marsh, Morfa, Llanelli, SS511.987, R.D. Pryce, 2004, NMW, 2<sup>nd</sup> record.
- \*152/14.1. *Cladium mariscus* (Great Fen-sedge) (Corsfrwynen). Seven flowering stems in 2 distinct clumps, 5m apart, in vegetated, pulverised fuel ash (pfa) lagoon, developing fen, Pwll Ash Lagoon SSSI, SN471.010, R.D. & K.A. Pryce, 2004, NMW, 1<sup>st</sup> record.
- +152/16.7. *Carex spicata* (Spiked Sedge) (Hesgen Dywysennog Borffor). One plant only in rank neutral grassland around WDA development land, Machynys, Llanelli, SS508.984, R.D. & K.A. Pryce, 2004, NMW, conf. G. Hutchinson.
- \*‡153/39.3. *Agrostis castellana* (Highland Bent). Sown in restoration seed mix on site of restored coal washery, Pont-y-clerc, Ammanford, SN619.116, A.O. Chater & BSBI Field Meeting, 2004, NMW, 1<sup>st</sup> record.
- \*153/56.1×2. *Elytrigia × drucei* (*E. repens* × *E. atherica*) (a hybrid couch). With both parents on highest zone of saltmarsh, Tywyn Burrows, SN366.050; +With both parents on old power station site, Burry Port, SN459.006; both A.O. Chater & BSBI Group, 2004, NMW, 1<sup>st</sup> & 2<sup>nd</sup> records.
- +153/56.1ari. *Elytrigia repens* var. *aristata* (Common Couch) (Marchwellt). St Michael's Church, Ammanford, SN628.122, I.K. Morgan, 2003, NMW, det. G. Hutchinson.
- +153/63.1. *Molinia caerulea* (Purple Moor-grass) (Glaswellt y Gweunydd). ‡Well established with other acid grassland species on imported soil on road embankment, Bynea, Llanelli, SS543.986, R.D. Pryce, 2004.
- +‡153/68.1. *Echinochloa crus-galli* (Cockspur) (Cibogwellt Rhydd). Weed in raised flower bed, Stepney Street, Llanelli, SN506.003, I.K. Morgan, 1998, NMW, det. T.B. Ryves.
- +‡153/70.pum. *Setaria pumila* (Yellow Bristle-grass) (Cibogwellt Melyn). ‡Frequent near old peoples home and producing mature fruit, rear of Greenway Street, Llanelli, SN503.004, I.K. Morgan, 2002, NMW, det. G. Hutchinson.
- +‡159/2.1. *Sisyrinchium bermudiana* (Blue-eyed-grass) (Glaswellt Llygatlas). About 30 plants in flushed area next to path by *Ulex* on former opencast site, Mynydd Mawr, Tumble, SN543.125, I.K. Morgan, 2001, 1<sup>st</sup> record, according to May's List as a 'well established introduction on Towyn Burrows', P.W.T. Henry, 1950. Now considered to be native? and still extant as occasional plants over a wide area of the dunes.
- \*159/5.4. *Iris versicolor* (Purple Iris) (Iris Borffor). Three plants in small area of flushed tall fen under broadleaved trees dominated by *I. pseudacorus*, by Nant Mwrwg, Llangennech, SN557.016, R.D. Pryce & K.A. Cottingham, 2002, NMW, det. G. Hutchinson.
- +159/5.8. *Iris foetidissima* (Stinking Iris) (Iris Ddrewllyd). Ty-isaf, Llanelli, SS512.995, I.K. Morgan, 2003, 1<sup>st</sup> record.
- +162/14.1. *Anacamptis pyramidalis* (Pyramidal Orchid) (Tegeirian Bera). Two plants on roadside verge, Bethlehem Road, Llandeilo, SN635.219, N. Matthew, 1996. Refound by NM 6/2004.
- +162/16.1. *Gymnadenia conopsea* (Fragrant Orchid) (Tegeirian Pêr). +Marshy meadow S of River Gwendraeth Fach, near Torcoed Fawr, Llangyndeyrn, SN476.143, M. Godfrey, C. Tero & S. Woodward; +c.10 plants in

flower in unimproved neutral grassland hay meadow, Stone Field, Bryntirion, Llanedi SSSI, SN588.085, R.D. Pryce & Llanelli Naturalists; both 2004.

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

- +4/1.3. *Equisetum variegatum* (Variegated Horsetail) (Marchrawn Amrywiol). Seepage from base of steep bank, Crude oil tank Two, Texaco Refinery, SM902.032, S.B. Evans & J. Hayes, 2004.
- \*4/1.5×8. *Equisetum* × *rothmaleri* (*E. arvense* × *E. palustre*) (a hybrid horsetail). Growing in the *Angelica sylvestris* sub-community of *Molinia caerulea*-*Potentilla erecta* mire. Llambled, Mathry, SM886.326, A. Turner & S. Bosanquet, 2003. 1<sup>st</sup> record.
- +4/1.7. *Equisetum sylvaticum* (Wood Horsetail) (Marchrawn y Coed). Good numbers in rush-pasture, SW fringe of Castlebythe Common, Puncteston, SN01.28, S. Smith & D. Reed, 2003.
- +5/2.1. *Botrychium lunaria* (Moonwort) (Lloerlys). One frond in short acid grassland (OS field 1861), Robleston Mountain, SW of Plumstone Mountain, SM912.226, J. Hudson, 2003.
- +6/1.1. *Osmunda regalis* (Royal Fern) (Rhedynen Gyfrdwy). One clump on streamside bank, Cwmfrenni Fawr, SN207.353, M. Sutton, 2003.
- +10/2.1.gam. *Trichomanes speciosum* gametophyte (Killarney Fern) (Rhedynen Wrychog). +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, Llangolman, SN112.252; both S. Bosanquet, 2003.
- +28/13.4. *Ranunculus sardous* (Hairy Buttercup) (Crafanc y Frân Blewog). Coastal setaside fields, Gernos, Cippyn, SN123.480, S.B. & A.E. Evans, 2003. 1<sup>st</sup> record for hectad in v.c. 45.
- +28/13.19. *Ranunculus omiophyllus* (Round-leaved Crowfoot) (Egyllt y Rhosdir). Spring fed ditch in pasture, Pwll-caerog, Abereddy, SM786.305, S.B. Evans, 2003.
- +28/13.20. *Ranunculus tripartitus* (Three-lobed Crowfoot) (Crafanc Trillob). Rutted wet heath, Keeston Moor, SM894.188, J. Webber, 2003.
- +31/5.3. *Fumaria bastardi* (Tall Ramping-fumitory) (Mwg y Ddaear Grymus). +Wall, Whitesands Bay car park, SM734.272, (Also 1 plant on garden wall at SM755.251 & on gravel by house at SM753.252, both localities within St David's city); +A large clump on hedgebank, road East of Marloes, SM808.083; all T.C.G. Rich, 2003.
- +†43/1.8. *Chenopodium polyspermum* (Many-seeded Goosefoot) (Troed yr Wydd Luos-hadog). Plants seen at several locations on reservoir drawdown shore, Llys-y-fran Reservoir, SN039.248, S.B. & A.E. Evans, 2003.
- +43/7.2. *Suaeda maritima* (Annual Sea-blite) (Helys Unflwydd). One large plant on strandline below dune cliff, front of Penally Dunes, Tenby, SS121.987, S.B. Evans, 2003.
- +46/10.1. *Sagina nodosa* (Knotted Pearlwort) (Corwlyddyn Clymog). Four plants in calcareous flush, Newgale Farm, Newgale, SM851.226, S. Bosanquet & M. Sutton, 2003.
- +46/11.2. *Scleranthus annuus* (Annual Knapel) (Dinodd Blynnyddol). Over 1000 plants at edge of organic oats crop, Castell Farm, Dinas Cross, SM982.379, S.B. & A.E. Evans, 2003. Derived from buried seed not from the organic oats seed, as growing on upper field edges above rows.
- +†47/4.6. *Polygonum rurivagum* (Cornfield Knotgrass) (Canclwm Tir Âr). Growing with *Silene gallica* & *Scleranthus annuus* in arable field margins of broad bean crop, Monkhill Farm, St Ishmaels, SM833.065, T. Dines & S.B. Evans, 2004. 2<sup>nd</sup> record.
- +51/1.10. *Hypericum humifusum* (Trailing St John's-wort) (Eurinllys Môn Ymdaenol). Disturbed wet area below quarry, Pwll-caerog, Abereddy, SM783.303, S.B. Evans, 2003.
- +†53/1.6. *Malva pusilla* (Small Mallow) (Hocys Blodau Bychan). ‡Foot of drainpipe on pavement, New Street, St David's, SM754.253, D. Dupree, 2003. 1<sup>st</sup> recent record but casual only.
- +57/1.4×7. *Viola riviniana* × *V. lactea* (a hybrid dog-violet). Rare on burnt coastal heath, Strumble Head, SM898.413, S.P. Chambers, 2004.
- +57/1.9b. *Viola palustris* subsp. *juressi* (Marsh Violet) (Fioled y Gors). Rush-pasture in valley mire, Springfield farm, Hayscastle Cross, SM915.250, S.B. Evans, 2003.
- +62/12.1×2. *Rorippa* × *sterilis* (*R. nasturtium-aquaticum* × *R. microphylla*) (Hybrid Water-cress) (Berwr Dwr Croesryw). Wet flush, Ciliau Moor, SM939.403, S.P. Chambers, 2004.
- +62/30.3. *Lepidium heterophyllum* (Smith's Pepperwort) (Pupurlys). Quarry bank, Pwll-caerog, Abereddy, SM783.303, S.B. Evans, 2003.

- +‡62/33.2. *Diploxys muralis* (Annual Wall-rocket) (Cedw y Tywod). Several plants in sandy arable setaside, behind & to SE of Toilet Block, Gupton Farm, SR885.994, S.B. Evans & J.W. Donovan, 2003. 1<sup>st</sup> recent record for tectad.
- +62/34.5. *Brassica nigra* (Black Mustard) (Cedw Du). ‡Old quarry, Pwll-caerog, Abereddy, SM788.301, S.B. Evans, 2003. Also locally abundant in reservoir spoil at SM785.302.
- +62/41.1. *Crambe maritima* (Sea-kale) (Ysgedd). Strandline below soft cliff, West Dale Bay, SM799.058, J. Hudson, 2003. Still present 2004.
- +62/42.1b. *Raphanus raphanistrum* subsp. *maritimus* (Sea Radish) (Rhuddygl Glan y Môr). ‡Growing on junction between upper foreshore and low rib-rab sea wall, Newport Beach, SN054.405, S.B. & A.E. Evans, 2003.
- \*64/1.1. *Empetrum nigrum* subsp. *nigrum* (Crowberry) (Creiglys). 4×2m patch in a remnant area of wet heath in valley bog, NE of Dol-aeron, Crymch, SN191.325, S. Bosanquet, 2003. 1<sup>st</sup> record. The size of the patch & intactness of the vegetation suggest a relict rather than a recent arrival.
- +69/6.3. *Anagallis minima* (Chaffweed) (Corfrilys). Winter flushed tracks in acid grassland, ENE of Mirianog-ganol, Pontyglasier, SN141.345, S.B. & A.E. Evans, 2002. Very tightly sheep grazed; *Moenchia erecta* was amongst the associates.
- \*‡70/1.2. *Pittosporum tenuifolium* (Kohuhu) (Llwyn Cohwhw). Odd seedling self-sown on edge of pavement, Pembroke Dock, SM969.036, P. Green, 2004. 1<sup>st</sup> record.
- +75/19.14. *Alchemilla glabra* (Smooth Lady's-mantle) (Mantell Fair y Nant). Roadside verge & hedgebank, Glynysaithmaen, SN111.306, S.B. & A.E. Evans, 2002.
- \*75/21.11×12. *Rosa* × *andegavensis* (*R. stylosa* × *R. canina*) (a hybrid rose). A single bush on waste ground, Pembroke Dock, SM970.038, P. Green, 2004. 1<sup>st</sup> record.
- +77/15.12. *Lathyrus nissolia* (Grass Vetchling) (Ytbyesen Goch). ‡Abundant on sandy turf on old oil tank bunds, Bunds 7 & 8 of disused oil tank storage, Kilpaison, SM892.018, S.B. Evans, 2004; ‡Many plants on waste ground, Pembroke Dock, SM968.037, P. Green, 2004.
- +‡77/17.1. *Melilotus altissimus* (Tall Melilot) (Meillionen y Ceirw). Disused sand & gravel quarry. Llangwarren Lake, Letterston, SM925.310, S.B. Evans, 2004. Probably imported with sand from the dunes at Brownslade Burrows.
- \*‡102/1.4. *Oxalis exilis* (Least Yellow-sorrel) (Suran Felen Leiaf). Corner of cemetery steps, Portfield, Haverfordwest, SM946.153, E.C. Howells, 1984, NMW, det G. Hutchinson. 1<sup>st</sup> record as a neophyte.
- +106/1.2b. *Hedera helix* subsp. *hibernica* (Atlantic Ivy) (Iorwg yr Lwerydd). Llambod, Mathry, SM88.32, S. Bosanquet & A. Turner, 2003.
- +107/16.1. *Berula erecta* (Lesser Water-parsnip) (Pannas y Dwr). Edge of calcareous stream, NW of Greenfield House, Cosheston, SM998.031, S.B. Evans, 2003.
- +‡107/20.1b. *Aethusa cynapium* subsp. *agrestis* (Fool's Parsley) (Gauberfllys). Organic wheat crop, N of Copybush, Martletwy, SN027.092, S.B. Evans, 2003.
- +107/29.2. *Petroselinum segetum* (Corn Parsley) (Eilunberfllys). Several plants at base of wall, Pembroke Dock, SM967.040, P. Green, 2004.
- +107/40.1. *Pastinaca sativa* var. *sativa* (Wild Parsnip) (Panasen Wyllt). ‡One flowering plant in rock paved area, below Llys-y-fran Reservoir Dam, SN037.242, S.B. & A.E. Evans, 2003.
- +‡110/4.1. *Hyoscyamus niger* (Henbane) (Ffa'r Moch). Corner of cattle-grazed field on disturbed sandy ground near the Toilet Block, Abereddy, SM798.313, K.J.S. Devonald, 2003. Not present 2004.
- +‡110/9.1. *Datura stramonium* (Thorn-apple) (Meiwyn). Grass ley near farm buildings, Pelcomb Farm, NW of Haverfordwest, SM933.173, A. Strzelecki, 2003, herb. SBE.
- +‡116/6.4. *Anchusa arvensis* (Bugloss) (Bleid-drem). Dredged spoil from reservoir, Pwll-caerog, Abereddy, SM785.302, S.B. Evans, 2003.
- +116/15.4. *Myosotis laxa* (Tufted Forget-me-not) (Ysgorcionllys Siobynnog). Spring fed ditch in pasture, Pwll-caerog, Abereddy, SM786.305, S.B. Evans, 2003.
- +116/15.10. *Myosotis discolor* (Changing Forget-me-not) (Ysgorcionllys Amryliw). Quarry bank, Pwll-caerog, Abereddy, SM783.303, S.B. Evans, 2003.
- +118/1.5×6. *Stachys* × *ambigua* (*S. sylvatica* × *S. palustris*) (Hybrid Woundwort) (Briwlys Croesryw). Hedgebank, Petrol Station, E of St David's, SM765.252, D. Dupree, 2003.
- +‡118/1.8. *Stachys arvensis* (Field Woundwort) (Briwlys yr Yd). Edge of organic oats crop, Tresinwen, Strumble Head, SM899.410, S.B. Evans, 2004.
- +‡118/5.4. *Lamium hybridum* (Cut-leaved Dead-nettle) (Marddanhadlen Rwygddail). +Barley stubble, Great Nash, Trooper's Inn, SM969.101, S.B. & A.E. Evans; +Organic wheat crop, NE of Lawrenny Newton Farm, Lawrenny, SN036.077, S.B. Evans; both 2003.

