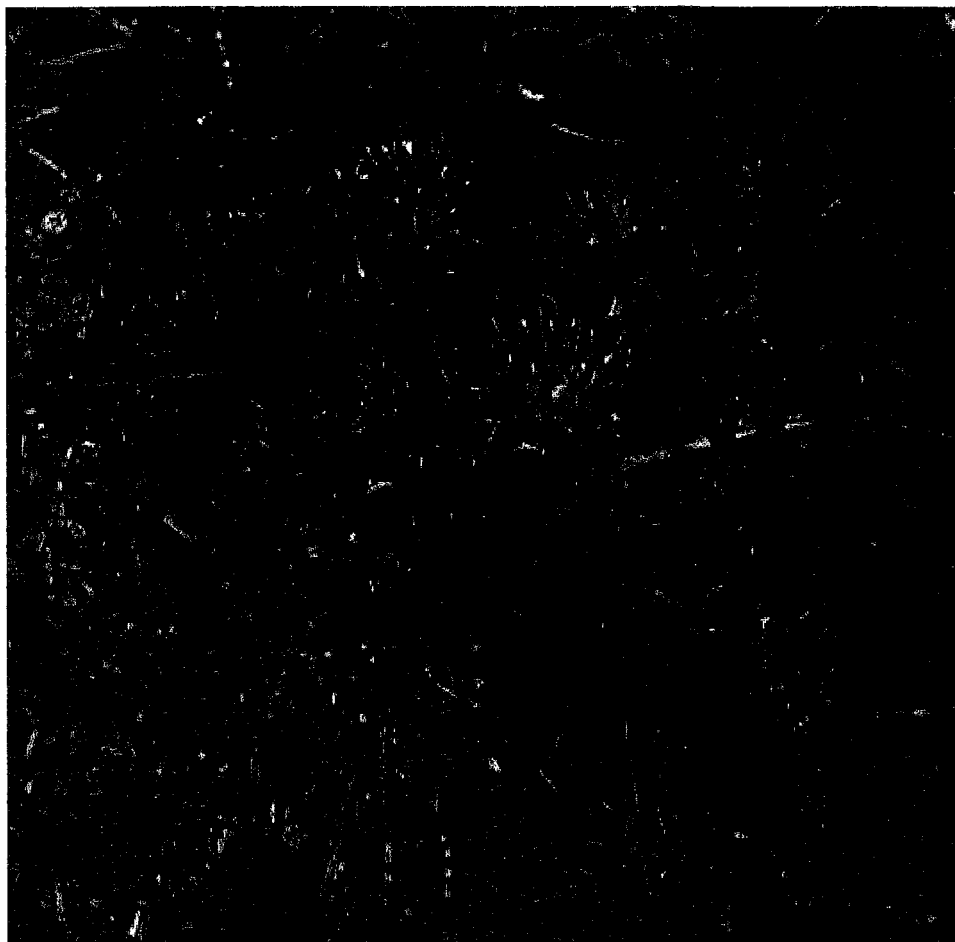




Welsh Bulletin

No. 84
June 2009



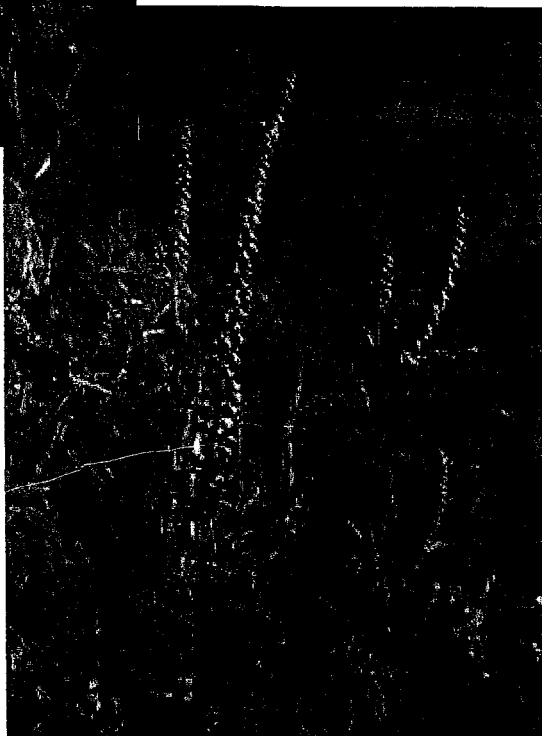
Editors Richard Pryce & George Hutchinson



Left : Several plants of *Solanum physalifolium* were seen during the Glynhir Recording Week on the new embankments of the Morfa-Berwick Link Road, Llanelli and were a new record for Carmar.

Right : *Ambrosia artemisiifolia* growing on waste ground in the centre of Carmarthen.

Photos: Richard Pryce.
(see Welsh Plant Records)



Front Cover Photo : *Cirsium acaule* at Rhes-y-cae, Flintshire (v.c. 51) (see p. 10) Photo: Goronwy Wynne

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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).

Publication date of last BSBI Welsh Bulletin (No. 83) - January 2009.

GUEST EDITORIAL

To coincide with his retirement from Amgueddfa Cymru — National Museum Wales (NMW) George Hutchinson has decided to step down as co-editor of the Welsh Bulletin. He has been working on the Bulletin for twenty-four years and actually compiling it since 1996. So that such a mammoth job should not slide entirely onto Richard's shoulders (which we are sure he is pleased about!), we took on the job of joint editors. It seemed right that the Welsh Bulletin should be kept within NMW as it would be easier to transfer all those boxes that George said the editor needed space for, the short distance up the hall!

As well as dragging boxes down the hall, we are attempting to get our heads around the task, trying not to feel too daunted, whilst being determined that the transition will go smoothly. We would like to thank Richard for having faith in us and agreeing to us taking on the role of joint editors. Good luck to George when he retires, and we are very envious of the amount of botanising he will be able to do.

Based in the Cryptogamic Section, Department of Biodiversity and Systematic Biology in NMW, Sally is Collections Manager and Katherine is Curatorial Assistant. In our roles we are custodians of the cryptogamic herbarium and its archives, dealing with loans of material, curation and databasing of specimen data. As well as this we have research and educational roles. We would be most happy to welcome you as visitors to the Cryptogamic Herbarium and please feel free to contact us with any lower plant related queries.

Working for a national museum, education is always at the forefront of many of our activities. One very enjoyable responsibility is to maintain the Living Plant Table. This is a display of locally collected living native and ornamental plant material. Our principal aim is to inspire new audiences, to help them notice and look at the plants that are growing all around them.

There is an increasing ground-swell of interest in botany at the moment, even if people don't realise it's botany that they're getting into as they are trying to identify Fat Hen from their cabbage plants on the allotment. Remarkably, *Taraxacum* appeared at Chelsea this year, in a clay pot in an herb display, not your normal formal horticulture, thus proving interest in natives is increasing. Furthermore, TV programmes such as BBC's *Gardener's World* and *Springwatch* have been encouraging the inclusion of native plants and wild flower meadows in our gardens. It is only a matter of time until there are some 'garden escapees' who want to know what those plants are beyond their garden. Just wait for an influx of new BSBI Wales members and nurture their interest, just don't tell them its botany!

On a final note, please could we appeal now for any articles, ideas, photos, guest editorials, meetings or holiday reports, etc. that you have and we ask you to send these to us or Richard.

Sally Whyman and Katherine Slade, Department of Biodiversity & Systematic Biology, National Museum, Cathays Park, Cardiff CF10 3NP

CORRIGENDUM

Welsh Bulletin No. 82, contents page only: for main heading 'Annual General Meeting, 2008' read 'Annual General Meeting, 2007'.

BSBI WALES ANNUAL GENERAL MEETING 2008

The 46th Annual General Meeting of the BSBI in Wales, held at Gregynog Hall, Montgomeryshire on Saturday 9th August 2008.

The Chairman, Andy Jones welcomed everyone to Montgomeryshire and the splendid setting of Gregynog Hall.

1. **Apologies for Absence:** Natasha De-Vere, R.G. Ellis, T.G. Evans, Dr G. Hutchinson, Dr Q. Kay, Marjorie Wainwright and Dr G. Wynne.

2. **Minutes of 2007 AGM:** (Published in *BSBI Welsh Bulletin* No.82, pp 5-8). Minutes accepted without amendment.

3. **Matters Arising:** None.

4. **Chairman's Opening Remarks:** Andy Jones wanted to emphasise that, overall, botany and BSBI membership must be enjoyable. He went on to thank Kate Thorne for all the work put into organising the weekend, the staff at Gregynog for being so helpful, and to welcome especially George Peterken, our keynote speaker, and Diana Reynolds, Head of Nature Conservation & Biodiversity Policy (Welsh Assembly Government).

5. **Diana Reynolds:** Diana thanked Andy for the opportunity to say a few words, said she was enjoying meeting the BSBI (despite the weather for the field visits) and wanted to emphasise the following: That BSBI attend the full meetings of the Wales Biodiversity Partnership and fully brief Trevor Dines, who sits on the Steering Group of the Partnership. That she is aware of weaknesses in the Biodiversity Action Plan (BAP) process and a review is currently underway. Her team are helping BAP Co-ordinators to run better meetings, and that Biodiversity Gain is one of her job performance indicators! Finally, that she is planning to find a way of making funds available to Vice-county Recorders towards the purchase of books and other equipment.

6. Hon. Secretary's Report:

- a) Richard Pryce reiterated the Chairman's welcome especially to members from outside Wales, and in particular to Kevin Walker and Bob Ellis from the BSBI.
- b) Richard asked Diana to add increased funding for management of SSSI's to her list.
- c) *The Vascular Plant Red Data List for Wales*, described at the 2007 AGM, was now complete and launched at the Plantlife AGM in June. Richard thanked the VCRs and other data providers and congratulated Trevor Dines on the achievement.
- d) A very comprehensive Rare Plant Register for Pembrokeshire has been made available as a draft in an electronic format. Also Registers have been completed in paper and spreadsheet format for Caernarfonshire and Flintshire - congratulations to all the compilers and editors.
- e) Delyth Williams has succeeded Jean Green as VCR for Denbigh and Liz Dean and Sue Spencer have taken on Radnor following the retirement of David Humphreys.
- f) A full programme of field meetings is in progress, with thanks to all the leaders.
- g) Recorders are participating in the Threatened Plants Pilot Project, which is a very welcome attempt to collect a range of useful information about selected scarce species, in addition to just compiling lists of taxa.
- h) Our input to most of the above, and to many other matters, would be hugely helped if BSBI could find the matching funds to enable it to take up CCW's offer of finance towards a BSBI Wales Officer.

- i) Two issues of the Welsh Bulletin, numbers 81 and 82, have been issued during the year by our indefatigable editor, George Hutchinson, who has given early notice of his retirement in April 2010. However to the delight of the Committee George has recruited two potential successors to share the editorial role, both of whom also work in the National Museum, so keeping the close links between NMW and the BSBI. Thanks are also due to Gwynn Ellis who continues to edit VCR's contributions for Plant Records, published in the Welsh Bulletin. To conclude Richard drew our attention to a new departure for the Bulletin, that of inviting a guest editor to contribute the editorial - a role so ably filled by Kath Pryce that it is certain to be repeated!
- j) Finally Richard thanked all those involved in the organisation of the events this weekend, especially Andy Jones, Sarah Stille, Kate Thorne and the staff of Gregynog, also Andy Law for the walk on Friday, John Poland for his workshop and George Peterken for his talk later tonight.

7. Hon. Treasurer's Report:

Annual Statement of accounts 30 June 2007 – 30 July 2008

<i>Receipts</i>	£	<i>Payments</i>	£
<i>Welsh Bulletin</i> subs	94.00	Welsh Bulletin 80 printing	143.00
2007 AGM receipts	958.05	Welsh Bulletin 80 postage	57.18
2008 AGM receipts	6632.00	Welsh Bulletin 81 printing	142.99
Plantlife (WB 81)	<u>164.00</u>	Welsh Bulletin 81 postage	80.31
		2007 AGM outgoings	3630.94
		2007 AGM refunds	<u>270.00</u>
<u>Totals</u>	7848.05		4324.42
Excess of receipts over payments	3523.63		
Carried forward from 30 June 2007	<u>3748.32</u>		
Balance at 30 July 2008	<u>7271.95</u>		

Note: Once AGM invoices have been received and paid the account will show a modest credit balance.

Sarah Stille, Hon. Treasurer, BSBI Committee for Wales

The accounts were projected onto the screen with paper copies also available. There were no questions and the accounts were accepted unanimously.

8. **Welsh Bulletin Editor:** Covered in paragraph 'i' of the Hon. Secretary's report.

9. Election of Officers and Committee Members:

The Chairman, Andy Jones, and Vice Chairman, Delyth Williams, were elected to serve four year terms in 2006 and are not due to retire until 2010.

Nominations for Officers were as follows:

Hon. Secretary: Richard Pryce

Hon. Treasurer: Sarah Stille

Committee Members are elected for a period of three years.

Nominations may be received at the meeting if accompanied by the written consent of the nominee. The nominations from the committee are as follows:

New committee member (co-opted during 2007-8): Natasha De-Vere

Existing committee members due to retire in 2008, all eligible to stand for re-election:

Ian Bonner, Wendy McCarthy, Julian Woodman, Goronwy Wynne.

Serving Committee members in mid-term are as follows (with the dates they are due to retire):

Arthur Chater (2010), Trevor Dines (2009), Stephen Evans (2010), Trevor Evans (2009), George Hutchinson (2010), Andy Jones (2010), Quentin Kay (2010), Mike Porter (2010), Richard Pryce (2009), Sarah Stille (2010), Kate Thorne (2010), Delyth Williams (2010) and Ray Woods (2009).

CCW Observer: Paul Day

Plantlife Observer: Trevor Dines is a committee member but also Plantlife Observer

There were no further nominations, Ian Bonner had decided not to seek re-election on this occasion.

The officers and committee members were re-elected as set out above. Ian was thanked for his contribution to the work of the committee over the past 10 years.

10. **AGM and Exhibition Meeting 2009:** No firm decisions had been taken over location or dates; but it is likely to be based in Radnor/Brecknock.

A programme of field meetings was also taking shape.

11. **Any Other Business:** Trevor Dines thanked VCR's and other BSBI members for all the help given in the compilation of the *Red Data List for Wales*, which was already being used by CCW and the Welsh Assembly Government. It was planned to update the List annually, with any changes being published in the BSBI Welsh Bulletin. Trevor hoped that the BSBI would play the major role in monitoring the populations of the species on the list and felt that the joint working between BSBI, CCW and Plantlife was a partnership to be proud of.

Richard Pryce thanked Ian Bonner for his sterling service on the Welsh Committee over the past years. This was echoed by all present.

The AGM was attended by 50 people.

CALENDAR OF MEETINGS 2009

Full details and procedure for booking are available in the BSBI Year Book for 2009 and the BSBI Welsh Bulletin No. 83.

SAT 23rd MAY - CRAIG BREIDDEN, WELSHPOOL, MONTYOMERYSHIRE, (v.c. 47) –
A Jones

SAT 6th JUN - CORSERDDEINIOG NNR, ANGLESEY (v.c. 52) – L. Colley

SAT 20th JUN – CAE BLAEN DYFFRYN PLANTLKIFE RESERVE, LAMPETER,
CARMARTHENSHIRE (v.c. 44) – T. Dines

FRI 26th JUN - SUN 28th JUN - WELSH AGM and EXHIBITION MEETING, ROYAL WELSH
SHOWGROUND, RADNORSHIRE (v.c. 43) and associated field meetings

SAT 27th JUN – CAEAU TAN Y BWLCH PLANTLIFE RESERVE, CLYNNOGFAWR,
CAERNARVONSHIRE (v.c. 49) – T. Dines

SAT 11th JUL - SAT 18th JUL - GLYNHIR MANSION, LLANDYBIE, CARMARTHENSHIRE
(v.c. 44) - K. & R. Pryce

SAT 25th JUL – ALYN WATERS COUNTRY PARK, nr WREXHAM, DENBIGHSHIRE (v.c. 50) –
D. Williams & J. Green

SAT 15th AUG – TYWYN, MERIONETH (v.c. 48) – P. Benoit

SAT 5th SEP – BRITHDIR, nr CHURCHSTOKE, MONTGOMERYSHIRE (v.c. 47) – A. Jones

REMINDER - BSBI WALES AGM**47th Welsh AGM & 27th Exhibition Meeting, 2009****Friday 26th – Sunday 28th JUNE 2009**

This is just a quick reminder that the BSBI Wales AGM for 2009 is being held at the Royal Welsh Showground, Builth Wells, with a Grassland and Grasses theme. All levels of experience will be catered for and participants are warmly encouraged to bring their own material for determination and discussion. Please plan ahead and collect any plant material for identification in the workshops.

