

BOTANICAL SOCIETY OF THE BRITISH ISLES

WELSH BULLETIN

Editors : R. D. Pryce & G. Hutchinson

No. 78, June 2006



Life-size photocopies of specimens of Mousetail and Mousetailplant (*Myosurus minimus* and *Arisarum proboscideum*) at NMW, recently recorded from Wales (see Denbs. & Brecs. articles resp.).

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Most back issues of the BSBI Welsh Bulletin are still available on request (originals or photocopies). Please enquire before sending cheque (made payable to BSBI Wales), @ £2 per issue, which includes p & p, to - Dr G. Hutchinson, Department of Biodiversity & Systematic Biology, National Museum, Cathays Park, Cardiff CF10 3NP, specifying the issue number, or year (which would have to include the season or month). Large runs - price negotiable.

Publication date of last BSBI Welsh Bulletin (No. 77) - January 2006.

 EDITORIAL

The recent cold, wet, stormy weather (now hot and sunny again as I write this) has given me an opportunity to browse the latest BSBI publication, *Change in the British Flora 1987 – 2004*, the report of the recent *Local Change* monitoring. If you haven't yet obtained your copy, you must, before it goes out of print! It is a truly sumptuous, glossy book when compared with preceding reports in a similar vein and considers changes in individual species' distributions as well as analyses of plant changes grouped by broad habitats. It makes fascinating and sometimes surprising reading and is certainly a fitting climax to all the hours of effort that the membership and Vice-county Recorders have put in over the three years of the scheme. The authors, Michael Braithwaite, Bob Ellis and Chris Preston, are to be heartily congratulated in the way they have undertaken the analytical modelling and presentation of the statistics, which are comprehensible even to a mathematical dumbo like me!

New Welsh publications include Jean Green's welcome *The Flowering Plants and Ferns of Denbighshire* which is the first-ever checklist devoted to the plants of the vice-county and should be an encouragement for further work, in order in time to produce the first full County Flora. Congratulations Jean! Also, several County Rare Plant Registers have appeared in draft or are nearing completion, but Ian Bonner's *Anglesey Rare Plant Register* has recently been printed and follows the now-established format of a list of the occurrences of the international, national and county rare and scarce species, together with extinct taxa and short explanatory notes at the beginning. It is a spiral bound A4 soft-back which will prove to be a great asset to those involved in nature conservation management, planning and development control, as well as stimulating, as Ian puts it, 'a flow of new and updated records, as much work needs to be done to refine the information in this first edition'.

2006 seems to be accelerating by and I've hardly been able get out into the field until recently due to Kath's operation. But she's on the mend now, so I hope the convalescence will continue with an extra dose of fieldwork! Paid work has also continued at a slower pace than in the past, it having had to take second place to more important matters, but I did manage to fit-in a mundane *Fallopia japonica* (Japanese Knotweed) mapping job on a large development in the centre of Carmarthen. I meticulously recorded every m² of the site and was quite surprised at the botanical interest present in the sparsely-weedy angles between pavements and boundary-walls or on concrete floor-pads of demolished buildings. Plants which could have been anticipated included species such as *Centranthus ruber*, *Veronica arvensis*, *Coryza canadensis* and, of course, the usual wall ferns, but less expected were the single plant of *Anthriscus sylvestris* and abundant *Geum urbanum*. Less common species included *Veronica agrestis*, *Arenaria serpyllifolia* and *Valerianella carinata* which seems to be increasingly growing in the weedy flower beds of the town. But the most exciting find was the two plants of *Amsinckia microphylla*† (Common Fiddleneck), a new record for V.C.44 and the first in South Wales for many years, according to published sources. To cap it all, I even found four stands of knotweed for my client to deal with! Hopefully the latter half of the year (including the Glynhir meeting) will allow Kath and me to get out more often and include visits to some more attractive sites than just concrete dereliction.

Thanks to all concerned in the successful running of the BSBI in Wales especially those involved in arranging and leading field meetings, particularly the AGM at Plas Tan-y-Bwlch, near Ffestiniog, in September. Bookings for the AGM are still being taken although accommodation within the Plas is now nearly exhausted. The theme this year will be on ferns and I look forward to seeing you there.

Richard Pryce, 12th Jun 2006

[† not *microphylla* spelling of colour section p.3] *see p. 10*

BSBI WALES ANNUAL GENERAL MEETING 2005

Saturday 18th June 2005

The 43rd Annual General Meeting of the BSBI in Wales, held at the University of Wales, Lampeter.

1. **Apologies for absence:** Dr Derek Hill, Graeme Kay, Julian Woodman, Ann Conolly, Ian Bonner.

2. **Minutes of 2004 AGM:** (published in Welsh Bulletin 75, 5-6) Accepted without amendment.

3. **Matters arising:** none

4. **Chairman's opening remarks:** Dr Goronwy Wynne welcomed everyone to the meeting and expressed his thanks to those who have worked hard over the last year, particularly the committee members and those involved in planning for this year's Annual General Meeting. He particularly singled out the contributions made by Dr George Hutchinson and Richard Pryce for their work on the Welsh Bulletin, and thanked all those who had brought exhibits to the AGM. Dr Wynne concluded by regretting that Summerfield Books had no representatives at the meeting, but that their books were on sale as usual.

5. **Hon. Secretary's Report.** Andy Jones reported that feedback already received from members attending this AGM had been very positive and endorsed the fact that themed meetings were constructive, useful and worth following-up in future.

6. **Hon. Treasurer's Report.** The accounts for 2004 were tabled and circulated. The treasurer explained that the decrease in funds was in part due to the costs of producing two issues of a larger Welsh Bulletin and a small deficit from the Llangollen AGM in 2004.