- +†118/5.6. *Lamium amplexicaule* (Henbit Dead-nettle) (Marddanhadlen Goch Gron). +Organic potato crop, Pwll-caerog, Abereddy, SM788.304, 2003; +Edge of organic oats crop, Tresinwen, Strumble Head, SM899.410, 2004; both S.B. Evans.
- +118/10.4. *Scutellaria minor* (Lesser Skullcap) (Cwcwll Bach). Disturbed wet area below quarry, Pwll-caerog, Abereddy, SM783.303, S.B. Evans, 2003.
- +118/23.1. *Mentha arvensis* (Corn Mint) (Mintys yr Yd). Several scattered patches in setaside arable, Great Nash, Trooper's Inn, SM971.072, S.B. & A.E. Evans, 2003; Organic wheat crop, NE of Lawrenny Newton Farm, Lawrenny, SN036.077, S.B. Evans, 2003. An associate of *Centaurea cyanus*.
- +120/1.5. *Callitriche obtusangula* (Blunt-fruited Water-starwort) (Brigwlydd Ffrwyth-aflem). Spring fed ditch in pasture, Pwll-caerog, Abereddy, SM786.305, S.B. Evans, 2003.
- +†124/2.4. *Scrophularia scorodonia* (Balm-leaved Figwort) (Gorneth Gwenynddail). Waste ground, derelict café, Lawrenny Quay, SN010.062, J.W. & J. Donovan, 2003.
- \*‡124/13.mar. *Linaria maroccana* (Annual Toadflax) (Llin-y-llyffant Morocco). Two plants on roadside 300m from houses between Solva and Whitchurch, SM800.249, M. Sutton, 2002. *Eschscholzia californica* nearby. 1<sup>st</sup> record.
- +125/2.2. *Orobanche rapum-genistae* (Greater Broomrape) (Gorfanc Mwyaf). Steep gorse covered slope, Creiny Bridge, Fishguard, SM975.359, V. Greenaway, 2002. c.12 spikes in 2003.
- +†133/1.2. *Valerianella carinata* (Keelbed-fruited Cornsalad) (Llysiau'r Oen Rhychiog). Base of wall, opposite Cricket Club, Lawrenny, SN019.070, S.B. Evans, 2003. Associates included *Geranium rotundifolium*, *Carex divulsa* subsp. *divulsa* & *Calamintha ascendens*.
- +†133/1.4. *Valerianella dentata* (Narrow-fruited Cornsalad) (Gwylaeth yr Oen Deintio). About 12 plants in 1×1.5 paces in corner of organic barley field, Pwll-caerog, Abereddy, SM791.297, S.B. Evans, 2003. Only extant site.
- +†135/11.3. *Centaurea cyanus* (Cornflower) (Penlas yr Yd). +Rough pasture, East side of Trevine, SM842.325, R. Lewis, 2003. Believed to have come in with feed for horses; +Organic wheat crop, NE of Lawrenny Newton Farm, Lawrenny, SN036.077, D. Lort-Phillips, 2003. 25 to 40 plants counted by S.B. & A.E. Evans on 13/8/2003; +One plant with white & blue flower on new roadside verge, A478, opposite Crane Cross Teat Park, Moreton, Tenby, SN119.042, T.C.G. Rich, 2003. Assumed to have come in with seed; +One or two plants on relatively recent spoil heap, Tresais, Caerfarchell, SM789.267, J. Hudson, 2004.
- +135/30.1. *Filago vulgaris* (Common Cudweed) (Edafeddog). Rare on disturbed ground in setaside field, Pwll-caerog, Abereddy, SM789.304, S.B. Evans, 2003.
- +135/54.1. *Chamaemelum nobile* (Chamomile) (Camri). Very short sheep grazed acidic grassland, Rhos Fach, Gors Fawr, SN131.302, S. & A. Coker, 2002. Not far from ruins of old cottage but could also be native.
- +†135/56.1. *Chrysanthemum segetum* (Corn Marigold) (Melyn yr Yd). Fallow edge to barley stubble, Great Nash, Trooper's Inn, SM968.099, S.B. & A.E. Evans, 2003.
- +†135/59.1. *Matricaria recutita* (Scented Mayweed) (Amranwen). +Farmyard, Pwll-caerog, Abereddy, SM787.301, S.B. Evans, 2003; +Unsprayed field margins of barley crop, Runwayskiln, Marloes, SM773.079, S.B. & A.E. Evans, 2004.
- +†135/79.1. *Helianthus annuus* (Sunflower) (Blodau'r Haul). ‡One plant on sandy foreshore under estuarine soft cliff, N. side of Newport Estuary, SN055.401, M. J. Buchanan, 2003.
- +141/1.1. *Triglochin palustre* (Marsh Arrowgrass) (Saethbennig y Gors). Disturbed wet area below quarry, Pwll-caerog, Abereddy, SM783.303, S.B. Evans, 2003.
- +142/1.19. *Potamogeton crispus* (Curled Pondweed) (Dyffilys Crych). Outlet channel to flooded sand & gravel quarry, Llangwarren Lake, Letterston, SM921.309, S.B. Evans, 2004.
- +†148/2.4. *Lemna minuta* (Least Duckweed) (Corlinad). Cattle trough, Pwll-caerog, Abereddy, SM788.303, S.B. Evans, 2003.
- +151/1.6. *Juncus foliosus* (Leafy Rush) (Brwynen Ddeiliog). Spring fed ditch in pasture, Pwll-caerog, Abereddy, SM786.305, S.B. Evans, 2003.
- +152/3.5. *Eleocharis quinqueflora* (Few-flowered Spike-rush) (Sbigfrwynen Goch). Abundant in the centre of the Common in *Carex rostrata*-*Calliergon* spp. mire. Ysgeifiog Common, Caerfarchell, SM80.27, S. Bosanquet & D. Reed, 2003.
- +152/7.1. *Schoenoplectus lacustris* (Common Club-rush) (Llafrwynen). ‡Newgale Farm, Newgale, SM85.22, S. Bosanquet & M. Sutton, 2003.
- +152/8.1. *Isolepis setacea* (Bristle Club-rush) (Clwbfrwynen Fach). Spring fed ditch in pasture, Pwll-caerog, Abereddy, SM786.305, S.B. Evans, 2003.
- +152/16.7. *Carex spicata* (Spiked Sedge) (Hesgen Dywysennog Borffor). Some substantial populations in winter wet disused hard standings, Templeton Disused Airfield, SN092.111, S.B. Evans, 2002. Associates included *Carex arenaria*, *Juncus inflexus* and *Briza media*.



- +152/16.8b. *Carex muricata* subsp. *lamprocarpa* (Small-fruited Prickly-sedge) (Hesgen Bigog Hwyr). Sheltered sea-cliff ledge on headland, Pwllderi, Strumble Head, SM888.386. An associate of *Asplenium billotii*; Edge of coast path, Tresinwen, Strumble Head, SM906.407; both S.B. Evans, 2004.
- +152/16.10. *Carex arenaria* (Sand Sedge) (Hesgen Arfor). Winter wet disused hard standings, Templeton Disused Airfield, SN092.111, S.B. Evans, 2002. Associates included *Carex spicata*.
- +152/16.11. *Carex disticha* (Brown Sedge) (Hesgen Lygliw Benblydd). About 5×5m patch at edge of seasonal pool, wet heath, St. David's Tip, SM787.266, M. Sutton, 2003.
- +152/16.18. *Carex dioica* (Diocious Sedge) (Hesgen Ysgar). A small population of almost 100 plants in calcareous flush, Llambed, Mathry, SM886.325, S. Bosanquet & A. Turner, 2003.
- +152/16.39. *Carex laevigata* (Smooth-stalked Sedge) (Hesgen Ylfinog Lefn). Three plants in, Tally Ho fields, Trooper's Inn, SM967.096, S. Bosanquet, 2003.
- +152/16.44×46. *Carex* × *fulva* (*C. hostiana* × *C. viridula*) (a hybrid sedge). Trenewydd Farm, Llanychaer, SM99.36, S. Bosanquet & D. Reed, 2003. Also found in SM99.37 to the N on Ty Meini land.
- +152/16.46a. *Carex viridula* subsp. *brachyrrhyncha* (Long-stalked Yellow-sedge) (Hesgen Felen Baladr Hir). 50+ plants growing in calcareous flush, Llambed, Mathry, SM886.325, S. Bosanquet & A. Turner, 2003.
- +152/16.68. *Carex elata* (Tufted-sedge) (Hesgen Oleulas Sythddail). A few clumps in disused sand quarry dune slack vegetation, Broomhill Burrows, SM890.000, S.B. Evans, 2003.
- +153/12.2. *Festuca arundinacea* (Tall Fescue) (Peisgwellt Tal). Extreme upper salt marsh, NNW of Greenfield House, Cosheston, SM999.032, S.B. Evans, 2003.
- +153/17.1. *Briza media* (Quaking-grass) (Crydwellt). Damp neutral grassland, Newton Baptist Chapel, Haycastle, SM902.267; S.B. & A.E. Evans, 2004.
- +†153/17.3. *Briza maxima* (Great Quaking-grass) (Crydwellt Mwyaf). ‡Roadside gutter, Newport town, SN057.389, S.B. & A.E. Evans, 2003.
- +153/18.12. *Poa nemoralis* (Wood Meadow-grass) (Gweunwelt y Coed). Wooded hedgebank opposite Little Milford Church, SM962.120, S.B. & A.E. Evans, 2004.
- +153/24.1. *Glyceria maxima* (Reed Sweet-grass) (Perweltl). Possibly native, two stands of 40×20m & 37×13m in marsh, Caslebythe Common, Puncheston, SN018.287, S. Smith & D. Reed, 2003.
- +†153/39.2. *Agrostis gigantea* (Black Bent) (Maesweltl Mawr). Organic oat crop, Castell Farm, Dinas Cross, SM981.379, S.B. & A.E. Evans, 2003.
- \*†153/47.6. *Alpecurus myosuroides* (Black-grass) (Cynffonwelt Du). ‡Arable. Great Nash, Trooper's Inn, SM973.098, S.B. & A.E. Evans, 2003. 1<sup>st</sup> record. Growing with a bird seed mix of sunflower and millet so possibly introduced with these.
- \*†153/70.pum. *Setaria pumila* (Yellow Bristle-grass) (Cibogweltl Melyn). ‡Lower Freystop, SM956.123, S. Bosanquet, 2004. 1<sup>st</sup> record. 'Looks identical to an A.O. Chater specimen from Ceredigion.'
- \*‡153/70.adh. *Setaria adhaerens* (Adherent Bristle-grass) (Cibogweltl Ymlynol). Base of wall opposite harbour car park, Saundersfoot, SN135.047, T.C.G. Rich, 2003, NMW. 1<sup>st</sup> record.
- +†158/12.2. *Lilium pyrenaicum* (Pyrenean Lily) (Cap y Twrc Melyn). Long established, growing under a sycamore tree in roadside hedgebank, Gwndwn-gwyn, Ambleston, SM988.267, W. Thomas, 2003.
- +†158/24.3. *Allium roseum* (Rosy Garlic) (Garlleg 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.
- +†158/34.1b. *Asparagus officinalis* (Garden Asparagus) (Merllys). ‡One strong shoot about 2 feet long in a strip of earth between the pavement and the foot of a low wall, old dockyard, Pembroke Dock, SM960.035, S.B. & A.E. Evans, 2003.
- +†159/5.8. *Iris foetidissima* (Stinking Iris) (Iris Ddrewllyd). Base of roadside hedgebank, Penrhiw, Cwm yr Eglwys, SN016.399, S.B. & C.D. Evans, 2003. Possible garden escape but persistent by road for a few years.
- +162/20.3. *Orchis morio* (Green-winged Orchid) (Tegeirian y Waun). +Damp neutral grassland, Newton Baptist Chapel, Haycastle, SM902.267, S.B. & A.E. Evans, 2003. Too late to count spikes in 2003 but 468 flowering spikes counted by S.B. & A.E. Evans on 21/05/2004; +8 spikes only, Red Cliff, Dale, SM790.069, S. & A. Coker, 2004.

