BOTANICAL SOCIETY OF THE BRITISH ISLES

WELSH BULLETIN

Editors : R. D. Pryce & G. Hutchinson

No. 83, JANUARY 2009

WELSH NATIONAL HERBARIUM

THE FLORA OF THE BRITISH ISLES			
Cephalanthera longifalia			
See	Coloured transpare	ney as Voucher	
Locality	nr. Kerry Woo	ds., Montgomeryshire	
Phologn Collector	apher', E.H.Wolfe		
Comm.	Miss E.D. Pugh	Date 10. VI . 1978	
National	Grid		
	EdNo	Reg. No	

National Museum of Wales

Department of Botany

An early example at **NMW** of storing data for rare species on a herbarium sheet thus avoiding the need to collect voucher material. Today, digital camera and film camera colour prints are routinely attached to herbarium sheets (see also in Editorial; *Cephalanthera longifolia* is mentioned in the Montgomeryshire abstract, p.10).

CONTENTS

Editorial	3
47th Welsh AGM, & 27th Exhibition Meeting, 2009	4
BSBI Meetings Wales - 2009	.5
Abstracts of exhibits shown at the 26th BSBI Welsh Exhibition Meeting, Gregynog,. Newtown, Montgomeryshire August 2008	7
Anglesey Plants in 2008	11
Melampyrum pratense subsp. pratense var. hians Druce in Cardiganshire	13
Ceterach officinarum var. crenatum T. Moore	14
New priorities for vascular plant species conservation in Wales	15
Conservation and research at the National Botanic Garden of Wales	18
Requests	21
PLANTLIFE - WALES NEWSLETTER - 8	.1

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).

Publication date of last BSBI Welsh Bulletin (No. 82) - July 2008.

EDITORIAL

In the last issue a request was made for a new co-editor for the BSBI Welsh Bulletin due to the forthcoming retirement of George Hutchinson from the National Museum of Wales, Cardiff in March 2010. The BSBI Wales Committee was delighted to have an immediate response, from two members of staff in the same department as George, and both are BSBI members: Mrs Katherine Slade and Miss Sally Whyman. They will share the task and hope to start with the January 2010 issue of the Bulletin. This will minimise any handing-over problems and of course there will be some in-house training. We wish them well.

The cover illustration serves as a reminder that, especially in the case of threatened and endangered plants, the herbarium of the National Museum of Wales will accept photographic prints. The pictures should preferably show the plant *in situ*, and relevant identification features. Print sizes should be at least 6×4 inches (15×10 cm) as very small prints may not be recognizable. These can also be useful additions to conventional herbarium specimens to show taxonomically relevant details of the living plants, such as original flower shape, leaf ranking, colour, and so on.

Despite the good reception of last issue's *Guest Editorial*, no offer has been received of a repeat this time, so the *Editorial* falls back to me, I'm afraid! I'm sure there must be several members who would welcome this chance to get on their soap-boxes, but in the mean time I hope I use the opportunity to good effect!

The Threatened Plants Project piloted this year and organised by Kevin Walker, the BSBI's Head of Research and Development, seems to have produced acceptable results, although having seen the map which shows returns so far, Wales seems a little 'bald'. This may be as a result of a genuine absence of surveyed species, but I also suspect that some returns have still to be submitted. I am as guilty as anyone, in as much as I only sent mine to Kevin a few days ago! This project is just one of the many tasks that BSBI County Recorders are asked to carry-out and the loading does not just come from the higher echelons of BSBI: recorders have been instrumental in providing data to Plantlife for Trevor Dines' production of the Red List for Wales and more recently, have been asked to assess the effect of alien invasive species on Red List plants (see Plantlife - Wales Newletter, p.4). This in addition to dealing with Local Record Centres, requests from developers, input to LBAPs, as well as doing their own 'county tasks' which obviously include the enjoyable bits such as field recording, but also computer input, reporting and maybe, Flora writing. In my own case, I could easily spend all my time just doing BSBI recorder duties (but sadly I do have other commitments!) and without Kath as 'chief inputter' the backlog of inaccessible data would be growing at an ever increasing rate. Quite honestly, I do not know how most recorders cope, especially those who are not retired.

So, I come to my point. The BSBI (and ultimately, local authorities, the Welsh Assembly and UK government) effectively get this service for nothing, relying on the enthusiasm of those involved and their consciences, that if they don't do it, then in a relatively short time many more of our native plants would be lost through absence of knowledge of their whereabouts. And yet we have to fight for the most minimal of funds, even to the point that members cannot even legally use OS map copies for working in the field. I feel this continues to be a sad reflection on the lack of emphasis given to important environmental issues, whereas relatively superficial subjects such as sport, celebrity and media, seem to attract obscene amounts of money. Why couldn't the *Barclay's BSBI Recorder Network* (or similar)? The BSBI and similar organisations could do a very effective job for a tiny fraction of the amount involved in football sponsorship!

But the principal issue in my view continues to be the decline in basic environmental knowledge and the increasing gulf between the 'real world' and the majority of people's lifestyles. Perhaps the economic downturn may be the wake-up call for people to be more aware of, and care for their surroundings instead of living in a constant fantasy world.

47th WELSH ANNUAL GENERAL MEETING & 27th EXHIBITION MEETING

Friday 26th – Sunday 28th JUNE 2009

at FLOUS

THE ROYAL WELSH SHOWGROUND Radnorshire v.c. 43

OUTLINE PROGRAMME

This theme of this meeting will be "Grasses and Grasslands", to mark the publication of the new Handbook and a landmark book on Welsh Grasslands by the late David Stevens. The AGM extends a warm welcome to members at all levels of experience. Participants are encouraged to bring their own material (not just *Poaceae*) for determination and discussion.

Friday 8th

1.00 pm	Main Exhibit room open for setting up.
2.00 pm	Welcome & registration, Royal Welsh Showground, Builth Wells.
3.00 pm	Afternoon tea, short talks and grasses identification workshop (also Welsh
	Committee meeting for committee members).
6.30 pm	Conference evening meal in the Dining Room at Neuadd Henllan, RWS, followed by a guided walk around a site near Builth.

Saturday 9th

7.30–9.00 am	Breakfast at Neuadd Henllan (collect pack-lunch).
9.30 am	Assemble in car-park for excursions to Brecknock and Radnorshire grasslands.
4.00 pm	Return to Royal Welsh Showground. Afternoon tea, second i.d. workshop / short talks and AGM.
6.30 pm	Evening meal in the Dining Room, Neuadd Henllan.
8.00 pm	Keynote address by guest lecturer in the Royal Welsh Showground.
9.00 pm	Social time and view Exhibition.
a r rafi	

Sunday 10th

7.30-9.00 am	Breakfast at Neuadd Henllan (collect pack-lunch).
9.30 am	Excursions to further grassland sites in Radnorshire and Brecknock
	(finish at 3 - 4 pm).

The cost for two nights' full-board at Neuadd Henllan with packed lunches and conference fee is expected to be around £100 without en suite. <u>NB</u> this price is only available for 30 people (including three twin rooms). Other accommodation will be available at nearby hotels but the weekend is then expected to cost nearer £140. Further details and a booking form will be included with the January mailing of BSBI News.

EXHIBITS: Details for booking exhibit space will appear on the main meeting booking form in January. Any material that will be of interest to other members is welcome.

Organising Secretary: Andy Jones, Countryside Council for Wales, Plas Gogerddan, Aberystwyth, Ceredigion, SY23 3EE <u>a.jones@ccw.gov.uk</u>. Please mark post "Personal".

BSBI MEETINGS WALES 2009

Full details and procedure for booking are also available in the BSBI Year Book for 2009.

Saturday 23rd May: Craig Breidden, Welshpool, Montgomeryshire, v.c. 47. Leader: Andy Jones. On this meeting, we will visit the seasonally droughted scrub margin and rock-heath communities of the south and west crags of Breidden Hill. Species should include *Veronica spicata* (Spiked speedwell), Shaggy Mouse-eared Hawkweed and *Lychnis viscaria* (Sticky catchfly). We will also search for late spring flowering annuals. Bring lunch and stout footwear. Numbers will be strictly limited to 10 so early booking is advised. Further details will be provided on receipt of booking. Bookings with SAE please to: Mr. R.A.Jones, CCW, Plas Gogerddan, Bow Street, Aberystwyth, SY23 3EE. Tel. 01970 821119.