Annual Statement of Accounts, 1 January 2004 to 31 December 2004

<i>Receipts</i>	£	<i>Payments</i>	£
From BSBI Treasurer	0.00		
2004 Welsh AGM	4347.00	2004 AGM	4541.50
		2004 AGM reimbursements	88.50
<i>Welsh Bulletin</i> subs	162.00	<i>Welsh Bulletin</i> # 73 Printing	95.46
		<i>Welsh Bulletin</i> # 73 Postage	48.67
		<i>Welsh Bulletin</i> # 74 Printing	79.96
		<i>Welsh Bulletin</i> # 74 Postage	48.94
<u>Totals</u>	4509.00		4903.03
Excess of receipts over payments	-394.03		
Carried forward from 2003	597.62		
Balance at 31/12/04	203.59		

Statement of Accounts 24 July 2004 to 18 June 2005

<i>Receipts</i>	£	<i>Payments</i>	£
2004 AGM	4347.00	2004 AGM venue	4541.50
Refund of O/P from Hand Hotel, Llangollen	221.15	2004 AGM reimbursements	88.50
<i>Welsh Bulletin</i> subs	136.00	<i>Welsh Bulletin</i> # 74 Printing	79.96
Plantlife payment for <i>Bulletin</i>	<u>106.00</u>	<i>Welsh Bulletin</i> # 74 Postage	48.94
Totals	4810.15	<i>Welsh Bulletin</i> # 75 Printing	235.49
		<i>Welsh Bulletin</i> # 75 Postage	90.87
		Secretary's postage costs	<u>26.00</u>
Excess of receipts over payments	-301.11	Totals	5111.26
Carried forward from 24 July 2004	546.49		
Balance at 18 June 2005	: 245.38		

Sarah Stille, Hon Treasurer, BSBI Committee for Wales

Gwynn Ellis proposed that the accounts be adopted which was approved unanimously.

7. Election of Officers and Committee for Wales Members 2005 - 2006:

Dr Goronwy Wynne continues his term of office as Chairman until 2006.

Due to the resignation of Julian Woodman, R A Jones was proposed as Vice-Chairman.

As previously proposed, Richard Pryce takes over as Hon. Secretary, on his retirement as BSBI President.

In the absence of any additional nominations, Committee members due to retire in 2005 were re-elected.

The Committee for Wales now comprises:

Hon. Chairman & Welsh Rep. on Council

Dr Goronwy Wynne

Hon. Vice-chairman

R A Jones

Hon. Secretary

Richard Pryce

Hon. Treasurer

Sarah Stille

Hon. Field Meetings Secretary

WendyMcCarthy

Hon. Minutes Secretary

Ian Bonner

Committee Members

Arthur Chater

Dr George Hutchinson

Paul Day

Dr Quentin Kay

Dr Trevor Dines

Joe Phillips

Stephen Evans

Mike Porter

Trevor Evans

Delyth Williams

CCW Observer: Ray Woods

Dr Trevor Dines also represents Plantlife International (Wales)

8. Future Meetings.

Ailsa Burns reminded members that the 2005 Exhibition Meeting was to be held in London on 26th November. She appealed for exhibits to support the meeting.

The 2006 Welsh AGM would be held later in the year, possibly as late as September, in Caernarvonshire.

It had been suggested that the theme of Pteridophytes should be adopted following this year's successful Aquatic Plants theme.

Wendy McCarthy appealed to members to come forward with proposals and ideas for field meetings for 2006, as soon as possible.

9. Any other Business

In appreciation of Richard Lansdown's contribution to the success of the weekend in running workshops and leading field meetings on the aquatic plant theme, Dr Goronwy Wynne presented him with a set of the BSBI Handbooks on Alien Plants.

The Chairman closed the meeting by reiterating his thanks to everyone who had contributed to the weekend.

The AGM attendance list was signed by 48 members.

CALENDAR OF WELSH BSBI MEETINGS 2006

Full details and procedure for booking are available in the BSBI Year Book for 2006.

SAT 17th JUN - ABERSOCH, CAERNARVONSHIRE (v.c. 49) – T. Dines & W. McCarthy

SAT 24th JUN - LAMPETER, CARMARTHENSHIRE (v.c. 44) – T. Dines

SAT 1st JUL - CLYNNOG FAWR, CAERNARVONSHIRE (v.c. 49) – T. Dines

SAT 1st JUL - COLWYN BAY, DENBIGHSHIRE (v.c. 50) – J. Green

SAT 15th JUL - BRYNBERIAN MOOR, PEMBROKESHIRE (v.c. 45) – H. Williams & S.B. Evans

SAT 22nd JUL - SAT 29th JUL - GLYNHIR MANSION, LLANDYBIE,
CARMARTHENSHIRE (v.c. 44) – R.D. Pryce

SAT 5th AUG - LLYN GWNGU, CARDIGANSHIRE (v.c. 46) – A.O Chater

SAT 12th AUG - BERWYN MOUNTAINS, MERIONETHSHIRE (v.c. 48) – S. Stille

FRI 1st - SUN 3rd SEP - WELSH AGM and EXHIBITION MEETING, PLAS TAN-Y-BWLCH and associated field meetings (v.c. 49)

REMINDER - BSBI WALES AGM

11th Quadrennial Meeting, 44th Welsh AGM, & 24th Exhibition Meeting, 2006

Friday 1st - Sunday 3rd September 2006

This is a reminder that the BSBI Wales AGM for 2006 is being held at the Plas Tan y Bwlch Field Study Centre at Maentwrog (Gwynedd) and will have the identification and conservation of Pteridophytes (ferns, horsetails & clubmosses) as its main theme. All levels of experience will be catered for and **participants are strongly encouraged to bring their own material for determination** and discussion. Please plan ahead and collect any plant material (not just ferns!) throughout the year for identification in the workshops.

There will be:

- Workshop sessions on Friday & Saturday with Fred Rumsey and other experts helping to identify ferns and related species, as well as any other (non-fern) plants you're having trouble with.
- Saturday excursions to fern-rich woodlands and gorges in the Vale of Ffestiniog.
- Sunday excursions to fern-rich montane sites (including restricted numbers to Dan-y-Ogof cave on Moel Hebog, Beddgelert) and mine sites in the Gwydyr Forest, Betws-y-Coed.
- A talk by Rod Gritten (Snowdonia National Park Ecologist) on the botany of the Park on Friday.
- A talk by Fred Rumsey on fern ecology and identification on Saturday.
- A display of books for sale by Summerfield Books.
- An exhibition of posters and specimens by members.