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

- +1/4.1. *Diphlastastrum alpinum* (Alpine-clubmoss) (Cnwpfwsogl Alpaidd). Quarry spoil by F.C. road, 600m W of Moel Prysgau, Upper Tywi, SN800.612, R.J. Williams, 2004.
- +4/1.4x5. *Equisetum* × *litorale* (*E. fluviatile* × *E. arvense*) (Shore Horsetail). Hedgebank of lay-by, 150m E of Hafod, Bwlch-llan, SN574.578, A.O. Chater & R. Maskew, 2004.
- +5/1.1. *Ophioglossum vulgatum* (Adder's-tongue) (Tafod y Neidr). Acidic pasture, W of Llechwedd-melyn, Pysgah, SN670.777, N. Sharp, 2004.
- +15/1.1. *Phyllitis scolopendrium* (Hart's-tongue) (Tafod yr Hydd). Masonry of ruined dam, Afon Ystwyth, 2km E of Pont Blaen, SN841.755, A.O. Chater & S.D.S. Bosanquet, 2004.
- +17/3.8x9. *Dryopteris* × *deweveri* (*D. carthusiana* × *D. dilatata*) (a hybrid Buckler-fern). +Among *Molinia*, E of Camddwr at Noddfa, Llyn Brianne, SN793.524; +Wet mire, Cors Bwlch-y-baedd, Tyn-y-graig, SN710.702; both A.O. Chater, 2004.
- \*†18/1.2. *Blechnum cordatum* (Chilean Hard-fern). Naturalised colony 7x5m in wooded dingle, Penglais, Aberystwyth, SN593.820, A.O. Chater, 2004, NMW. 1<sup>st</sup> record.
- +28/6.1a. *Aconitum napellus* subsp. *napellus* (Monk's-hood) (Cwccwl y Mynach). ‡Naturalised on roadside hedgebank, S of Rhattal, Sarn Helen, SN641.574, A.O. Chater, 2004.
- +28/13.4. *Ranunculus sardous* (Hairy Buttercup) (Crafanc y Frân Blewog). ‡Casual single plant on road verge, by roundabout, Llanbadarn Road, Aberystwyth, SN595.812, A.O. Chater, 2004.
- +31/5.3. *Fumaria bastardii* var. *bastardii* (Tall Ramping-fumitory) (Mwg y Ddaear Grymus). Tir Gofal swede crop, 250m W of Troedrhwiwsebon, Cwm Rheidol, SN717.783, A.O. Chater & S.D.S. Bosanquet, 2004.
- +31/5.5b. *Fumaria muralis* subsp. *boraei* var. *gracilis* (Common Ramping-fumitory) (Mwg y Ddaear Amgrywiol). Weed in potato crop, 200m E of Blaendyffryn, Cwmbrwyno, SN701.812, A.O. Chater, 2004.
- +†43/1.3. *Chenopodium ficifolium* (Fig-leaved Goosefoot) (Troed yr Wydd Ffigys-ddail). Casual in crop sown for bird seed, Ynys-hir RSPB Reserve, SN669.958, A.O. Chater & BSBI Field Meeting, 2004.
- \*†43/1.4. *Chenopodium quinoa* (Quinoa). Casual in crop sown for bird seed, Ynys-hir RSPB Reserve, SN669.958, A.O. Chater, 2004, NMW. Casual also here for c.3 years. 1<sup>st</sup> record.
- +45/3.1a. *Montia fontana* subsp. *fontana* (Blinks) (Gwlyddyn y Ffynnon). Damp riverside grassland, Gamlin Bridge, Cwm Rheidol, SN681.790, A.O. Chater, 2004.
- +†47/1.2. *Persicaria campamulata* (Lesser Knotweed) (Clymiys Lleiaf). +Naturalised in scrub, Abermachnog, Bangor Teifi, SN374.403. The cultivar 'Rosenrot'; +Colony (12x12m) naturalised in wooded dingle, Penglais dingle, Aberystwyth, SN593.820; both A.O. Chater, 2004.
- +57/1.11. *Viola lutea* (Mountain Pansy) (Fioled y Mynydd). Acidic pasture, Top of Talfan, Talsarn, SN560.582, S.P. Chambers, 2004. Flowers yellow.
- +62/12.4. *Rorippa palustris* (Marsh Yellow-cress) (Berwr Melyn y Gors). River bank, Afon Teifi, Pont-Llanio, SN64.56, D. Broughton, 2004.
- +†62/30.8a. *Lepidium draba* subsp. *draba* (Hoary Cress) (Pupurlys Llwyd). Railway verge, Borth Station, SN609.901, A.O. Chater, 2004.
- +†72/2.4. *Ribes sanguineum* (Flowering Currant) (Rhyfon Blodeuog). Self-sown on streambank, Cwm Padarn, Llanbadarn Fawr, SN600.809, A.O. Chater, 2004.
- \*†73/CHLopp. *Chiastophyllum oppositifolium* (Lamb's-tail). 100+ plants (360 inflorescences) naturalised along 30m of outside of wall of old walled garden, Plas Ynys-hir, SN681.958, A.O. Chater, 2004, NMW. 1<sup>st</sup> record.
- +†75/3.1x2. *Spiraea* × *rosalba* (*S. salicifolia* × *S. alba*) (Intermediate Bridewort). Naturalised in conifer plantation, Upper Forest, Lampeter, SN57.49, D. Broughton, 2004.
- \*075/8.14. *Rubus arrheniformis* (a bramble). Road verge, 120m S of Garden entrance, Llangwryfon, SN612.722, D.E. Allen & A.O. Chater, 2004, BM, conf. A. Newton. 1<sup>st</sup> record.
- +75/8.209. *Rubus dentatifolius* (a bramble). +Roadside slope among Rhododendrons, W end of Coed Cwmnewyddion, SN699.742; +Roadside bank, 1.7km N of Blaen-twrch, SN682.511; both D.E. Allen & A.O. Chater, 2003.
- +75/8.313. *Rubus nemorosus* (a bramble). Thickets in pasture, Caeau Llety Cybi WTSWW Reserve, Llangybi, SN603.535, A.O. Chater, 2004, NMW, det. D.E. Allen.
- +†75/11.2. *Fragaria moschata* (Hautbois Strawberry) (Mefusen Fawr). Naturalised in graveyard, Capel Rhiwbwys, Llanrhystud, SN456.692, A.O. Chater, 2004.
- +†75/13.3. *Geum macrophyllum* (Large-leaved Avens). Naturalised on roadside bank and verge, Dolau, Lovesgrove, SN622.811, A.O. Chater, 2004.

- +75/21.4×12. *Rosa × irregularis* (*R. arvensis*♀ × *R. canina*♂) (a hybrid rose). Field hedge, 500m ENE of Llangeitho church, SN625.603; +Roadside hedge, N of Blaenpant, 2km N of Lampeter, SN574.500; both R. Maskew & A.O. Chater, 2004.
- +‡75/21.9. *Rosa virginiana* (Virginian Rose) (Rhosyn Virginia). Naturalised on sandy roadside bank, Ynys-las Dunes NNR, SN609.937, A.O. Chater, 2004, NMW, VCCC status upgrade
- +75/21.12×13. *Rosa × dumalis* (*R. canina* × *R. caesia*) (a hybrid rose). Roadside hedge, S of Aeron Villa, Rhydypany, SN633.619, R. Maskew & A.O. Chater, 2004.
- +75/21.12×14. *Rosa × dumetorum* (*R. canina*♀ × *R. obtusifolia*♂) (a hybrid rose). +Laneside hedge, Lampeter woodyard site, SN581.488; +Roadside hedge, S of Aeron Villa, Rhydypany, SN633.619; +Roadside hedge, SSW of Betws Leucu, SN605.578; (*R. canina*♂ × *R. obtusifolia*♀) (a hybrid rose). +Roadside hedge, just N of Pont Tre-fran, Bwlch-llan, SN573.577; all R. Maskew & A.O. Chater, 2004.
- +75/21.12×15. *Rosa × scabriuscula* (*R. canina*♂ × *R. tomentosa*♀) (a hybrid rose). Roadside hedge, 30m S of crossroads N of Pont Tre-fran, Bwlch-llan, SN573.577, R. Maskew & A.O. Chater, 2004.
- +‡75/32.21. *Cotoneaster horizontalis* (Wall Cotoneaster) (*Cotoneaster* y Mur). Established on roadside verge, Cwmbrwyno, SN705.808, A.O. Chater, 2004.
- +‡75/32.35. *Cotoneaster rehderi* (Bullate Cotoneaster). Naturalised in roadside hedge, 700m W of Cardigan old bridge, SN170.459, A.O. Chater, 2004.
- \*‡77/15.7. *Lathyrus grandiflorus* (Two-flowered Everlasting-pea). Roadside hedge by field, Bow Street, SN625.851, A.O. Chater, 2004, NMW. 1<sup>st</sup> record.
- +79/2.4. *Myriophyllum alterniflorum* (Alternate Water-milfoil) (Myrddail Bob yn Ail). In recently constructed pond, 450m N of Bwa-drain, SN714.802, A.O. Chater, 2004.
- +84/1.2×9. *Epilobium × rivulare* (*E. parviflorum* × *E. palustre*) (a hybrid willowherb). Among *Molinia*, E of Camddwr at Noddfa, Llyn Brianne, SN793.524, A.O. Chater, 2004.
- +84/1.6×8. *Epilobium × vicinum* (*E. obscurum* × *E. ciliatum*) (a hybrid willowherb). Felled conifer forest, 500m N of Cwmergyr, SN794.830, A.O. Chater, 2004.
- +‡84/1.12. *Epilobium brunescens* (New Zealand Willowherb) (Helyglys Gorweddol). Naturalised in sand quarry, Penparc, SN201.490, A.O. Chater & S.D.S. Bosanquet, 2004.
- \*84/4.1×3×4. *Oenothera glazioviana* × *O. biennis* × *O. cambrica* (a hybrid evening-primrose). Large colony on sand dunes, Ynys-las Dunes NNR, SN606.933, A.O. Chater, 1999, NMW, det. J.C. Bowra. 1<sup>st</sup> record.
- +‡91/2.15. *Euphorbia cyparissias* (Cypress Spurge) (Fflamgoed Gyprysol). Established at wall base by road, Trefechan, Aberystwyth, SN584.810, R.A. Jones, 2004.
- +‡93/2.1. *Parthenocissus quinquefolia* (Virginia-creeper) (Dringwr Fflamgoch). Roadside hedge, Opposite Tyn-y-fron, Capel Dewi, SN753.431, A.O. Chater, 2004.
- +‡102/1.6. *Oxalis stricta* (Upright Yellow-sorrel) (Suran Felen Unionsyth). River shingle, Afon Brefi, Llanddewi Brefi, SN65.55, D. Broughton, 2004.
- +‡102/1.10. *Oxalis debilis* var. *corymbosa* (Large-flowered Pink-sorrel) (Suran Oddfog). Naturalised on grass slope, Penyrangor, Aberystwyth, SN580.807, A.O. Chater, 2004.
- +‡103/1.1. *Geranium endressii* (French Crane's-bill) (Troedrudd Ffrengig). Naturalised on road verge, Cwmbrwyno, SN705.808, A.O. Chater, 2004.
- +103/1.7. *Geranium pratense* (Meadow Crane's-bill) (Pig yr Aran y Weirglodd). ‡Naturalised on road verge and adjacent scrub, Bwlch Nantyrarian, SN719.812, A.O. Chater, 2004.
- \*107/6.2. *Anthriscus caucalis* (Bur Chervil) (Gorthyfail Cyffredin). ‡Casual in flowerbed, Ysgol Penweddig, Aberystwyth, SN595.810, A.O. Chater, 2004, NMW. 1<sup>st</sup> confirmed record.
- \*‡107/32.1. *Anni majus* (Bullwort) (Esgobyls). Casual in garden, probably from bird seed, 200m ESE of crossroads, Ponrhydfendigaid, SN731.663, A.O. Chater, 2004, NMW. 1<sup>st</sup> record.
- +‡110/9.1. *Datura stramonium* (Thorn-apple) (Meiwyn). ‡Casual in garden, probably from bird seed, Minawel, Ffair-rhos, SN735.678, J.E. Davies, 2003; +‡Casual in garden, probably from bird seed, 200m ESE of crossroads, Ponrhydfendigaid, SN731.663, A.O. Chater, 2004.
- +‡113/2.1. *Nymphaeodes peltata* (Fringed Water-lily) (Ffaen Gors Eddiög). Naturalised in pond made in 1990, 150m W of Nantyrarian, SN714.813, A.O. Chater, 2004.
- +‡115/1.1. *Phacelia tanacetifolia* (Phacelia). ‡Casual in Tir Gofal bird seed crop, 450m ESE of Wallog, SN594.855, A.O. Chater, 2004.
- \*‡116/4.7. *Symphytum caucasicum* (Caucasian Comfrey) (Cyfardwf y Caucasus). Naturalised colony (5×0.5m) in grassland, behind Cefn Melindwr, Capel Bangor, SN658.800, S.P. Chambers, 2004, herb. SPC. 1<sup>st</sup> record (1<sup>st</sup> noticed in 1999).
- +‡116/4.8. *Symphytum bulbosum* (Bulbous Comfrey) (Cyfardwf Crwn). Naturalised colony 4m long on hedgebank, Piercefield Lane, Penparcau, SN589.798, A.O. Chater, 2004.