There will be:

- Friday afternoon workshop on the vegetative characters of grasses with John Poland; short talks / demonstrations and an evening walk along the River Wye at Builth Wells with Ray Woods.
- A Saturday excursion to Vicarage Meadow, Abergwesyn, Brecknockshire.
- On Saturday afternoon Summerfield Books will have a display of new and old books of interest.
- Saturday evening lecture on “The Grasslands of Wales” by Tim Blackstock (Head of Terrestrial Science at the Countryside Council for Wales).
- An exhibition of posters and specimens by members.
- A Sunday excursion to the Elan Valley meadows, Radnorshire.

and more...

We have already received several posters and exhibits in but would like to say how much we look forward to contributions of this kind. Any interesting specimens or noteworthy records will be gratefully received (they don't have to very polished or 'scientific') and all add to the Exhibition atmosphere. If you're coming to Builth please bring something with you!

Booking forms were circulated with the last edition of BSBI News, to be made by the beginning of May, 2009. However, there are a few places left, although ensuite rooms have long been booked up. Applications should be made as soon as possible to Andy Jones, c/o CCW, Plas Gogerddan, Aberystwyth, Ceredigion SY23 3EE

Tel: 01970 821119 e-mail: a.jones@ccw.gov.uk

QUITE A PRICKLY CHARACTER

Over much of southern England the Stemless Thistle *Cirsium acaule* is a common plant but in most of Wales it is something of a rarity.

In Flintshire, we make quite of a fuss about it, because we can claim its most north-westerly locality in Europe (just about!).

In this country we have about a dozen different thistles and some of them can be rather difficult to separate, in fact, the leafy rosettes of the Stemless and Creeping Thistles can be quite similar until you 'get your eye in'. However, once in flower the Stemless Thistle is quite unmistakable, and lives up to its name (the Latin specific epithet *acaule* also means stemless).

Description

Cirsium acaule (previously *acaulis*, *acaulon*, *acaulos*any more?)

A perennial with spiny leaves arranged in a rosette and usually pressed on the ground. The horizontal, branched, underground stem produces a group of new rosettes in a loose cluster. In summer, each rosette may produce one sessile flowering head (or sometimes more), reddish purple in colour and about 15mm across.

Ecology

Habitat: short grassland on limestone (or chalk). It grows best where the grasses are kept short by grazing. If grazing stops, new seedlings are out-competed by tall grasses. It has been shown that the plant responds markedly to light intensity; as the degree of shading increases the growth rate declines.

pH: The plant grows mainly on soils with a pH above 5.5 and is absent from soils of pH 4 – 5. As a calcicole it cannot survive even a low concentration of aluminium ions in the soil water, and these increase as the pH falls.

Soil fertility: It has also been shown that the Stemless Thistle grows best in soils with low concentrations of nitrogen and phosphorus – in more fertile soils it is out-competed by other plants such as coarse grasses.

Climate: The distribution of *Cirsium acaule* seems to be largely determined by summer temperature. It is almost confined to the area where the average daily maximum in August exceeds 20° C. In Britain this corresponds roughly to that area south and east of a line from the Wash to the Severn estuary. The warmer temperature is required for successful seed production. North of the 20°C isotherm the plants may not develop mature fruits and the seeds may not ripen.

There are other factors which tend to reduce the production of mature seeds in the northern plants. Firstly, the plant flowers about a month later at its northern limits than in the south of England, so the temperature will be lower; secondly, the rainfall tends to be higher in the north and the flowers often fail to open; thirdly, in dull, wet weather the stalks below the flower may become infected by the fungus *Botrytis cinerea* which prevents fruit development.

Our Flintshire plants, near the village of Rhes-y-cae, are in a large area of common land, largely grazed by sheep, which forms part of Halkyn Mountain at an altitude of 228m. The soil is mainly a brown earth, with complex patterns of drift over blocked limestone. The pH is around 6.5. The average annual rainfall (1961 – 1991) is 887mm. and the average means of daily maximum temperatures in August is 18°C.

Two final snippets....

1. In parts of southern England the Stemless Thistle belies its name by having a definite aerial stem. Stanley Jermyn in his *Flora of Essex* (1974) mentions that some plants have flowering stems 'from an inch or two up to a foot'. This form has been given the name *caulescens*.

2. If you are familiar with the Stemless Thistle you might like to answer this question. How does it respond to trampling? Here are two opinions....

J. E. Lousley in *Wild Flowers of Chalk and Limestone* (1950) says that, like the Hoary Plantain, it can withstand much trampling and is a most difficult plant to destroy, and hence can be found on the most frequented parts of the downs and 'is able to put up with any amount of bad treatment.' In contrast, C. D. Pigott (1968) says that... 'it is destroyed by trampling and is absent from heavily trodden pathways' (*J. of Ecology* **56**: 597-612 [specifically p.603]). Is the jury still out?

GORONWY WYNNE, Gwylfa, Lixwm, Holywell, Flintshire CH8 8NQ

WELSH PLANT RECORDS – 2008

Welsh Plant Records are compiled by Gwynn Ellis, 41 Marlborough Road, Roath, Cardiff, CF23 5BU, from reports of BSBI vice-county Recorders to whom records should preferably be sent. Plants are listed for each vice-county in the order of D.H. Kent's *List of Vascular Plants of the British Isles* (1992) and *Supplements 1 & 2* (1996 & 2000), the number in those lists preceding the name, so that names changed since 1996 can be given without giving the former name. Latin names also follow Kent (1992) and *Supplements 1, 2 or 3* or, if not in that list, the *Vice-county Census Catalogue* (2003), the 2nd edition of C.A. Stace's *New Flora of the British Isles* (1997), E.J. Clement & M.C. Foster's *Alien Plants of the British Isles* (1994), T.B. Ryves, E.J. Clement & M.C. Foster's *Alien Grasses of the British Isles* (1996) or Sell & Murrell's *Flora of Great Britain and Ireland* (1996-2009). Authorities for Latin names are not given unless the name is not in any of these works. English names are those in *English Names of Wild Flowers* ed. 2 (1986) by Dony *et al*, or, if not in that list, Stace (1997). Clement & Foster (1994). Ryves, Clement & Foster (1996). or Sell & Murrell (1996-2009). English names enclosed by square brackets do not occur in any of these books but have been used elsewhere. Welsh names are those in *Planhigion Blodeuol, Conwydd a Rhedyn*, published by Cymdeithas Edward Llwyd (2003).

The following symbols are used:

* to indicate a new v.c. record

+ to indicate a new or updated hectad record

† indicates archaeophyte; ‡ indicates neophyte; © indicates casual

†‡© before the species number: to indicate that the species is regarded as an archaeophyte, neophyte or casual at least somewhere in the British Isles.

†‡© before the record: to indicate a species which although a native, archaeophyte or neophyte at least somewhere in the British Isles, is not so in the locality recorded

[] to indicate that the record, previously published in error, should be deleted

↗ to indicate an update to a rare or scarce taxon

Ø to indicate that the taxon is now believed to be extinct in the locality cited

In general, only records which update the *Vice-county Census Catalogue* (2003) or the *New Atlas of the British & Irish Flora* (2002) will be listed. Other records are included at the discretion of the vice-county recorder.

The minimum grid reference is to a hectad but, if supplied by the recorder, references to a 1km or even a 100m square may be included. A letter in parentheses following a grid reference indicates a tetrad.

The Vice-county Recorders from 1/6/2009 are:

MONMOUTH, v.c. 35; Mr T.G. Evans, La Cuesta, Moun-ton Road, Chepstow, Monmouthshire NP16 5BS
 GLAMORGAN, v.c. 41 (West); Dr Q.O.N. Kay, West Cwm Ivy, Llanmadoc, Gower, Swansea SA3 1DG
 GLAMORGAN, v.c. 41 (East); Mr J. Woodman, c/o CCW, Unit 4, Castleton Court, Fort-ran Road, Cardiff CF3 0LT (Please mark PERSONAL)
 BRECON, v.c. 42; Mr M. Porter, Aberhoywy Farm, Cyffredyn Lane, Llangynidr, nr Crickhowell, Powys NP8 1LR
 RADNOR, v.c. 43; Miss E.R. Dean, Enmore House, Croft Lane, Kingsland, Leominster, Herefordshire, HR6 9PP & Mrs S.M. Spencer (*all correspondence to Miss Dean*)
 CARMARTHEN, v.c. 44; Mr R.D. Pryce, Trevethin, School Road, Pwll, Llanelli, Carmarthenshire SA15 4AL
 PEMBROKE, v.c. 45; Mr S.B. Evans, Glan-y-Mor, Dinas Cross, Newport, Pembrokeshire SA42 0UQ
 CARDIGAN, v.c. 46; Mr A.O. Chater, Windover, Penyrangor, Aberystwyth, Ceredigion SY23 1BJ
 MONTGOMERY, v.c. 47; Dr A K Thorne, Churton House, Church Pulverbatch, Shropshire, SY5 8BZ
 MERIONETH, v.c. 48; Mr P.M. Benoit, Pencarreg, Barmouth, Gwynedd LL42 1BL
 CAERNARFON, v.c. 49; Mrs W.N. McCarthy, 5 Tyn-y-coed, Great Orme, Llandudno, Conwy LL30 2QA
 DENBIGH, v.c. 50; Mrs D. Williams, Bryn Siriol, Graigfechan, Ruthin, Denbighshire, LL15 2HA
 FLINT, v.c. 51; Dr G. Wynne, Gwylfa, Lixwm, Holywell, Flintshire CH8 8NQ
 ANGLESEY, v.c. 52; Dr N.H. Brown, Treborth Botanic Garden, University College of North Wales, Bangor, Gwynedd LL57 2RQ and Mr I.R. Bonner (*all correspondence to Dr Brown*)

MONMOUTH, v.c. 35 (comm. T.G. Evans)

- 5/1.1. **Ophioglossum vulgatum** (Adder's-tongue) (Tafod y Neidr). 4,500 plants, semi-improved field, SW of Dingestow, SO456.097, S.D.S.Bosanquet, 2005.
- 5/2.1. **Botrychium lunaria** (Moonwort) (Lloer-redynen). Two plants, unimproved field west of boundary path, New Grove, GWT Reserve SO502071, M.A.R. & C.Kitchen, 2007; D. Green, 2008.
- +‡36/3.1. **Soleirola soleirolii** (Mind-your-own-business) (Mam Miloedd). In abundance, Trellech Church entrance, SO501.055, also in abundance on roadside wall in Cleddon village, SO52.04, S.J.Tyler, 2008.
- 46/5.1b. **Stellaria nemorum** ssp. **montana** (Welsh Wood Stitchwort) (Serenlllys-y-coed Cymreig). Patch, c.100x3-10m, near Manor Brook, Whitebrook, SO531.063(I). D.Green, 2008. Unfortunately, it had received a cut and much of it was secondary growth. If it was nearly all the *montana* subspecies it will be the best v.-c. site for it because the Angidy site has deteriorated greatly since the 1950s.
- 47/1.6. **Persicaria bistorta** (Common Bistort) (Llysiau'r Leidr). 3x2m patch persistent for more than 20 years in pasture, Yew Tree Cottage, Lone Lane, Penallt, SO529.092(J). S.J.Tyler, 2008.
- 61/1.2. **Populus tremula** (Aspen). Patch above A4043, Pontypool urban bypass, SO277.015(Q) J.Branscombe, 2008.
- +61/2.5. **Salix purpurea** (Purple Willow) (Helygen Gochlas). One plant N shore of lake, Dingestow Court, SO456.096(P). D.Green & S.J.Tyler, 2007.
- +‡62/14.cor. **Cardamine corymbosa** (New Zealand Bitter-cress) (Berwr Chwerw Seland Newydd). 40 unwanted plants imported with nursery stock, Great Manson Hall, Monmouth, SO499.156(X). D.Green, 2008.
- *©62/17.red. **Lunaria rediviva** (Perennial Honesty). One large plant near brook, Manor Brook valley, Whitebrook, SO531.063, T.G.Evans, D.Green, 2008. Probably planted, a number of sources in Plant Finder.
- 62/23.5. **Cochlearia danica** (Danish Scurvygrass) (Llwylys Denmarc). Small patches, road edge, Newport Docks, ST32.85(H). S.J.Tyler, 2008.
- +‡62/33.2. **Diplotaxis muralis** (Annual Wall-rocket) (Roced-y-muriau'r Tywod). Six plants, base of high brick wall, walkway between Monnow Street and Chippenham Doctor's surgery, Monmouth, SO506.126, H.V.Colls. 2008.
- 64/1.1a. **Empetrum nigrum** ssp. **nigrum** (Crowberry) (Creiglusen). Several young plants scattered across spoil, S of Blaen-y-cwm, SO187.074(Y).
- +69/8.1. **Samolus valerandi** (Brookweed) (Claerlys). About 20 plants, bank, Tesco Depot, Magor, ST408.865(D). S.J.Tyler, 2008.
- 74/5.19. **Saxifraga tridactylites** (Rue-leaved Saxifrage) (Tormae'n Tribys). 1000s on corrugated, asbestos roof & garage roof nearby, Pentwyn Farm, SO28.21(V). S.A.Rippin, 2008.
- ‡75/6.1. **Filipendula vulgaris** (Dropwort) (Y Grogedau). Patch of several plants, graveyard, Penallt Old Church, SO522.107, S.J.Tyler, 2008. An old record thought to be extinct there, a happy refind.
- +‡75/12.1. **Duchesnea indica** (Yellow-flowered Strawberry) (Llwyn Mefus Melyn). 2-3 metres on rubble pile in coal yard, Newport Docks, ST325.845(H). S.J.Tyler, 2008.
- +75/17.1. **Sanguisorba officinalis** (Great Burnet) (Bwrned Mawr). One patch in field, Little Goytre Farm, Earlswood, ST43.97(I). D.Green & S.J.Tyler, 2008.
- 75/17.3a. **Sanguisorba minor** ssp. **minor** (Salad Burnet) (Bwrned). About 30 plants on soil heap, verge of disused railway, Pontnewydd, SO/279.017, J.Branscombe, 2008. New tetrad - Q.
- 75/19.10b. **Alchemilla filicaulis** ssp. **vestita** (Lady's-mantle) (Mantell-Fair Flewog). In grass near Cadwgan car park, Grwyne Fawr Valley, SO27.25(S). S.A.Rippin, 2008.
- 75/21.15. **Rosa tomentosa** (Harsh Downy-rose) (Rhosyn Gwlanog). One bush in valley bottom, Glyn Farm, Llanishen, SO472.042(S). D.Green, 2008.
- +75/21.19. **Rosa micrantha** (Small-flowered Sweet-briar) (Drysi'en Bêr Fân-flodeuog). 8-10 bushes in planted hedge along lane, Shirefield, near Caerwent, ST466.897, Dave Green, 2008.
- 75/22.11. **Prunus padus** (Bird Cherry) (Coeden Geirios yr Adar). One flowering bush, Llanvihangel Gobion, SO348.090(P). J.Branscombe, 2008.