An important part of the meeting will be an exhibition of posters prepared by members - **please contribute to this!** It is a great way to communicate your observations and stimulate discussion; any material that will be of interest to other members is welcome - don't worry about producing highly-polished, scientific posters.

Booking forms were circulated with the last edition of BSBI News, and **ALL BOOKINGS MUST BE MADE BY 30th JUNE, 2006.**

NEW STORAGE FOR THE WELSH NATIONAL HERBARIUM

The Welsh National Herbarium of vascular plants has been re-housed following purchase of 420 new cabinets with a £100,000 grant from the Welsh Assembly. The new cabinets have allowed the entire collection to be rearranged and integrated into one room, with improved access and additional expansion space for the next 25 years.

The herbarium originated in 1870 when Cardiff Museum purchased a small collection of dried plants collected in the 1830s by Charles Conway of Pontrydyryn. In 1912 the collection was taken over by the newly constituted National Museum of Wales, by which time it comprised some 3,500 mounted specimens. Expansion continued through gifts, exchange, purchase of new collections and amalgamation of defunct herbaria. By 2004, the collections had contained about 235,000 specimens, and a reorganisation of the collections was long overdue.

The new cabinets were purchased from C&D (Sheet Metal) Engineering in Kent, who have also supplied cabinets to Kew Gardens and the Natural History Museum. The cabinets are constructed of sheet metal and can be bolted together, which will allow them to be loaded onto roller racking at some stage in the future. There are insect-proof seals around the doors, and shallower shelves to improve storage conditions for the specimens. The rearrangement took about 15 months, and was a huge undertaking, with many museum staff helping.

There are significantly improved facilities for visitors to work on the collections, who will be very welcome. Please contact either myself or George Hutchinson for access.

TIM RICH, Head of Vascular Plants
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A NEW "WILD" PLANT FOR THE BRITISH ISLES

In 2005, John S. Rees from Bristol sent me a few-flowered head and a compound leaf from a plant he had found on the bank of the Usk, near the bridge, at Abergavenny. He was unfamiliar with it and looked it up in Stace and decided it was *Cardamine bulbifera*. I was not convinced and the following day I visited the site near the top of a drainage ditch for carrying off flood water from Castle Meadows and counted 7 flowering spikes and 3 non-flowering stems, each had a whorl of 3 compound leaves just below the middle of the stem; only one had an additional, single compound leaf and that between the whorl and the inflorescence; there were no simple leaves and no bulbils; the inflorescence was a symmetrical, shortish raceme of 20-22mm long, deep purplish flowers (see photograph of a pressed plant); 2 outer stamens were shorter than the 2 inner ones, which were slightly shorter than the pistil, which was slightly longer than the fused tubular part of the clawed petals; the glabrous, oval sepals were brownish purple with the 2 outer ones slightly saccate at their base. The key in *Flora Europaea*, Vol. 1, page 285 (1st edn) in 4 steps revealed the plant as *Cardamine quinquefolia*, a plant of E. Europe. My rather old edition of *Plant Finder* had no mention of this *Cardamine*, George Hutchinson looked up last year's version for me and found there were now 17 suppliers of the plant. Was one of these (via a gardener) the origin? The plants are among brambles and small saplings of at least Ash. A small piece of rhizome with leaves was removed to my garden where for over a month it survived and looked good, and then one morning there was nothing there except the trail of slug or snail. I couldn't believe it, when

early in March, this year a flash of purple caught my eye and there was a perfect flowering stem bedecked with a single whorl of 3 compound leaves and an inflorescence and with a single compound leaf on its own a few centimetres away. A visit to Abergavenny shortly after revealed the colony had 26 flowering plants so one was picked, pressed and presented to NMW. Tim Rich and I looked up the Russian flora and found a drawing of *C. quinquefolia* and it matched the specimen, the Bulgarian Flora had an even better matching drawing.

A week ago, I received a letter from one of my recorders, Bob Hewitt. His friend Stephen Baker, also from near Pontypool, had visited his late wife's grave at Llangattock and had noticed flowers he didn't recognise on the bank of Nant Onnau. Bob collected a part of one and sent it off to someone in RHS. It was obviously not complete enough as the reply said it was *C. bulbifera*. Bob came with me and we saw at least 5 colonies, one quite big (see photo), the plants were examined, most of them were the same as those at Abergavenny with 3 compound leaves per whorl but one plant had a whorl of 4 and one had 2 leaves with a third just above the other two. There were no bulbils. The Onnau flows into the Usk opposite Crickhowell, a higher point than Abergavenny. The Usk floods, and it looks as if a propagule has been carried down to Abergavenny to establish a new colony. As every leaf has 7 leaflets why *quinquefolia*?

TREVOR EVANS

La Cuesta, Mounton Road, Chepstow, Gwent NP16 5BS

RECORDING THE FLORA OF BRECKNOCKSHIRE : 2005

The discovery by Ray Woods of a single plant of *Dryopteris aemula* (Hay-scented Buckler-fern) near Elan Village marks a notable extension in the range of this species in Brecknockshire. With one bound it has leapt from its one known site near the southern boundary with Glamorgan to the northern extremity of v.c.42.

A small population of *Diphasiastrum alpinum* (Alpine Clubmoss) on a rocky outcrop on the northern slopes of Fan Nedd provided another example of an increase in the known distribution of a locally uncommon species. Nearby were flourishing populations of *Festuca vivipara* (Viviparous Fescue), *Huperzia selago* (Fir Clubmoss) and *Hymenophyllum wilsonii* (Wilson's Filmy-fern). Many dwarf plants of Fir Clubmoss were also found growing with *Carex montana* (Soft-leaved Sedge) in closely grazed turf over limestone on Mynydd Llangynidr.