Saturday 6th June: Cors Erddeiniog NNR, Anglesey, v.c. 52. Leader Les Colley. An opportunity to visit one of the Anglesey fen National Nature Reserves and be guided by the CCW warden. Habitats include grassland, heath, open water and woodland as well as fenland. To include updating records for the Anglesey CRPR. Meet at 10.30am in the lay-by beside the minor road at SH475.806, near the entrance to Bodgynda (just off the B5110 Brynteg to Llangefni road). Wellingtons advised, bring lunch, waterproofs, and GPS if you have one. Finish about 4.00pm. Numbers limited to 20. Bookings with SAE please to: Mrs. W. McCarthy, 5, Ty'n y Coed, Great Orme, Llandudno LL30 2QA. Tel. 01492 877451. wendorme@aol.com.

Saturday 20th June: Cae Blaen Dyffryn Plantlife reserve, Lampeter, Carmarthenshire, v.c. 44. Leader: Trevor Dines. Join in the annual vegetation survey of this small but wonderful neutral grassland reserve. As well as recording changes in the vegetation, we'll survey the meadow for both *Platanthera chlorantha* and *P. bifolia*, (Greater & lesser butterfly orchids) and look for hybrids between the two. We'll also monitor *Botrychium lunaria* (Moonwort) and *Viola lutea* (Mountain pansy) as well as enjoying the wealth of sedges and hybrid *Dactylorhiza*. Meet at 11.00am on the road verge car park at SN605.442 (on the inside of the tight corner). Bring lunch. Bookings with SAE please to: Trevor Dines, Plantlife Wales, c/o CCW, Maes y Ffynnon, Ffordd Penrhos, Bangor, Gwynedd LL55 2LQ. Tel. 01248 387396.

<u>Friday 26th June to Sunday 28th June:</u> Welsh AGM and Exhibition Meeting and associated field meetings, The Royal Welsh Showground, Radnorshire, v.c. 43 [*see* Outline Programme, p. 4]

Saturday 27th June: Caeau Tan y Bwlch Plantlife reserve, Clynnogfawr, Caernarvonshire v.c. 49. Leader: Trevor Dines. Join in the annual vegetation survey of this famous neutral grassland reserve. As well as recording changes in the vegetation, we'll survey the meadows for *Platanthera chlorantha* (Greater butterfly orchid). We'll also search for *Ophioglossum vulgatum* (Adder's tongue) and have a look at the various *Euphrasia* taxa found here.

If we have time, the stunning views are great too! Meet at 11am at the car park beside the reserve at SH431.488. Bring lunch. Bookings with SAE please to: Trevor Dines, Plantlife Wales, c/o CCW, Maes y Ffynnon, Ffordd Penrhos, Bangor, Gwynedd LL55 2LQ. Tel. 01248 387396.

Saturday 11th July to Saturday 18th July: Glynhir mansion, Llandybie, Carmarthenshire, v.c. 44. Leaders: Kath and Richard Pryce. The annual Carmarthenshire Recording and Monitoring Meeting will include visits to well-botanised sites as well as areas in need of additional recording within the county. It is hoped that there will be the opportunity to spend a day with Forestry Commission staff at the arboretum near Abergorlech in Brechfa Forest. The meeting

will cater for both experienced and inexperienced botanists and will provide an opportunity for the informal development of identification skills.

Glynhir Mansion is located about 2km east of Llandybie on the western flank of the Black Mountain at SN640151. From the A483 between Ammanford and Llandybie, on the southern outskirts of Llandybie, take the unclassified road (Glynhir Road) eastwards (marked with brown signs to golf club and b&b). Follow this road for about 2km and Glynhir Mansion is on the right. If coming from the station by taxi make sure you ask for Glynhir Mansion (not Glynhir Golf Club or Glynhir Mill).

The River Loughor runs through the estate and at one point plunges over a 10m waterfall into a rocky gorge where *Dryopteris aemula*, *Hymenophyllum tunbrigense* and *Asplenium trichomanes* ssp. *trichomanes* are included among the ferns growing on the cliffs. There will be ample opportunity in the timetable to visit the site. Large parkland trees provide the setting to the mansion, including *Tilia cordata*, and there remains much scope for further discoveries to be made in the vicinity.

The mansion is run by the Jenkins family providing first class facilities including a large common room for the evening. The cost of the week from lunchtime Sat 19th to breakfast on Sat 26th, including full board and packed lunches, will be approximately £400.00 but will be limited to about 20 participants. Accommodation for part of the week will be charged *pro rata*.

Please make initial bookings with the leaders as soon as possible. A 25% deposit will be required by Glynhir followed by full payment six weeks prior to the meeting. Bookings to Mr & Mrs R.D. Pryce, Trevethin, School Road, Pwll, Llanelli, Carmarthenshire, SA15 4AL. Tel:/ Fax: 01554 775847; <u>PryceEco@aol.com</u>.

Saturday 25th July: Alyn Waters Country Park, near Wrexham, Denbighshire, v.c. 50.

Leaders: Delyth Williams & Jean Green. A visit to a large local authority nature reserve, some of which is on reclaimed land, based around the River Alyn. There will be a wide variety of habitats and it should be especially good for weedy species. Meet at 10.30am in the visitors' car park at SH316.547, the entrance to the park is off the A541 from Wrexham. Café and toilets are available. The going will be mostly flat. Please bring lunch. Bookings, preferably by email, to <u>delyth718@btinternet.com</u> or with SAE please to Mrs. D.Williams, Graigfechan, Ruthin LL15 2HA.

Saturday 15th August: Tywyn, Merioneth, v.c. 48. Leader: Peter Benoit. A meeting to explore the flora of the extensive sand dunes and saltmarsh at Tywyn. Meet at 10.30am in the car park at the main railway station (not the miniature railway station nearby) at SH583.007. Please bring lunch. Bookings with SAE please to: Mr. P.M.Benoit, Pencarreg, Barmouth, Gwynedd LL42 1BL.

Saturday 5th September: Brithdir, near Churchstoke, Montgomeryshire, v.c. 47. Leader: Andy Jones. A meeting to explore this mosaic of unimproved meadows and hedgebanks with dry acidic, neutral and damp, and base-rich grassland types. Species should include *Silaum silaus* (Pepper saxifrage) here at the edge of its range, and the rare *Campanula patula* (Spreading bellflower). We will then go on to a series of neighbouring field boundaries and lanes where *Campanula patula* has also recently been found. This meeting is paired with the field meeting next day (September 6th) at Great Malvern Chase, Worcestershire, to encourage a better understanding of this rare species. Meet at 10.30am in the farmyard at Brithdir, near Roundton Hill, Churchstoke. Further details will be given on receipt of booking. Bookings with SAE please to: Mr.R.A.Jones, CCW, Plas Gogerddan, Bow Street, Aberystwyth, SY23 3EE. Tel. 01970 821119.

[The following meeting included by request of Andy Jones]

Sunday 6th September: Campanula patula in the Great Malvern Chase, Worcestershire, v.c. 37. Leaders: John Day & Kevin Walker. Campanula patula occurs in a variety of ancient habitats within the Chase. The purpose of this day will be to survey a number of known sites as well as former or likely sites in the immediate area. Meet at 10.30am in the old ferry car park at Clevelode SO845.468.

ABSTRACTS OF EXHIBITS SHOWN AT THE 26th BSBI WELSH EXHIBITION MEETING, GREGYNOG, NEWTOWN, MONTGOMERYSHIRE AUGUST 2008

EXHIBITS

'GARDEN' SHRUBS - an exhibit of cut, living material. SHIRLEY BURTON

CETERACH OFFICINARUM VAR. CRENATUM T. MOORE

ARTHUR CHATER, Windover, Penyrangor, Aberystwyth, Dyfed SY23 1BJ [The full text of the note and colour photos form a separate article in this Bulletin.]

MELAMPYRUM PRATENSE SSP. *PRATENSE* VAR. *HIANS* DRUCE IN CARDIGANSHIRE

ARTHUR CHATER, Windover, Penyrangor, Aberystwyth, Dyfed SY23 1BJ [The full text of the note and colour photos form a separate article in this Bulletin.]

IS THIS SENECIO INAEQUIDENS (NARROW-LEAVED RAGWORT)?

A living specimen was exhibited; collected while travelling to the meeting, and experts present were invited to pass judgement on its identity. It was confirmed by Arthur Chater and Wendy McCarthy and is thought to be the first record for Herefs. (v.c.36).

HEATHER COLLS, The Steppes Cottage, Jingle Street, Wonastow, Monmouth NP25 4DL

A TENUOUS BSBI LINK WITH THE GREGYNOG PRESS: WOOD ENGRAVINGS BY GERTRUDE HERMES BEING ILLUSTRATIONS OF SELBORNE WITH EXTRACTS FROM GILBERT WHITE.