- +116/15.1. *Myosotis scorpioides* (Water Forget-me-not) (Ysgorionllys 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.
- +†118/2.1. *Ballota nigra* (Black Horehound) (Marddanhadlen Ddu). Naturalised on waste ground, Ysgol Penweddig, Aberystwyth, SN595.810, A.O. Chater, 2004, NMW. 1st record since c.1950.
- +†118/23.2×3. *Mentha × piperita* (*M. aquatica* × *M. spicata*) (Peppermint) (Mintys Poethion). Naturalised on stream bank, Afon Brefi, Llanddewi Brefi, SN64.54, D. Broughton, 2004.
- \*†118/24.1. *Rosmarinus officinalis* (Rosemary) (Rhos Mari). ‡Casual at base of wall, St David's Road, Aberystwyth, SN591.816, A.O. Chater, 2004. 1<sup>st</sup> record.
- +120/1.4. *Callitriche platycarpa* (Various-leaved Water-starwort) (Brigwlydd y Gwanwyn). In stream, Afon Dulas, Llanddewi Brefi, SN60.52, D. Broughton, 2004.
- +121/1.3b. *Plantago major* subsp. *intermedia* (Greater Plantain) (Llwynhidydd Mawr). Frequent in draw-down zone of reservoir, Noddfa, Camddwr arm of Llyn Brianne, SN792.524, A.O. Chater, 2004.
- +†124/1.5. *Verbascum phlomoides* (Orange Mullein) (Pannog Oren). Waste ground in field, Ynys Edwin, Eglwys Fach, SN688.962, A.O. Chater, 2004.
- +124/1.7. *Verbascum thapsus* (Great Mullein) (Pannog Melyn). Field, N of Afon Teifi, Pen-y-bont. Pont Einon, SN66.61, D. Broughton, 2004.
- +124/2.2. *Scrophularia auriculata* (Water Figwort) (Gomerth y Dwr). Streamside, Above bridge 400m ESE of Alltirodyn, SN453.440, A.O. Chater, 2004.
- +†124/4.2. *Mimulus guttatus* (Monkeyflower) (Blodyn y Mwnci). Naturalised dominant in marsh by 1990 pond, 150m W of Nantyrarian, SN714.813, A.O. Chater, 2004.
- +†124/16.20. *Veronica polita* (Grey Field-speedwell) (Rhwyddiwn Llwyd). Naturalised at base of wall, road junction, New Quay, SN383.596, S.P. Chambers, 2004.
- +†129/1.9. *Campanula portenschlagiana* (Adria Bellflower) (Clychlys Adria). Naturalised on roadside wall, Figure Four, SN589.776, A.O. Chater, 2004.
- +135/43.6. *Erigeron acer* (Blue Fleabane) (Cedowydd Glas). About 1000 plants on partially vegetated limestone chippings, Cwm Rheidol lead mine, SN729.781, A.O. Chater & S.D.S. Bosanquet, 2004. A recent arrival at this site created c.1990.
- +135/48.3. *Tanacetum vulgare* (Tansy) (Tanclys). FC road verge, Upper Lodge, Hafod, SN770.738, A.O. Chater, 2004.
- +†135/56.1. *Chrysanthemum segetum* (Corn Marigold) (Melyn yr Yd). Abundant in disturbed field, Dolgamfa, Ystumtuen, SN747.790, A.O. Chater & S.D.S. Bosanquet, 2004.
- +135/57.1. *Pulicaria dysenterica* (Common Fleabane) (Cedowydd). Streamside, Cwm Pemprys, SN710.942, C.M. Forster Brown, 2004.
- +†135/66.com×lax. *Brachyglottis* 'Sunshine' (*B. compacta* × *B. laxifolia*) (Shrub Ragwort). Naturalised on sea cliffs, New Quay, SN387.603, A.O. Chater, 2004.
- 137/3.1. *Luronium natans* (Floating Water-plantain) (Dwr-lyriad Nofiadwy). In river, N side of Pont Llanio, SN652.569, D. Broughton, 2004. The furthest down the Teifi that *Luronium* has been found.
- +†138/4.1. *Elodea canadensis* (Canadian Waterweed) (Alaw Canada). Naturalised in river, Afon Teifi, Pont Gogoyan, SN64.54, D. Broughton, 2004.
- +143/1.1. *Ruppia maritima* (Beaked Tasselweed) (Tusw Troellog). Filling ditch on N side of B4353, Glanwern, Borth, SN610.889, C.M. Forster Brown & T. Lovering, 2000.
- +†147/5.2b. *Arum italicum* subsp. *italicum* (Italian Lords-and-Ladies) (Pidyn y Gog Eidalaidd). Naturalised on road verge, by Vicarage garden, Eglwys Fach, SN686.955, A.O. Chater, 2004.
- +†151/1.25. *Juncus inflexus* (Hard Rush) (Brwynen Galed). Waste ground, S of caravan site, Borth, SN608.935, A.D.Q. Agnew, 1975, ABS.
- +†152/11.2. *Cyperus eragrostis* (Pale Galingale) (Ysnoden Fair Welw). Naturalised in damp scrub by drained pond, grounds of Plas Goggerddan, SN631.837, S.P. Chambers, 2004.
- +152/16.57. *Carex limosa* (Bog-sedge) (Hesgen Eurwerdd). Wet central part of mire, Cors Bwlch-baedd, Ty'n-y-graig, SN710.699, A.O. Chater *et al.* 2004.
- +†153/12.7g. *Festuca rubra* subsp. *megastachys* (a red fescue). Naturalised on roadside verge, St Dogmaels Road, Cardigan, SN170.459, A.O. Chater, 2004.
- \*153/12.13. *Festuca lemaitii* (Confused Fescue). Dominant in closed sward on river shingle, Aber-ffrwyd, SN670.783, A.O. Chater, 1989, NMW, conf. C.A. Stace 2004. 1<sup>st</sup> record.
- +153/24.1. *Glyceria maxima* (Reed Sweet-grass) (Perwellt). †Naturalised at edge of recently made pond, 450m N of Bwa-drain, SN714.802, A.O. Chater, 2004.

- \*153/39.1×2. *Agrostis* × *bjoerkmanii* (*A. capillaris* × *A. gigantea*) (a hybrid bent). Pasture, Llety-lfan-Hen, Tal-y-bont, SN686.853, A.D. Bradshaw, 1959, *New Phytologist* 58:214 (1959). 1<sup>st</sup> record. Identification confirmed by chromosome number 2n=35.
- +‡153/39.3. *Agrostis castellana* (Highland Bent). Naturalised on roadside grassy verge, Ysgol Penweddig, Aberystwyth, SN595.812, A.O. Chater, 2004. 2<sup>nd</sup> record.
- \*‡153/62.1. *Cortaderia selloana* (Pampas-grass) (Paithwellt). Established on lead mine spoil, Goginan mine, SN692.819, A.O. Chater, 2004. 1<sup>st</sup> record.
- +153/64.1. *Phragmites australis* (Common Reed) (Corsen). Colony 2×1m on clay slope above beach, Traeth y Coybal, New Quay, SN372.593, A.O. Chater & P.A. Smith, 2004. A recent colony not here a few years ago.
- +‡153/68.1. *Echinochloa crus-galli* (Cockspur) (Cibogwellt Rhydd). ‡Casual by supermarket, by Aberystwyth Station, SN585.815, S.P. Chambers, 2004.
- \*‡153/71.san. *Digitaria sanguinalis* (Hairy Finger-grass) (Byswellt Blewog). Casual (Probably from bird seed) by supermarket, by Aberystwyth Station, SN585.815, S.P. Chambers, 2004, herb. SPC, det. T.B. Ryves. 1<sup>st</sup> record.
- +154/1.2. *Sparganium emersum* (Unbranched Bur-reed) (Cleddlys Di-gaine). Pond in corner of field, New Quay Head, SN378.600, A.O. Chater & P.A. Smith, 2004.
- +155/1.1. *Typha latifolia* (Bulrush) (Cynffon y Gath). Fringing pond made in 1990, 150m W of Nantyrarian, SN714.813, A.O. Chater, 2004.
- +‡159/13.1. *Crocasmia paniculata* (Aunt-Eliza). Naturalised colony 2×1m on roadside verge, Cwmbrwyno, SN705.809, A.O. Chater, 2004.

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

- +15/2.8. *Asplenium septentrionale* (Forked Spleenwort) (Duegredynen Fforchog). Several colonies in view but access difficult on rocks, Glaslyn Mont. Trust Reserve, SN8.9, M. Lawley, 2004, NMW. 2<sup>nd</sup> & 1<sup>st</sup> recent record.
- \*‡31/5.7b. *Fumaria officinalis* subsp. *wirtgenii* (Common Fumitory) (Mwg y Ddaear). Sandy mound in farmyard, N of Cefn Coch, SJ049.061, S.P. Chambers, 2004. 1<sup>st</sup> record for subsp.
- +46/17.3. *Spergularia marina* (Lesser Sea-spurrey) (Troellys Bach). ‡With *Atriplex prostrata* in extreme edge of grass verge, next to new tarmac, SW of Dolfor, SO086.832, K. Thorne & M. Wainwright, 2004, det. A.O. Chater. 3<sup>rd</sup> record & 1<sup>st</sup> for an inland site. Possibly introduced with sand after recent road improvement.
- 57/1.11. *Viola lutea* (Mountain Pansy) (Fioled y Mynydd). Two patches, 1 yellow & 1 purple, but no bi-colour flowers, on dry bank with relic grassland beside minor road, Staylittle, SN900.911, S.P. Chambers, 2003. Like most recent records for this species, it remains on the roadside but is gone from the fields.
- \*‡62/14.1. *Cardamine bulbifera* (Coralroot) (Deintwraidd). Overgrown garden area, by Lake Vyrnwy, just S of hotel, SJ021.196, J. O'Reilly, 2003. 1<sup>st</sup> record. Known to have been present for many years.
- +‡73/1.3. *Crassula helmsii* (New Zealand Pigmyweed) (Corchwyn Seland Newydd). Stony shore of new upland pool dug out of mire, N of Cefn Coch, SJ044.059, S.P. Chambers, 2004. 3<sup>rd</sup> record.
- \*‡74/6.1. *Heuchera sanguinea* (Coralbells). Naturalized on S bank of River Vyrnwy, far from any habitation, Pontrobert, SJ093.136, K. Thorne, 2004. 1<sup>st</sup> Welsh record. Possibly brought down by river.
- \*75/21.16×17. *Rosa* × *perthensis* (*R. sherardii* × *R. mollis*) (a hybrid downy-rose). Trackside hedge, Llanwddyn, SJ025.186, K. Thorne & M. Wainwright, 2003, det. A.L. Primavesi. 1<sup>st</sup> record.
- \*94/1.1. *Linum bienne* (Pale Flax) (Llin Culddail). ‡Garden, a bird seed alien with *Phalaris canariensis* & *Raphanus raphanistrum*, Llanidloes, SN955.852, M. Oliver, 2003. 1<sup>st</sup> record.
- \*‡103/1.13×pla. *Geranium* × *magnificum* (*G. ibericum* × *G. platyptalum*) (Purple Crane's-bill) (Pig yr Aran Porffor). With *Alchemilla mollis* & *Calystegia pulchra* on rough bank beside minor road, N of Llangurig, SN910.802, S.P. Chambers, 2003. 1<sup>st</sup> record.
- +‡111/3.3. *Calystegia pulchra* (Hairy Bindweed) (Taglys Blewog). With *Alchemilla mollis* & *Geranium* × *magnificum* on rough bank beside minor road, N of Llangurig, SN910.802, S.P. Chambers, 2003.
- \*‡135/74.1. *Ambrosia artemisiifolia* (Ragweed) (Bratlys). ‡Garden, a bird seed alien with *Linum bienne*, *Phalaris canariensis* & *Raphanus raphanistrum*, Llanidloes, SN955.852, M. Oliver, 2003. 1<sup>st</sup> 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.

- +153/50.3. *Bromus racemosus* (Smooth Brome) (Pawrwellt Llyfti). A single tuft with one plant of *Sherardia arvensis* on re-seeded field near Marsh's Pool, Cwm Belan, SN926.813, S.P. Chambers, 2003.
- +153/59.4. *Hordeum secalinum* (Meadow Barley) (Heiddwellt y Maes). Rough bank beside minor road, with *Lamium album*, Llangurig, SN913.803, K.C. Austin, 2003, det. S.P. Chambers. 2<sup>nd</sup> & 1<sup>st</sup> recent record.
- \*154/1.4. *Spartanium 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. 1<sup>st</sup> record. An important surviving habitat threatened only by the proximity of Trannon wind-farm.