An unusual habitat for a locally scarce plant was reported by Tim Rich when he found eight clumps of *Vicia sylvatica* (Wood Vetch) growing along the top of a limestone cliff at Cefn Sychbant.

In 2005 one plant of *Campanula patula* (Spreading Bellflower) was flowering at one of its two extant localities in Brecknockshire. Both sites are steep lane banks which are subject to erosion.

Not surprisingly, at this stage in mapping the flora, most of the new county records in 2005 were aliens. *Verbascum speciosum* (Hungarian Mullein), on a road verge at Brecon, *Arisarum proboscideum* (Mousetailplant), on shady rough ground near Ystradgynlais, and *Phaseolus vulgaris* (French Bean), beside the canal at Brecon, were all NCRs reported by Tony and Viv Lewis. Steve Chambers noted *Hedera colchica* (Persian Ivy) as well established on a road bank near Llangattwg and Hywel Price recorded *Dianthus barbatus* (Sweet William) on waste ground at Bwlch. *Diascia integerrima* (Twinspur), growing on a road verge at Penderyn, and *Sutera cordata* (Bacopa), on the bank of the river west of Hay-on-Wye, may both have escaped from discarded hanging baskets. The soil used for the

construction of a new roadbank near Bronllys, which supported several plants of *Fagopyrum esculentum* (Buckwheat), was traced to a nearby estate where pheasants are reared. The only new blackberry recorded last year was also an alien, *Rubus tricolor* (Chinese Bramble)! Many of these records of aliens will be only casual occurrences, but the discovery of *Crassula helmsii* (New Zealand Pigmyweed) in a moorland pool on Mynydd Illtud, 6km west of Brecon rang alarm bells. The Brecon Beacons National Park own this area, so their Ecologist was alerted and has taken control measures, but only rigorous monitoring in subsequent years will show whether these measures have been effective. Nearby on this upland common, there are several other small pools, with scarce species such as *Limosella aquatica* (Mudwort) and *Baldellia ranunculoides* (Lesser Water-plantain), which would be threatened by an invasion of the pigmyweed.

MIKE PORTER

Aberhoywy Farm, Cyffredyn Lane, Llangynidr, Crickhowell NP8 1LR

REPORT FOR V.C.43

Since the last report there have been few major happenings. An important project which was undertaken by Margaret Gill from Glasbury was a survey of the present botanical status of the Dolyhir and Strinds quarries. These are very active quarries, mainly providing roadstone, but also are the only sites of limestone in the county. There was considerable interest and co-operation from the owners, Tarmac Western, and the results have been published in the Radnorshire Society Journal with beautiful colour drawings by Margaret, straying for that year from her usual archaeological interests. 2004 has been a good year for *Ophrys apifera* (Bee Orchid) over the country generally, and provided the first county record when it was spotted by a local farmer's wife on the verge of the main A44, only a half mile from the English border with Herefordshire. Its reappearance on this closely mown trunk road edge will be awaited, but without great certainty.

Ongoing projects here will have to be to produce a second edition of the *Radnorshire Rare Plants Register* of 2001, and to work towards an update of Ray Wood's *Flora of Radnorshire* of 1993. The records for that publication had been made in 5km squares. Many later County Floras had tetrad distribution maps, which are not compatible with 5km quadrants, and therefore records are now being made in 1km squares, compatible with both methods, and nearer to the present tendency to concentrate on sites rather than areas. Actually v.c.43 has some 1300 km squares of which over 200 are partial squares on the county boundary. Like most Welsh counties many squares have no roads crossing them, and 'square-bashing', although a pleasurable activity, can become quite arduous. The county is well known for a great preponderance of sheep population over human, and a consequent scarcity of recorders.

DAVID HUMPHREYS

Knill Court, Presteigne, Powys LD8 2PR

THE RESULTS OF THE LOCAL CHANGE SURVEY IN TETRAD SN78A, CWMBRWYNO, CARDS, V.C.46

In many ways this tetrad, 12km east of Aberystwyth on the A44, is a microcosm of inland Cardiganshire and it would be difficult to find any other more suitable for monitoring change in the county. It spans the boundary between lowlands and uplands, ranging from 105 to 370m altitude, and includes two complete small valleys and parts of two larger ones. In 1987-88, two-fifths of it were Forestry Commission conifer plantations, another two-fifths were improved, reseeded pasture, mostly grazed by sheep, and the remainder included unimproved upland sheepwalk and moorland, marshy pastures, several areas of poor fen, acidic bog and associated flushes, *Molinia* blanket bog, *Quercus petraea* woodland, scrub on rocky slopes, bracken-dominated slopes, heathy cliff slopes, wooded ravines with waterfalls, four streams and several arable fields. There was a hamlet of nine houses and a chapel with graveyard, two working farms, four other houses, two former lead mines with associated ruins and spoil tips, a small partly silted-up mine reservoir, a small quarry, a Forestry visitor centre, a trunk road with extensive lay-bys, and a network of other roads, green lanes, hedges, Forestry roads and footpaths. There were no SSSIs or nature reserves, and this absence of any statutory conservation designation meant that any changes that took place were likely to reflect the market forces and general public and institutional attitudes that would affect the county as a whole.

291 taxa were recorded in the tetrad in 1987-88. A considerable number of these were restricted to just one site, often just one or a few plants or in just a few square metres, for example *Lycopodium clavatum*, *Hymenophyllum wilsonii*, *Dryopteris carthusiana*, *Phyllitis*, *Asplenium trichomanes* subsp. *trichomanes*, *Pinguicula vulgaris*, *Silene uniflora*, *Linum catharticum*, *Epilobium brunnescens*, *Valeriana officinalis*, *Eleocharis palustris* and *Carex pallescens*. In a commentary on the tetrad submitted with the Monitoring Scheme results I suggested that species such as these would be expected to be especially vulnerable to any changes, and in an article (published only in Welsh, "Y filltir sgwar a'r rhwydwaith o blanhigion [The square mile and the network of plants]", *Y Naturiaethwr* No.19, pp.11-14 (1988)), describing this tetrad, I commented on the presumed importance of these often minute populations in maintaining the more general distribution of the less common species over the countryside as a whole.