One of the ventures for which Gregynog is famous is the Gregynog Press (Gwasg Gregynog), started in 1922 by Gwendoline and Margaret Davies with the help of Thomas Jones (Deputy Cabinet Secretary and adviser to Lloyd George and Stanley Baldwin). The Davies sisters were noted art collectors and their paintings by Cezanne, Van Gogh, Renoir and others form the backbone of the collection at the National Museum of Wales at Cardiff.

Forty two books had been printed by 1940, when the Press went into abeyance. It was started up again in 1975 on the initiative of the University of Wales, with the help of the Arts Council of Wales. Titles were mostly of a literary nature, in both English and Welsh. One of the few with any direct natural history relevance was the exhibited volume of illustrations by Gertrude Hermes to Gilbert White's *The Natural History of Selborne*. These wood engravings were commissioned by the Press in 1930, but were never used because of a slump in the market for private press books and because of a series of acrimonious misunderstandings between the artist and the Press. The revived Press decided to issue the six completed engravings fifty eight years later, with an introduction and accompanying texts by William Condry, a long-standing BSBI member.

PENNY CONDRY, Ynys Edwin, Eglwys Fach, Machynlleth, Powys SY20 8TA

A VASCULAR PLANT RED DATA LIST FOR WALES

Details will be published in a forthcoming issue of BSBI News

TREVOR DINES, Plantlife Wales Officer, c/o Countryside Council for Wales, Maes y Ffynnon, Ffordd Penrhos, Bangor, Gwynedd LL57 2LQ

NEW PRIORITIES FOR VASCULAR PLANT SPECIES CONSERVATION IN WALES

[The full text of the note form a separate article in this Bulletin.]

TREVOR DINES, Plantlife Wales Officer, c/o Countryside Council for Wales, Maes y Ffynnon, Ffordd Penrhos, Bangor, Gwynedd LL57 2LQ

CAERNARFONSHIRE COUNTY RARE PLANTS REGISTER

A draft County Rare Plants Register (CRPR) for Caernarfonshire has now been compiled and published. It has been circulated to all Vice-County Recorders in Wales, the Local Records Centre (Cofnod), the Local Biodiversity Action Partnership, CCW and locally active recorders. Sample copies of the register were displayed at the AGM and copies are available to recorders that are active in the county.

Caernarfonshire has proved to be a county very rich in rare and threatened taxa, with 516 species included in the Register, far more than any other published Welsh CRPR. The Register includes a fascinating mix of well-recorded taxa (such as *Ophioglossum vulgatum*), taxa that are moderately well recorded but for which some updating or more detail would be very helpful (such as *Vulpia fasciculata*), and taxa that are certainly under-recorded and for which much more detail and updating is needed (such as *Filago vulgaris*).

The main aim of getting the Register published is to improve and stimulate recording of all the taxa included, so that a full and more complete Register can be published in a few years' time.

TREVOR DINES, Plantlife Wales Officer, c/o Countryside Council for Wales, Maes y Ffynnon, Ffordd Penrhos, Bangor, Gwynedd LL57 2LQ WENDY MCCARTHY, 5 Tyn-y-Coed Rd, Gt Orme, Llandudno, Conway LL30 2QA

FLOWERING PLANTS & FERNS OF DENBIGHSHIRE

An exhibit of Jean's recent county check-list.

JEAN GREEN, 3 Karen Court, Denbigh LL16 4RB

COTONEASTER - 36 new taxa for NMW since full list shown at last's year's Welsh Exhibition Meeting. Acknowledgements were given to Mr C. G. Hanson for the donation, and for the determinations and research by Mrs J. Fryer. Photocopies of many were displayed to show the diversity of their sources. Also, data from the full set of 36 taxa was presented as an Excel spread-sheet to indicate the sort of NMW herbarium records that can be made available to researchers on request, and can be sent as an email attachment.

GEORGE HUTCHINSON, Dept of Biodiversity & Systematic Biology, National Museum Wales, Cathays Park, Cardiff CF10 3NP

JUNIPERUS COMMUNIS SUBSP. HEMISPHAERICA IS NOT PRESENT IN WALES The results were presented of a report* investigating the true identity of Juniper bushes on Ramsey (Pembrokeshire) and South Stack (Anglesey). The former have long been considered to be *J. communis* subsp. *hemisphaerica* while the latter were suspected of being this subspecies.

As well as putative subsp. *hemisphaerica* from Wales and the Lizard Peninsula (Cornwall), material was included of subsp. *communis* from the Great Orme, Gower and Snowdonia, as well as from Cumbria and Scotland. Using both chloroplast and nuclear molecular markers little evidence was found to support the identification of any Welsh Juniper populations as subsp. *hemisphaerica*, despite their morphological similarity to this subspecies. Instead the data suggests that our plants are merely local morphological variants of subsp. *communis*.

Cornish subsp. *hemisphaerica* plants, however, appeared to be distinct from all other samples analysed. Since European samples of subsp. *hemisphaerica* and subsp. *communis* were not included in the study it cannot be proved that the Cornish individuals represent true subsp. *hemisphaerica* or whether these plants are merely variants of subsp. *communis* which have accumulated genetic differences as a result of their isolation from all other Juniper populations in Britain. All Welsh material formerly regarded as this subspecies, however, falls within the range of subsp. *communis*.

Electronic copies of the report are available on request from Trevor Dines (trevor.dines@plantlife.org.uk).

*Squirrell J. & Hollingsworth, P.M. (2008). An Assessment of *Juniperus communis* ssp. *hemisphaerica* in Britain using Molecular Markers. CCW Contract Science Report: No. 848

BARBARA JONES and TREVOR DINES, Plantlife Wales, c/o Countryside Council for Wales, Maes y Ffynnon, Ffordd Penrhos, Bangor, Gwynedd LL57 2LQ

GLYNHIR 2008, THE 26th ANNUAL CARMARTHENSHIRE RECORDING MEETING

A colour poster showing some of the highlights of this year's recording week held from $19^{th} - 26^{th}$ July. They included the finding of 33 *Hammarbya paludosa* (Bog Orchid) plants in Cwm Twrch, the species' only Carms site; the visit to the hay meadow at Blaen Tir, Llandovery; Tywyn Burrows and Banc-y-Lord, Kidwelly; the National Botanic Garden of Wales and Llyn Llech Owain.

RICHARD & KATH PRYCE, Trevethin, School Road, Pwll, Llanelli, Carmarthenshire SA15 4AL

NATUR CYMRU

An exhibit of past issues of this quarterly publication which records nature conservation issues throughout the Principality.

DIANA REYNOLDS, Head of Nature Conservation and Biodiversity Policy, Welsh Assembly Government

SUMMERFIELD BOOKS

New botanical and natural history books for sale.

ROSA species

In the late 1990s, as part of an assignment for a University of Birmingham course, I set out to do a check list of Shropshire Roses. John (my husband), who had already been looking at the Rose book, was keen to be involved too and so began an attempt to find as many different species as possible. Subsequently, some attempt was also made to look for distribution patterns within the county.

Rev. Primavesi very readily agreed to look at live specimens and, throughout, these were determined/verified by return of post.

John, who has always had some interest in gardening, began to take cuttings (sturdy sections of stem) from bushes that had been determined and found that he could quite easily get them to grow. It was from his collection (now largely a rose thicket with only *Rosa agrestis* remaining small and neat) that most of the fresh specimens in the exhibition came. A few came directly from the wild, close to the Welsh border.

'Garden' specimens in the exhibition i.e. those that have grown successfully from cuttings, included:

Rosa mollis, Rosa sherardii, Rosa tomentosa, Rosa caesia ssp. vosagiaca, Rosa canina x sherardii and Rosa micrantha (all from Shropshire).

Rosa stylosa x canina (Dorset).

Rosa agrestis (nr Brighton).

Rosa spinossisima and *Rosa caesia x spinossisima* (both from Tyree). The latter, in fact, could not be determined initially as, although it was on a ledge, it was rather a poor grazed specimen and had no hips. However, the cuttings took and a season later it was flourishing (and continues to do well) as a very convincing hybrid, and a specimen was sent off.

Cuttings from two other species have inexplicably failed, at least twice. These are *Rosa rubiginosa* (Cambridgeshire) and *Rosa caesia* ssp. *caesia* from just up the road. Since the latter is very conveniently positioned by a telegraph pole, it is both easy to re-find and invariably bears hips (gets missed by the hedge cutter). This was therefore one of the specimens in the exhibition straight from its original site. There was no specimen of *Rosa rubiginosa* as it does not grow as a native shrub in Shropshire.