- +77/16.4. *Ononis repens* (Creeping Restharrow) (Tagaradr). 2×1m patch, steep pasture, N of Lone Lane, Penallt, SO527.093, S.J.Tyler, 2008.
- +†91/1.2. *Mercurialis annua* (Annual Mercury) (Bresychen-y-cwn Flynyddol). About 6 plants in front garden by street wall, Stow Hill, Newport, ST309.875, H.V.Colls, 2008.
- +92/2.1. *Frangula alnus* (Alder Buckthorn) (Breuwydd). Four bushes, Branches Fort Meadow (GWT reserve). Pontypool, SO269.016, J.Branscombe, 2008.
- 116/15.9. *Myosotis ramosissima* (Early Forget-me-not) (Sgorpionllys Cynnar). Numerous plants, waste ground behind sea wall, Newport Docks, ST31.84(C). S.J.Tyler, 2008.
- †118/1.8. *Stachys arvensis* (Field Woundwort) (Briwlys y Tir Ár). Abundant in barley stubble field, Gadr Farm, S of Great Llan-thomas, SO466.066, S.J.Tyler, 2007 & 2008. Buzzing with honey bees and a solitary Clouded Yellow, only the 2nd one in v.c. in 2008
- ‡124/2.4. *Scrophularia scorodonia* (Balm-leaved Figwort) (Gwrnerth Dail Gwenyn). Five crowded plants, bank near sea wall, between S dock & R. Usk, Newport Docks, ST3268.8447(H). T.G.Evans & S.J.Tyler, 2008.
- †124/12.1. *Kickxia elatine* (Sharp-leaved Fluellen) (Llysiau-Llywelyn). 175+ plants in barley stubble field, Gadr Farm, SO466.066(T). S.J.Tyler, 2007-2008. Also field N of Fishpool Farm, Dingestow, SO446.106(K). H.V.Colls, 2008.
- 125/1.1. *Lathraea squamaria* (Toothwort) (Deintlys). About 100 spikes, bare ground near entrance to Cadwgan car park, Grwyne Fawr Valley, SO27.25(S). S.A.Rippin, 2008. Probably on Alder.
- 125/2.10. *Orobanche minor* (Common Broomrape) (Gorfanhadlen). About 200 plants on waste ground, Newport Docks, ST31.84, S.J.Tyler, 2008.
- 133/1.1. *Valerianella locusta* (Common Cornsalad) (Gwylaeth yr Oen). Frequent on reen bank, Magor to Llanwern, ST399.865; also frequent on waste ground, Newport Docks, ST31.84, S.J.Tyler, 2008. Tetrads Y & C.
- +135/2.1. *Carlina vulgaris* (Carline Thistle) (Ysgallen Siarl). 4-5 plants in old sand quarry, Trellech Hill, SO504.068, S.J.Tyler, 2008.
- 135/5.1. *Carduus tenuiflorus* (Slender Thistle) (Ysgallen Flodfain). 5-6 plants on waste ground near sea wall, Newport Docks, ST31.84(C). S.J.Tyler, 2008.
- ‡135/32.1. *Anaphalis margaritacea* (Pearly Everlasting) (Edafeddog Hirhoedlog). Silent Valley, SO187.074(Y). J.Branscombe, 2008.
- 151/1.27. *Juncus conglomeratus* (Compact Rush) (Brwynen Bellennaidd). Usk turn-off from A449, SO397.008(V). J.Branscombe, 2008.
- ‡152/11.2. *Cyperus eragrostis* (Pale Galingale) (Ysnoden-Fair Welw). One tufted fruiting plant on foot of roadside wall of 'Wind Rush', Bayfield, ST5195.9339(B). T.G.Evans, 2009, but persisting from 2008. 1st recent record.
- 152/16.1×15. *Carex xboeninghausiana* (*C. paniculata* × *C. remota*) (hybrid sedge). One clump, Nant Merddog banks, SO187.061, J.Branscombe, 2008. 1st millennium record.
- 153/17.1. *Briza media* (Quaking-grass) (Crydwellt). Rail verge, Pontnewydd, SO269.016(Q). J.Branscombe, 2008.
- 153/18.9. *Poa compressa* (Flattened Meadow-grass) (Gweunwellt Cywasgedig). ‡One clump on cemetery wall, Gwernesney, SO416.018(A). D.Green, 2008.
- 153/40.1. *Calamagrostis epigejos* (Wood Small-reed) (Corsen Fach y Coed). Several clumps in ashy ballast, old shunting yards, Rogiet, ST45.87(N); two clumps on ashy substrate, Caldicot, ST47.87(T). both T.G.Evans, 2008.
- +‡153/51.4. *Bromopsis inermis* (Hungarian Brome) (Pawrwellt Hwngaria). Large clump, upside of bypass bridge over R. Monnow, Monmouth, SO506.122, D.Green, 2007. Present for at least 3 years. 1st record as a neophyte.
- ‡153/52.1 *Anisantha diandra* (Great Brome) (Pawrwellt Mawr). Two plants in field S of Crumbland Plantation, Llanishen, SO476.016 & 479.016(Q). D.Green, 2008.
- +153/58.1. *Hordelymus europaeus* (Wood Barley) (Heiddwellt y coed). Embankment with scattered trees near Wyndcliff above A466, SO526.973(I). D.Green, 2007. 1st update since 19th century.
- 158/7.1 *Colchicum autumnale* (Meadow Saffron) (Saffrwm y Ddôl). 70 flowering stems in c.50m at side of path, St Pierre's Great Woods, ST506.925, T.G.Evans; encroachment of brambles, nettles,

- etc, through lack of walkers is a threat to this long established colony; also one plant in field, Cwmcarn Hill, SO474.061, S.J.Tyler, both 2008.
- +‡158/24.3. *Allium roseum* (Rosy Garlic) (Garleg Rhosliw). One clump under hedge, the Narth, SO522.064, Dave Green & S.J.Tyler. 2008. Only 2nd site in v.c.
- *‡158/24.5. *Allium subhirsutum* (Hairy Garlic) (Garleg Blewog). A one square metre patch on barish waste ground, E side South Dock, Newport, ST317.841, TG Evans & S.J.Tyler, 2008.
- *©158/28.1 *Tristagma uniflorum* (Spring Starflower) (Sêr-flodyn y Gwanwyn). Several plants on minor roadside near hedge and Bowleaze Reen and dumped black bags, ST377.855, H.V.Colls. 2006-8; also four patches, waste ground, between South Dock and R. Usk, Newport, ST3171.8418, S.J.Tyler, 2008. 1st & 2nd records.
- 158/33.5a. *Narcissus pseudonarcissus* (Daffodil) (Cenhinen-Bedr Wylt). About 2000 flowers in field corner, Chapel Cottage, Llanishen, SO471.036; c.1000 plants W of Trewen House, Llanishen, SO471.036; both S.J.Tyler, 2008. First time good numbers have been given for this tetrad.
- 162/3.4. *Epipactis helleborine* (Broad-leaved Helleborine) (Y Galdrist Lydanddail). Near entrance to Argoed, Penallt, SO521.084(J). S.J.Tyler, 2008.
- 162/5.1. *Neottia nidus-avis* (Bird's-nest Orchid) (Tegeirian Nyth Aderyn). Woodland, Coed Cwnwr, ST406.996(E). D.Green, 2008.
- 162/6.1. *Listera ovata* (Common Twayblade) (Caineirian). Two plants on Ringers' Ride, Newport Wetlands Reserve, ST34099.82939(L). R. James, 2006.
- 162/13.1. *Platanthera chlorantha* (Greater Butterfly-orchid) (Tegeirian Llydanwyrdd). 28 flowering plants & many non-flowering, Gaer Wood, Llangovan, SO46.05(S). S.J.Tyler, 2007. A better site for numbers than previous records for tetrad.
- 162/13.2. *Platanthera bifolia* (Lesser Butterfly-orchid) (Tegeirian Llydanwyrdd Bach). Nine flowering and four non-flowering plants, deciduous part of Hardwick Plantation, ST453.894, T.G.Evans, 2008. Worthy of inclusion because it is the best recent number in v.c. 35's only site for the orchid.
- 162/14.1. *Anacamptis pyramidalis* (Pyramidal Orchid) (Tegeirian Bera). Two plants on E bank of cutting, A4042, S of New Inn, Torfaen, ST303.981, K.Roberts, 2008.
- 162/18.1. *Dactylorhiza fuchsii* (Common Spotted-orchid) (Tegeirian Brych). About 200 plants near junction of Usk road & A449, SO397.008, J.Branscombe, 2008.
- 162/20.3. *Orchis morio* (Green-veined Orchid) (Tegeirian y Waun). One flowering plant, on 'island' where Usk road exits from A449, SO397.008, J.Branscombe; three plants in field, Cwmcarn Hill, SO477.058(S). S.J.Tyler & R.Howell (owner); both 2008.
- 162/23.3. *Ophrys apifera* (Bee Orchid) (Tegeirian y Wenynen). One plant on trackside, wet meadow, Loysey Wood, SO498.064, S.J.Tyler, 2008.

GLAMORGAN, v.c. 41 (comm. J.P.Woodman)

- +1/3.1. *Lycopodium clavatum* (Stag's-horn Clubmoss) (Cnwp-fwsogl Corn Carw). Forestry track, Cefn Rhos-gwawr, Aberdare, SN9803.0109, M.Evans, 2007. Single large plant.
- +16/4.1. *Gymnocarpium dryopteris* (Oak Fern) (Rhedynen Dridarn). Cliff face in wooded gorge, Cwm Ffrwdd, Merthyr Tydfil, SO0268.0747, J.P.Woodman, 2004.
- †28/13.8. *Ranunculus arvensis* (Corn Buttercup) (Blodyn-ymenyn yr Yd). Arable field, Flemingston, St Athan, ST013.694, J.P.Woodman, 2004. c.130 plants in arable field mostly near edge; also seen in the following years up to 2008. 1st recent records.
- +‡28/17.3. *Thalictrum flavum* (Common Meadow-rue) (Arianllys). Two clumps on road bank, Penmark, ST0656.6830, B.McDonald, 2006.
- +31/5.6. *Fumaria purpurea* (Purple Ramping-fumitory) (Mwg-y-ddacar Glasgoch). Eight plants on south facing road bank, Oxwich, SS492.869, T.Rich, 2008; Garden flower bed, Llandaff, Cardiff, ST158.776, T.Rich, 2005. The only recent East Glamorgan record, but weeded out on same day.

- *‡37/2.1. *Pterocarya fraxinifolia* (Caucasian Wingnut) (Coeden Cnau Adeiniog). Bargoed, ST14475.99270, A.O.Chater & P.A.Smith, 2005. 1st record.
- +‡46/18.cha. *Lychnis chaledonica* (Maltese-Cross) (Croes Malta). Edge of wood, Leckwith, Cardiff, ST1571.7538, B.McDonald, 2005. Only recent East Glamorgan record and new hectad.
- +©47/1.cap. *Persicaria capitata* (Pink-headed Persicaria). Growing between patio slabs in garden, Bargoed, SO1456.0034, P.A.Smith, 2004, det. A.O.Chater.
- +†47/4.6. *Polygonum rurivagum* (Cornfield Knotgrass) (Canclwm y Tir Âr). Several throughout arable field, Peterston Super Ely, ST076.784, J.P.Woodman, 2006, **herb.JPW**.
- +51/1.15. *Hypericum montanum* (Pale St John's-wort) (Eurinllys Gwelw). Six plants on N side of Cwm Mawr near Wick, SS895.723, R.&L.Nottage, 2003. Seen again in 2008.
- +62/10.2. *Matthiola sinuata* (Sea Stock) (Murwyll Arfor). Sand dune, East Aberthaw, ST039.658, B.Barker, 2006, det. J.Curtis.
- +62/12.3. *Rorippa islandica* (Northern Yellow-cress) (Berwr Melyn Gogleddol). Five plants in disturbed weedy ground near pigeon houses in field, Tonyrefail, ST0193.8817, J.P.Woodman; and two plants on river shingle, River Taff, Cardiff, ST175.770, T.Rich; both 2003.
- +66/1.3b. *Pyrola rotundifolia* ssp. *maritima* (Round-leaved Wintergreen) (Glesyn-y-gaeaf Deilgrwn). About 40 plants in grassland around new pond, Cosmeston Country Park, ST173.693, J.Curtis, 2004.
- +74/5.15. *Saxifraga granulata* (Meadow Saxifrage) (Tormaen y Gweunydd). Three separate 'mats' along a 20m stretch in damp woodland, river bank, River Taff near Abercynon, ST090.952, G.Tordoff, 2007, det. J.P.Woodman. Also seen in 2008.
- +75/8.3. *Rubus saxatilis* (Stone Bramble) (Corfiaren). Cliff face in wooded gorge, Cwm Ffrwdd, Merthyr Tydfil, SO0268.0758, J.P.Woodman, 2004. 2nd plant nearby.
- +77/10.3. *Ornithopus perpusillus* (Bird's-foot) (Troed yr Aderyn). First seen on new sandy, seeded lawn c.2004. Persisting through regular mowings in herb rich, though sparse sward, The Rink, inner Merthyr Tydfil, SO050.067, J.N.Davies 2008.
- +77/18.5. *Medicago arabica* (Spotted Medick) (Maglys Brith). Post-development, loose roadside ground, Gwaunfarren Gardens, Penydarren, Merthyr Tydfil, SO054.070, J.N.Davies, 2008.
- *84/6.1x2. *Circaea xintermedia* (Upland Enchanter's-nightshade) (Llysiau-Steffan yr Ucheldir). Wood edge on stream bank, Abercanaid, SO0425.0413, J.P.Woodman, 2003. Not listed in VCCC for v.c.41; there is a possible 1987 BRC record but no details have been uncovered.
- †91/2.6. *Euphorbia platyphyllos* (Broad-leaved Spurge) (Llaethlys Llydanddail). 100+ plants in maize field with other good arable species (*Petroselinum segetum* & *Kickxia spuria*). Penarth, ST186.687, M.A.R. & C.Kitchen, 2007, **herb.JPW**. 1st recent records.
- +107/26.3. *Bupleurum tenuissimum* (Slender Hare's-ear) (Paladr Trwyddo Eiddilddail). 58 plants on upper edge of saltmarsh, West Aberthaw, ST0136.6643, V.& A.Marshall (BSBI meeting). 2004, conf. J.P.Woodman; +1000s appeared when grazing relaxed in upper saltmarsh, West Aberthaw, ST029.675, M.Hampton, 2006. 1st recent records.
- †107/7.1. *Scandix pecten-veneris* (Shepherd's-needle) (Nodwydd y Bugail). 1000s of plants in crop edge of arable fields, Flemingston, St Athan, ST010.697; Llanbethery, ST033.702; both, J.P.Woodman, 2004. Also seen in nearby fields in following years.
- 108/5.2. *Gentianella campestris* (Field Gentian) (Crwynllys y Maes). 400+ plants in dune grassland, Sker, Kenfig, SS789.799, M.J.Clark, 2008, conf. J.Curtis. 1st recent records.
- ‡116/12.2. *Amsinckia micrantha* (Common Fiddleneck) (Amsincia). ©30 plants in disturbed ground, Caerphilly, ST1562.8868, A.Jones, 2003, conf. J.P.Woodman. 1st recent records.
- 124/18.1. *Sibthorpia europaea* (Cornish Moneywort) (Deilen Gron Cernyw). Flushed marshy grassland, Trehafod, ST036.907, P.Sturgess, 2008, conf. J.P.Woodman. Not recorded from this hectad since 1950s. More seen in flushes here by JPW in later months.
- +124/19.3. *Melampyrum pratense* (Common Cow-wheat) (Gliniogai). Two plants on steep slopes in Woodland Trust's Goetre Coed Reserve, adjacent to extensive housing, Quakers Yard, ST093.967, J.N.Davies, 2008.