By 2003-04 many changes had taken place in the tetrad, although most of the proportions of the different habitats remained roughly the same. Some areas of conifers had been felled, several areas of unimproved pasture had been reseeded, especially in the higher parts, a small part of the blanket bog and flushes had been destroyed to make an access road for a wind farm just outside the tetrad, one of the arable fields was different, the larger lead mine had been partially restored to smooth slopes, the visitor centre had been greatly extended and modified, the trunk road had been widened and part of the hillside cut away, the lay-bys had been extended and disturbed, a new house had been built and the chapel demolished and its graveyard become more overgrown. The larger upland farm had entered the Tir Gofal agri-environment scheme, although this had not yet had time to influence the vegetation. The most striking change was the construction of four new ponds, all on different properties. Three were small, put into marshy pastures for pleasure and environmental enrichment. The fourth was a 3ha lake built by the Forestry Commission next to the visitor centre, flooding an area of very acidic marsh and poorly grown conifers. (The ten Local Change tetrads in v.c. 46 had eight ponds built in them since 1987-88, so if this was a representative sample, and I think it may well be at least for this feature, it would indicate c.440 new ponds in the county in the last 17 years, probably the greatest single habitat change during that period.)

The 2003-04 total of taxa was 327, an increase of 36. Of the 69 new taxa recorded, 26 had probably been missed the first time through accident or ignorance (including *Trichomanes gametophyte*, *Juncus xkern-reichgeltii* and *Dactylorhiza maculata*). The 43

taxa that had probably genuinely newly arrived had come partly because of road widening and disturbance of the verges and lay-bys, or as part of the general movement of casuals along roads (seven taxa, including *Cochlearia danica*, *Atriplex patula*, and *Poa compressa*); because they had been deliberately planted, mostly in connection with the new ponds (15 taxa, including *Carex pendula*, *Crassula helmsii*, *Glyceria maxima* and *Cornus sanguinea*); because of changes in arable cultivation (four taxa, *Brassica rapa*, *Euphorbia peplus*, *Sonchus oleraceus* and *Viola arvensis*); by pasture reseeding (*Lolium multiflorum*); and by throw-outs from gardens and bird-dispersal (six taxa, including *Geranium endressii*, *Cotoneaster simonsii* and *Lysimachia punctata*); and by probably natural spread to the new ponds (five taxa, *Eleogiton fluitans*, *Lemna minor*, *Myriophyllum alterniflorum*, *Typha latifolia* and *Lythrum portula*) and to the old pond (*Sparganium erectum*). Apart from these last six taxa, the only other presumably naturally arrived native was *Ornithopus perpusillus*, on a rocky lane verge.

33 taxa had apparently been lost by 2003-04, but 19 of these were probably just missed accidentally (there were, I hope, fewer missed through ignorance by then). Reseeding of pastures was the chief observable cause of real loss, accounted for four taxa (*Lycopodium clavatum*, *Polygala vulgaris*, *Pimpinella saxifraga* and *Carex pallescens*); changes in arable accounted for two (*Lamium purpureum* and *Spargula arvensis*); felling of conifers accounted for *Pinus sylvestris* and, because of consequent drying out of a ravine, the same felling probably led to the loss of *Hymenophyllum wilsonii*; removal of a wall did for *Asplenium trichomanes* subsp. *quadrialeans*; grass encroachment in the graveyard exterminated *Silene uniflora*; *Carex laevigata* disappeared for unknown reasons from an apparently unaltered marshy pasture, and *Tripleurospermum inodorum*, *Myosotis sylvatica* and *Trifolium hybridum* similarly disappeared from where they had been before for no obvious reason.

Thus four of the eleven taxa I had noted in 1987-88 as vulnerable had gone because of habitat change. Of the seven that survive, *Pinguicula* precariously persists as eight plants on the ruined wall of a lead mine wheelpit, and *Dryopteris carthusiana* narrowly missed being flooded by the new lake. The arrival of *Ornithopus* and of six native aquatics is little consolation for the loss of *Lycopodium* and *Hymenophyllum* and eight other natives, but the tetrad has changed surprisingly little. Most of the original habitats still exist at least in part, and although there are now a few more gaps in the distribution of the scarcer taxa, the network still for the most part holds.

ARTHUR CHATER,

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RECORDING IN MERIONETH

Recording work in vice-county 48 has been concentrated on checking and updating the 'New Atlas' records - especially those dating back to the 1970-87 period. Experience shows that searching for species not seen since before 1970 is not rewarding: it uses up a lot of time and effort for little result. Of course, one always hopes for the lost species and the rediscovery of one of them is exciting indeed. But it rarely happens. Probably most species not sighted since before 1970 are truly extinct: if a species has survived, somebody in 36 years will have spotted it and reported the fact.

But the middle group in the 'New Atlas' time categories - the species not updated since 1987 - are a different matter. Many, perhaps most, of these can be expected to have survived. Lack of a more recent sighting probably means that they are inconspicuous, locally uncommon or inaccessible species or were just missed in all of the activity of assembling a large number of records for the 'New Atlas' in a few hectic seasons. Updating these is our most rewarding

activity, especially now that recording has reached the stage when completely new hectad records are only occasional and new vice-county records, except escapes, throw-outs or plantings, are rare.

Going back in time, the most recent new native - type Merioneth plants, excluding *Rubi*, are *Dactylorhiza traunsteineri* (2003) and *Raphanus maritimus* (2001) (if these are treated as species), and *Schoenus nigricans* (1993), *Koeleria macrantha* (1991), *Carex disticha* (1991), *Cyperus longus* (1981), *Limosella aquatica* (1979) ...