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

- +1/3.1. *Lycopodium clavatum* (Stag's-horn Clubmoss) (Cnwpfwsogl Corn Carw). Boggy track through upland forestry, SH8.3, shown to BSBI group by A.N. Graham, 2004.
- +15/3.4. *Asplenium marinum* (Sea Spleenwort) (Deugredynen Arfor). Flourishing and undoubtedly increased in crevices of sea cliff, Galt Ffynnon yr Hydd, SH6.1, P.M. Benoit & J.M. Maynard, 2004. Recorded here by W.W. How before 1863.
- 17/3.2. *Dryopteris oreades* (Mountain Male-fern) (Marchredynen Fach y Mynydd). Drystone wall by shore of the Mawddach estuary near Arthog, SH6.1, P.M. Benoit 1962, again in the same place 2003. Growing at sea level, lower than the lowest altitude for the species, 105m, given in the *New Atlas*. Good *D. oreades*, the indusia fringed with stalked glands and stomatal guard cells 51-53µm.
- +‡34/2.1. *Humulus lupulus* (Hop) (Hopysen). Roadside hedge at Llandrillo, SJ0.3, S.E. Stille, 2004.
- +46/11.2a. *Scleranthus annuus* subsp. *annuus* (Annual Knawel) (Dinodd Blynnyddol). Frequent in turf over flat rocks at Ynys near Harlech, SH5.3, P.M. Benoit & J.M. Maynard, 2004. An update from 1982 in the only known 'native' site for the species in Merioneth.
- +46/17.3. *Spergularia marina* (Lesser Sea-spurrey) (Troellys Bach). ‡Run-off channel from council salt-grit store near Bronaber, Trawsfynydd, SH717.321, H.M. Slade, 2003. 'Alien' records from SH6.4 & SH7.1 in the *New Atlas* should be 'native': the species occurs in both hectares as a normal natural inhabitant of upper saltmarsh, P.M. Benoit.
- +47/1.16. *Persicaria minor* (Small Water-pepper) (Clymog Bychan). Shore of Llyn Trawsfynydd, SH69.38, W.N. McCarthy, 2003.
- \*47/8.1b. *Rumex acetosella* subsp. *pyrenaicus* (Sheep's Sorrel) (Suran yr Yd). In quantity on roadside banks at Llanddwywe, SH5.2, P.M. Benoit, 2003. 1<sup>st</sup> 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, SH5.2 and the Dysynni Broadwater, SH5.0.
- +61/1.2. *Populus tremula* (Aspen) (Aethnen). A tree by the stream at Graig-ddu-isaf, Trawsfynydd, SH68.29, P.M. Benoit & J.M. Maynard, 2003.
- +61/2.2×4. *Salix × ambigua* (*S. aurita* × *S. repens*) (a hybrid willow). Two small prostrate grazed plants on rise above mire, Tir Stent, Dolgellau, SH7.1, S.P. Chambers, 2003, conf. R.D. Meikle as 'typical *S. × ambigua*'. Confirmation of identity and update here from 1990.
- +62/12.1×2. *Rorippa × sterilis* (*R. nasturtium-aquaticum* × *R. microphylla*) (Hybrid Water-cress) (Berwr Dwr Croesryw). ‡Without either parent in wet patch in farm field at Llandrillo, SJ0.3, P.M. Benoit & S.E. Stille, 2004. Surely a 'watercress' introduction.
- \*‡62/14.5. *Cardamine pratensis* flore pleno (Cuckooflower) (Blodyn y Gog). Escaped from a garden into adjacent marshy meadow (now in quantity) near Hengwrt, Dolgellau, SH7.1, P.M. Benoit & J.M. Maynard, 2003. 1<sup>st</sup> record for variety. See *BSBI News* 91: 28 (2002) & 93: 23 (2003) and *Watsonia* 3: 170-174 (1955).
- +62/21.4. *Draba muralis* (Wall Whitflowgrass) (Bystwn y Fagwyr). ‡Still flourishing on a wall at Llandderfel Bridge, SH98.36, P.M. Benoit 2003. Recorded here as a 'casual' in 1939 by J.A. Whellan in the *B.E.C. Report for 1943-44*, p. 703 (1946). Apparently the only surviving colony in v.c. 48.
- \*‡73/1.3. *Crassula helmsii* (New Zealand Pigmyweed) (Corchwyn Seland Newydd). +Ornamental pool at Penmaenpool, SH6.1, R.H. Gritten and, independently, P.M. Benoit c.1992, now eradicated; +Garden pool at Llandrillo, SJ0.3, P.M. Benoit & S.E. Stille, 1999; +Pool at Bala, SH9.3, R.H. Gritten, c.2002, pool now filled in; +In great quantity in artificial lake at Trawscoed, Llanuwchllyn, SH8.3, A.N. Graham & BSBI Group, 2004. 1<sup>st</sup> records.
- +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.

- +†75/19.15. *Alchemilla mollis* (Robust Lady's-mantle). Escape from nearby gardens on roadside by houses at Brithdir, SH7.1, P.M. Benoit & J.M. Maynard, 2004.
- +†116/10.1. *Myosotis alpestris* (Alexanders) (Dulys). Laneside near Cae Nest, Llanbedr, SH5.2, P.M. Benoit & A.O. Chater, 2004.
- +†107/25.1. *Conium maculatum* (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.
- +116/5.9. *Myosotis ramosissima* (Early Forget-me-not) (Ysgorionllys Cynnar). Calcareous duneland by Llandanwg church, SH56.28, P.M. Benoit & J.M. Maynard, 2003.
- \*124/13.3×4. *Linaria × domini* (*L. purpurea* × *L. repens*) (a hybrid toadflax). Several plants with both parents on platform, Barmouth railway station, SH612.158, P.M. Benoit, 2003. 1<sup>st</sup> record.
- +130/6.7. *Gallium mollugo* (Hedge-bedstraw) (Briwydden y Clawdd). ‡Llanelltyd churchyard, SH7.1, P.M. Benoit & J.M. Maynard, 2004. A notable update from the last sighting here, PMB, 1948.
- +131/2.2. *Viburnum lantana* (Wayfaring-tree) (Gwifwrwydden). ‡By the Mawddach long-distance footpath (disused railway track), near Penmaenpool, SH7.1, P.M. Benoit, 2004. 2<sup>nd</sup> record & 1<sup>st</sup> since *Atlas Br. Fl.*, p. 264, 1962 (Bodowen, near Barmouth, SH6.1, P.M. Benoit). Both records were of 'alien' occurrences.
- +135/6.9×10. *Cirsium × celakovskianum* (*C. palustre* × *C. arvense*) (a hybrid thistle). Meadow near Pentre-dol-amarch, Tallyllyn, SH7.1, P.M. Benoit, 2004. Seen previously in same spot in 1982.
- \*†135/22.1. *Lactuca serriola* (Prickly Lettuce) (Gwylaeth Bigog). One plant on platform, Barmouth railway station, SH612.158, P.M. Benoit, 2003. 1<sup>st</sup> record.
- \*135/71.1. *Petasites hybridus* ♀ (Butterbur) (Alan Mawr). With *Tussilago farfara* in the rocky bed of the Afon Ceidiog at Llandrillo, SJ0.3, P.M. Benoit, 2004. 1<sup>st</sup> record of the female plant.
- \*†138/4.2. *Elodea nuttallii* (Nuttall's Waterweed) (Alaw Nuttall). Pool at Penrhyndeudraeth, SH6.3, R.H. Gritten, 2004. 1<sup>st</sup> record.
- +†151/1.2. *Juncus tenuis* (Slender Rush) (Brwynen Fain). Mawnog Egryn, SJ01.35, S.E. Stille, 2003.
- +151/1.15. *Juncus bulbosus* s.s. (Bulbous Rush) (Brwynen Oddfog). With the common *J. kochii* in bog in the Dinam valley, Llandrillo, SJ0.3, P.M. Benoit, 2004.
- \*151/1.26×27. *Juncus × kern-reichgeltii* (*J. effusus* × *J. conglomeratus*) (a hybrid rush). In quantity with both parents in a meadow near Ystumgwadnaeth, Dolgellau, SH7.2, P.M. Benoit, 2002. 1<sup>st</sup> record.
- +152/2.2a. *Trichophorum cespitosum* subsp. *germanicum* with proliferating spikes (Deergrass) (Clwbfrwynen y Mawn). Path up to Bwlch 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 Islawrdref, SH7.1, P.M. Benoit & A. Seddon, 2001. 1<sup>st</sup> Merioneth record from an inland (alt. 106m), non-saline habitat of a species that is common in the saltmarshes.
- +152/3.6. *Eleocharis acicularis* (Needle Spike-rush) (Sbigfrwynen Leiaf). In one spot in Llyn Tallyllyn, SH7.1, P.M. Benoit, 2004. A useful by-product of Local Change recording.
- +152/11.1. *Cyperus longus* (Galingale) (Ysnoden Fair). ‡In quantity with other aliens on dumped earth, embankment of tidal River Mawddach, Ty'n-twill, Bontddu, SH67.18, P.M. Benoit & J.M. Maynard, 2003.
- +152/13.1. *Rhynchospora alba* (White Beak-sedge) (Corsfrwynen Wen). Bog near Llyn Cynwch, SH7.2, P.M. Benoit, 2004. A new site and an update for the hectad from 1939.
- +152/16.1. *Carex paniculata* (Greater Tussock-sedge) (Hesgen Rafunog Fwyaf). Bog near Nannau, A. Seddon; Bog on Rhobell Fawr, S.E. Stille & H.M. Slade; both SH7.2, 2004.
- +152/16.18. *Carex dioica* (Dioecious Sedge) (Hesgen Ysgar). One large patch in bog in Dinam valley, Llandrillo, SJ0.3, P.M. Benoit & S.E. Stille, 2004. Male with usually one utricle at the base of the spike.
- +152/16.31. *Carex pendula* (Pendulous Sedge) (Hesgen Bendrymus). ‡Two large plants, surely self-sown or planted, on roadside by Llanelltyd old bridge, SH71.19, P.M. Benoit, 2003.
- 152/16.59. *Carex magellanica* (Tall Bog-sedge) (Hesgen Eurwerdd Lefn). Bog at Ffestiniog, SH7.4, J.A. Green & S.E. Stille, 2003.
- 152/16.69. *Carex bigelowii* (Stiff Sedge) (Hesgen Ddu). Summit of Cader Fronwen (alt. 784m), SJ0.3, S.E. Stille, 2003. Rare in v.c. 48 and only on the highest summits.