- ‡130/6.12. *Galium spurium* (False Cleavers) (Coeg-gynghafan). Large quantity in 10x20m plot in game cover crop, arable, Dyffryn, ST097.718, J.P.Woodman, 2006, conf. A.O.Chater. Also seen in following year. Rediscovery of taxon published as extinct in VCCC (or subsequently).
- +135/25.55. *Taraxacum bracteatum* (Dark-green Dandelion). Bargoed, SO14532.00582, P.A.Smith, 2007, conf. A.J.Richards, NMW.
- +135/25.90. *Taraxacum hamiferum* (Dark Hook-lobed Dandelion). Ty'r capel, SO14031.02280, P.A.Smith, 2007, conf. A.J.Richards, NMW.
- +135/25.98. *Taraxacum pseudohamatum* (False Hook-lobed Dandelion). Garden weed, Bargoed, SO145.003, P.A.Smith, 2007, det. A.J.Richards, NMW.
- +135/25.101. *Taraxacum subhamatum* (Large Hook-lobed Dandelion). Path in damp wooded valley, Coed Groes-faen, SO14322.00878, P.A.Smith, 2007, conf. A.J.Richards, NMW.
- +135/54.1. *Chamaemelum nobile* (Chamomile) (Camri). Small patch at edge of car park, cliff top, Nash Point, SS9164.6836, J.P.Woodman, 2007. Has been seen here for a few years but no exact date.
- +135/55.2. *Anthemis arvensis* (Corn Chamomile) (Camri'r ŷd). Arable field, Bonvilston, ST061.745, J.P.Woodman, 2006, herb.JPW. Last recorded in the v.c. in 1971 at Cheriton, Gower.
- +135/6.4. *Cirsium tuberosum* (Tuberous Thistle) (Ysgallen Glorog). Two patches in dry neutral / base-rich marshy grassland zonation, Peterston Super Ely, ST0737.7674, J.P.Woodman, 2004.
- 135/6.4x9. *Cirsium xsemidecurrens* (*C. tuberosum* × *C. palustre*). Single clump in neutral grassland, cliff top, Cwm Nash, SS905.699, BSBI meeting, 1998. Update of old record prior to KJW record. Still there 2007.
- +‡138/4.2. *Elodea nuttallii* (Nuttall's Waterweed) (Ffugalaw Nuttall). Dense growths in 10-year-old recreation lake at Taff Bargoed Community Park, Trelewis, ST103.979, J.N.Davies, 2008, det. T.G.Evans.
- +142/1.19. *Potamogeton crispus* (Curled Pondweed) (Dyfrillys Crych). Frequent in 10-year-old recreation lake at Taff Bargoed Community Park, Trelewis, ST103.979, J.N.Davies, 2008.
- +152/14.1. *Cladium mariscus* (Great Fen-sedge) (Corsfrwynen Lem). Single patch, 3x3m in dune slack, fen, Crymlyn Burrows, SS7181.9331, J.P.Woodman, 2004.
- +152/16.34. *Carex strigosa* (Thin-spiked Wood-sedge) (Hesgen-y-coed Benfain). Scattered throughout woodland, Middleton Wood, Barry, ST089.686, J.P.Woodman, 2006. Also seen in many other woods in the area.
- +152/16.54. *Carex montana* (Soft-leaved Sedge) (Hesgen Feddal). About 20 plants in species-rich acid grassland, Perthcelyn, ST0479.9709, J.P.Woodman, 2004.
- +153/12.7b. *Festuca rubra* ssp. *junceae* (Red Fescue) (Peiswellt Coch). Cwm Ysgwydd-gwyn, SO1330.0065, P.A.Smith & M.Teneva, 2007, det. A.Copping. Inland site.
- +153/20.1. *Catabrosa aquatica* (Whorl-grass) (Brigwellt Troellennog). Single small patch in field ditch, Margam Moors, SS7821.8435, J.P.Woodman, 2004.
- +©153/28.4a. *Avena sterilis* ssp. *ludoviciana* (Winter Wild-oat) (Ceirchen Wyllt y Gaeaf). Arable field, Llanbethery, ST0402.7138; Arable field, Bonvilston, ST061.745; both J.P.Woodman, 2006. Also recorded near the 1st site in 2003.
- +‡153/46.2. *Polypogon viridis* (Water Bent) (Barfwellt y Dŵr). Frequent weed in front gardens, Llandaff North, Cardiff, ST148.793, T.Rich, 2006. 1st record as a neophyte.
- †153/50.7. *Bromus secalinus* (Rye Brome) (Pawrwellt Bach). Frequent in large wheat field near coast, S of Boverton, SS981.669, 2002; Throughout several arable fields, Home Farm, Dyffryn, ST097.716, 2006; both J.P.Woodman. 1st & 2nd extant county records.
- +162/13.1. *Platanthera chlorantha* (Greater Butterfly-orchid) (Tegeirian Llydanwyrdd). Single spike in occasionally mown grassy edge to The Taff Trail, 50m SE of the east A470 layby, Cefn Coed viaduct, Merthyr Tydfil, SO034.072, A.Chaplin et al. 2008, det. G.Hutchinson & T.C.G.Rich.
- +162/23.3. *Ophrys apifera* (Bee Orchid) (Tegeirian y Wenynen). Single plant, western roadside edge of leisure centre car-park's shrubbery, Rhydycar, Merthyr Tydfil, SO048.054, J.N.Davies, 2008.

RADNOR, v.c. 43 (comm. Miss E.R. Dean & Mrs S.M. Spencer)

- *77/15.3.ten. **Lathyrus linifolius** var. **tenuifolius** (Bitter-vetch) (Ytbyssen y Coed). SE of Glaschwmm Hill, SO172.505, P.Bauer (with the Herefordshire Botanical Society). 2008. 1st record of variety.
- *124/16.9.vil. **Veronica scutellata** var. **villosa** (Thyme-leaved Speedwell) (Rhwyddlwyn Dail Teim). S of Llanbister, SO116.708, S.Chambers, 2008. 1st record of variety.

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

- +6/1.1. **Osmunda regalis** (Royal Fern) (Rhedynen Gyfrdwy). Clynsaer Pond, Cynghordy, SN8255.4128, S.&A.Coker, 2008.
- +17/3.8. **Dryopteris carthusiana** (Narrow Buckler-fern) (Marchredynen Gul). Basin mire, Mynydd Fygn, SN589.299, S.D.S.Bosanquet, 2008.
- +17/3.8x9. **Dryopteris carthusiana** × **D. dilatata** = **D. xdeweveri** (a hybrid buckler-fern). Very few plants in valley mire, Blaentir, Llandovery, SN8062.3649, BSBI Glynhir Meeting, 2008, conf. G.M.Kay, NMW.
- +‡19/1.1. **Azolla filiculoides** (Water Fern) (Rhedynen y Dŵr). Fairly recently established wildlife pond, Craig-y-Dyfor Tafarnspite, SN1823.1424, R.D.&K.A.Pryce, 2008, NMW, BM. Subsequently checked for fertility by F.Rumsey at BM, who found it to be sterile.
- +‡20/2.1. **Pseudotsuga menziesii** (Douglas Fir) (Ffynidwydden Douglas). Planted in young/mature conifer plantation, Coygen Quarry TN21, SN2824.0946, R.D.Pryce, 2008.
- +‡20/3.1. **Tsuga heterophylla** (Western Hemlock-spruce) (Sbriwsen-Hemlog y Gorllewin). Self-sown sapling, 1m tall on bank by old trackway in broad-leaved woodland edge, Skanda Vale, Llanpumsaint, SN4208.3223, R.D.&K.A.Pryce, 2008.
- +‡20A/TAX.dis. **Taxodium distichum** (Swamp Cypress). Plantation of mixed exotic conifers including a few later planted *Taxodium*, Court Wood, Pembrey, SN4212.0199, A.Stevens, 2008. 2nd record.
- +27/1.1. **Ceratophyllum demersum** (Rigid Hornwort) (Cyrnddail Caled). Pingo pond, Alltgaredig Valley, Llanpumsaint, SN427.301, S.D.S.Bosanquet, 2008.
- +28/13.12. **Ranunculus lingua** (Greater Spearwort) (Llafnlys Mawr). Introduced in shaded garden pond, Blaentir, Llandovery, SN79964.36392, BSBI Glynhir Meeting, 2008.
- +‡30/1.4. **Papaver rhoeas** (Common Poppy) (Pabi Coch). Roadside verge, Ammanford, SN6.1(G), J.Poland & M.Stead, 2008, Side of new bypass.
- +33/1.2. **Ulmus procera** (English Elm) (Llwyfen Lloegr). Garreg Wen, Trelech, SN2.3(V), A.Jones, 2008, 1st record for the v.c.44 part of the hectad.
- 39/4.5. **Quercus petraea** (Sessile Oak) (Derwen Mes Di-goes). Hedgerow, Craig-y-Dyfor Tafarnspite, SN1835.1407, R.D.&K.A.Pryce, 2008, WWBIC Recorders Day. Four trees, presumably planted. 1st recent record for hectad.
- +‡43/1.8. **Chenopodium polyspermum** (Many-seeded Goosefoot) (Troed-yr-ŵydd Amlhadog). Construction site, Queen Elizabeth School, Carmarthen, SN4031.1859, R.D.Pryce, 2008. Two well grown plants on sub-soil storage mound.
- +43/3.2. **Atriplex prostrata** (Spear-leaved Orache) (Llygwyn Tryfal). Rough old track/footpath, Ammanford, SN63.13, J.Poland & M.Stead, 2008.
- +‡45/2.2. **Claytonia sibirica** (Pink Purslane) (Porpin Pinc). 5x3m patch in flower on bank of River Gwendraeth Fawr, Pont Newydd, SN448.074, A.Stevens, 2008. 1st record for hectad and first in the wild away from the Tywi.
- +46/17.1. **Spergularia rupicola** (Rock Sea-spurrey) (Troellig Arfor y Clogwyn). Weeds on sparsely vegetated verge of new roundabout, Welsh Wildfowl Centre, Penclacwydd, Llanelli, SS5326.9875, BSBI Glynhir Meeting, 2008, det. A.O.Chater, NMW. Also at SS5327.9878.
- +‡46/20.9. **Silene latifolia** (White Campion) (Gludlys Gwyn). Roadside verge on side of new bypass, Ammanford, SN6.1(G), J.Poland & M.Stead, 2008.

- +‡46/25.6. *Dianthus barbatus* (Sweet-William) (Penigan Barfog). Single self-sown plant (pink flowered) in unmanaged dune grassland, Ashburnham Golf Course near The Links, Pembrey, SN4306.0051, Llanelli Naturalists meeting, 2008. 1st record as neophyte and 3rd record.
- +‡51/1.4. *Hypericum hircinum* (Stinking Tutsan) (Dail-y-Beiblau Drewllyd). Escaped from garden on roadside bank, Tri pen had Road, Ferryside, SN3684.1035, R.D.&K.A.Pryce, 2008.
- +62/23.3. *Cochlearia officinalis* (Common Scurvygrass) (Llwylys Cyffredin). Pavement weed, two plants at foot of wall, Llandeilo, Crescent Road near car park entrance, SN63076.22427, R.D.&K.A.Pryce, 2008.
- +‡62/33.2. *Diplotaxis muralis* (Annual Wall-rocket) (Roced-y-muriau'r Tywod). Roadside verge on E side of new bypass, Ammanford, SN638.125, J.Poland & M.Stead, 2008, det. J.Poland.
- +64/1.1.a. *Empetrum nigrum* ssp. *nigrum* (Crowberry) (Creiglusen). 2x1m patch with scattered plants nearby in basin mire, Figyn Common, SN5522.2994, S.D.S.Bosanquet, 2008. CCW Phase II Lowland Peatland Survey.
- *‡72/2.5. *Ribes odoratum* (Buffalo Currant) (Llwyn Cwrens Persawrus). Roadside verge on E side of new bypass, Ammanford, SN638.125, J.Poland & M.Stead, 2008, det. J.Poland. 1st record.
- +‡75/8.2. *Rubus tricolor* (Chinese Bramble) (Llwyn Mwyar Trilliwi). Well established and spreading on A40 embankment slope from original landscape plantings in scrub, Abergwili, SN4345.2124, R.D.&K.A.Pryce, 2008. 1st record.
- +75/09.13x14. *Potentilla xsuberecta* (*P. erecta* x *P. anglica*). By shale cliff and river wall, Tafod y merch, Cwm Twrch, SN7620.1362, BSBI Glynhir Meeting, 2008, conf. A.O.Chater & J.Poland.
- +75/09.14x15. *Potentilla xmixta* (*P. erecta* x *P. reptans* & *P. anglica* x *P. reptans*) (Hybrid Cinquefoil) (Pumnaen Groesryw). Semi-improved grassland, Penywaun, Alltwalis, SN439.305, S.D.S.Bosanquet, 2008. CCW Phase II Lowland Peatland Survey.
- +75/13.1. *Geum rivale* (Water Avens) (Mapgoll Glan y Dŵr). ‡Suburban woodland edge, Glascoed, Pwll, SN4766.0123; established from garden throw-out; +Ravine in Sessile Oakwood, Skanda Vale, Llanpumsaint, SN4214.3243; both R.D.&K.A.Pryce, 2008.
- +‡75/32.10. *Cotoneaster salicifolius* (Willow-leaved Cotoneaster) (Cotoneaster Dail Helyg). On vegetated slope of spoil mound north of quarry entrance, Coygen Quarry, Laugharne, SN2869.0935; +Well naturalized from original landscape plantings and self sown on nearby rubble piles by retaining walls confining River Lledi, Buckleys Brewery Site, Llanelli, SN5077.0053, det. G.Hutchinson, NMW; both R.D.Pryce, 2008.
- *‡77/14.fab. *Vicia faba* (Broad Bean) (Ffeuen y Gerddi). One plant likely to have germinated from past year's arable crop in reseeded pasture, Pant-Hywel, Pwll, SN4821.0151, R.D.&K.A.Pryce, 2008. 1st localized record..
- +81/1.3. *Lythrum portula* (Water-purslane) (Troed y Gywen). Improved farm pastures, Garreg Wen, Trelech, SN2.3V, A.Jones, 2008. 1st record for v.c.44 part of hectad.
- +‡84/1.12. *Epilobium brunnescens* (New Zealand Willowherb) (Helyglys Seland Newydd). Acid hedgebank, Garreg Wen, Trelech, SN2.3V, A.Jones, 2008.
- +84/1.3x8. *Epilobium xinterjectum* (*E. montanum* x *E. ciliatum*). Weeds on new verge of Welsh Wildfowl Centre approach road, Welsh Wildfowl Centre, Penclacwydd, Llanelli, SS5326.9862, BSBI Glynhir Meeting, 2008, NMW.
- +84/1.5. *Epilobium tetragonum* (Square-stalked Willowherb) (Helyglys Pedronglog). Farmyard, Craig-y-Dyfor Tafarnspite, SN1812.1418, R.D.&K.A.Pryce, 2008. WWBIC Records Day, 1st record for v.c.44 part of hectad.
- +‡84/4.1x4. *Oenothera xbritannica* (*O. glazioviana* x *O. cambrica*). One plant in limestone blockstone reinforcement at top of sandy/shingly beach, Cefn Padrig, Pwll, SN4615.0053, B.&D.Wright & K.&R.Pryce, 2008. 2nd record.
- +92/2.1. *Frangula alnus* (Alder Buckthorn) (Breuwyddden). Several plants seen on lane sides, Llyn Llech Owain, SN5658.1502, BSBI Glynhir Meeting, 2008. 1st recent record.
- 99/1.3. *Acer campestre* (Field Maple) (Masarnen Fach). Mature tree in hedge of minor lane opposite Bethel Chapel (not on main road), Cilycwm, SN7524.4000, M.&J.Lliff, 2008. 1st recent record for hectad.