Others from their original sites included Rosa caesia x sherardii and Rosa caesia x mollis.

KATE THORNE, Churton House, Church Pulverbatch, Shropshire SY5 8BZ

RECORDING IN MONTGOMERYSHIRE

1. An introductory sheet, drawn up to encourage people to take up recording again simply to update records without necessarily aiming towards a Flora. Includes an explanation of tetrad recording and taking grid references. Contact details are given.

2. List of plants (on a set of sheets) to be recorded at tetrad level – one list can be used for all the tetrads in one hectad. The list has names in English and Latin to assist the less experienced recorders. Recording period: 2006 to 2020.

The previous system of recording A (common) plants at hectad level and B plants at tetrad level has been revised. A and B plants have now been combined into a single list to be recorded at tetrad level. A few C (uncommon) plants have been put on this list while some B plants have become C plants.

Changes in status were based on tetrad numbers in the 1995 Flora.

3. A second list of A and B plants, designed for use for a single tetrad or site.

4. List of C plants requiring 6 figure GRs and details.

5. Photographs of *Campanula patula* and *Cephalanthera longifolia*, both with updated 2008 records.

KATE THORNE, Churton House, Church Pulverbatch, Shropshire SY5 8BZ

THE REDISCOVERY OF *CIRSIUM* X *SEMIDECURRENS* RICHT. (C. PALUSTRE X C. TUBEROSUM) IN GLAMORGAN

The exhibit described the findings of Kevin's recent research and included a history of its recording in Britain, the habitat of its Glamorgan population at Cwm Nash, a list of confirmed records (from Glam and S. Wilts) and a cluster-plot showing the morphology of Cirsium palustre, C. tuberosum, C. acaule and their hybrids.

KEVIN WALKER, BSBI Head of Research & Development, 97 Dragon Parade, Harrogate, North Yorkshire HG1 5DG

ENDEMIC FLORA OF ST. HELENA

Photographs of some of the endemics growing on St. Helena were shown captioned to give a flavour of Delyth's visit to the island, its habitats and vegetation.

DELYTH WILLIAMS, The Quillet, Heol-y-Berwyn, Llandrillo, Corwen, LL21 0TH

WORKSHOP:

John Poland: The identification of willows using his draft vegetative key. For details *see* Poland, J. (2008). A vegetative key to *Salix*. BSBI News No.109, pp.29-32.

KEYNOTE SPEECH:

George Peterken: The Woodland Origin of Meadows.

This was a profound and thought-provoking presentation which ranks among the best so far given at a Welsh AGM. It is hoped that its content will be published in a future issue of *British Wildlife*. It was something of a reunion for George as the Welsh AGM was also attended by Barry Goater, his school biology master, and Richard Pryce, at the time also a pupil at Haberdashers' Aske's School!

ANGLESEY PLANTS IN 2008

Writing this in November after seemingly endless wet and windy weather I am reminded that we enjoyed some stunning spring and early summer days, although we started our ten Flora Group field trips rather inauspiciously when nine of us forgathered on a cold and very windy April Saturday at Gallows Point.

However, despite the conditions a very respectable number of species were recorded from the monads just east of Beaumaris, with the highlight being the massed display of *Cyclamen repandum* (Spring Sowbread) in parts of the burial ground. John Bratton spotted the first new county record for 2008, although its true identity as *Senecio inaequidens* (Narrow-leaved Ragwort) was not confirmed until September. There was just a single plant alongside one of the sheds in the boatyard – it will be interesting to see if it spreads as rapidly as in neighbouring v.c. 49.

At the end of April a dozen of us enjoyed the delightful spring flora, with weather to match, recording the monads around Cors y Farl and Plas Llanddyfnan, Talwrn and in early May the informal Flora Group recorded in the four grid squares around Llanddona Beach and Wern. In May visits to Newborough Forest to check on Rare Plant Register species such as *Filago minima* (Small Cudweed), *Hypochaeris glabra* (Smooth Cat's-ear) and *Vulpia fasciculata* (Dune Fescue) also found *Brachypodium pinnatum* (Tor Grass) still flourishing along one of the rides in SH40.65 at probably its only Anglesey location

Also in May and early June attention shifted to the NW coast around Rhoscolyn to check-up on *Tuberaria guttata* (Spotted Rockrose) and *Viola lactea* (Pale Dog-violet) locations; other finds included about 25 plants of *Apium graveolens* (Wild Celery) in a brackish marsh near Porth y Garan. Quite a few localities for Wild Celery are listed in R. H. Roberts (1983); but there are very few recent records – is it being overlooked or in decline?

Early June also saw the Group on the coast in the Porth Swtan area to look at *Tuberaria* sites around Clegir Mawr, with only limited success, much of the area being too gorse dominated, with other rocky knolls being used for stock feeding. A bonus was to find *Viola lactea* in SH38, a new hectad record, growing close by a small number of *Trifolium subterraneum* (Subterranean Clover) plants, making this a sixth location for this clover, as compared to only three known from throughout the 20th century. Was Subterranean Clover under recorded, or is it spreading?

It was good to refind *Antennaria dioica* (Mountain Everlasting) at Bryn Offa, the National Trust land near Llanddona, for although it is only a very small colony it brings to four the number of post-2000 localities, as compared to fourteen known in the latter half of the 20th century.

A visit to the ruins of the Telegraph Station, just inland from Cable Bay, produced a 5th post-2000 location for *Torilis nodosa* (Knotted Hedge-parsley). This is another species either in decline or overlooked, as there were a further 13 locations known between 1958 and 1985. Potato fields surround the old signal station and contained tens of thousands of plants of *Viola arvensis* (Field Pansy).

Richard Lansdown found *Lemna gibba* (Fat Duckweed) near Valley while leading an aquatic plant course based at Treborth, Bangor. It is listed in the 'Vice-county Census Catalogue', but I can find no details, so this seems to be the first documented record for this species.

July saw a determined start to record the Threatened Plant Project (TPP) species, with the first of several searches for *Monotropa hypopitys* (Yellow Bird's-nest), the combined eyes of the Flora Group spotting two small colonies of 21 and 5 inflorescences in former dune slacks in different parts of Newborough Forest. However, throughout the rest of the summer all other searches at sites which had recent records proved negative. While still in the Forest we were puzzled by a tufted sedge in the *Carex binervis* group on a sandy bank above one of the slacks, and we were grateful to Arthur Chater who determined it as *Carex punctata* (Dotted Sedge) – only the second recent record for the county.

Later in July we turned our attention to *Stellaria palustris* (Marsh Stitchwort), meeting at the Malltraeth Marsh RSPB reserve and successfully finding a small population at one site; but failing at another – the area now being too dominated by Common Reed and Reed Canary-grass.

At the end of July Charles Aron reported a possible hybrid between Creeping and Marsh Thistle from part of the family farm at Lligwy, confirmed later by Kevin Walker as *Cirsium x celakovskianum (C. arvense x palustre)* – another 1st County Record.

In early August we weathered a wet start to enjoy a day on the southern end of Cors Bodwrog, refinding *Pyrola rotundifolia* (Round-leaved Wintergreen) and noting *Bolboschoenus maritimus* (Sea Club-rush), plants more usually associated with the Anglesey coast. We also recorded two small colonies of *Osmunda regalis* (Royal Fern) and refound *Catabrosa aquatica* (Whorl-grass).

Jane & Ivor Rees spent some time helping monitor populations of *Gentianella campestris* (Field Gentian), (our final TPP species for this year) on sand dunes at Newborough, Aberffraw and Rhosneigr, but no success was had relocating any of the records inland from the coast.

Although wet weather caused the cancellation of the Llanddona field meeting a quick later visit did find that *Rubia peregrina* (Wild Madder) still grew along a hedgebank towards Bwrdd Arthur - its northern limit in Britain.

The final Flora Group meeting, on yet another wet day, was to the Rhuddlan Fawr extension to Cors Goch nature reserve. Here we refound *Polypodium cambricum* (Southern Polypody) on the limestone in the hazel wood, and noted that the Spindle (*Euonymus europaeus*) was already re-shooting in the absence of sheep grazing. A scatter of *Spiranthes spiralis* (Autumn Lady's-tresses) greeted us on the plateau limestone grassland, and a considerable amount of *Galium uliginosum* (Fen Bedstraw) in the fen adjacent to Llyn Cadarn.