## CAERNARFON, v.c. 49 (comm. W. McCarthy)

- +1/3.1. *Lycopodium clavatum* (Stag's-horn Clubmoss) (Cnwfwfsgl Corn Carw). Two plants in different sites, in Ty'n y Cwm forest, Dolwyddelan, SH73.48, W. McCarthy & M. Stead, 2004.
- +4/1.4×5. *Equisetum × litorale* (*E. fluviatile* × *E. arvense*) (Shore Horsetail). +Along cycle track, at Pant Glas, SH46.47; +Banks of lane to, Bryn quarry, Llanllechid, SH62.69; both W. McCarthy, 2004.
- +14/1.1. *Thelypteris palustris* (Marsh Fern) (Marchredynen y Gors). Marshy field, near Nefyn, SH29.39, W. McCarthy & S. Thomas, 2004.
- +14/2.1. *Phegopteris connectilis* (Beech Fern) (Rhedynen y Graig). Under rocks, on Foel Fras, Dolwyddelan, SH72.48, W. McCarthy, 2004.
- +17/1.2. *Polystichum aculeatum* (Hard Shield-fern) (Gwrychredynen Galed). Disused quarry, Llangwstennin, SH82.79, W. McCarthy, 2004.
- +17/3.8. *Dryopteris carthusiana* (Narrow Buckler-fern) (Marchredynen Gul). Marshy field, near Nefyn, SH29.39, S. Thomas, 2004.
- +28/13.4. *Ranunculus sardous* (Hairy Buttercup) (Crafanc y Frân Blewog). Disturbed waste ground by railway station, Llandudno, SH77.82, W. McCarthy, 2004.
- +‡37/1.1. *Juglans regia* (Walnut) (Coeden Cnau Ffrengig). Ancient tree in pasture, Llangwstennin, SH82.79, W. McCarthy, 2004.
- +43/1.6. *Chenopodium rubrum* (Red Goosefoot) (Troed yr Wydd Ruddog). Few plants on tip in quarry, Llangwstennin, SH82.78, W. McCarthy, 2004.
- +‡43/1.13. *Chenopodium ficifolium* (Fig-leaved Goosefoot) (Troed yr Wydd Ffigys-ddail). One plant on tip in quarry, Llangwstennin, SH82.78, W. McCarthy, 2004.
- +‡45/2.2. *Claytonia sibirica* (Pink Purslane) (Gwlyddyn Rhudd). Woodland, near Boduan, SH32.37, S. Thomas, 2004.
- +46/10.3. *Sagina subulata* (Heath Pearlwort) (Corwlyddyn Mynawydaidd). Around sides of quarry, near Marchlyn reservoir, SH60.62, W. McCarthy, 2004.
- +51/1.3. *Hypericum androsaemum* (Tutsan) (Dail y Beiblau). Path side, Ty'n y Cwm, Dolwyddelan, SH73.49, W. McCarthy, 2004.
- +57/1.4×6. *Viola × intersita* (*V. riviniana* × *V. canina*) (a hybrid dog-violet). +Sand dunes at, Morfa Dinlle, SH43.59; +Large spreading colonies, at Black Rock Sands, Porthmadog, SH53.37; both W. McCarthy, 2004.
- +61/1.2. *Populus tremula* (Aspen) (Aethnen). Edge of woodland, Nant y Gamar, SH80.81, W. McCarthy, 2004.
- +‡62/1.5. *Sisymbrium altissimum* (Tall Rocket) (Berwr Treigledigol). Sandy bank, West Shore, Llandudno, SH77.81, W. McCarthy, 2004.
- +‡62/7.1. *Erysimum cheiranthoides* (Treacle Mustard) (Triagl-arfog). Weedy potato field, Maenan, SH80.66, W. McCarthy, 2004.
- +62/41.1. *Crambe maritima* (Sea-kale) (Ysgedd). One plant on shingle beach, West Shore, Llandudno, SH76.82, W. McCarthy, 2004.
- +62/42.1b. *Raphanus raphanistrum* subsp. *maritimus* (Sea Radish) (Rhuddygl Glan y Môr). Sandy bank, West Shore, Llandudno, SH77.81, W. McCarthy, 2004.
- \*‡69/3.1. *Cyclamen hedertifolium* (Cyclamen) (Bara'r Hwch). Two plants amongst scrub in woods, Great Orme, SH77.82, W. McCarthy, 2004. 1<sup>st</sup> record.
- +72/2.1. *Ribes rubrum* (Red Currant) (Rhyfôn Coch). ‡Hedge bank, near Pen y Mount, Porthmadog, SH57.39, W. McCarthy, 2004.
- +‡73/1.1. *Crassula tillaea* (Mossy Stonecrop) (Anwywig). +In gravel in car-park, Pwllheli Marina, SH38.74, T. Dines; +Around car-park edges, Gilfach Ddu, Llanberis, SH58.60, T. Dines, W. McCarthy & S. Thomas; both 2004.
- +74/5.4. *Saxifraga stellaris* (Starry Saxifrage) (Tormaen Serennog). Streamsides, in Ty'n y Cwm forest, Dolwyddelan, SH73.48, M. Stead, 2004.
- +75/13.1. *Geum rivale* (Water Avens) (Mappgoll Glan y Dwr). Side of path into, Ty'n y Cwm, Dolwyddelan, SH73.49, W. McCarthy, 2004.
- +75/15.2. *Agrimonia procera* (Fragrant Agrimony) (Llys y Dryw Peraroglus). Hedge bank, near Pen y Mount, Porthmadog, SH57.39, W. McCarthy, 2004.
- +77/19.1. *Trifolium ornithopodioides* (Bird's-foot Clover) (Corfeillionen Wen). Path side, E of Gwern Engan pools, Sychnant, SH75.76, W. McCarthy, 2004.
- +77/26.1×2. *Ulex europaeus* × *U. gallii* (a hybrid gorse). +Heathy outcrop in wet field, Ystumillyn, 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. 1<sup>st</sup> record for over 100 years and only known extant site.
- +102/3.4. *Erodium lebelii* (Sticky Stork's-bill) (Pig y Crëyr Gludog). One plant on disturbed sand dunes, Black Rock Sands, Porthmadog, SH53.37, W. McCarthy, 2004.
- +103/1.10. *Geranium columbinum* (Long-stalked Crane's-bill) (Pig yr Aran Hirgoesog). Grassy bank, Llangwstennin, SH82.78, W. McCarthy, 2004.
- +111/3.2b. *Calystegia sepium* subsp. *roseata* (Pink Hedge Bindweed) (Taglys Mawr). Hedge bank, Ystumllyn, Criccieth, SH52.38, J.A. Green, 2004.
- +‡114/1.1. *Polemonium caeruleum* (Jacob's-ladder) (Ysgol Jacob). ‡At cross-roads in forest tracks, Dolwyddelan, SH73.48, W. McCarthy, 2004. An obvious garden escape but a long way from houses.
- +118/1.5×6. *Stachys* × *ambigua* (*S. sylvatica* × *S. palustris*) (Hybrid Woundwort) (Briwlys Croesryw). Muddy track at, Maes y Groes farm, Maenan, SH79.67, W. McCarthy, 2004.
- +‡118/1.8. *Stachys arvensis* (Field Woundwort) (Briwlys yr Yd). Side of railway track, Pen y Mount, Porthmadog, SH57.39, W. McCarthy, 2004.
- +‡118/5.4. *Lamium hybridum* (Cut-leaved Dead-nettle) (Marddanhadlen Rwygddail). Side of railway track, Pen y Mount, Porthmadog, SH57.39, M. Stead, 2004.
- +‡118/23.2×3. *Mentha* × *piperita* (*M. aquatica* × *M. spicata*) (Peppermint) (Mintys Poethion). In ditch, near Afon Wydden, Glanwydden, SH82.80, W. McCarthy, 2004.
- +124/2.2. *Scrophularia auriculata* (Water Figwort) (Gomerth y Dwr). +Wet field, near Nefyn, SH29.39, W. McCarthy & S. Thomas; +River bank, Afon Dwyfach, Garn Dolbenmaen, SH48.43, W. McCarthy; both 2004.
- +‡124/12.1. *Kickxia elatine* (Sharp-leaved Fluellen) (Llysiau Llywelyn). Edge of maize field, near Pydew, SH80.79, W. McCarthy, 2004.
- +124/13.3×4. *Linaria* × *domini* (*L. purpurea* × *L. repens*) (a hybrid toadflax). Several plants with parents, on slate quarry waste, Llanllechid, SH63.69, W. McCarthy, 2004.
- +‡124/16.19. *Veronica agrestis* (Green Field-speedwell) (Rhwyddlwyn Gorweddol). Side of railway track, Pen y Mount, Porthmadog, SH57.39, W. McCarthy, 2004.
- +128/1.3. *Pinguicula vulgaris* (Common Butterwort) (Tafod y Gors). Peaty bank on slopes of, Foel Fras, near Ty'n-y-cwm, Dolwyddelan, SH73.48, W. McCarthy & M. Stead, 2004.
- \*‡129/1.3. *Campanula lactiflora* (Milky Bellflower). Riverside rocks, Llanrwst, SH79.62, W. McCarthy, 2004. 1<sup>st</sup> record.
- +130/7.1. *Cruciata laevipes* (Crosswort) (Croeslys). Large patch by forest track, near Dolwyddelan, SH73.54, J. & H. Lowell, 2004.
- +135/33.5. *Gnaphalium uliginosum* (Marsh Cudweed) (Edafeddog Canghennog). Pathside in field, Llangwstennin, SH82.78, W. McCarthy, 2004.
- +‡135/44.1. *Coryza canadensis* (Canadian Fleabane) (Amrhydlwyd Canada). Roadside gravel, near Maenan Abbey, Llanrwst, SH79.65, W. McCarthy, 2004.
- +‡135/55.1a. *Anthemis punctata* subsp. *cupaniana* (Sicilian Chamomile) (Camri Arfor). Cliff face, Vardre, Deganwy, SH78.79, W. McCarthy, 2004.
- +137/2.1. *Baldellia ranunculoides* (Lesser Water-plantain) (Llyren Fechan). Marshy field, Ystumllyn marsh, Criccieth, SH53.38, M. Stead, 2004.
- +151/1.6. *Juncus foliosus* (Leafy Rush) (Brwynen Ddeiliog). Marshy streamside, Llanrhos, SH79.79, W. McCarthy, 2004.
- +151/1.11. *Juncus subnodulosus* (Blunt-flowered Rush) (Brwynen Flodbwll). Wet corner of sloping field, Glanwydden, SH80.80, W. McCarthy, 2004.
- +152/1.2. *Eriophorum latifolium* (Broad-leaved Cottongrass) (Plu'r Gweunydd Llydanddail). c.15 clumps in mire, near Afon Wen, near Bryncir, SH44.43, S.P. Chambers, 2004.
- +152/8.2. *Isolepis cernua* (Slender Club-rush) (Clwbfrwynen Eiddil). Sandy bank above beach, Criccieth, SH49.37, M. Stead, 2004.
- +152/12.1. *Schoenus nigricans* (Black Bog-rush) (Corsfrwynen Ddu). Damp meadow, near Waen Fechan, Rowen, SH74.69, W. McCarthy, 2004.
- +152/16.7. *Carex spicata* (Spiked Sedge) (Hesgen Dywysennog Borffor). Path-edge, behind Moel y Ci farm, Tregarth, SH59.67, W. McCarthy, 2004.
- +152/16.73. *Carex pulicaris* (Flea Sedge) (Chwein-hesgen). Boggy edge of path, W of Ty'n y Cwm, Dolwyddelan, SH73.49, W. McCarthy, 2004.
- \*153/12.8c. *Festuca ovina* subsp. *ophiolticola* (Sheep's-fescue) (Peisgwellt y Defaid). Limestone crags, Pen y Dinas, Great Orme, SH77.82, W. McCarthy, 2004, det. A. Copping. 1<sup>st</sup> record for subspecies.

- +153/18.4. *Poa humilis* (Spreading Meadow-grass) (Gweunwellt Helaeth). Bank at field edge, near Nefyn, SH29.39, S. Thomas, 2004.
- +153/23.1. *Parapholis strigosa* (Hard-grass) (Corwelltyn y Morfa). Sandy shingle beach, West Shore, Llandudno, SH76.82, W. McCarthy, 2004.
- +‡153/38.3. *Phalaris canariensis* (Canary-grass) (Pefrwellt Amaethol).  $\phi$ Pavement crack, Porthmadog, SH57.39, W. McCarthy, 2004.
- +‡153/47.6. *Alopecurus myosuroides* (Black-grass) (Cynffonwellt Du). Roadside bank, Ysbyty Ifan, SH83.48, W. McCarthy, 2004.
- +‡153/68.1. *Echinochloa crus-galli* (Cockspur) (Cibogwellt Rhydd).  $\phi$ Between houses and A497 road, near Pwllheli, SH3.3, T. Dines & I.R. Bonner, 2004.
- +‡153/70.pum. *Setaria pumila* (Yellow Bristle-grass) (Cibogwellt Melyn).  $\phi$ One plant at wall-base, Jerusalem chapel, Bethesda, SH62.66, S.P. Chambers, 2004.
- +‡153/PAN.mil. *Panicum miliaceum* (Common Millet) (Miled). + $\phi$ Seed contaminant in maize field, Pydew, SH80.79; + $\phi$ Maize field, Bodafon, Llandudno, SH80.81; both W. McCarthy, 2004.
- \*‡158/24.4. *Allium neapolitanum* (Neapolitan Garlic). Naturalized on high bank, above Marine Drive, Great Orme, SH76.82, W. McCarthy, 2004. 1<sup>st</sup> Welsh record.
- +158/35.1. *Ruscus aculeatus* (Butcher's-broom) (Celynnen Fair). Large spreading plant on dry rocky bank in wood, apparently native, Llangwstennin, SH82.79, W. McCarthy, 2004.
- \*‡159/5.ung. *Iris unguicularis* (Algerian Iris). Limestone grassland, near St Petrock's, Great Orme, SH76.82, W. McCarthy, 2004. 1<sup>st</sup> Welsh record.
- \*159/8.2. *Crocus tommasinianus* (Early Crocus). One plant on road-verge, with household waste, near Deiniolen, SH59.64, S.P. Chambers, 2004. 1<sup>st</sup> record.
- +162/16.1 $\times$ 18.2.  $\times$ *Dactyloдения legrandiana* (*Gymnadenia conopsea*  $\times$  *Dactylorhiza maculata*) (a hybrid orchid). Flushed grassland, near Afon Duly, Rowen, SH74.68, W. McCarthy, 2004, conf. L.T. Colley. 1<sup>st</sup> recent record.
- +162/18.3a. *Dactylorhiza incarnata* subsp. *incarnata* (Early Marsh-orchid) (Tegeirian Rhuddgoch). +Flushed grassland, near Afon Duly, Rowen, SH74.68, W. McCarthy, 2004.
- +162/18.3c. *Dactylorhiza incarnata* subsp. *pulchella* (Early Marsh-orchid) (Tegeirian Rhuddgoch). +Wet meadow, Cors Gyfelog, SH45.48, L.T. Colley, 2004.

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

- +11/1.3. *Polypodium cambricum* (Southern Polypody) (Llawredynen Gymreig). N facing, shady limestone cliff, Bryn Euryn, SH830.797, W. McCarthy, 2004, conf. T. Dines.
- +17/2.3a. *Dryopteris affinis* subsp. *affinis* (Scaly Male-fern) (Marchredynen Euraid). Riverside, Trefor, SJ270.420, R. Maskew, 2004. 2<sup>nd</sup> record for subspecies.
- \*17/3.2 $\times$ 3. *Dryopteris*  $\times$  *complexa* (*D. filix-mas*  $\times$  *D. affinis*) (a hybrid Male-fern). Woodland, Trefor, SJ25.52, R. Maskew, 2004. 1<sup>st</sup> record.
- \*17/3.3b. *Dryopteris affinis* subsp. *cambrensis* (Scaly Male-fern) (Marchredynen Euraid). Woodland, Trefor, SJ270.420, R. Maskew, 2004. 1<sup>st</sup> record.
- +17/3.3c. *Dryopteris affinis* subsp. *borreri* (Scaly Male-fern) (Marchredynen Euraid). Woodland, Trefor, SJ270.420, R. Maskew, 2004. 2<sup>nd</sup> record for subspecies.
- +17/3.8 $\times$ 9. *Dryopteris*  $\times$  *deweveri* (*D. carthusiana*  $\times$  *D. dilatata*) (a hybrid Buckler-fern). Dry heath, Gors Maen Llwyd, SH980.583, A.O. Chater, 2004. 2<sup>nd</sup> record.
- \*‡22/1.1. *Araucaria araucana* (Monkey-puzzle) (Pinwydden Chile).  $\phi$ 28 trees planted on drive to house, Llangernyw, SH846.659, J.A. Green, 2004. 1<sup>st</sup> record.
- \*‡28/12.3. *Clematis tangutica* (Orange-peel Clematis). Grassed over coal mine, Chirk, SJ298.383, BSBI group, 2004. 1<sup>st</sup> record.
- +28/13.4. *Ranunculus sardous* (Hairy Buttercup) (Crafanc y Frân Blewog). Barley field weed, Trefnant, SJ051.686, J.A. Green, 2004.
- +28/13.7. *Ranunculus parviflorus* (Small-flowered Buttercup) (Crafanc y Frân Manflodeuog). Shallow calcareous soil, Mynydd Marian, SH888.774, W. McCarthy & J.A. Green, 2004. 1<sup>st</sup> record since 1960.
- +28/13.26. *Ranunculus fluitans* (River Water-crowfoot) (Crafanc Hirddail). Riverside, River Elwy, Llanfair Talhaiarn, SH927.703, J.A. Green, 2004.
- +31/5.3. *Fumaria bastardii* (Tail Ramping-fumitory) (Mwg y Ddaear Grymus). Roadside, Dolwen, SH883.744, K. Watson, 2004. 1<sup>st</sup> record since old Atlas.