- +102/1.8. *Oxalis articulata* (Pink-sorrel) (Suran Ruddgoch). On pile of limestone chippings by track Coygen Quarry, Laugharne, SN2834.0892, R.D.Pryce, 2008.
- +103/1.9. *Geranium sanguineum* (Bloody Crane's-bill) (Pig-yr-aran Ruddgoch). Naturalised in wildflower steppe garden, National Botanic Garden of Wales, Middleton Hall, Llanarthne, SN5240.1803, BSBI Glynhir Meeting, 2008.
- +†103/2.2. *Erodium moschatum* (Musk Stork's-bill) (Pig-y-crëyr Fwsg). One small plant in flower and fruit in recently disturbed ground (construction site), Cross Hands Business Park, SN5711.1243, R.D.Pryce, 2008.
- +107/19.1. *Oenanthe fistulosa* (Tubular Water-dropwort) (Cegiden Bibellaidd). Shaded garden pond, Blaentir, Llandoverly, SN79964.36392, BSBI Glynhir Meeting, 2008. Pond at S end of garden. Not knowingly introduced but not native at this site.
- +†107/20.1. *Aethusa cynapium* ssp. *cynapium* (Fool's Parsley) (Geuberllys). Waste ground, N end of Jacksons Lane, Carmarthen, SN4126.2012, R.D.&K.A.Pryce, 2008. 1st hectad record for the ssp.
- *©107/38.1. *Levisticum officinale* (Lovage) (Llwfach). Waste ground, N end Jacksons Lane, Carmarthen, SN4125.2012, R.D.&K.A.Pryce, 2008. 1st record. Probably originating from bird seed.
- +©110/7.1. *Lycopersicon esculentum* (Tomato) (Tomato). Single seedling c.10cm tall, growing in angle between garden curtilage wall and pavement, outside 29 Francis Terrace, Carmarthen, SN41343.20435, R.D.&K.A.Pryce, 2008.
- *©110/8.3. *Solanum physalifolium* (Green Nightshade) (Codwarth Gwyrdd). Weeds on sparsely vegetated verge of new roundabout, Welsh Wildfowl Centre, Penclacwydd, Llanelli, SS53288.98713, BSBI Glynhir Meeting, 2008, det. G.M.Kay. NMW. Also recorded further along same verge at SS5260.9888 by R.D.&K.A.Pryce.
- +©110/PET.axixint. *Petunia × hybrida* (*P. axillaris* × *P. integrifolia*) (Petunia) (Petwniâu). One flowering plant with lawn cuttings and other garden waste on old tree-lined hedgerow on bank of field behind 222a Waterloo Road, Penygroes, SN5891.1229, R.D.Pryce, 2008. 3rd record.
- +‡113/2.1. *Nymphoides peltata* (Fringed Water-lily) (Lili'r-dŵr Eddiog). Well established pond, Old Castle Pond, Llanelli, SN5007.0036, R.D.&K.A.Pryce, 2008. Also at SN5008.0041.
- +‡116/10.1. *Trachystemon orientalis* (Abraham-Isaac-Jacob) (Abraham, Isaac a Jacob). Patch c.6ft across at edge of layby on roadside near Plashett, SN283097, I.K.Morgan, 2008.
- +©116/9.1. *Borago officinalis* (Borage) (Tafod yr Ych). Many plants in a shallow sandy ditch which had been dug earlier this year, Pembrey Country Park, SS410.997, A.&L.Stevens, 2008. 1st record for v.c.44 part of hectad.
- +118/01.5×6. *Stachys xambigua* (*S. sylvatica* × *S. palustris*) (Hybrid Woundwort) (Briwllys Croesryw). Horse-grazed MG5 neutral grassland, Cross Hands, SN5567.1232, R.D.Pryce, 2008.
- +124/02.2. *Scrophularia auriculata* (Water Figwort) (Gwrneth y Dŵr). Track side, ENE of Penllwydcoed, Alltwalis, SN4663.3326, R.D.&K.A.Pryce, 2008.
- +‡124/04.2. *Mimulus guttatus* (Monkeyflower) (Blodyn Mwnci). Well established and naturalized at edge ornamental lake, National Botanic Garden of Wales, Middleton Hall, Llanarthne SN5226.1789, BSBI Glynhir Meeting, 2008.
- +124/19.3. *Melampyrum pratense* ssp. *pratense* var. *pratense* (Common Cow-wheat) (Gliniogai). Disused limestone quarry, Garn Quarry, Carmel NNR, SN5910.1618, R.D.&K.A.Pryce, 2008, conf. A.O.Chater. 1st hectad record for the subsp. and var.
- +124/20.3. *Euphrasia anglica* (an eyebright) (Effros Lloegr). Frequent in small areas of dry acid/neutral grassland, Caeau Rhyd-y-Gwiall SSSI, SN5636.1496, BSBI Glynhir Meeting, 2008.
- +124/20.7. *Euphrasia nemorosa* (Effros). In vicinity of chimney and kilns, Cwm Twrch, SN7623.1370, BSBI Glynhir Meeting, 2008. Also nearby in dry acid grassland at SN7682.1467. 1st record for v.c.44 part of hectad.
- +©124/7.1. *Antirrhinum majus* (Snapdragon) (Trwyn y Llo). On pile of limestone chippings by track, Coygen Quarry, Laugharne, SN2834.0892, R.D.Pryce, 2008.
- +‡131/6.1. *Lonicera pileata* (Box-leaved Honeysuckle) (Gwyddfid Llorweddol). Tall hedge of Holly, oak, Beech and Ash on laneside bank, Abergwili, SN4403.2134, R.D.&K.A.Pryce; +Naturalised

- on roadside hedge on bank, Pentrepoeth, Llanelli, SN5101.0169, R.D.Pryce; +By old stone mine ruin on old colliery tip, Cefneithin, SN5622.1323, A.Stevens; all 2008.
- +135/16.1. *Leontodon autumnalis* var. *coronopifolius* (Autumn Hawkbit) (Peradyl yr Hydref). Edge of saltmarsh, E of A484, just S of Commissioners' Bridge. Kidwelly, SN412.055, A.O.Chater & J.A.Green, 2008.
- +135/17.2. *Picris hieracioides* (Hawkweed Oxtongue) (Tafod y Llew). ‡Waste ground, N end Jacksons Lane, Carmarthen, SN4125.2012, R.D.&K.A.Pryce, 2008. Probably originating from bird seed.
- +©135/22.1. *Lactuca serriola* (Prickly Lettuce) (Letusen Bigog). Ten plants, roadside verge on N side of new road, Ammanford, SN639.125, J.A.Green, 2008.
- +135/27.2.off. *Pilosella officinarum* ssp. *officinarum* (Mouse-ear-hawkweed) (Clust-y-llygoden). In vicinity of chimney and kilns, Cwm Twrch, SN7623.1370, BSBI Glynhir Meeting, 2008, det. A.O.Chater, 1st hectad record for the ssp.
- +135/27.2.trl. *Pilosella officinarum* ssp. *tricholepia* (Mouse-ear-hawkweed) (Clust-y-llygoden). Upper level, north side of disused limestone quarry, Garn quarry, Carmel NNR, SN5908.1619, BSBI Glynhir Meeting, 2008, det. A.O.Chater; Also on floor of Pantycastell quarry, SN5721.1577 on same day. 1st hectad record for the ssp.
- ✱135/28.1.2. *Hieracium virgultorum* (Long-leaved Hawkweed). Wall and railwayside, E of Burry Port Station, SN448.007, G.Hutchinson, 1989, det. D.J.McCosh, NMW. 1st record. Also at SN449.007.
- +135/28.4.29. *Hieracium placherophylloides* (Purplish-leaved Hawkweed). 12 plants in dry sand on SE side of path leading to bee orchid ride under partly fallen *Pinus radiata* tree, edge of afforested coastal dunes, Pembrey Forest, SN3726.0325, R.D.&K.A.Pryce, 2004, det. D.J.McCosh, NMW.
- *135/28.7.avi. *Hieracium aviicola* (Many-toothed Hawkweed). Limestone quarry, Coygan Quarry, Laugharne, SN285.092, G.Hutchinson & R.D.Pryce, 1986; +Roadside near Pen-y-wern, Rhandirmwyn, SN781.420, J.&M.Illiff, 1993; both det. D.J.McCosh, NMW. 1st records.
- ✱135/28.7.sca. *Hieracium scanicum* (Fang-toothed Hawkweed). Grassy bank, Bethlehem, SN687.253, J.Bevan, R.Burton, G.Hutchinson & R.D.Pryce, 1986, det. D.J.McCosh, NMW.
- *135/28.8.115. *Hieracium scotostictum* (Dappled Hawkweed). Limestone quarry, Banc-y-Mansel Quarry, Foelgastell, SN5346.1498, T.&V.Lewis & K.A.&R.D.Pryce, 2005, det. D.J.McCosh, NMW. 1st record.
- *135/28.8.cli. *Hieracium clivicola* (Hill Hawkweed). Bannau Sir Gaer, ?SN7.2.or.SN8.2, Rev.H.J.Riddelsdell, 1902, det. D.J.McCosh, NMW. Original det. on Hb. label by H.J.R. as *H. euprepes* var. *clivicolum*.
- *135/28.8.syi. *Hieracium sylvularum* (Wandering Hawkweed). Roadside bank, S. of Llanarthne, SN530.192, R.D.Pryce & K.A.Cottingham, 2002, det. D.J.McCosh, NMW. 1st record.
- +135/3.2. *Arctium minus* (Lesser Burdock) (Cyngaf Bach). Wayside, Craig-y-Dyfor Tafarnspite, SN1830.1404, R.D.&K.A.Pryce, 2008. 1st record for v.c.44 part of hectad.
- +135/6.3×9. *Cirsium xforsteri* (C. dissectum × C. palustre). With *Genista tinctoria* in M24 area of hay meadow, Blaentir, Llandovery, SN7991.3637, BSBI Glynhir Meeting, 2008.
- +‡135/65.1. *Delairea odorata* (German-ivy) (Creulys Dail Eiddew). Two large patches climbing over wire fence to immediate south of shed at NW corner of recreation ground, Llanmiloe, SN252.087, I.K.Morgan, 2008, 2nd record. Few flowers remaining, but the lush, unseasonal, green leaves quite noticeable contrasting with the *Calystegia* with which it is growing. It should be looked out for in other coastal areas of S Wales.
- +©135/74.1. *Ambrosia artemisiifolia* (Ragweed) (Bratlys). Waste ground, N end Jacksons Lane, Carmarthen, SN4125.2012, I.K.Morgan, 2008. At least a dozen plants counted by R.D. Pryce & K.A. Pryce on 11/10/08; originating from bird seed.
- *‡135/79.cle. *Helianthus clementi* (a sunflower). Very abundantly naturalised composite in wildflower steppe garden, National Botanic Garden of Wales, Middleton Hall, Llanarthne, SN5240.1803, BSBI Glynhir Meeting, 2008, det. E.J.Clement & J.Poland, NMW.
- +‡135/GUI.aby. *Guizotia abyssinica* (Niger) (Guizotia). Waste ground, N end Jacksons Lane, Carmarthen, SN4125.2012, R.D.&K.A.Pryce, 2008. Originating from bird seed. 2nd record.

- +‡136/1.1. **Butomus umbellatus** (Flowering-rush) (Brwynen Flodeuog). One clump apparently naturalized and well established at edge of ornamental lake, National Botanic Garden of Wales, Middleton Hall, Llanarthne, SN5226.1789, BSBI Glynhir Meeting, 2008. 2nd record.
- +‡138/4.2. **Elodea nuttallii** (Nuttall's Waterweed) (Ffugalaw Nuttall). Well established in ornamental lake, National Botanic Garden of Wales, Middleton Hall, Llanarthne, SN5244.1800, BSBI Glynhir Meeting, 2008.
- +‡138/6.1. **Lagarosiphon major** (Curly Waterweed) (Ffugalaw Crych). Fairly recently established wildlife pond, Craig-y-Dyfor Tafarnspite, SN1823.1424, R.D.&K.A.Pryce, 1st record for v.c.44 part of hectad; +Farm pond, Garreg Wen, Trelech, SN287.315, A.Jones; +Probably introduced in recently constructed pond, Penywaun, Alltwalis, SN438.303, S.D.S.Bosanquet; + Abundant, requiring regular removal from very eutrophic small lake, Maesquarre Bethlehem, SN6534.2335, R.D.&K.A.Pryce & G.D.V. & M.Williams; all 2008.
- *‡139/1.1. **Aponogeton distachyos** (Cape-pondweed) (Alaw De Affrica). Pond, Trip Farm, W of Meidrim, SN267.215, L.Wilberforce, 2008. Pond choked with this species – originally planted.
- +142/1.1. **Potamogeton natans** (Broad-leaved Pondweed) (Dyfrilys Llydanddail). Garreg Wen, Trelech, SN2.3(V), A.Jones, 2008.
- +‡147/5.2. **Arum italicum** (Italian Lords-and-Ladies) (Pidyn-y-gog Eidalaid). Naturalised, presumably originally planted in curtilage hedge bank, Pentremeurig Road, Carmarthen, SN39435.20510, R.D.&K.A.Pryce, 2008. 1st recent record.
- +‡148/2.4. **Lemna minuta** (Least Duckweed) (Llinad Bach). Ditch, Llanmiloe, SN255.087; +Pond, Parc Cynog farm, SN263.103, I.K.Morgan, 2008.
- +151/1.15. **Juncus bulbosus** (aquatic form) (Bulbous Rush) (Brwynen Oddfog). By edge of acid lake, Llyn Llech Owain, SN5686.1522, BSBI Glynhir Meeting, 2008, conf. J.Poland.
- +151/1.15.koc. **Juncus bulbosus** ssp. **kochii** (Bulbous Rush) (Brwynen Oddfog). Weeds on sparsely vegetated verge of new roundabout near Welsh Wildfowl Centre, Penclacwydd, Llanelli, SS5327.9876, A.O.Chater & N.Jonsell, 2008.
- +151/1.26×27. **Juncus ×kern-reichgeltii** (**J. effusus** × **J. conglomeratus**). Acid laneside banks, ENE of Penllwydcoed, Alltwalis, SN4596.3297, R.D.&K.A.Pryce, 2008. 1st record.
- +151/1.6. **Juncus foliosus** (Leafy Rush) (Brwynen Ddeiliog). In top of trampled flush above stream, Garreg Wen, Trelech, SN2880.3130, A.Jones, 2008.
- +‡152/11.2. **Cyperus eragrostis** (Pale Galingale) (Ysnoden-Fair Welw). Abundantly naturalised in wildflower steppe garden, National Botanic Garden of Wales, Middleton Hall, Llanarthne, SN5240.1803, BSBI Glynhir Meeting, 2008. 1st record.
- +152/13.1. **Rhynchospora alba** (White Beak-sedge) (Corsfrwynen Wen). About 250 plants of *Rhynchospora* in 15+ M2a pools in degraded bog, Cors Blaendud, Nantyfen, SN387.327, S.D.S.Bosanquet, 2008.
- +152/16.22. **Carex curta** (White Sedge) (Hesgen Benwen). Base-rich flushes, Cors Helyg, Cefn-bryn-brain, SN740.136, S.D.S.Bosanquet, 2008, With 30+ plants of *Rhynchospora alba*, 30+ plants of *Drosera intermedia* mixed with *D. rotundifolia*. *Pinguicula vulgaris* also in vicinity.
- +152/16.32. **Carex sylvatica** (Wood-sedge) (Hesgen y Coed). Woodland under Ash and Hazel with 22 spikes of *Orchis mascula*, Craig-y-Dyfor Tafarnspite, SN1828.1409, R.D.&K.A.Pryce, 2008. Also at SN1828.1414, SN1826.1419, SN1828.1406, SN1828.1404. 1st records for v.c.44 part of hectad.
- +152/16.44×46. **Carex ×fulva** (**C. hostiana** × **C. viridula**) (a hybrid sedge). Several plants in valley mire, Blaentir, Llandovery, SN8062.3649, BSBI Glynhir Meeting, 2008.
- *152/16.5×15. **Carex ×pseudoaxillaris** (**C. otrubae** × **C. remota**) (a hybrid sedge). One big clump on bank on south side of lane, three-quarters of the way from Waun-y-gwial-fach farm to first corner on road to Four Roads, Kidwelly, SN4509.0883, A.Stevens, 2008, conf. A.O.Chater, NMW. 1st v.c. record, c.10th Welsh record.
- 152/3.1. **Eleocharis palustris** (Common Spike-rush) (Ysbigfrwynen). Pingo margin, Alltgaredig Valley, Llanpumsaint, SN426.302, S.D.S.Bosanquet, 2008. 1st recent record for hectad.