Thanks to the members of the Flora Group and to all others who have contributed plant records this year.

Reference

Roberts, R.H. (2002). The Flowering Plants and Ferns of Anglesey. National Museum of Wales, Cardiff.

IAN BONNER, Cae Trefor, Tyn y Gongl, Anglesey, LL74 8SD

MELAMPYRUM PRATENSE SUBSP. PRATENSE VAR. HIANS DRUCE IN CARDIGANSHIRE

There are two very distinct colour forms of the common *Melampyrum pratense* subsp. *pratense*: var. *pratense* which has the corolla tube whitish or pale yellow, becoming more yellow towards the mouth, and var. *hians* which has the corolla deep golden yellow throughout.

Var. *hians* was discussed by A. J. E. Smith in his very interesting 1963 paper, 'Variation in *Melampyrum pratense* L.' in *Watsonia* 5: 336-367 (1963); he showed it as having a western and northern distribution in Britain. It is described in the *Plant Crib* 1998, dismissed by 'CTM' and ignored in 'Stace'. Although mentioned in several post-war local Floras, for example French *et al.*'s of Cornwall, May's of Carmarthenshire and Halliday's of Cumbria, I am not aware of any maps showing its distribution on a local scale.

Its Cardiganshire distribution proves to be extraordinary, var. *pratense* being confined to the north of the county (apart from two sites in the lower Teifi valley) and var. *hians* being confined to the south, with no overlap, no mixed populations, and a straight east-west line of division. There seem to be no environmental features to explain this, and no other closely related pair of taxa shows such a distribution pattern. Both varieties occur in the full range of habitats, from lowland oakwoods to upland heaths.



Smith suggests that different pollinators may be involved with the two varieties, but so far as Cardiganshire is concerned this only shifts, and does not explain, the problem of its distribution.

It would be interesting if the detailed distributions of these two very easily recognised varieties could be recorded in other areas.

ARTHUR CHATER, Windover, Penyrangor, Aberystwyth, Dyfed SY23 1BJ

CETERACH OFFICINARUM var. CRENATUM T. Moore

A generally very distinct variety of *Ceterach officinarum* Willd. has been overlooked by most authors. It was described by Thomas Moore in The Ferns of Great Britain and Ireland (1855-1856) and illustrated in one of his magnificent nature-printed plates with specimens from Dr. Allchin from Ireland and from J. R. Cobb from Crickhowell. Moore wrote of it: "This has the margins of the lobes distinctly crenato-sinuata and is usually larger than the common form. It is met with occasionally in various locations, occurring probably under certain conditions which favour luxuriant growth and hence not constant when indifferently cultivated." This last comment is contradicted by Chris Page who illustrates and describes the variety in The Ferns of Britain and Ireland ed. 2 (1997) and writes: "In some south-west England and west Welsh populations, plants become larger and more crenately lobed along the margins Such crenate-margined plants become the usual form over most of Ireland. In the extreme west of Ireland, fronds on most plants are regularly extremely crenated, of very large size and often proportionately broader. Preliminary experiments suggest that these characteristics are genetically determined. These Irish forms have been referred to var. crenatum Moore." Var. crenatum was described in the first three editions of H. A. Hyde & A. E Wade's Welsh Ferns (1940, 1948 and 1954) and recorded from VCs 41, 42, 49 and 52, but thereafter was dropped in line with the national fashion for ignoring infraspecific taxa.

Geoffrey Halliday found an extreme example of this variety in Cumbria in 2007 and drew my attention to Page's mention of it in Wales, and Clive Jermy kindly provided copies of Moore's description and illustrations of it.

Var. *crenatum* is chiefly characterised by the crenate margins of the frond lobes. The fronds are usually bigger and proportionately wider, less neat and rigid in appearance, usually a darker and less yellowish green, and the scales on the under surface often or perhaps usually come less close to the margin so that when viewed from above the lobes appear unfringed by silvery brown.

Plants referable to var. *crenatum* have proved to be widespread and as common as var. *officinale* in Cardiganshire, VC 46. As tetrad maps showed, they are somewhat more northern and eastern in distribution, i.e. more upland, but by no means exclusively so. As one might expect with taxa of the rank of variety, of the 47 populations examined, four consisted more or less entirely of intermediates, three consisted of one variety along with intermediates, six contained both varieties and the remaining 34 consisted of one variety only. Most of the six containing both varieties had no intermediates, suggesting perhaps that there had been separate colonisations by the two.

R. Ll. Praeger in *The Botanist in Ireland* (1934) says of what he calls f. *crenatum* (Milde): "This is the prevailing form in Ireland, and is often strikingly developed, with overlapping pinnae up to .4 inch broad, giving it a very distinct appearance. The form with pinnae entire is seldom seen." R. W. Scully in *The Flora of County Kerry* (1916) says: "The var. *crenatum* Milde appears to be the prevailing form in Kerry as elsewhere in Ireland." Yet when Kevin Walker kindly looked out for these plants and collected a selection of fronds for me this spring from both native limestone and old walls in the Burren district of Ireland, he estimated that less than 5% of the plants there were var. *crenatum*.

It would be well worth recording this variety throughout Wales and elsewhere to discover its general distribution, and to work out how distinct it is in different habitats and conditions. Its nomenclature probably needs investigating in the light of the references to Milde, and anyway *Ceterach* is now subsumed again into *Asplenium* and the species is called *A. ceterach*, so a new varietal combination is probably necessary. (The Law of the Constant Rate of Nomenclatural Change in Ferns is being upheld, and older botanists will doubtless welcome the return of a once familiar binomial.)

Thanks to Geoffrey Halliday, Clive Jermy and Kevin Walker for their help.

ARTHUR CHATER, Windover, Penyrangor, Aberystwyth, Dyfed SY23 1BJ

NEW PRIORITIES FOR VASCULAR PLANT SPECIES CONSERVATION IN WALES

Since both the UK BAP list and the Section 42 list have been updated recently, it is useful to present the new priorities for vascular plant conservation together in one list.

Many of the UK Priority BAP species (such as *Pilularia globulifera* and *Cotoneaster cambricus*) will be familiar as original UK BAP species from when the BAP process started. These are shown in the list as being "Old BAP". Others (such as *Platanthera bifolia* and *Viola lactea*) are "new" UK Priority BAP species, having been selected as such on the findings of the GB Red Data List (Cheffings & Farrell, 2005). These are shown as being "New BAP" in the list.

Eleven species, however, are new priorities only in Wales. These have been selected in consultation with the BSBI Wales Committee, based on the findings of the Wales Red Data List (Dines, 2008), and appear on Section 42 of the Countryside and Rights of Way Act (2006). These species are shown as being "S42" in the list.

Note the size of the new list below. There are now 77 taxa on the new combined list, compared to just 25 on the old UK BAP list. This means that a huge number of new sites will need work with monitoring and habitat management. Work on these new species will start in early 2009 once a framework for their conservation has been agreed, although fieldwork has already started for some species (such as *Hammarbya paludosa* and *Campanula patula*). Everyone is encouraged to collect detailed records for all of these species, including population size, habitat and condition of the habitat, as well as a sketch map where possible.

The Latin names follow Cheffings, C.M. & Farrell, L. (eds). (2005). *The Vascular Plant Red Data List for Great Britain*. Joint Nature Conservation Committee, Peterborough. As this publication does not contain Common names, they follow Stace. C. (1997). *New Flora of the British Isles*. 2nd edn. Cambridge University Press.