Re-recording of the 1987-onwards species has hardly begun because many of the existing records are, even now (2006), only 7 years old and they include all the very common species. Their turn will come. But at present work on this group would divert attention from the more important earlier date categories and from the BSBI's hybrid project, and would choke the system with a mass of unnecessary data. Exceptions are the uncommon species and all the Pteridophyta (as a separate well-marked group): these are updated in Merioneth year by year as sightings allow - not just to the date categories of the 'New Atlas'.

Merioneth has been well-worked for hybrids. Even when *A Contribution to a Flora* appeared in 1963 75 different ones were listed, and now the total for the vice-county is around 118. But many of the records of them need updating and there are gaps to fill for some of the commonest hybrids such as *Agrostis capillaris* x *stolonifera*, *Quercus petraea* x *robur*, *Rumex crispus* x *obtusifolius* and *Salix aurita* x *cinerea*. Several hybrids - *Barbarea verna* x *vulgaris*, *Carex binervis* x *punctata*, *Catapodium marimum* x *rigidum*, *Ophioglossum azoricum* x *vulgaris* - are not known anywhere else, while *Carex acuta* x *aquatilis*, *Festuca rubra* x *Vulpia myuros*, *Mimulus guttatus* x *luteus* and probably *Ulex europaeus* x *gallii*, though subsequently found elsewhere, were originally recognised in Merioneth.

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STELLARIA PALLIDA ON BARDSEY

The cover of the Summer 2001 issue of the *Welsh Bulletin* shows a photocopy of a specimen at NMW of *Stellaria pallida* labelled "Bardsey Island 49 Caern., comm: P.M. Benoit Apr. 1954." in the hand of A.E. Wade. It does not seem to have been recorded that this specimen was actually collected by Mary Richards of Dolgellau. Condry (1998) in his biography of Mrs Richards says (p.110), "In early April [1954] she was in a working party on Bardsey Island, helping to get the bird-observatory ready for the visitor season." The *Stellaria* was in a box of miscellaneous Bardsey plants, mainly mosses, posted to me at Aberdaron and received on the 12th April 1954. As the specimen was a good one of typical *S. pallida* and I realised it probably represented a worth-while record for the island, I sent it to the National Museum of Wales. That accounts for the label being in the hand of Mr Wade (Assistant Keeper of Botany at the Museum) and bearing my name. I did not myself visit Bardsey in 1954.

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V.C. 50 DENBIGHSHIRE PLANTS 2005

During 2005 five recording meetings were held for interested people - not all were BSBI members. Usually 5-10 people came and we visited a variety of sites. Near Worthenbury we refound a small number of *Myosurus minimus* (Mousetail) in a farm gateway. An elusive plant - its habitat is common, but the plant is rare. A small elm tree was identified as *Ulmus minor* subsp. *minor* (from the key in 'Stace') but not determined by an expert. In Erddig (National Trust) Orchard there was an abundance of *Viscum album* (Mistletoe) no doubt encouraged by Victorian gardeners to supply the big house. A large specimen of *Platanus x hispanica* (London Plane) found in a park in Wrexham proved to be a 1st V.C. record. It is rare in North Wales ?under-recorded because "planted". A carbody repair yard in Denbigh was full of *Senecio inaequidens* (Narrow-leaved Ragwort) and in September we found a new site for *Gentianella campestris* (Field Gentian) near Minera. Other records include *Carex x decolorans* (*C. bigelowii* x *C. nigra*) (1st V.C. record) from the summit of Cadair Bronwen, and from lowland sites *Lathyrus sylvestris* (Narrow-leaved Everlasting-pea) and *Epilobium roseum* (Pale Willowherb).

Almost ready is "Flowering Plants and Ferns of Denbighshire V.C. 50". This is the first plant list to be produced for Denbighshire. It will be available soon.

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LETTER TO THE EDITORS

23 Nov 2005

Dear Editors

I always enjoy reading the *BSBI Welsh Bulletin* and thank you for your behind-the-scenes work on it.

I was particularly interested in the article by Trevor Dines in No. 76 June 2005 - *Plantlife Wales Newsletter* No. 2 concerning Narrow-leaved Helleborine (*Cephalanthera longifolia*).

It is perhaps worth pointing out that although the Aberdyfi population is in a mostly *Quercus petraea* wood, several *Tilia cordata* (Small-leaved Lime) also grow amongst the oaks, so there is presumably some base-rich feature to the site.

Bill's last *Guardian* 'Country Diary' (Machynlleth 30 May 1998) was about *Cephalanthera longifolia*. In it he wrote: "In a steeply tilted oak wood not far from here, as May turns to June, a rare orchid shyly appears. A mere half dozen spikes are its visual output, with a few other plants producing leaves only, a promise for the following year. But in good seasons as this year there may be a score or so of blooms. This treasure which I have always called a sword-leaved helleborine, but which now seems to be more often known as the Narrow-leaved Helleborine, is a great beauty when freshly opened but is so sadly [?evanescent] that its pure white petals are turning brown in only two or three days. What makes the helleborine so rare I have no means of telling but I can say that besides its normal range of between six and twenty blooms per year it can at rare intervals produce a great outburst. One year I found it flowering abundantly on the roadside at the bottom of the wood where it had also spilled over on the railway bank below, a beautiful and astonishing site ..."

Best wishes

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Juniper (*Juniperus communis*) in Wales - a new national inventory of sites

Juniperus communis (Juniper, Merywen) is a well known and easily recognised species. In Wales, records at the 10-km square level are pretty good; the *New Atlas of the British & Irish Flora* (Preston *et al.*, 2002) maps Juniper in 42 hectads and 76% of these are dated 1987-1999. However, records of Juniper at a site level (with 6- or 8-figure grid references) are often scarce and can be difficult to obtain. Lacking a national inventory of sites, it has been difficult to assess the status of Juniper in Wales, or identify under-recorded areas. Thanks to funding from CCW and the help of a wide range of individuals and organisations (especially the BSBI), Plantlife has just published the first national inventory of Juniper sites in Wales.