- \*†36/3.1. *Soleirolia soleirolii* (Mind-your-own-business) (Mam Miloedd). Damp walls, Bodnant Garden, SH797.723, W. McCarthy, 2003. 1<sup>st</sup> record.
- +†37/1.1. *Juglans regia* (Walnut) (Coeden Cnau Ffrengig). +Lane in wooded valley, Wigfair, SJ027.710, T. Grey-Hulse; +Lane in wooded valley, Rhewl, SJ107.600, J.A. Green; both 2004.
- +†43/1.8. *Chenopodium polyspermum* (Many-seeded Goosefoot) (Troed yr Wydd Luos-hadog). Waste ground, Brynhovah, SJ384.432, J.A. Green, 2004.
- †46/7.3. *Cerastium tomentosum* (Snow-in-summer) (Clust Llygoden y Felin). Llanarmon yn Ial, SJ189.573, J.A. Green, 2004.
- +46/7.10. *Cerastium diffusum* (Sea Mouse-ear) (Clust Llygoden Arfor). Quarry floor, Llanarmon yn Ial, SJ189.574, J.A. Green, 2004.
- \*†49/1.1. *Paeonia officinalis* (Garden Peony). Slate waste in disused quarry, Llyn Brenig, SH979.592, J.A. Green, 2003, det. P. Lee. 1<sup>st</sup> record.
- +61/1.3a. *Populus nigra* subsp. *betulifolia* (Black Poplar) (Poplysen Ddu). Near railway, Llangollen, SJ210.424, J. Topp, 2004.
- \*†61/1.3Ita. *Populus nigra* 'Italica' (Lombardy Poplar) (Poplysen Lombardy). ‡Planted near farm, Bangor on Dee, SH393.439, J.A. Green, 2003. 1<sup>st</sup> record.
- +†61/2.3. *Salix alba* (White Willow) (Helygen Wen). Waste ground, Wrexham, SJ380.492, G. Kay, 2004.
- +62/14.6. *Cardamine impatiens* (Narrow-leaved Bitter-cress) (Berwr Chwerw Culddail). Boulder scree, Eglwysseg, Llangollen, SJ223.467, I. Bennallick, 2004, conf. T. Dines.
- +62/23.5. *Cochlearia danica* (Danish Scurvygrass) (Llwylys Denmarc). Trefnant, SJ044.713, J.A. Green, 2004.
- +†62/30.6. *Lepidium latifolium* (Dittander) (Berwr Gwyllt). Industrial wasteland, Wrexham, SJ381.491, W. McCarthy, 2004. 1<sup>st</sup> recent record.
- +†62/36.1. *Erucastrum gallicum* (Hairy Rocket) (Berwr Ffrengig). ‡By main road, Chirk, SJ289.387, J. Brooker, 2004, M. Rand. 2<sup>nd</sup> record.
- +†73/1.3. *Crassula helmsii* (New Zealand Pigmyweed) (Corchwyn Seland Newydd). Stream, Bodnant Garden, SH798.722, W. McCarthy, 2003.
- +†74/8.1. *Tellima grandiflora* (Fringe-cups) (Clychau'r Clawdd). Edge of stream, Llanarmon yn Ial, SJ184.575, BSBI group, 2004.
- +75/13.1×2. *Geum × intermedium* (*G. rivale* × *G. urbanum*) (Hybrid Avens) (Mappgoll Croesryw). Wet ditch, Llanarmon yn Ial, SJ186.573, M. Rogers, 2004.
- +75/21.4×12. *Rosa × irregularis* (*R. arvensis* × *R. canina*) (a hybrid rose). Scrub, Trefor, SJ273.418, R. Maskew, 2004.
- +75/21.13×16. *Rosa caesia* × *R. sherardii* (a hybrid rose). Scrub, Trefor, SJ25.52, R. Maskew, 2004.
- +75/21.18. *Rosa rubiginosa* (Sweet-briar) (Drysen Bêr). Hedge in public park, Minera, SJ276.508, J.A. Green, 2004, R. Maskew.
- +†77/15.9. *Lathyrus latifolius* (Broad-leaved Everlasting-pea) (Ytbysen Barhaus Lydanddail). Disused railway, Wrexham, SJ322.503, B. Formstone, 2004.
- \*77/26.1×2. *Ulex europaeus* × *U. gallii* (a hybrid gorse). Limestone hill, Llysfaen, SH892.772, W. McCarthy, 2004, conf. P.M. Benoit. 1<sup>st</sup> record.
- \*†102/1.4. *Oxalis exilis* (Least Yellow-sorrel) (Suran Felen Leiaf). Lawn, Bodnant Garden, SH799.724, J.A. Green, 2004, NMW. 1<sup>st</sup> record.
- \*†107/44.1maj. *Daucus carota* subsp. *major* (a carrot). By garden bird table, Moelfre, Abergel, SH948.732, C. Clarke, 2004, det. M. Southam. 1<sup>st</sup> record of subspecies.
- +†114/1.1. *Polemonium caeruleum* (Jacob's-ladder) (Ysgol Jacob). Naturalised in woodland, Erddig, Wrexham, SJ3.4, R. Hesketh, 2003.
- +†115/1.1. *Phacelia tanacetifolia* (Phacelia). ‡Barley field, Trefnant, SJ054.696, J.A. Green, 2004. 2<sup>nd</sup> record.
- +116/15.9. *Myosotis ramosissima* (Early Forget-me-not) (Ysgorpionllys Cynnar). Bare ground, Mynydd Marian, SH888.774, J.A. Green, 2004.
- +118/6.4. *Galeopsis tetrahit* (Common Hemp-nettle) (Penboeth). Grassland, Erddig, Wrexham, SJ3.4, R. Hesketh, 2003.
- +118/23.1×3. *Mentha × gracilis* (*M. arvensis* × *M. spicata*) (Bushy Mint) (Mintys Culddail). Streamside, Loggerheads near Mold, SJ19.62, J. Philips, 2004.
- \*118/23.5. *Mentha pulegium* (Pennyroyal) (Brymllys). ‡Grassed over coal mine, Chirk, SJ298.383, BSBI group, 2004. 1<sup>st</sup> record.
- +120/1.4. *Callitriche platycarpa* (Various-leaved Water-starwort) (Brigwlydd y Gwanwyn). Riverside, River Dee, Trefor, SJ272.418, R. Maskew, 2004. 1<sup>st</sup> record since old Atlas.
- +†124/12.1. *Kickxia elatine* (Sharp-leaved Fluellen) (Llysiau Llywelyn). Ploughed field, Pentrefelin, SH7.7, W. McCarthy, 2004.

- +‡129/7.2. *Lobelia erinus* (Garden Lobelia). Naturalised in wood, Erddig, Wrexham, SJ3.4, R. Hesketh, 2003.
- +‡135/12.1. *Cichorium intybus* (Chicory) (Ysgellog). Grassland, Llay, SJ322.552, B. Formstone, 2004.
- +135/28.21. *Hieracium trichocaulon* (a hawkweed). Grassed over coal mine, Chirk, SJ297.383, J. Clarke, 2004, NMW.
- +‡135/74.1. *Ambrosia artemisiifolia* (Ragweed) (Bratlys). ♂Car park near beach, Llandulas, SH907.785, M. Rogers, 2004. 2<sup>nd</sup> record.
- \*‡135/81.4. *Bidens frondosa* (Beggarticks) (Llau'r Crwydryn). Lock gate, canal basin, Trefor, SJ271.422, G. Kay, 2004. 1<sup>st</sup> record.
- +141/1.1. *Triglochin palustre* (Marsh Arrowgrass) (Saethbennig y Gors). Wet flush, Eglwyseg, Llangollen, SJ223.467, I.J. Bennallick, 2004.
- \*151/1.26×27. *Juncus × kern-reichgeltii* (*J. effusus* × *J. conglomeratus*) (a hybrid rush). Moorland flush, Gors Maen Llwyd, SH980.583, A.O. Chater, 2004. 1<sup>st</sup> record.
- \*151/2.1×2. *Luzula × borleri* (*L. forsteri* × *L. pilosa*) (a hybrid wood-rush). Wooded slope, Trefor, SJ273.419, R. Maskew, 2004, conf. C.A. Stace. 1<sup>st</sup> record.
- \*151/2.6. *Luzula multiflora* subsp. *congesta* (Heath Wood-rush) (Coedfrwynen Luosben). Pasture, The Cloy, SJ397.428, J. Clarke, 2004. 1<sup>st</sup> record of subspecies.
- +152/16.1. *Carex paniculata* (Greater Tussock-sedge) (Hesgen Rafunog Fwyaf). Marsh, Bradley, SJ324.534, B. Formstone, 2004, conf. J.A. Green.
- +152/16.27. *Carex pseudocyperus* (Cyperus Sedge) (Hesgen Hopysaidd). Field pond, Overton, SJ397.426, J.A. Green, 2004.
- +‡153/3.1. *Sasa palmata* (Broad-leaved Bamboo) (Bambw). Estate garden, Hafodunos Hall, Llangernyw, SH869.668, J.A. Green, 2004. Status upgraded from VCCC.
- \*153/32.1b. *Deschampsia cespitosa* subsp. *parviflora* (Tufted Hair-grass) (Brigwellt Cudynnog). Felled woodland, World's End, Llangollen, SJ228.477, A.O. Chater, 2004. 1<sup>st</sup> record.
- \*154/1.1b. *Sparganium erectum* subsp. *microcarpum* (Branched Bur-reed) (Cleddlys Canghennog). Pond in waste ground, Wrexham, SJ381.487, J. Clarke, 2004. 1<sup>st</sup> record of subspecies.
- +158/13.1. *Convallaria majalis* (Lily-of-the-valley) (Clych Enid). Limestone wood, Minera, SJ256.520, P.L. Thomas, 2004, conf. J. Vigo. Refound after 33 years
- +162/5.1. *Neottia nidus-avis* (Bird's-nest Orchid) (Tegeirian Nyth Aderyn). Deciduous wood, Rhewl, SJ095.589, T. Grey-Hulse, 2004.

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- +‡62/31.2. *Coronopus didymus* (Lesser Swine-cress) (Olbrain Lleiaf). Waste ground, Foresters Hall, High St, Bagillt, SJ219.753, M. Midgley, 2002.
- +‡62/40.1. *Rapistrum rugosum* (Bastard Cabbage) (Berwr Crychiog). ♂Waste ground, Leeswood, near Mold, SJ272.597, R. Hesketh, 2004, det. T.C.G. Rich. 3<sup>rd</sup> record.
- \*‡75/18.3. *Acaena ovalifolia* (Two-spined Acaena) (Pirri-pirri Pigog). Mixed woodland on limestone, Loggerheads Country Park, SJ199.629, J. Phillips, det. P.F. Yeo, 2003. 1<sup>st</sup> record.
- +77/18.5. *Medicago arabica* (Spotted Medick) (Maglys Amrywedd). ‡Large patches on dry bank, SE of marine Lake, Rhyl, SJ000.804, J.A. Green, 2004. 2<sup>nd</sup> confirmed record.
- +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.
- \*107/31.1. *Cicuta virosa* (Cowbane) (Buladd). Field pond, Penymynydd, SJ306.624, P. Day 2003. Only extant site (first found 1988). 1<sup>st</sup> record.
- +‡135/22.1. *Lactuca serriola* (Prickly Lettuce) (Gwylaeth Bigog). c.30 plants on waste ground, E of Marine Lake, Rhyl, SJ002.805, J.A. Green, 2004. 3<sup>rd</sup> record.
- +‡135/44.1. *Conyza canadensis* (Canadian Fleabane) (Amrhydlwyd Canada). Garden borders on imported soil, Foresters Hall, High St, Bagillt, SJ219.753, M. Midgley, 2002.
- +‡138/4.2. *Elodea nuttallii* (Nuttall's Waterweed) (Alaw Nuttall). Pond at edge of field, between Rhuddlan and Rhyl, SJ029799, G. Wynne, 2003.
- +162/18.4. *Dactylorhiza praetermissa* (Southern Marsh-orchid) (Tegeirian y Gors). Over fifty plants in hay meadow, Tremerchion, SJ072.715, J.A. Green, 2003, det. R.H. Roberts.