- +152/3.4. **Eleocharis multicaulis** (Many-stalked Spike-rush) (Ysbigfrwynen Gadeiriog). Clump c.1m×0.3m by outlet stream of valley mire near Blaentir, Llandovery, SN8062.3649, BSBI Glynhir Meeting, 2008, conf. A.O.Chater & J.Poland. 1st record for v.c.44 part of hectad.
- +‡153/5.1. **Pseudosasa japonica** (Arrow Bamboo) (Bambŵ'r Saethau). Broad-leaved woodland, Skanda Vale, Llanpumsaint, SN4216.3236, R.D.&K.A.Pryce, 2008. Naturalized by path used for exercising elephant through Sessile Oak wood.
- *‡153/9.gig. **Stipa gigantea**. Self-sown in wildflower steppe garden, National Botanic Garden of Wales, Middleton Hall, Llanarthne, SN5240.1803, BSBI Glynhir Meeting, 2008.
- +153/12.7.c. **Festuca rubra** subsp. **litoralis** (Red Fescue) (Peiswellt Coch). In very sparse vegetation on limestone spoil, Coygen Quarry, Laugharne, SN2853.0927, R.D.Pryce; +Saltmarsh, E of A484, just S of Commissioners' Bridge. Kidwelly, SN412.055, A.O.Chater & J.A.Green; both 2008.
- +153/14.2. **Vulpia bromoides** (Squirreltail Fescue) (Peisgwellett Cynffon Gwiwer). In vicinity of chimney and kilns, Cwm Twrch, SN7623.1370, BSBI Glynhir Meeting, 2008.
- +‡153/14.3. **Vulpia myuros** (Rat's-tail Fescue) (Peisgwellett y Fagwyr). Track by 'The Scrape'. Pembrey Forest, SN3731.0390, BSBI Glynhir Meeting, 2008. Also at SN3731.0389.
- +153/21.1. **Catapodium rigidum** (Fern-grass) (Gwenithwellt Caled). Few plants on Limekiln wall, Cwm Twrch, SN7625.1376, BSBI Glynhir Meeting, 2008. 1st record for v.c.44 part of hectad.
- +153/24.4. **Glyceria notata** (Plicate Sweet-grass) (Melyswellt Plygedig). Dry attenuation pond, Welsh Wildfowl Centre, Penclacwydd, Llanelli, SS5333.9877, BSBI Glynhir Meeting, 2008. 1st record for v.c.44 part of hectad.
- +153/39.8. **Agrostis vinealis** (Brown Bent) (Maeswellt-y-cŵn y Mynydd). Acid grassland/dwarf shrub heath mosaic, Rhos Cefn-bryn, SN5555.0723, Llanelli Naturalists, 2008. Llanelli Naturalists Dormouse meeting led by J.&P.Hartley; +Rank, poorly-managed acid grassland, Caeau Rhyd-y-Gwiall SSSI, Gorslas, SN5648.1493, BSBI Glynhir Meeting, 2008. Also recorded in unmanaged, ungrazed, abandoned rush pasture at Cross Hands, SN5752.1252, by R.D. Pryce on 19/7/08.
- +‡153/40.1. **Calamagrostis epigejos** (Wood Small-reed) (Corsen Fach y Coed). Naturalised in wildflower steppe garden, National Botanic Garden of Wales, Middleton Hall, Llanarthne, SN5240.1803, BSBI Glynhir Meeting, 2008.
- ‡+153/47.3. **Alopecurus bulbosus** (Bulbous Foxtail) (Cynffonwellt Oddfog). Extending over area c.10m×3m 5n brackish marsh, NW corner of Pond-y-Pelican, adjacent to Banc-y-Lord, Kidwelly, SN4097.0496, BSBI Glynhir meeting, 2008.
- +153/50.2. **Bromus commutatus** (Meadow Brome) (Pawrwellt y Ddôl). Few plants in improved field, immediately S of Banc-y-Lord, Kidwelly, SN4093.0490, BSBI Glynhir meeting, 2008, det. by G.M.Kay, NMW.
- +153/64.1. **Phragmites australis** (Common Reed) (Corsen). Area of scrub with stream and marshy area, with abundant willow and locally dominant *Phragmites*, Abergwilli West, SN4240.2071, J.Hartley, 2008.
- *‡153/MIS.sin. **Miscanthus sinensis**. Naturalized in wildflower steppe garden, National Botanic Garden of Wales, Middleton Hall, Llanarthne, SN5240.1803, BSBI Glynhir Meeting, 2008. 1st record.
- +‡158/33.5.b. **Narcissus pseudonarcissus** ssp. **obvallaris** (Tenby Daffodil) (Cenhinen-Bedr Penfro). One plant probably recently planted (one plant growing amongst cultivars) by track to castle in grass verge, Dinefwr Castle, SN6120.2169, R.D.&K.A.Pryce, 2008.
- +‡159/13.1. **Crocossia paniculata** (Aunt-Eliza) (Modryb Leusa). E side of new bypass on roadside verge, Ammanford, SN635.124, J.Poland & M.Stead, 2008, det. J.Poland.
- +@160/3.1. **Cordyline australis** (Cabbage-palm) (Palmwydden Fresych). Plant c.2ft high, bird sown into edge of foundation of small building near 'Pavilion Café', Pwll, SN476.008; +Seedling below mature plants in a small park at corner of road junction in urban park, Barn Road, Carmarthen, SN412.203; both I.K. Morgan, 2008.
- +162/14.1. **Anacamptis pyramidalis** (Pyramidal Orchid) (Tegeirian Bera). Three plants in disturbed ground in Ne-Ne pen on N side of path to the British Steel Hide, Welsh Wildfowl Centre, Penclacwydd, Llanelli, SS5306.9840, B.Stewart, 2008. 1st record for v.c.44 part of hectad.

- +162/18.3. *Dactylorhiza incarnata* (Early Marsh-orchid) (Tegeirian-y-gors Cynnar). In *Molinia* dominated winter-wet area of species-rich hay meadow, Blaentir, Llandovery, SN7988.3638, R.D.&K.A.Pryce &D.&F.Cobley, 2008. 1st recent record for hectad.

PEMBROKE (v.c. 45) (comm. S.B.Evans)

- *‡2/1.2. *Selaginella kraussiana* (Krauss's Clubmoss) (Cnw-p-fwsogl Krauss). Spreading over the floor and borders of the Fernery in walled garden, Picton Castle, SN009.134, S.B.&A.E.Evans, 2008.
- *‡11/2.1. *Phymatosorus diversifolius* (Kangaroo Fern) (Rhedynen Gangarŵ). Numerous self-sown small plants on the Fernery path in walled garden, Picton Castle, SN009.134, S.B.&A.E.Evans, 2008.
- +17/1.2. *Polystichum aculeatum* (Hard Shield-fern) (Gwrychredynen Galed). A single plant in hedgebank, Abertrinant, Blaenffos, SN181.377, M.Rickard, 2008.
- +17/3.3b. *Dryopteris affinis* ssp. *cambrensis* (Scaly Male-fern) (Marchredynen Euraid). Hedgebank, Abertrinant, Blaenffos, SN181.377, M.Rickard, 2008. conf. K.Trewren. A single plant confirmed by K.Trewren from an M.Rickard photograph.
- +‡19/1.1. *Azolla filiculoides* (Water Fern) (Rhedynen y Dŵr). ©Shallow pools, northern edge of Marloes Mere, SM776.083, S.&A.Coker; ©Pool, northern edge of Corsydd Llangloffan, SM905.319, R.J.Haycock; both 2008. The latter pool was colonised by dense mat of *Azolla* in 2008; not seen before and a suspected aquaria emptying as location is the nearest pool to the road along the boardwalk.
- +30/2.1. *Meconopsis cambrica* (Welsh Poppy) (Pabi Cymreig). ‡Several plants at edge of minor road, south-west of Tyriet, Cilgwyn, SN073.360, S.B.&A.E.Evans, 2008.
- +31/5.3. *Fumaria bastardii* (Tall Ramping-fumitory) (Mwg-y-ddaeear Grymus). Trefalun Caravan Park, Wedlock Farm, SN09.02, T.Rich, 2008.
- +33/1.1. *Ulmus glabra* (Wych Elm) (Llwyfen Lydanddail). A medium sized multi-stemmed tree alongside the A487 where it crosses Dowrog Common, SM771.262, S.B.&A.E.Evans, 2008. 1st post-1970 record for hectad.
- *‡40/2.3. *Alnus cordata* (Italian Alder) (Gwernen yr Eidal). Several saplings or young trees had regenerated on wet waste ground derived from amenity planting on a bank nearby, West Llanion Pill, Pembroke Dock, SM967.039, S.B.Evans, 2008.
- +45/3.1c. *Montia fontana* ssp. *amporitana* (Blinks) (Porpin y Ffynnon). Plants growing on cattle poached muddy margins to ponds, Cromlech valley, Longhouse, Abercastle, SM849.336, S.B.&A.E.Evans, 2008. 1st recent record.
- +46/7.8. *Cerastium glomeratum* (Sticky Mouse-ear) (Clust-y-llygoden Lydanddail). Lane N of Tremynydd Fawr, Abereiddy, SM779.301, S.B.&A.E.Evans, 2008. An under-recorded small coastal hectad.
- *‡46/18.1. *Lychnis coronaria* (Rose Campion) (Lluglys Gwridog). ©Green waste paving slabs, St. David's Recycling Centre, SM785.267, S.B.&A.E.Evans, 2008. A host of casuals had seeded into the crevices between the paving in a little used part of the green waste temporary storage area (see below).
- +‡47/1.2. *Persicaria campanulata* (Lesser Knotweed) (Y Ganwraidd Fach). Two flowering stands in streamside fen, Orchard Lea, Amroth, SN160.073, S.B.&A.E.Evans, 2008. Not introduced by the owners but the location was downstream of the National Trust Colby Lodge Gardens.
- +‡53/1.7. *Malva neglecta* (Dwarf Mallow) (Corhocysen). Several plants on roadside bank on limestone, E end of the Parade, Pembroke, SM984.013, S.B.Evans, 2008.
- +‡57/1.11×12×alt. *Viola ×wittrockiana* (*V. lutea* × *V. tricolor* × *V. altaica*) (Garden Pansy) (Trilliw'r Gerddi). ©Green waste paving slabs, St. David's Recycling Centre, SM785.267, S.B.&A.E.Evans, 2008.

- +62/3.1. *Alliaria petiolata* (Garlic Mustard) (Garlleg y Berth). Streamside with trees, disused New Mill, Brandy Brook, SM880.231, 2004; +Side of track through woods, Sealyham Woods, Wolf's Castle, SM961.274, 2008; both S.B.&A.E.Evans.
- +†62/7.1. *Erysimum cheiranthoides* (Treacle-mustard) (Triagl Arfog). Single plant in a green fodder, bird seed and bird cover crop, Camrose Home Farm, SM936.200, S.B.Evans & J.Hudson, 2008.
- +†62/11.4. *Barbarea verna* (American Winter-cress) (Berwr-y-gaeaf cynnar). Green waste paving slabs, St. David's Recycling Centre, SM785.267, S.B.&A.E.Evans, 2008.
- +†62/35.1. *Sinapsis arvensis* (Charlock) (Mwstard Gwyllt). Lane N of Tremynydd Fawr, Abereiddy, SM779.301, S.B.&A.E.Evans, 2008. An under-recorded small coastal hectad.
- +69/7.1. *Glaux maritima* (Sea-milkwort) (Glas yr Heli). Shallow round winter pond on limestone sea-cliff, Crickmail Down, Castlemartin, SR949.938, S.B.&A.E.Evans, 2008. Growing with *Potentilla anserina* in what appeared to be a shallow collapsed solution hollow on the flat plateau surface of the limestone sea-cliff. 1st post-1970 record for hectad.
- +74/5.19. *Saxifraga tridactylites* (Rue-leaved Saxifrage) (Tormaen Tribys). Growing on tarmac alongside disused 25,000 gallon water reservoir on old airfield, Brawdy, SM847.264, S.B.&A.E.Evans, 2008.
- +†75/19.15. *Alchemilla mollis* (Garden Lady's-mantle) (Mantell-Fair y Gerddi). Grassland within chapel grounds, Capel Felinganol, Solva, SM805.260, S.B.&A.E.Evans, 2008.
- +†77/6.1. *Onobrychis vicifolia* (Sainfoin) (Y Godog). Sandy waste ground, Swyn y Mor, Abereiddy, SM798.312, S.B.&A.E.Evans, 2008. Growing in front of garden wall where seen in earlier years so well naturalised.
- +77/19.23. *Trifolium arvense* (Hare's-foot Clover) (Meillionen Gedennog). Sand dunes, Newport Dunes, SN052.402, S.B.&A.E.Evans, 2008.
- +79/2.4. *Myriophyllum alterniflorum* (Alternate Water-milfoil) (Myrdd-dail Blodau Bob yn Ail). Small stream through wet heath, Waun Isaf North, Mynachlogddu, SN142.301, S.B.&A.E.Evans, 2008.
- +†84/1.12. *Epilobium brunnescens* (New Zealand Willowherb) (Helyglys Seland Newydd). Stony track, Bwlch-y-whilor, W of Crymch, SN145.344, H.Williams, 2008.
- *85/3.1. *Griselinia littoralis* (New Zealand Broadleaf) (Griselinia). A single flowering tree in ancient churchyard (planted), Monkton Priory, Pembroke, SM979.014, S.B.&A.E.Evans, 2008.
- +†91/2.9. *Euphorbia lathyris* (Caper Spurge) (Llaethlys Caprys). Single plant at top of steep bank with cottages and gardens above, Felinganol, Solva, SM806.259, S.B.&A.E.Evans, 2008.
- +©94/1.2. *Linum usitatissimum* (Flax) (Lin). Chippings below low wall (almost certainly from bird seed). S edge of car park, St. Dogmaels, SN164.459, S.B.&A.E.Evans, 2008.
- +103/1.15. *Geranium pusillum* (Small-flowered Crane's-bill) (Pig-yr-aran Fân-flodeuog). Growing on edge of barley crop on sandy soil, by Broad Haven car-park, Bosherston, SR975.939, S.B.Evans, 2008. Other species present nearby included *Lamium amplexicaule* and *Euphorbia exigua*. 1st post-1970 record for hectad.
- *†103/1.pro. *Geranium procurrens* (Trailing Geranium). Well established garden escape on roadside hedgebank, Pen-y-bont, Cilgwyn, Newport, SN074.362, C.Stace, 2008. Probably the first British record. Owner had introduced it to her garden from a Hampshire nursery about 15 years ago and now spreading along a few yards of roadside hedgebank.
- +†105/1.4. *Impatiens glandulifera* (Indian Balsam) (Jac y Neidiwr). ©Green waste paving slabs, St. David's Recycling Centre, SM785.267, S.B.&A.E.Evans, 2008.
- +107/1.1. *Hydrocotyle vulgaris* (Marsh Pennywort) (Dail-ceiniog y Gors). Lower cliff slope alongside tiny stream where flushed with freshwater in wet periods, Castell Coch, W of Abereiddy, SM775.303, S.B.&A.E.Evans, 2008.
- +107/6.1. *Anthriscus sylvestris* (Cow Parsley) (Gorthyfail). Lane N of Tremynydd Fawr, Abereiddy, SM779.301, S.B.&A.E.Evans, 2008. An under-recorded small coastal hectad.
- 107/40.1. *Pastinaca sativa* (Wild Parsnip) (Panasen Wylt). ©Green waste paving slabs, St. David's Recycling Centre, SM785.267, S.B.&A.E.Evans, 2008.