Species	Common name	Old UK	New UK	Wales
Artomisia compostria	Field Marmurad	DAF	Now PAD	Onlyr
Anternisia campestris			New DAF	
Asparagus prostratus	A Maidanhair			842
auban pooburoobia	A Maidennair			542
Blyomup comprosedue	Elet and an	-		
Duple units compressus	Clander Here's eer		New BAP	
			New BAP	
	Spreading Beimower	_	INEW BAP	
	Divided Sedge		New BAP	
Centaurea cyanus	Cornflower			
	Perennial Centaury	_	New BAP	
Cepnalanthera longifolia	Narrow-leaved Helleborine		New BAP	
Cerastium arcticum	Arctic Mouse-ear	1	New BAP	
Chamaemelum nobile	Chamomile		New BAP	
Cicendia filiformis	Yellow Centaury		New BAP	
Clinopodium acinos	Basil Thyme		New BAP	
Cotoneaster cambricus	Wild Cotoneaster	Old BAP		
Dactylorhiza purpurella	A Marsh orchid		New BAP	
subsp. cambrensis				
Dactylorhiza viridis	Frog Orchid		New BAP	
Dianthus armeria	Deptford Pink	Old BAP		
Euphrasia anglica	An Eyebright		New BAP	
Euphrasia cambrica	An Eyebright	Old BAP		
Euphrasia ostenfeldii	An Eyebright		New BAP	
Euphrasia pseudokerneri	An Eyebright		New BAP	
Euphrasia rivularis	An Eyebright	Old BAP		
Euphrasia rostkoviana	An Eyebright		New BAP	
subsp. montana				
Fumaria purpurea	Purple Ramping - fumitory	Old BAP		
Galeopsis angustifolia	Red Hemp-nettle	Old BAP		
Galeopsis segetum	Downy Hemp-nettle			S42
Galeopsis speciosa	Large-flowered Hemp- nettle			S42
Gentianella anglica	Early Gentian	Old BAP		
Gentianella campestris	Field Gentian		New BAP	
Gentianella uliginosa	Dune Gentian	Old BAP		
Gymnadenia borealis	Northern Fragrant Orchid			S42
Gymnadenia conopsea	A Fragrant Orchid			S42
Gymnadenia densiflora	A Fragrant Orchid			S42

Species	Common name	Old UK BAP?	New UK BAP?	Wales Only?
Hammarbya paludosa	Bog Orchid			S42
Hieracium spp.	6 Threatened Endemic Hawkweeds			S42
Hordeum marinum	Sea Barley		New BAP	
Juniperus communis	Common Juniper	Old BAP		
Juniperus communis subsp.	Common Juniper	Old BAP		
hemisphaerica	subspecies			
Liparis loeselii	Fen Orchid	Old BAP		
Luronium natans	Floating Water-plantain	Old BAP		
Lycopodiella inundata	Marsh Clubmoss	Old BAP		
Lycopodium clavatum	Stag's-horn Clubmoss			S42
Matthiola sinuata	Sea Stock		New BAP	
Melittis melissophyllum	Bastard Balm		New BAP	
Mentha pulegium	Pennyroyal	Old BAP		
Monotropa hypopitys	Yellow Bird`s-nest		New BAP	
Neotinea ustulata	Burnt Orchid		New BAP	
Oenanthe fistulosa	Tubular Water-dropwort		New BAP	
Ophrys insectifera	Fly Orchid		New BAP	
Pilularia globulifera	Pillwort	Old BAP		
Platanthera bifolia	Lesser Butterfly-orchid		New BAP	
Poa glauca	Glaucous Meadow-		New BAP	
	grass			
Polystichum lonchitis	Holly-fern		New BAP	
Potamogeton compressus	Grass-wrack Pondweed	Old BAP		
Potentilla rupestris	Rock Cinquefoil		New BAP	
Pseudorchis albida	Small-white Orchid		New BAP	
Ranunculus arvensis	Corn Buttercup		New BAP	
Ranunculus tripartitus	Three-lobed Crowfoot	Old BAP		
Rumex rupestris	Shore Dock	Old BAP		
Salsola kali subsp. kali	Prickly Saltwort		New BAP	
Saxifraga cespitosa	Tufted Saxifrage		New BAP	
Scandix pecten-veneris	Shepherd's-needle	Old BAP		
Scleranthus annuus	Annual Knawel		New BAP	
Silene gallica	Small - flowered Catchfly	Old BAP		
Sorbus eminens	A Whitebeam		New BAP	
Sorbus leptophylla	A Whitebeam		New BAP	
Sorbus leyana	A Whitebeam	Old BAP		
Sorbus minima	A Whitebeam		New BAP	
Stellaria palustris	Marsh Stitchwort		New BAP	
Trollius europaeus	Globeflower			S42
Valerianella rimosa	Broad-fruited Cornsalad	Old BAP		
Vicia orobus	Wood Bitter-vetch		<u> </u>	S42
Viola lactea	Pale Dog-Violet		New BAP	<u> </u>
Woodsia ilvensis	Oblong Woodsia	Old BAP		

TREVOR DINES, Plantlife Wales Conservation Manager, c/o Countryside Council for Wales, Maes y Ffynnon, Ffordd Penrhos, Bangor, Gwynedd LL57 2LQ

.1

CONSERVATION AND RESEARCH AT THE NATIONAL BOTANIC GARDEN OF WALES

NBGW mission statement is to: develop a viable world-class national botanic garden dedicated to the research and conservation of biodiversity and its sustainable utilisation, to lifelong learning and to the enjoyment of the visitor.

In order to make progress on the research and conservation of biodiversity I was appointed as conservation botanist in October 2007 with funding provided by the Countryside Council for Wales. One year on, a number of projects have been established with the emphasis being on the integration of *in situ* and *ex situ* conservation and to providing the scientific underpinning necessary to conserve plant species and habitats.

For the first two to three years work will concentrate on the Welsh flora, reflecting the emphasis placed within the Global Strategy for Plant Conservation that our national flora should be a priority. Beyond that, conservation and research will be expanded to integrate with the NBGW main plant collections and provide effective *in situ* conservation overseas. Here is a brief overview of a selection of our current projects.

Rare Welsh Plants Project (RWPP)

This conservation programme works on some of the most endangered plant species in Wales to ensure their long-term survival. *In situ* and *ex situ* methods are used to provide effective, integrated conservation, for these threatened plants. A multidisciplinary approach is taken that combines taxonomic and ecological research using experiments in the field and common garden and using molecular techniques alongside herbaria based studies to inform species conservation.

The Rare Welsh Plants Project is a collaboration between NBGW and Dr Tim Rich, National Museum Wales, with the different institutions leading on various species. Individual projects are in collaboration with Plantlife, Botanical Society of the British Isles (BSBI), the Whitley Wildlife Conservation Trust (WWCT), Chester Zoo, Exeter University, Aberystwyth University and Manchester University. Some of the current species we are working on include:

Wild Cotoneaster - Cotoneaster cambricus:

This critically endangered, endemic species is found on the Great Orme, Caernarvonshire, where there are only six original plants left in the wild, along with some plants reintroduced from just one of these individuals. There is doubt about the taxonomy and status of the species; over whether it is *C. cambricus* or *C. integerrimus* s.l. and if the latter whether it is native or introduced. In order to effectively conserve this species we need to resolve the issues surrounding its taxonomy and status and also provide a much more detailed account of the ecology of this species. This project aims to: a) propagate the six remaining 'wild' plants and establish sustainable populations in cultivation, b) conduct molecular research that investigate the ecology of this species and d) use the above to develop a conservation plan. So far we have used 'air-layering' on four of the plants on the Great Orme in order to try and propagate these individuals. We will be working with Aberystwyth University to carry out molecular research to investigate the relationship between *C. cambricus* and other members of the *C. integerrimus* group.

Spreading Bellflower - Campanula patula:

Campanula patula is a species of sunken lanes and woodland edges, found on the Welsh borders, it is endangered in the UK and critically endangered in Wales, but very little is known about its ecology or the precise reasons for its decline. This project aims to investigate the ecology of this species in order to inform its conservation. This year, we conducted a survey of many of the historical sites for this species in Wales and some in England. *C. patula* was found in three of the eighteen sites visited in Wales, with one new area found close to an existing population near Hyssington, Monts. In England, *C. patula* was found in two out of the five sites visited. We have also acquired seed from the Millennium Seed Bank and are germinating these in order to have a population we can study in more detail at NBGW.

Endemic Whitebeams - Sorbus species:

Thanks to the work of Dr Tim Rich at the National Museum Wales, NBGW has an excellent *ex situ* collection of endemic British *Sorbus* species. We are working with Tim on a number of *Sorbus* projects. Tracey Hamston from the Whitley Wildlife Conservation Trust has carried out an MSc project investigating the ecology of the *Sorbus* species in the Torbay area of Devon. Tracey will then begin a PhD on the origins and conservation of endemic *Sorbus* species in SW England. This will be supervised by Dr James Cresswell (Exeter University),

Dr Tim Rich (NMW), Dr Amy Plowman (WWCT) and I. Tracey and I will begin molecular work for this project in the New Year at Exeter University.

Biodiversity in the Waun Las National Nature Reserve

NBGW has a 400 acre estate that has been managed as an organic farm for the last 10 years. It contains a wide range of valuable habitats including purple moor grass and rush pasture, wet woodland and lowland meadows – all UK BAP habitats. In April 2008 the estate was designated as a National Nature Reserve. The new NNR will be a hub for informing the public about other NNRs and more generally about the countryside around them. The core theme of the NNR is that: *farming practices are essential to conserving native Welsh plant life*.