Sources of records

148 records of Juniper from BRC (Monks Wood) were disseminated to BSBI Vice-county Recorders, as well as other organisations including the Snowdonia National Park Authority (SNPA), the National Trust (NT), various Local Biodiversity Action Plan Officers and staff and wardens of Countryside Council for Wales (CCW). Various survey reports were consulted for references to Juniper, although this proved to be very time consuming and only the most accessible reports were consulted.

Status of Juniper in Wales

Compilation of the inventory has considerably improved the quality of Juniper data available for Wales. However, although 71% of sites have 6-figure grid references, many remain poorly localised. Information regarding population size, health, sex of plants, age of plants, extent of regeneration, grazing pressure and current management practices is usually absent and many recorders still do not differentiate between subsp. *communis* and subsp. *nana*, and pin-pointing exact locations is often difficult, especially if numerous plants occur over widely-scattered areas.

Several sources (such as CCW Phase II reports) have not yet been fully consulted and the inventory should be seen as a good first version. **Copies of the inventory** (on MS Excel) are available by e-mail from Trevor Dines (trevor.dines@plantlife.org.uk). **If anyone has additional records, please send them to the same address.**

During this exercise, 274 records have been added to the inventory, bringing the total to 397 records. Of these, 68% date from 1987 onwards and 49% have been made since 2000. 64% have 6- or 8-figure grid references.

There are 91 individual Juniper sites in Wales (although the delineation of individual "sites" has been somewhat arbitrary). For 78% of these we have 1987+ records and for 61% we have 2000+ records; for 71% we have 6- or 8-figure grid references. Out of the 91 sites, 39 are identified as subspecies *communis*, 33 are subspecies *nana*, and just 1 is subspecies *hemisphaerica*.

Population sizes

Population sizes are available for 63 sites; 22 of these (34.9%) have just one plant and 25 (39.7%) have between 2 and 10 plants. Just 9 (14.3%) have over 100 plants. The largest single population in Wales is that at Nant y Gamar (Penrhyn Bay, Caerns.), with over 300 plants recorded.

Vice-county distribution

A summary of the sites on a Vice-county basis is given below, along with a total for the most recent record in each site organised into date classes.

Vice-county	Total sites	Sites with most recent record in date-class ...		
		pre-1970	1971-1986	1987+ (2000+)
Glamorgan	12	1	1	10 (10)
Radnorshire	2	1		1 (0)
Carmarthenshire	1		1	
Pembrokeshire	4			4 (4)
Merionethshire	17	1	2	14 (12)
Caernarfonshire	49		3	46 (33)
Denbighshire	3	2		1 (0)
Flintshire	2		1	1 (1)
Anglesey	1			1 (1)
Total	91	5	8	78 (61)

Lowland populations

Juniper populations in lowland areas are generally well known and well recorded. This includes populations on Gower (Glamorganshire), in Pembrokeshire, on the Great Orme (Caernarfonshire), and in Flintshire and Denbighshire. For almost all these post-2000 are available, often with 6- or 8-figure grid references. A notable exception are the unlocalised hectad records for the Llyn peninsula (SH12, SH23, SH34, SH44, SH45, SH53) mapped in Preston *et al.* (2002). These are presumably records of plants on lowland heaths or cliffs, but no detailed site information about them has yet been traced.

Upland Snowdonia

In contrast to the lowlands, Juniper sites in upland areas of Caernarfonshire and Merionethshire have in the past been poorly recorded. This is perhaps not surprising given the difficulties of access and the fact that plants are often scattered over large areas in small numbers. Fieldwork for this inventory has significantly improved the situation with the addition of many new sites and up-to-date records of known sites. However, the difficulty of the terrain means that many records are hard to re-find (especially in the absence of sketch maps) and a good number of sites remain to be re-found.

Demography and regeneration

In general, it is difficult to assess the demography and regeneration of Juniper in Wales because the relevant information has not been collected. Recorders are encouraged to determine the age and sex of plants in populations and the extent of any regeneration. However, it is apparent that many populations throughout the range of the species consist of a few or even single plants (especially in Snowdonia), with little hope of regeneration no matter how old or healthy they are.

On Ramsey, the status of *Juniperus communis* subsp. *hemisphaerica* is of particular concern. No regeneration has been observed and of the six known bushes only four survive. Two of these are described as being in a poor condition, with extensive die-back of branches reported in 2002. It is very encouraging that material of the surviving plants has been collected by CCW and vegetatively propagated, as the total British population of this species is probably only around 11 plants (7 are known from the Lizard peninsula in Cornwall).

Population Structure in Snowdonia

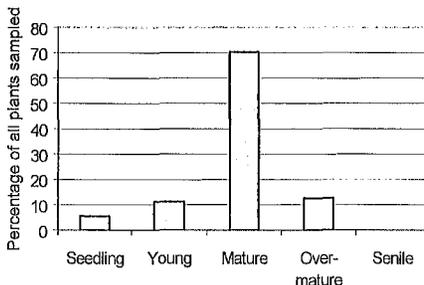
During compilation of the inventory, it became clear that upland areas of Snowdonia were especially poorly recorded at site level. A detailed survey was undertaken, with an emphasis on mapping small, isolated populations and gathering information on population structure. Records were collected for 71 plants in 22 sites, bringing the total number of sites in Snowdonia to 45.

The vast majority of populations in Snowdonia are small: 69% have between 1 and 5 plants and many (29%) are of single plants. Larger populations are rarer: 20% have 6-20 plants and just 11% have more than 20 bushes. The degree of genetic isolation and gene flow between populations is likely to be very small, especially given the dioecious nature of Juniper. The largest populations are located at Cwm Caregog, Snowdon (100+ plants), Cwm Bychan, Beddgelert, (60-80 plants), Lliwedd & Graig Ddu, Snowdon (100+ plants), Moel Meirch to Cerrig Cochion, Nantgwynant (a large but scattered population) and Cwm Beudy Mawr, below Crib Coch, Snowdon (60+ plants).