- +108/1.1. *Cicendia filiformis* (Yellow Centaury) (Y Ganrhi Felen Eiddil). 100s of plants on narrow trackway in wet heath, Clun Fach, St. Nicholas, SM899.358, S.Bosanquet, 2008. 1st post-1970 record for hectad.
- +‡110/1.1. *Nicandra physalodes* (Apple-of-Peru) (Afal Periw). ©Green waste paving slabs, St. David's Recycling Centre, SM785.267, S.B.&A.E.Evans, 2008.
- +‡117/1.bon. *Verbena bonariensis* (Argentinian Vervain) (Ferfain yr Ariannin). ©Green waste paving slabs, St. David's Recycling Centre, SM785.267; +5 flowering plants 3-4 metres up on the courtyard curtain wall (obviously self-sown). Courtyard Entrance, Picton Castle, SN011.135; both S.B.&A.E.Evans, 2008. 2nd and 3rd records.
- +118/1.5. *Stachys sylvatica* (Hedge Woundwort) (Briwllys y Gwrych). Lane N of Tremynydd Fawr, Abereiddy, SM779.301, S.B.&A.E.Evans, 2008. An under-recorded small coastal hectad.
- +‡118/2.1. *Ballota nigra* (Black Horehound) (Marddanhadlen Ddu). Three or four clumps on bare earth or bare rock in traditional farmyard, Portheddy Farm, Abereiddy, SM803.310, J.Hudson, 2008.
- +118/6.5. *Galeopsis bifida* (Bifid Hemp-nettle) (Y Benboeth Hollt). In a green fodder, bird seed and bird cover crop in field, Camrose Home Farm, SM936.199, S.B.Evans & J.Hudson, 2008.
- +118/23.1. *Mentha arvensis* (Corn Mint) (Mintys yr Âr). Growing on unsown edge of cereal crop on NW part of field, Monk Hill Farm, St. Ishmaels, SM831.066, S.B.Evans & K.J.S.Devonald; 1st post-1970 record for hectad; +In a green fodder, bird seed and bird cover crop in field, Camrose Home Farm, SM937.200, S.B.Evans & J.Hudson; both 2008.
- +120/1.4. *Callitriche platycarpa* (Various-leaved Water-starwort) (Brigwlydd y Gwanwyn), River, Western Cleddau below St. Catherine's Bridge, SM945.198, R.Lansdown, 2008.
- *124/1.9x5. *Verbascum xbrockmuelleri* (*V. nigrum* × *V. phlomoides*) (a hybrid mullein). Limestone quarry, Black Rock Quarry, Tenby, SN12.00, F.L.Rees, 1942, NMW, det. V.Johnstone. In July 2008, the Referee, V.Johnstone, determined the 1942 NMW specimen as this hybrid as titled on the original label. He said 'I am fairly certain that this is *V. nigrum* × *phlomoides* as it was originally labelled'. *Fl. Pl. Wales* includes the record as erroneous.
- +‡124/7.1. *Antirrhinum majus* (Snapdragon) (Trwyn y Llo). ©A single yellow flowered plant growing on masonry at the foot of the mill below a window box (with no *A. majus*). Blackpool Mill, Minwear, SN059.144, S.B.&A.E.Evans, 2008.
- +‡124/12.3. *Linaria purpurea* (Purple Toadflax) (Llin-y-llyffant Porffor). Growing on edge of tarmac at foot of north-eastern bridge parapet, Felinganol, Solva, SM805.258, S.B.&A.E.Evans, 2008. Abundant in nearby gardens.
- +‡129/1.10. *Campanula poscharskyana* (Trailing Bellflower) (Clychlys Ymlusgol). Wall, S side of entrance to main car park, Narbeth, SN108.147, S.B.Evans, 2008.
- *129/1.12. *Campanula trachelium* (Nettle-leaved Bellflower) (Clychlys Dail Danadl). ©Green waste paving slabs, St. David's Recycling Centre, SM785.267, S.B.&A.E.Evans, 2008.
- +©129/7.2. *Lobelia erinus* (Garden Lobelia) (Bidoglys yr Ardd). Green waste paving slabs, St. David's Recycling Centre, SM785.267; +Several plants in between small paving bricks, Castle Square, Tenby, SN136.005; both S.B.&A.E.Evans, 2008. 2nd & 3rd records.
- +‡133/1.2. *Valerianella carinata* (Keeled-fruited Cornsalad) (Gwylaeth-yr-oen Ffrwythau Rychog). Abundant outside churchyard wall alongside track edge, Monkton Priory, Pembroke, SM979.014, S.B.&A.E.Evans, 2008. Track edge sprayed with herbicide and all taxa except *V. carinata* impacted. This appeared to be unaffected and had set seed. Perhaps increased herbicide use in urban areas has favoured early flowering *V. carinata*?
- +135/5.1. *Carduus tenuiflorus* (Slender Thistle) (Ysgallen Flodfain). Sandy pasture, by toilet block, Abereiddy, SM798.314, S.B.Evans, 2008. Close to earlier record of *Hyoscyamus niger* and extant population of *Malva neglecta*.
- +‡135/43.4. *Erigeron karvinskianus* (Mexican Fleabane) (Amrhydlwyd y Cerrig). Old garden wall, St. David's, SM75.25, I.K.Morgan, 1997, IKM found *E. karvinskianus* on old garden wall, 'as yet scarcely naturalised, but - believe me - it will be!' Although this was the first record it was not published as such because he used the words 'scarcely naturalised'. Record is still of interest. +Growing on edge of turf by a petrol outlet, Retail complex, Haverfordwest, SM957.167,

- S.B.&A.E.Evans; +Cracks in concrete by pavement, Upper St. Marys Street, Newport, SN058.391, S.B.&A.E.Evans; +Basement steps and railing/pavement edge, South Cliff Gardens Road, Tenby, SN133.002, S.B.Evans; +Inner edge of paving slabs by house front, Church Street, St. Dogmaels, SN164.459, S.B.&A.E.Evans. Growing with *Lobelia erinus* in the gap between the front wall of Maes y felin and the paving slabs of the pavement; all 2008.
- +‡135/58.lac×max. **Leucanthemum ×superbum** (*L. lacustre* × *L. maximum*) (Shasta Daisy) (Y Llygad-Ilo Mwyaf). ©Green waste paving slabs, St. David's Recycling Centre, SM785.267, S.B.&A.E.Evans, 2008.
- +‡135/59.1. **Matricaria recutita** (Scented Mayweed) (Amranwen Bêr). One plant on S side of new verge of straightened A487, W of Velindre, SN090.389, S.B.&A.E.Evans, 2008. 1st post-1970 record for hectad.
- *‡135/73.1. **Calendula officinalis** (Pot Marigold) (Melyn Mair). ©Green waste paving slabs, St. David's Recycling Centre, SM785.267, S.B.&A.E.Evans, 2008.
- 137/2.1. **Baldellia ranunculoides** (Wild-oat) (Ceirchen Wylt). Old water course, Evans' Marsh, Penally, SS120.996, S.&A.Coker, 2008.
- +142/1.9. **Potamogeton perfoliatus** (Perfoliate Pondweed) (Dyfrllys Trydwl). River about 200 metres downstream of the bridge, Western Cleddau below St Catherine's Bridge, SM944.197, C.Hurford, 2008.
- +142/1.15. **Potamogeton berchtoldii** (Small Pondweed) (Dyfrllys Bach). Dew Pond, Peep-in Walk, Picton Castle, SN013.135, S.B.&A.E.Evans, 2008.
- +146/1.1. **Zostera marina** (Eelgrass) (Gwellt y Gamlas). Several patches, the largest was 50cm along the shore by 6m down the shore at extreme low shore level, Hakin Point, Milford Haven, SM900.053, M.Camplin, 2007.
- +‡148/2.4. **Lemna minuta** (Least Duckweed) (Llinad Bach). Fen, Swanswell Pond, Broad Haven, SM862.135, S.B.Evans & K.J.S.Devonald, 2008; +Settling pool above beach, Manorbier, SS061.976, T.Rich, 2008. Growing with *Azolla* in a natural settling pool where a major stream discharges onto Manorbier beach. Not present in 2007 when *Azolla* first recorded by SBE.
- +152/4.1. **Bolboschoenus maritimus** (Sea Club-rush) (Ysbigfrwynen y Morfa). Amongst tiny patches of salt marsh just in the 10km square on the N side of Nevern estuary, SN054.401, S.B.&A.E.Evans, 2008.
- +152/16.9a. **Carex divulsa** ssp. **divulsa** (Grey Sedge) (Hesgen Lwyd). Unsurfaced car parking area, Stepaside Iron Works, SN139.075, S.B.&A.E.Evans, 2008.
- +152/16.31. **Carex pendula** (Pendulous Sedge) (Hesgen Bendrom). Roadside verge/bank, Crossroads east of Newchapel, SN232.395, S.B.&A.E.Evans, 2008.
- +152/16.51. **Carex caryophylla** (Spring-sedge) (Hesgen Gynnar). Lower cliff slope alongside tiny stream where flushed with freshwater in wet periods, Castell Coch, W of Abereiddy, SM775.303, S.B.&A.E.Evans, 2008.
- +153/23.1. **Parapholis strigosa** (Hard-grass) (Caledwellt y Morfa). Upper saltmarsh on W side of the slipway near the sign at the upper tide level, Slipway, St Dogmaels, SN166.460, S.B.&A.E.Evans, 2008. Also at Poppit saltmarsh at SN1578.4811. First hectad records for v.c.45. It is known in SN14 in v.c.46.
- +153/24.4. **Glyceria notata** (Plicate Sweet-grass) (Melyswellt Plygedig). River, Western Cleddau below St. Catherine's Bridge, SM944.197, R.Lansdown, 2008. 1st post-1970 record for hectad. +River, Western Cleddau upstream of Wolf's Castle Bridge, SM957.264, J.Woodman, 2008.
- +‡153/28.3. **Avena fatua** (Wild-oat) (Ceirchen Wylt). In a green fodder, bird seed and bird cover crop, Camrose Home Farm, SM936.200, S.B.Evans & J.Hudson, 2008.
- ‡153/39.2. **Agrostis gigantea** (Black Bent) (Maeswellt Mawr). Growing on unsown edge of cereal crop on NE part of field, Monk Hill Farm, St. Ishmaels, SM832.066, S.B.Evans & K.J.S.Devonald, 2008.
- +‡153/47.6. **Alopecurus myosuroides** (Black-grass) (Cynffonwellt Du). ©Chippings below low wall (almost certainly from bird seed), S edge of car park, St. Dogmaels, SN164.459, S.B.&A.E.Evans, 2008.

- +153/55.1. *Elymus caninus* var. *caninus* (Bearded Couch) (Marchwellt y Coed). Several flowering clumps by steps down to river from road, Pont y Nevern, SN082.398, S.B.&A.E.Evans, 2008.
- 153/57.1. *Leymus arenarius* (Lyme-grass) (Clymwellt). A small patch growing with a larger stand of *Juncus maritimus* amongst boulders at the foot of a sheltered Old Red Sandstone sea-cliff, Gravel Bay, N end of Freshwater West beach, SM879.006, S.B.Evans, 2008. There is an earlier, but unlocalised, tetrad record.; Sand dunes, South Beach, Tenby, SN131.008, S.B.Evans, 2008. Also seen here by SBE in 2002; it could, however, have been planted prior to 2002 to help stabilise the dunes. First recorded in SN10 in 1900 by Miss E.H.Edwards at Coppet Hall dunes, Saundersfoot at SN139.053.
- +‡153/60.1. *Triticum aestivum* (Bread Wheat) (Gwenith). ©Green waste paving slabs, St. David's Recycling Centre, SM785.267; +©Road scheme verges, A487 west of Velindre, SN092.389; both S.B.&A.E.Evans, 2008.
- +‡153/68.1. *Echinochloa crus-galli* (Cockspur) (Cibogwellt Rhydd). ©Chippings below low wall (almost certainly from bird seed), S edge of car-park, St. Dogmaels, SN164.459, S.B.&A.E.Evans, 2008.
- +154/1.2. *Sparganium emersum* (Unbranched Bur-reed) (Cleddlys Di-gainc). River, Western Cleddau below St. Catherine's Bridge, SM944.197, S.Clarke, 2008.
- +‡158/12.2. *Lilium pyrenaicum* (Pyrenean Lily) (Lili Ddrewllyd). Secondary woodland within chapel grounds, Capel Felinganol, Solva, SM805.260, S.B.&A.E.Evans, 2008.
- +‡158/24.7. *Allium triquetrum* (Three-cornered Garlic) (Garleg Trionglog). Waste ground at toe of bank, N side of Castle Pond, Pembroke, SM982.017. S.B.&A.E.Evans, 2008.
- 158/34.1a. *Asparagus officinalis* ssp. *prostratus* (Wild Asparagus) (Merllys Gwylt). A clump of 82x65cm with about 75 stems, probably a single ancient clone in crevice zone of sea-cliff, on W side of Saddle Point, Stackpole, SR980.940; A scattered clump (14 stems counted) spread over 150x1622 cm plus an outlier, probably a single ancient clone with an outlier, in sea-cliff crevice/maritime grassland, E of Sandy Pit, Stackpole Warren, SR984.942; both, S.B.&A.E.Evans, 2008.

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

- +1/1.1. *Huperzia selago* (Fir Clubmoss) (Cnwpl-fwsogl Mawr). Rock outcrop, Cnwch Mawr, Cwm Brefi, SN6840.5395, A.O.Chater, 2008.
- +16/5.1. *Cystopteris fragilis* (Brittle Bladder-fern) (Ffiolredynen Frau). ‡In alcove of roadside well (presumably spread from nearby gardens). Llanbadarn Road, Aberystwyth, SN5952.8124, M.Podsiedlik, 2008.
- +17/3.8x9. *Dryopteris x deweveri* (*D. carthusiana* x *D. dilatata*) (a hybrid male-fern). *Salix* carr by basin mire, Rhos Llawn-cwrt NNR, SN4099.4999, A.O.Chater, 2008.
- *‡24B/HOU.cor. *Houttuynia cordata* (Chameleon Plant). Abundant by path in wet woodland, below Llwyn-teg, 2km SE of Brynhoffnant, SN3520.5048, A.O.Chater, 2008, NMW, det. E.J.Clement. 2nd Welsh record.
- +28/13.7. *Ranunculus parviflorus* (Small-flowered Buttercup) (Blodyn-ymenyn Mân-flodeuog). Rough pasture, SW of Frongoch Farm, Llechryd, SN2239.4374, A.O.Chater & L.R.Gander, 2008. NMW.
- +28/17.3. *Thalictrum flavum* (Common Meadow-rue) (Arianllys). ‡Colony 10m long on overgrown disused railway embankment, Teifi Marshes Wildlife Trust Reserve, Cardigan, SN188.454, H.Williams, 2007.
- +28/17.4. *Thalictrum minus* (Lesser Meadow-rue) (Arianllys Bach). ‡Sandy roadside verge, Penyergyd, Gwbert, SN163.490, A.O.Chater & J.P.Poland; +‡Roadside hedgebank, Blaen Park, 3km SE of Mydroilyn, SN4770.5320, A.O.Chater; both 2008; the commonly naturalised segregate *T. flexuosum*.
- +‡29/1.9xemp. *Berberis x stenophylla* (*B. darwinii* x *B. empetrifolia*) (Hedge Barberry) (Pren Melyn Culddail). Hedgebank, 2.3km W of Trefenter, SN5870.6762, A.O.Chater, 2008.