A wide range of biodiversity surveys were carried out on the estate in the past, including vascular plants, ferns, mosses, fungi, lichens, birds, mammals (with specific surveys on dormice, bats, badgers and otters), reptiles and amphibians, molluscs, butterflies and moths and aquatic invertebrates. The first task (which has now been completed) was to collate together all of these previous surveys and enter them on to the Recorder 6 database. There are now over 1000 species recorded from the estate with over 10,000 individual records, all thanks to the work of dedicated volunteers, Alastair Hotchkiss and Izzy Griffith.

These surveys provide a valuable baseline and now need to be re-monitored so that we can investigate the effect of 10 years of organic farming and inform the future management of the estate. This year, surveys for the vascular plants, mosses, grassland fungi, dormice and a number of invertebrate groups have been carried out. Beyond that, the estate is a fantastic resource for investigating the restoration of species-rich grassland at a landscape scale, an area of research that will be developed in the future.

Library and herbarium

A working library and herbarium is an important resource for a botanic garden and we are now beginning to develop these at NBGW. The library has been set up entirely from donations of books and shelving by a team of volunteers led by a trained librarian, Margot Greer, who has also given her time voluntarily. We already have some important collections of books, including a mycological collection donated by Prof. Stan Hughes. We are also setting up a small herbarium to act as an in-house reference collection for the Welsh flora and repository for voucher specimens from research and collecting trips. So far we have approximately 5000 specimens, including a single sheet collection of each of the Welsh flora given on long term loan from the National Museum Wales. The next stage is to catalogue our library and herbarium collections, ensure access to staff and visiting researchers and develop the collections. If you are interested in visiting the library, or have botanical books that you might like to donate, please email <u>library@gardenofwales.org.uk</u>

DR NATASHA DE VERE, Head of Conservation and Research, National Botanic Garden of Wales, Llanarthne, Carmarthenshire SA32 8HG

REQUESTS

Juncus specimens required. The hybrid *J*. x *kern-reichgeltii* has been studied and an article will be published in 2008 on its identification. Requests were made in BSBI News but very little material was received and only two plants from Ireland. I would be grateful for any specimens (individuals or populations) for determination in order to build up a picture of distribution. This would also apply to the rush *J*. x *surrejanus* and *J. acutiflorus* (but not before end of July, i.e. plants at the fruiting stage only).

Also any *Epilobium* species required particularly in **flower** (with a few fruits to make sure it is not a hybrid) will be acceptable. Smaller plants from the base, though *E. hirsutum* can be just the top part with flowers and a few fruits. The two montane species and *E. lanceolatum* are particularly welcome and any in the *E. tetragonum* group. Fresh if possible or pressed – if pressing the plants, they can be saved up and sent at a later date in one envelope.

Additionally, I would be interested in receiving *Elytrigia repens* with none or very short awns and those with the very long awns up to 18mm (var. *aristata*) at flowering/fruiting stage. Pressed or semi-pressed or even fresh would be useful. Any other *Elytrigia* would be welcome.

MIKE WILCOX, 32 Shawbridge St, Clitheroe, BB7 1LZ - michaelpw22@hotmail.com

THE PLANTLIFE WALES NEWSLETTER - 8

The Alien Invasion

Much has been made lately of the invasion of alien species into Britain; the BBC even devoted a whole week to the issue recently, with items on their news and website about a whole range of species including Japanese Knotweed, Argentine Ants and American Signal Crayfish. Such stories often use evocative phraseology, such as "invasion", "mutant strain", "plague-harbouring" and "one of the greatest threats facing biodiversity today". While journalists naturally reach for the most headline-grabbing straplines they can muster, it's good to remind ourselves of the truth behind the "facts". Unfortunately though, the truth can be hard to reach and facts and figures are difficult to obtain. HENCE A CALL FOR HELP.

Why the attention now?

It is certainly true that the issue of alien species is higher up the agenda than it has been in the past. This is partly due to awareness raised by the headlines noted above, but in a more constructive way it is also due to the work of many organisations in the background. One of the main problems has been a lack of co-ordination and sharing of information, particularly regarding things like: what are the main problem species, what methods of control actually work, and who is leading work on particular species and sites? To counter this, Defra established the Non-Native Species Secretariat (*see www.nonnativespecies.org*) in 2006 to co-ordinate work on all alien species across Great Britain. This resulted in publication of *The Invasive Non-Native Species Framework Strategy for Great Britain* in 2008 and the establishment of working groups in each country (England, Scotland and Wales) to help bring everyone together to share knowledge and experiences.

In 2008, Schedule 9 of the Wildlife and Countryside Act (1981) was also updated. This lists those animal and plant species for which it is illegal to release, plant or cause to grow in the wild without a licence. Plantlife co-ordinated a response from ten organisations (including the BSBI in Wales) to the consultation and the updated lists are expected soon. For the first time, we were also invited to suggest a list of species for which a Ban on Sale would help stop their spread in the wild. Rapidly spreading aquatic species such as *Crassula helmsii* (New Zealand Pygmyweed) and *Hydrocotyle ranunculoides* (Floating Pennywort) were top-of-the-list in our joint response and we await to see how and when this proposal will be put into action.

Against this coordinative and legislative background, however, our principle interest lies in understanding precisely what's happening out there in the wider countryside. Without sound records and reports of which species are spreading, which are causing problems, which controls are effective and where more work is needed, we cannot be in a position to take (or recommend) action. It has also been stated that far too much attention is now being given to alien species, while invasive native species are in fact causing more problems. This argument is difficult to counter until we have a better understanding of the scale of the problem in the wild.

The scale of the problem

The invasive species "rule of tens" (Williamson & Fitter, 1996), states that of all alien species grown in a country, 10% will escape into the wild, 10% of these will become established and 10% of these will become a problem. While the RHS Plant Finder currently lists well over 70000 plants grown in Britain, a very large proportion of these will be cultivars of the same species. However, we do know that around 4300 have escaped into the wild. Of these, 1540 have become established, and around 43 of these have become "problem" species. The rule, therefore, sort of works, in that 1 in 100 species in the wild have become problems in Great Britain.

Famously, a handful of these species are a real concern and for which eradication programmes are rightly underway. Once the effect of *Rhododendron ponticum* (Rhododendron) on montane heathland around Beddgelert (Merionethshire and Caernarfonshire) has been seen, no one would deny that the work the National Trust and the Snowdonia National Park Authority are doing to eradicate it is anything but worthwhile. Similarly, work to eradicate *Fallopia japonica* (Japanese Knotweed) and *Heracleum mantegazzianum* (Giant Hogweed) is equally essential. Even though these latter two species are less frequent in sites with good semi-natural habitat, unless control is exercised now they will only stand to become even more of a problem in the future. We must also not forget that these species have an impact well beyond out competing native species – there are equally important economic costs, health implications and landscape impacts too. Control of another highly invasive species, *Impatiens glandulifera* (Himalayan Balsam) has recently been criticised because it has been show that it doesn't actually out compete native species. Again, while this may be the case at the sites studied, its impacts on some sites (such as along the River Wye and Afon Dwyryd) are quite astonishing and again include landscape, access and recreational impacts.

Controversy has arisen, however, over the effect alien species are actually having on our flora. This is mainly because we do not know what the situation is out in the countryside. While we can see the general effects Rhododendron, Giant Hogweed, Himalayan Balsam and Japanese Knotweed are having on our landscapes, apart from very few exceptions we don't know what direct effect they are having on our native plant populations. An absolutely essential, but as yet unanswered, question is: at how many sites are alien species having a negative impact on native species?

The Sites in Peril database

Matching the decline of a population of plants to the rise of an invasive alien plant on the same site would be invaluable information. In a world of limited resources, control of invasive species must be prioritised to sites with threatened native species, and knowing which sites were being impacted will allow appropriate responses to be planned. Plantlife Wales and the BSBI in Wales would therefore like to collect information on populations of species that are listed as being threatened (Critically Endangered, Endangered or Vulnerable) on either the GB or Wales Red Data List particularly if they have either been reduced or eliminated by the encroachment of an alien plant species. We'd also like to know of sites where threatened native and alien species occur together, even if a decline in the threatened native species has not been observed.