ANGLESEY, v.c. 52 (comm. N.H. Brown &amp; I.R. Bonner)

- 14/1.1. *Thelypteris palustris* (Marsh Fern) (Marchredynen y Gors). Locally abundant in fen, Tre'r Gof SSSI, SH359.935, I. Bonner & L. Colley, 2004. Reconfirmation of 1970-1986 record.
- +17/3.8×9. *Dryopteris* × *deweveri* (*D. carthusiana* × *D. dilatata*) (a hybrid Buckler-fern). With both parents in mire in former settling pond, Parys Mountain, SH446.901, I. Bonner & E. Wagstaff, 2004, **herb. IRB**, det. A.O. Chater. Site threatened by sludge dumping.
- \*†30/1.5b. *Papaver dubium* subsp. *lecoqii* (Yellow-juiced Poppy) (Pabi Sudd Melyn). Thin soil on limestone in gardens, Tynyngogl, SH509.828, I. Bonner, 2004. 1<sup>st</sup> record.
- +39/4.5×6. *Quercus* × *rosacea* (*Q. petraea* × *Q. robur*) (a hybrid oak). Overgrown yard of disused church, near Pentre Berw, SH478.735, I. Bonner, 2004.
- +45/3.1d. *Montia fontana* subsp. *chondrosperma* (Blinks) (Gwlyddyn y Ffynnon). +Thin soil around rocky outcrops, Porth y felin, Holyhead, SH243.834; +Centre strip in road, Between Pentraeth and Talwrn, SH50.77; both I. Bonner, 2004.
- +48/2.1. *Armeria maritima* (Thrift) (Clustog Fair). Single clump on road verge, near Capel Mawr, SH409.718, I. Bonner, 2004. Status uncertain.
- +61/2.11×12. *Salix* × *multinervis* (*S. cinerea* × *S. aurita*) (a hybrid willow). Fen, Tre'r Gof SSSI, SH35.93, I. Bonner & L. Colley, 2004.
- +62/12.2. *Rorippa microphylla* (Narrow-fruited Water-cress) (Berwr Dwr Lleiaf). Marsh surrounding Llyn y Fydlyn, nr. Carmel Head, SH294.917, I. Bonner & R.A. Jones, 2004.
- \*†62/14.cor. *Cardamine corymbosa* (New Zealand Bitter-cress). +Garden, Bryn-castell, SH565.788, G. Gibson, 2003; +In pots of Bloom's alpine plants in Plant Nursery, Holland Arms, SH471.724, I. Bonner, 2004. 1<sup>st</sup> & 2<sup>nd</sup> records.
- +62/22.3. *Erophila glabrescens* (Glabrous Whitlowgrass) (Bystwn Llyfn). Limestone chippings on drive entrance, near Ty Fry, Rhoscefnhir, SH517.761, I. Bonner, 2004, **herb. IRB**, det. A.O. Chater.
- +†62/33.2. *Diploaxis muralis* (Annual Wall-rocket) (Cedw y Tywod). +Spoil heap by track, Between Bethel and Capel Mawr, SH404.713, I. Bonner, **herb. IRB**; +Waste ground, Bull Bay, SH426.943, M. Stead; both 2004.
- +69/2.1. *Hottonia palustris* (Water-violet) (Pluddalen). Good colony in pond created by new A55 dual carriageway, between Brygwrn and Gwalchmai, SH372.761, R. Birch, 2004.
- +†69/4.5. *Lysimachia punctata* (Dotted Loosestrife) (Trewynyn Brych). Old spoil heap, Parys Mountain, SH439.899, I. Bonner & E. Wagstaff, 2004.
- +†72/2.4. *Ribes sanguineum* (Flowering Currant) (Rhyfon Blodeuog). Old spoil heap, Parys Mountain, SH42.90, E. Wagstaff; +Old spoil heap, Parys Mountain, SH439.899, I. Bonner & E. Wagstaff; both 2004. 1<sup>st</sup> & 2<sup>nd</sup> records as neophyte.
- \*†74/4.1. *Darmera peltata* (Indian-rhubarb). Stream edge, Cadnant Dingle, SH558.738, N. Brown, 2004. 1<sup>st</sup> record.
- +†74/5.8×9. *Saxifraga* × *urbium* (*S. umbrosa* × *S. spathularis*) (Londonpride) (Balchder Llundain). Waste ground, Parys Mountain, SH44.90, E. Wagstaff, 2004.
- +75/9.13×14. *Potentilla* × *suberecta* (*P. erecta* × *P. anglica*) (a hybrid cinquefoil). Roadside bank, near Gaerwen, SH497.727, I. Bonner, 2004, **herb. IRB**, conf. A.O. Chater.
- +75/15.2. *Agrimonia procera* (Fragrant Agrimony) (Llys y Dryw Peraroglus). By track, Parys Mountain, SH449.903, I. Bonner & E. Wagstaff, 2004.
- +†75/15.9. *Lathyrus latifolius* (Broad-leaved Everlasting-pea) (Ytbysen Barhaus Lydanddail). Garden escape on waste ground, Bull Bay, SH426.943, M. Stead, 2004.
- \*†75/19.15. *Alchemilla mollis* (Robust Lady's-mantle). Roadside bank, opposite cottage, Trefdraeth, SH40.70, I. Bonner, 2004. 1<sup>st</sup> record.
- +75/21.13a. *Rosa caesia* subsp. *caesia* (Hairy Dog-rose) (Rhosyn Blewog). Roadside hedge, near Gaerwen, SH494.731, I. Bonner, 2004, det. R. Maskew. Listed in the VCCC, not in Atlas 2000.
- +75/21.18. *Rosa rubiginosa* (Sweet-briar) (Drysen Bêr). †Almost certainly originally planted in hedgerow, lane end beyond Tre'r Gof, SH362.933, I. Bonner & L. Colley, 2004.
- \*77/16.3. *Ononis spinosa* (Spiny Restharrow) (Tagaradr Pigog), † or ‡ Road edge, near Dwyran, SH458.666, G. & P. Radford, 2003, **herb. IRB**, conf. A.O. Chater. 1<sup>st</sup> record, origin uncertain, still present 08.09.2004.
- \*84/1.2×6. *Epilobium* × *dacicum* (*E. parviflorum* × *E. obscurum*) (a hybrid willowherb). Damp ground, by track, Ty Mawr, Paradwys, SH416.708, I. Bonner, 2004, **herb. IRB**, conf. A.O. Chater. 1<sup>st</sup> record.
- \*84/1.6×8. *Epilobium* × *vicinum* (*E. obscurum* × *E. ciliatum*) (a hybrid willowherb). Waste ground, Parys Mountain, SH442.899, I. Bonner & E. Wagstaff, 2004, **herb. IRB**, conf. A.O. Chater. 1<sup>st</sup> record.

- +103/2.3. *Erodium cicutarium* (Common Stork's-bill) (Pig y Crëyr). Bare ground, near Cae Mawr, Capel Mawr, SH413.714, I. Bonner, 2004.
- \*123/23.1. *Parentucellia viscosa* (Yellow Bartsia) (Gorudd Melyn). Beside new A55 dual carriageway, Caergeiliog, SH306.796, R. Birch, 2004. 1<sup>st</sup> record (1<sup>st</sup> recorded in 2003); very localised, habitat is diminishing; unclear if introduced (casual) or native.
- +‡124/16.20. *Veronica polita* (Grey Field-speedwell) (Rhwyddlwyn Llwyd). Thin soil around rocky outcrops, Ty'n-y-buarth, Soar, SH393.729, I. Bonner, 2004, herb. IRB, det. A.O. Chater.
- +‡124/16.24b. *Veronica hederifolia* subsp. *lucorum* (Ivy-leaved Speedwell) (Rhwyddlwyn Eiddewddail). Roadside, near Gaerwen, SH482.735, I. Bonner, 2003, herb. IRB, conf. A.O. Chater.
- +‡129/1.10. *Campanula poscharskyana* (Trailing Bellflower) (Clychlys Ymlusgol). Established on roadbank, Trefdraeth, SH408.702, I. Bonner, 2004. VCCC status upgraded.
- +131/2.1. *Viburnum opulus* (Guelder-rose) (Corswigen). ‡Roadside, planted by new A55, near Gaerwen, SH482.724, I. Bonner, 2004.
- +‡131/5.1. *Leycesteria formosa* (Himalayan Honeysuckle) (Bachgen Llwm). Waste ground by footpath, Benllech, SH517.827, I. Bonner, 2004.
- \*135/26.1. *Crepis paludosa* (Marsh Hawk's-beard) (Gwalchlys y Gors). Stream edge, Cadnant Dingle, SH558.738, I. Bonner, 2004. 1<sup>st</sup> record.
- +‡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, J. Smith, 2004, letter to Nigel Brown.
- +‡135/59.1. *Matricaria recutita* (Scented Mayweed) (Amrauwn). Arable field, Trefdraeth, SH409.705, I. Bonner, 2004.
- \*‡135/80.2. *Galinsoga quadriradiata* (Shaggy-soldier) (Galinsoga Blewog). ‡Single plant beside new A55 dual carriageway, Gwalchmai, SH375.759, R. Birch, 2004. 1<sup>st</sup> record.
- +‡151/1.2. *Juncus tenuis* (Slender Rush) (Brwynen Fain). Grassy ride, Newborough Forest, SH39.64, I. Bonner, 2004.
- +152/3.6. *Eleocharis acicularis* (Needle Spike-rush) (Sbigfrwynen Leiaf). Balancing pond by new A55, Tyddyn Bach, Penrhos, SH264.808, R. Birch, 2004.
- +152/7.1. *Schoenoplectus lacustris* (Common Club-rush) (Llafwrwynen). Pool margin, Cefn-maesoglen, Llangaffo, SH460.671, I. Bonner, 2004, herb. IRB, conf. A.O. Chater. Pool is part of wetland creation by Richard Roberts of Cefn-maesoglen.
- +152/8.2. *Isolepis cernua* (Slender Club-rush) (Clwbfrwynen Eiddil). Edge of fen, Tre'r Gof SSSI, SH358.936, I. Bonner & L. Colley, 2004.
- +152/16.1. *Carex paniculata* (Greater Tussock-sedge) (Hesgen Rafunog Fwyaf). Marsh surrounding Llyn y Fydlyn, near Carmel Head, SH294.917, I. Bonner & R.A. Jones, 2004.
- +‡153/14.3. *Vulpia myuros* (Rat's-tail Fescue) (Peisgwelld y Fagwyr). Wall-top by new A55, near Gaerwen, SH484.724, I. Bonner, 2004, herb. IRB.
- +153/24.2×4. *Glyceria* × *pedicellata* (*G. fluitans* × *G. notata*) (Hybrid Sweet-grass) (Perwelld Croesryw). Marshland, Malltraeth Marsh, SH471.735, I. Bonner, 2004, herb. IRB, conf. A.O. Chater.
- +158/20.2×3. *Hyacinthoides* × *massartiana* (*H. non-scripta* × *H. hispanica*) (Hybrid Bluebell). +‡Under pines by forest ride, Newborough Forest, SH399.642, I. Bonner, 2001. Found again in 2004, with *Crocus* × *crocus* × *maritima*; +‡Roadside, between Pentraeth and Talwrn, SH506.772, I. Bonner, 2004.
- +‡158/20.3. *Hyacinthoides hispanica* (Spanish Bluebell) (Clychau Cog Sbaen). Roadside, near Porth Diana, Trearddur, SH254.784, I. Bonner & T. Dines, 2004.
- \*‡158/23.2. *Muscari armeniacum* (Garden Grape-hyacinth) (Clychau Glas yr Ardd). +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 Pentraeth, SH513.777; both I. Bonner, 2004. 1<sup>st</sup> & subsequent records.
- \*162/5.1. *Neottia nidus-avis* (Bird's-nest Orchid) (Tegeirian Nyth Aderyn). Under beech trees, near Menai Bridge, SH560.728, A. & M. Robinson, 2004. 1<sup>st</sup> record. c.18 spikes counted by N. Brown & I.R. Bonner on 07.07.2004.



## PLANTLIFE WALES NEWSLETTER - 2

# PLANTLIFE

### **Narrow-leaved Helleborine (Caldris 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!).

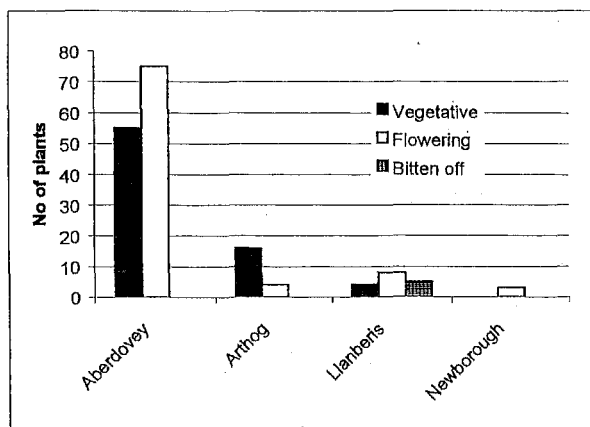
The following is an inventory of all Welsh *C. longifolia* populations that I have traced, with details of the first and last year plants were recorded at each site. Note that, of the 11 sites, only 4 are currently extant (i.e., they still have plants), and that *C. longifolia* has become extinct in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

Vice County	Locality	Grid Reference	First record	Last recorded	Last recorded by
Monmouthshire	Wynd Cliff	ST5297	1895	1914	E. Vachell
Monmouthshire	Chepstow	ST5394	1898	1901	Anon.
Monmouthshire	Black Cliff	ST5398	1975	1979	Anon.
Monmouthshire	Tintern	ST5399	1882	1882	Anon.
Cardiganshire	Eglwys Fach	SN6894	1956	1985	A. O. Chater
Montgomeryshire	Kerry	SO1588	1978	1978	E.H. Wolfe
Merionethshire	Eisengrug	SH6134	1905	1978	P. M. Benoit
Merionethshire	<b>Aberdovey</b>	SN6398	1927	<b>2004</b>	S. Kelly
Merionethshire	<b>Arthog</b>	SH6414	1920	<b>2004</b>	T. D. Dines
Caernarfonshire	<b>Llanberis</b>	SH5661	1832	<b>2004</b>	T. D. Dines
Anglesey	<b>Newborough</b>	SH3984	1981	<b>2004</b>	I. R. Bonner

### 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.



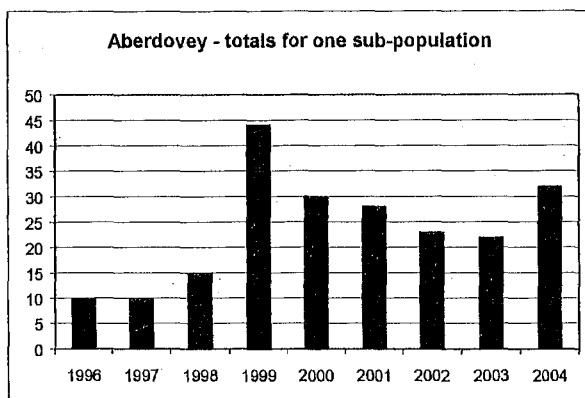


### Aberdovey, Merionethshire

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 Benoit 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.



### 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 Benoit 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), *Lonicera periclymenum* (Honeysuckle), *Lotus corniculatus* (Bird's-foot-trefoil), *Luzula multiflora* (Heath Wood-rush), *Luzula sylvatica* (Great 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), *Pteridium aquilinum* (Bracken), *Ulex europaea* (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 Lancut 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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