The plants themselves tend to be large and flat, with an average maximum width of 150 cm, an average minimum width of 113 cm and an average height of just 38 cm. In many cases, however, it is difficult to assign plants to either subsp. *nana* or *communis*, especially in the larger populations (e.g. Cwm Bychan, Beddgelert) where a wide range of morphotypes is present. Isolated plants tend towards subsp. *nana* by being very prostrate, but they often have leaf characters reminiscent of subsp. *communis*. A few upright bushes are convincingly subsp. *communis*, but such plants are exceptional. The largest single plant measured was a bush at Cwm Bychan, with a spread of 4.5 x 4.4 m and a height of 1 m. Larger bushes probably exist and it would be valuable to document such ancient plants.

As with many other populations of Juniper in Britain, population structure in Snowdonia (see graph below) tends towards mature plants with very little regeneration from seed being recorded. The majority of plants were categorised as being *mature* (70.4%), with more or less equal numbers being *young* (11.3%) or *over-mature* (12.7%), and only very few *seedlings* (5.6%).

Age Structure



Although the vast majority of plants are mature, it is important to note the absence of dying (senile) plants, and the number of young and seedling plants is not inconsequential. While the level of successful recruitment from seedling stage to maturity is unknown, it is likely that seedling and young plants were overlooked in the survey. Most of the seedlings found were in large populations, where searches in likely spots (such as the base of a cliff beneath fruiting bushes) revealed plants. On only one occasion were seedlings recorded in the absence of mature plants: a chance find by Helen Buckingham (National Trust Ecologist) while walking near Diffwys (Rhinogydd, Merionethshire). Of all plants surveyed, 21.1% were bearing fruit. While seedling recruitment is likely to be low and the maturity of the population is a concern, it is encouraging that so few plants were recorded as over-mature or senile.

The generally healthy condition of the plants is supported by the lack of grazing damage reported (only 1 plant) and the paucity of bushes categorised as 'collapsing' (4 plants). Of more concern, however, is the frequency of bushes reported with browning leaves or dying branches (40.8%). While this is broadly similar to levels of browning reported in Scottish populations (D. Long, pers. comm.), the cause of the browning needs to be identified and levels monitored. Concerns over levels of *Phomopsis* (a fungal infection which causes shoot browning) infection in Scotland have subsided following continued monitoring which showed that symptoms are more likely to be caused by drought. Patterns of browning in Scottish populations appear to be very site specific and more monitoring is needed to assess the impact on long-term population trends.

Habitat preferences in Snowdonia

Juniper plants in Snowdonia do not grow in a wide variety of habitats. Most frequently, they occur in a matrix of rocks and grassland (62% of plants), while more or less equal numbers occur on cliffs faces (15.5%) and in heathland (12.7%). A few plants (9.9%) were recorded in well-grazed grassland, probably mature plants that survive any grazing.

Perhaps surprisingly, the majority of plants surveyed (36.6%) grew on ground with a slope less than 18°. Plants were less frequent on slightly steeper ground, but were more common (29.6%) on slopes over 45°, the majority of which were cliff-face populations. Apart from these, it appears that the preferred habitat for Juniper in Snowdonia is on gentle to moderately sloping rocky grassland.

Management of Juniper in Snowdonia

Regeneration of Juniper has been recorded on the National Trust's Hafod y Llan farm, especially in Cwm Llan and on Y Lliwedd. Since the Trust took over management of the farm in 1999, grazing pressure has been reduced by approximately one half. Welsh Black Cattle were reintroduced in 2002 to graze upland areas and there has since been a marked increase in the diversity of plants and grasses growing on these sites (Daniels, pers comm.). There is also healthy regeneration of existing plants throughout Cwm Bychan (near Beddgelert), possibly following the restriction of livestock movements during the Foot and Mouth outbreak of 2001.

Some Juniper populations are threatened by encroaching alien species, principally *Rhododendron ponticum*. Cwm Bychan and Mynydd Sygun (Beddgelert) are cases in point, and the National Trust intends to continue its programme of eradication. A "mega-bash" in September 2004 saw over 1,000 volunteers taking part in a weekend of *Rhododendron* cutting. *Chamaecyparis lawsoniana* (Lawson's Cypress) is another serious problem in Cwm Bychan, with plants regenerating extensively from seed close to Juniper populations. There are concerns that Junipers may be destroyed by clearance teams unless their exact locations are known.

Most Juniper sites in Snowdonia have been heavily grazed in the past and this may account for the paucity of regeneration observed. However, in recent years many sites have seen a reduction in grazing pressure with the uptake of Tir Gofal and other management agreements by landowners and farmers. More recently, with the reform of the Common Agricultural Policy and the removal of headage payments in favour of one payment for cross compliance, it is likely that there will be a further reduction in sheep numbers, which will undoubtedly have a positive effect on the vegetation of the uplands.

Populations of Juniper which have survived are often old and probably became established during the years of agricultural depression in Wales in the nineteenth century and between the two World Wars. The dramatic increase in sheep numbers following WWII coupled with the tradition of burning heathland probably contributed to the dramatic reduction in Juniper populations. Those plants seen today are probably relicts of a far more widespread cover in Snowdonia and have survived at higher altitudes on the cliffs and steep slopes where they were away from heathland burning and sheep.

A long-term objective for Juniper management in Snowdonia is certainly needed. Given the nature of the majority of populations (small clusters of bushes scattered over wide areas), it would be appropriate to address wider management issues and plan accordingly. While larger populations are easily managed and monitored, it is the small isolated populations that are in most need of attention. It is hoped that this inventory will raise awareness of these small populations and make their positions known so that Agri-environment and other land management agreements can be directed towards their survival. For more information a Plantlife leaflet, *Managing Uplands for Juniper*, is available (see www.plantlife.org.uk for details).

Acknowledgements

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Thanks are also due to all those volunteers that contributed records, particularly Wendy McCarthy, Stephen Evans, the National Trust and Plantlife Flora Guardians. We also thank the Vice-county Recorders for their help in checking and verifying records, and the Biological Records Centre (CEH, Monks Wood) for supplying their data.

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