I suspect that making such direct links are going to be very difficult. For example, we know that parts of the Great Orme (Caernarfonshire) are home to many threatened species, such as *Aster linosyris* (Goldilocks Aster, Vulnerable in Wales) and *Hypochaeris maculata* (Spotted Cat's-ear, Endangered in Wales). The same sites have become infested with alien Cotoneaster species, especially *C. microphyllus* types [*C. integrifolius*] and *C. simonsii*, and with *Arbutus unedo* (Strawberry Tree). Work to eradicate these species by the Country Park and the Countryside Council for Wales has been underway for many years, and is proving successful, but even for such a well botanised site linking the influx of alien species to the fluctuating populations of threatened native species will be difficult, especially as other factors (such as climate and grazing) play an important role in population size. For many sites, the threat of alien invasion has already led to control measures, so assessing the impacts of the aliens will be difficult.

Similarly, at Arthog (Merionethshire), *Cephalanthera longifolia* (Narrow-leaved Helleborine, Vulnerable in GB & Endangered in Wales) grows in a small population alongside the Mawddach Trail. At the site, just a few meters from the Helleborine, *R. ponticum*

(Rhododendron) is increasing. We'll obviously not wait until it has smothered the Helleborine plants before action is taken (work is planned there this winter with the Snowdonia National Park Authority), but the Rhododendron is most certainly a threat to the Helleborine.

Although difficult to answer, we therefore ask the question: do you know of any sites at which invasive alien species having a negative impact on threatened native species? If you do, please get in touch with me or your BSBI County Recorder with details of site name, grid reference, the alien species in question, and details of how the threatened native plant population has changed in response to the alien species encroaching on the site (including "no longer present – site now dominated by such-and-such as species").

Slightly easier to answer, we are also asking the question: do you know of any sites at which invasive alien species are found along with threatened native species? They might pose a threat in the future, or have been controlled in the past and are being managed successfully. If you do, again please do get in touch with me or your BSBI County Recorder with details of site name, grid reference, the alien species in question, the threatened native species in question, and details of how the threat the alien poses to the native species or what control has been occurring on the site.

For a list of threatened native species, please see <u>www.plantlife.org.uk/portal/plantlife-news.htm</u> for a copy of the Vascular Plant Red Data List for Wales (or contact me for a list). Alien species we are interested in include (this is by no means exhaustive, but just to give an idea of the main culprits):

Species	Common name	Habitat where most likely to be a problem
Allium triquetrum	Three-cornered Garlic	Roadside verges
Carpobrotus edulis	Hottentot Fig	Cliffs
Chamaecyparis lawsoniana	Lawson's Cypress	Woodland, heathland
Cotoneaster species	Cotoneaster	Limestone pavement
Crassula helmsii	New Zealand Pygmyweed	Aquatic
Crocosmia x crocosmiiflora	Montbretia	Roadside verges
Elodea canadensis	Canadian Waterweed	Aquatic
Fallopia japonica & F.sachalinensis	Japanese & Giant Knotweed	Roadside verges
Hippophae rhamnoides	Sea-buckthorn	Dunes
Hydrocotyle ranunculoides	Floating Pennywort	Aquatic
Impatiens glandulifera	Himalayan Balsam	Riversides
Lagarosiphon major	Curly Waterweed	Aquatic
Lamiastrum galeobdolon subsp. argentatum	Variegated Yellow- archangel	Woodland 🥱
Myriophyllum aquaticum	Parrot's-feather	Aquatic
Picea sitchensis	Sitka Spruce	Woodland, heathland
Quercus cerris	Turkey Oak	Woodland, heathland
Rhododendron ponticum	Rhododendron	Woodland, moorland
Rosa rugosa	Japanese Rose	Dunes

Sites for which alien species have either had an effect on threatened native species, or where they are present on the same sites and could potentially impact threatened native species, will be entered onto the Sites in Peril database which will be used to prioritise action and determine the scale of the threat.

Assessing the risk from new arrivals

New species are continually arriving into Britain, and especially into gardens from where they escape into the wild. It is important that the behaviour of these in the wider countryside is monitored closely to spot any potential new Japanese Knotweeds or Rhododendrons. There are two aspects to this. Firstly, records from the wild, which are vital to show both how a species is behaving ecologically and how rapidly it is spreading, and secondly Risk Assessments.

A standardised method of Risk Assessment, the Pheloung methodology, has been developed to assess the potential invasiveness of plants worldwide (Pheloung, Williams & Halloy). The full methodology is very comprehensive and takes many hours to complete for each species. In order to screen a large number of species, Plantlife has developed a Rapid Risk Assessment methodology (a simplified version of the original) to use on alien species in Britain. It asks questions about a wide range of characteristics, including the rate of spread in the wild, the types of semi-natural habitat occupied, the invasiveness in other countries, the rate of reproduction (vegetative and by seed), the methods of spread and tolerance of the species to grazing and mechanical and chemical control.

Using this methodology, Plantlife is completing assessments for all aquatic species in cultivation in Britain (some 450 taxa), and 200 of the fastest-spreading terrestrial species. The initial results are fascinating and indicate some very interesting species that we should be watching closely. These species will now go forward for full assessment with the original Pheloung methodology, which should confirm whether they are potential problems of the future or not.

Rapid response in Wales

A final piece of the jigsaw with our work on invasive species comes with identifying those species for which there is a very high risk of problems now or in the future such that they warrant immediate action to eradicate them from the sites in which they are found. This "nip the problem in the bud" approach is very sensible, especially given that we are now so often accused of acting "after the horse has bolted" (i.e., some species are so well established in the wild effective control is now impossible).

The Non-native Species Secretariat has already identified Water Primrose (Ludwigia peploides and L. grandiflora) as being species highly likely to cause problems in Britain given their behaviour in northern France, where an infestation of 500 ha occurred in 5 years (see www.nonnativespecies.org). If anyone finds either of these species in Wales please let me know immediately. Given that I found plants for sale in a specialist aquatic nursery near Gloucester this summer, occurrences in Wales are likely. The species have already been recorded from Somerset, Hampshire and Lancashire and control at all sites is currently underway.

There are other species for which we could adopt a "complete eradication" policy for Wales. *Egeria densa* (Large-flowered Waterweed) resembles a large, leafy Canadian Pondweed and was historically restricted to canals warmed by industrial outflow. Recently, records have been increasing, perhaps because of milder winter temperatures, and the species has been recorded from three sites in Wales. Most recently, and most worryingly, it was discovered in a

pool on the very tip of the Lleyn peninsula (Caernarfonshire), which has a mild climate and is rich in native species, including *Baldellia ranunculoides* (Lesser Water-plantain) and *Ranunculus tripartitus* (Three-lobed Crowfoot). With just three sites known, we could eliminate this species from Wales and keep it out of the country if resources for a rapid response are available.

Another species for which this would be very desirable, albeit slightly more difficult to achieve, would be *Hydrocotyle ranunculoides* (Floating Pennywort). This is currently found in around a dozen sites in Wales (mainly in Caernarfonshire, Montgomeryshire and Anglesey). It is a very highly invasive aquatic species and in England is proving to be very difficult to control; parts of the River Stour in Dorset have been rendered impossible to navigate due to the floating mats produced by this species. A complete eradication programme and subsequent "zero tolerance" attitude for this plant would be very appropriate.

A final example of a rapid response species could be another invasive aquatic species, *Myriophyllum aquaticum* (Parrot's-feather). This forms dense mats of stems and leaves and is known to out-compete species such as Three-lobed Crowfoot (*Ranunculus tripartitus*) in Surrey. It is currently recorded from around 30 10-km squares in Wales. This may make it impossible, or at least difficult, to eradicate from the whole of Wales, but it may be appropriate to remove it from certain areas. Anglesey, with its richness of aquatic sites, may be suitable for this approach – it has been recorded from just two or three sites on the island so eradication may be possible.

The need for records

Finally, please do let me know about sites where alien species are damaging populations of threatened native species, and where the two are occurring together. I would also make a plea that Recorders view as a priority the need to make available records for the rarer but highly invasive species for which rapid action could make a large difference – *Crassula helmsii* (New Zealand Pygmyweed) and *Hydrocotyle ranunculoides* (Floating Pennywort) being examples. The inclusion of such records in County Rare Plant Registers would be extremely helpful and make these records available to those with resources to manage sites where they occur appropriately.

References

Pheloung, P.C., Williams, P.A. & Halloy, S.R. (1999). A weed risk assessment model for use as a biosecurity tool evaluating plant introductions. Journal of Environmental Management 57: 239-251.

Williamson, M. & Fitter, A. (1996). The varying success of invaders. Ecology 77: 1661-1666.

TREVOR DINES, Plantlife Wales Officer, c/o Countryside Council for Wales, Maes y Ffynnon, Ffordd Penrhos, Bangor, Gwynedd LL57 2LQ

•