- +‡30/1.5b. *Papaver dubium* ssp. *lecoqii* (Yellow-juiced Poppy). New road verge, Blaenannerch airfield, SN243.495, A.O.Chater, 2008.
- +‡43/1.13. *Chenopodium ficifolium* (Fig-leaved Goosefoot) (Troed-yr-ŵydd Dail Ffigys). Disturbed ground by car park, 500m S of Maesllyn, Cors Caron, SN692.625, A.O.Chater, P.A.Smith & M.Teneva, 2007.
- +‡46/18.1. *Lychnis coronaria* (Rose Campion) (Lluglys Gwridog). Sand dune, Penyrergyd, Gwbert, SN160.485, A.O.Chater & J.P.Poland; +Roadside hedgebank, Bryngwyn, SN299.450, A.O.Chater; both 2008.
- +©47/1.cap. *Persicaria capitata* (Pink-headed Persicaria). Pavement weed, Aberystwyth Road, Cardigan, SN184.466, A.O.Chater, 2008.
- *51/1.10×11. *Hypericum humifusum* × *H. linariifolium* (a hybrid St John's-wort). Rough grass by fence, MoD site, Aber-porth, SN2461.5157, A.O.Chater, 2008. NMW, det. N.K.B.Robson. *H. linariifolium* has not yet been seen in the v.c.
- +62/12.3. *Rorippa islandica* (Northern Yellow-cress) (Berwr Melyn Gogleddol). Garden weed, Cwmrhydgoch, Bontgoch, SN682.866, A.C.Williamson, 2006, conf. S.P.Chambers.
- +‡62/35.1. *Sinapis arvensis* (Charlock) (Mwstard Gwyllt). Waste ground, Penyrergyd caravan site, Gwbert, SN161.486, A.O.Chater & J.P.Poland, 2008.
- +‡62/38.1. *Hirschfeldia incana* (Hoary Mustard) (Mwstard Llwyd). ©New road verge, Foel Wyddon near A44(T) at 260m altitude, SN7938.8305, S.P.Chambers, 2008.
- +62/42.1b. *Raphanus raphanistrum* ssp. *maritimus* (Sea Radish) (Rhuddygyl Arfor). Sandy shingle, shore 350m N of Station Road, Borth, SN6079.9052, A.O.Chater & J.P.Poland, 2008.
- +‡65/8.3. *Gaultheria mucronata* (Prickly Heath) (Gweunlwyn Pigog). Originally planted but now well-naturalised on roadside hedgebank, Carreg-y-ddol, Trefenter, SN5870.6762, A.O.Chater, 2008.
- +‡72/1.1. *Escallonia macrantha* (Escallonia) (Esgalonia). Heather and gorse scrub, 800m N of Pen Garn-wen at 300m altitude, SN374.502, A.O.Chater, 2008.
- *73/1/1. *Crassula tillaea* (Mossy Stonecrop) (Corchwyn Mwsoglog). ‡Ynys-las, SN6.9, W.Williams, 1947, annotation in copy of Salter's *Flora* then belonging to Watkin Williams, UCW Aberystwyth, later Professor of Agricultural Botany at University of Reading, per G. Hutchinson. The earliest record from Wales, and doubtless introduced here by the military vehicles that used the dunes during the Second World War.
- +‡74/8.1. *Tellima grandiflora* (Fringecups) (Clychau'r Clawdd). Shaded roadside hedgebank, Llwyncolla Coed, Tyncelyn, SN6439.6302, A.O.Chater, 2008.
- +‡75/13.3. *Geum macrophyllum* (Large-leaved Avens). Mapgoll Fawr). Roadside verge, 500m SW of Llyn Eiddwen, SN5999.6645, A.O.Chater, 2008.
- *‡75/32.15. *Cotoneaster congestus* (Congested Cotoneaster) (Cotoneaster Trwchus). Many self-sown plants on walls of long-abandoned walled garden, Highmead, Llanybydder, SN500.430, A.O.Chater, 2002, NMW.
- +‡75/32.35. *Cotoneaster rehderi* (Bullate Cotoneaster) (Cotoneaster Deilgrych Rehder). Roadside hedge, 1.5km NW of Trefilan, SN538.583, A.O.Chater, 2008.
- +77/19.1. *Trifolium ornithopodioides* (Bird's-foot Clover) (Corfeillionen Wen). Thin soil on rock outcrop, Mynachdy'r-graig, SN5575.7486, A.O.Chater & J.P.Poland, 2008.
- +77/19.20. *Trifolium striatum* (Knotted Clover) (Meillionen Rychog). ©Road verge, 500m SW of Llyn Eiddwen at 310m altitude, SN6000.6645, A.O.Chater & M.D.Sutton, 2008.
- +77/19.22. *Trifolium scabrum* (Rough Clover) (Meillionen Arw). Gravelly waste ground, MoD site, Aber-porth, SN2513.5166, A.O.Chater, 2008.
- +‡80/1.1. *Gunnera tinctoria* (Giant-rhubarb) (Rheonllys Mawr). Naturalised from planting in rank fen, by Nant Cledlyn 200m ESE of Aber road bridge, SN4794.4824, A.O.Chater, 2008.
- *84/1.2×5. *Epilobium xpalatinum* (*E. parviflorum* × *E. tetragonum*) (a hybrid willowherb). Ditch, Ty-rhos farm, New Quay, SNc.378591, J.H.Salter, 1937, NMW, det. G.D.Kitchener, 2006.
- *84/1.2×6. *Epilobium xdacicum* (*E. parviflorum* × *E. obscurum*) (a hybrid willowherb). Rough track by new houses, Cefn-llan, Llanbadarn Fawr, SN599.815, S.P.Chambers, 2006, det. T.D.Pennington, The existing record for the v.c. in Wade (1952) and in the VCCC, and

- provisionally given in Ellis (1968) was based on a 1937 Salter specimen in NMW which is in fact *E. xpalatinum* (see above).
- +84/1.2×8. **Epilobium xfloridulum** (*E. parviflorum* × *E. ciliatum*) (a hybrid willowherb). Railway ballast, Capel Bangor station, SN647.811, S.P.Chambers, 2008. det. T.D.Pennington.
- +84/1.3×8. **Epilobium xinterjectum** (*E. montanum* × *E. ciliatum*) (a hybrid willowherb). Road verge, Trawsnant, Cellan, SN617.475, A.O.Chater, 2008.
- +88/1.1. **Euonymus europaeus** (Spindle) (Piswydden). Roadside hedge, Hafod, Nantcwnlle, SN573.578, R.A.Jones, 2008.
- +103/1.9. **Geranium sanguineum** (Bloody Crane's-bill) (Pig-yr-aran Ruddgoch).‡Well-naturalised in several places in rough pasture, NE of Ffair-rhos crossroads, SN7408.6808, A.O.Chater, 2008.
- +103/1.17. **Geranium macrorrhizum** (Rock Crane's-bill) (Pig-yr-aran Wreiddfawr). Abundantly naturalised on roadside bank, SW of Blaenbedw Fawr, SN366.514, A.O.Chater, 2008.
- +103/1.18. **Geranium lucidum** (Shining Crane's-bill) (Pig-yr-aran Loywddail). Roadside bank, 300m SE of Rhyd-fudr, Trefenter, SN5965.6682, A.O.Chater, 2008.
- +‡103/2.2. **Erodium moschatum** (Musk Stork's-bill) (Pig-y-crëyr Fwsg). Weedy strip by rugby field, Aberaeron, SN4581.6310, S.P.Chambers, 2008.
- +‡105/1.4. **Impatiens glandulifera** (Indian Balsam) (Jac y Neidiwr). Roadside ditch, S of Coed Tangaer, 3km SE of Cellan, SN622.471, A.O.Chater, 2008.
- +‡110/1.1. **Nicandra physalodes** (Apple-of-Peru) (Afal Periwr). ©Weed in town flowerbed, Mill Street, Aberystwyth, SN5833.8140, A.O.Chater, 2008. 2nd record as casual.
- +‡116/4.1×2. **Symphytum xuplandicum** (*S. officinale* × *S. asperum*) (Russian Comfrey) (Cyfardwf Rwsia). Roadside scrub, Trawsnant, Cellan, SN617.475, A.O.Chater, 2008.
- +116/15.01×4. **Myosotis xsuzae** (*M. scorpioides* × *M. laxa*) (a hybrid forget-me-not). Dominant over an area 50×20m in swampy pond, Ynys-hir RSPB Reserve, SN6819.9603, A.O.Chater, 2008, NMW, conf. D.Welch.
- *‡124/11.3. **Cymbalaria hepaticifolia** (Corsican Toadflax) (Trwyn-y-llo-dail-eiddew Corsica). Garden steps and paths (not planted), Winllan, Trefilan, SN567.574, I.W.Callan & A.O.Chater, 2008, NMW.
- +124/20.7×9. **Euphrasia nemorosa** × *E. confusa* (a hybrid eyebright). Sheep-grazed slope, S of Coed Tangaer, Cellan, SN619.473, A.O.Chater, 2008.
- *‡127/1.1. **Acanthus mollis** (Bear's-breech) (Troed yr Arth). Roadside bank (self-sown from adjacent garden), Aberporth, SN2566.5158, A.O.Chater & J.P.Poland, 2008.
- +‡129/1.9. **Campanula portenschlagiana** (Adria Bellflower) (Clychlys Adria). Roadside wall, Mydroilyn, SN456.553, A.O.Chater, 2008.
- +130/6.7. **Galium mollugo** (Hedge Bedstraw) (Briwydd y Clawdd). Rough grass, W edge of Aberporth churchyard, SN2559.5110, J.P.Poland, 2008.
- +‡131/6.4. **Lonicera xylosteum** (Fly Honeysuckle) (Gwyddfid Syth). Mixed deciduous estate woodland, Old Warren Hill Wildlife Trust Reserve, Nanteos, SN6122.7864, A.O.Chater, 2008, det. J.P.Poland. 1st record since before 1935.
- *‡133/2.2. **Valeriana pyrenaica** (Pyrenean Valerian) (Triaglog y Pyreneau). Marsh in sloping pasture, 400m E of Moelhedog, Rhydowen, SN4508.4620, A.O.Chater, 2008, NMW.
- +134/1.1. **Dipsacus fullonum** (Wild Teasel) (Cribau'r-pannwr Gwyllt). By rough track in heathy sheepwalk at 370m altitude, 2km E of Ffair-rhos, SN758.680, A.O.Chater, 2008.
- +‡135/11.3. **Centaurea cyanus** (Cornflower) (Glas yr Ŷd). Among dense growth of arable weeds from seed bank in turnip field, 600m NNW of Pen-rhiw, Capel Dewi, SN4353.4222, A.O.Chater, B.&G.Harrison, 2008. 1st record as an arable weed since 1936.
- +‡135/23.2a. **Cicerbita macrophylla** ssp. *uralensis* (Common Blue-sow-thistle) (Llaethysgallen Las). Colony 5m diameter (probably originally planted) in pasture, 2.5km NE of Llanfair Clydogau, SN641.533, A.O.Chater, 2008.
- [135/28.07.58. **Hieracium pollichiae**. Disused railway cutting, Penyrangor, Aberystwyth, SN581.808, A.O.Chater, 1993, NMW, Correction of error, specimen renamed as *H. spilophaeum*].

- *‡135/28.74. **Hieracium spilophaeum** (Spotted Hawkweed) (Heboglys Brith). Disused railway cutting, Penyrangor, Aberystwyth, SN581.808, A.O.Chater, 1993, NMW, det. D.J.McCosh, Correction of error, formerly named as *H. pollichiae*.
- *‡135/OST.juc. **Osteospermum jucundum** (Osteospermum). Well-naturalised in hedgebank around churchyard, Llandysiliogogo, SN3630.5745, A.O.Chater, 2008, NMW.
- +‡147/2.1. **Lysichiton americanus** (American Skunk-cabbage) (Pidyn-y-gog Americanaidd). Pathside in wet woodland below Llwyn-teg, 2km SE of Brynhoffnant, SN353.504, A.O.Chater, 2008.
- +‡153/5.1. **Pseudosasa japonica** (Arrow Bamboo) (Bambŵ'r Saethau). Naturalised thicket in woodland, SE of Llwyn-teg, 2km SE of Brynhoffnant, SN353.504, A.O.Chater, 2008.
- +‡153/47.6. **Alopecurus myosuroides** (Black-grass) (Cynffonwellt Du). Slurry pit, Rhiwonnen farm, Talsarn, SN570.547, A.O.Chater, 2008.
- +153/49.2. **Phleum bertolonii** (Smaller Cat's-tail) (Rhonwellt Penfain). Damp grassland, 600m S of Bryn Carregog, Pysgotwr valley at 340m altitude, SN720.526, A.O.Chater & J.P.Poland, 2008.
- *©153/SEC.cer. **Secale cereale** (Rye) (Rhyg). New road verge, A486, 1.2km SSE of Croes-lan, SN3888.4338, A.O.Chater, 2008. 1st record as a casual although it has been grown as a crop in the past.
- *‡158/21.1. **Hyacinthus orientalis** (Hyacinth) (Hiasinth). White-flowered plants established from throw-outs in rough grass on cliff-top above sea, S end of Borth, SN605.888, A.O.Chater, 2008.
- +162/3.4. **Epipactis helleborine** (Broad-leaved Helleborine) (Y Galdrist Lydanddail). Woodland, Bola'r Allt-goch, Strata Florida, SN740.656, R.Liford, 2008.
- *162/13.1×2. **Platanthera xhybrida** (**P. chlorantha** × **P. bifolia**) (a hybrid butterfly-orchid). Riverside pasture, S end of Cors Caron NNR, SN674.616, A.O.Chater, 2008. det. R.M.Bateman. Two plants confirmed in population of c.30 *P. chlorantha* or the hybrid; *P. bifolia* grows nearby. 1st record.

MONTGOMERY, v.c. 47 (comm. Dr A.K. Thorne)

- +2/1.1. **Selaginella selaginoides** (Lesser Clubmoss) (Cnw-p-fwsogl Bach). About ten plants in acid grassland with base-rich flushes, Mynydd Penypistyll, SN899.972, C.Forster-Brown, 2006. With *Pinguicula vulgaris*, *Linum catharticum*, *Euphrasia* agg., *Carex hostiana* & *C. pulicaris*.
- +17/3.3.a. **Dryopteris affinis** ssp. **affinis** (Scaly Male-fern) (Marchredynen Euraid). Riverside woodland, Pont Llogel SSSI, SJ034.154, M Rand, 2008.
- +17/3.3c. **Dryopteris affinis** ssp. **borreri** (Scaly Male-fern) (Marchredynen Euraid). Riverside woodland, Pont Llogel SSSI, SJ034.154, M Rand, 2008.
- +‡31/5.7. **Fumaria officinalis** (Common Fumitory) (Mwg-y-ddae'r Cyffredin). Melinbyrhedyn, SN80.98, T.Brown, 2008.
- +‡36/1.2. **Urtica urens** (Small Nettle) (Danhadlen Fach). Good sized patch on eroded edge of pasture near Llansantffraid, SJ222.208, A.Hazlehurst, S.Swindells & A.K.Thorne, 2008.
- +46/5.3. **Stellaria pallida** (Lesser Chickweed) (Gwlyddyn-y-dom Bach). Scattered localities over several knolls in U1 grassland, Green Hall Hill and George's Walks, SJ15.19, A.K. & W.I.J.Thorne. +On summit knolls, Jericho Hill, Llanfyllin, SJ16.20, A.K.Thorne, S.Swindells & A.Hazlehurst; both 2007.
- +46/7.12. **Cerastium semidecandrum** (Little Mouse-ear) (Clust-y-llygodyn Fach). Associated with exposed rocks in dry acid grassland, George's Walks, Llanfyllin, SJ155.196, A.K.Thorne, S.Swindells & A.Hazlehurst, 2007.
- +46/9.1. **Moenchia erecta** (Upright Chickweed) (Clust-y-llygodyn Seth). In dry acid grassland near hilltop, Jericho Hill, Llanfyllin, SJ162.202, A.K.Thorne, S.Swindells & A.Hazlehurst; +Along top of shallow rock face in dry acid grassland, Green Hall Hill, Llanfyllin, SJ14.18, A.K.Thorne, S.Swindells & A.Hazlehurst, with *Teesdalia nudicaulis*; both 2007; +Steep rocky pasture near Llansantffraid, SJ222.218, A.Hazlehurst, S.Swindells & A.K.Thorne, 2008.

- +47/8.13×19. *Rumex* ×*pratensis* (*R. crispus* × *R. obtusifolius*) (a hybrid dock). Roadside, Powis Castle turn, SJ223.061, M.Rand, 2008.
- +51/1.3. *Hypericum androsaemum* (Tutsan) (Dail y Beiblau). Laneside, Cwm Cae area, SO26.90, S.Kingsbury, 2008.
- +51/1.6×7. *Hypericum* ×*desetangsii* (*H. perforatum* × *H. maculatum*) (Des Etangs' St John's-wort) (Eurinllys Des Etangs). Scarce. Floodplain pasture, Dolydd Hafren, SJ205.004, M.Rand, 2008.
- +57/1.5. *Viola reichenbachiana* (Early Dog-violet) (Fioled y Coed). Laneside, Cwm Cae area, SO26.90, S.Kingsbury, 2008. Found in two tetrads.
- *62/12.3. *Rorippa islandica* (Northern Yellow-cress) (Berwr Melyn Gogleddol). 12 or so plants at pool edge with more scattered around same pool (by west hide), Dolydd Hafren, SJ205.003, A.O.Chater, 2008.
- +62/12.6. *Rorippa amphibia* (Great Yellow-cress) (Berwr Melyn Mawr). Pool margins, Dolydd Hafren, SJ20.00, A.K.Thorne & A.Jones, 2008.
- +62/23.5. *Cochlearia danica* (Danish Scurvygrass) (Llwyllys Denmarc). ‡Roadside verge, Welshpool, SJ227.075, R.A.Dawes, 2004; +‡Linear isolated patches along roadside verge, A483 Welshpool to Abermule, SJ19.00, R.A.Dawes, 2008.
- +62/27.1. *Teesdalia nudicaulis* (Shepherd's Cress) (Berwr y Bugail). Good colony in steep rocky pasture near Llansantffraid, SJ222.218, A.Hazlehurst, S.Swindells & A.K.Thorne, 2007.
- +‡62/31.2. *Coronopus didymus* (Lesser Swine-cress) (Olbrain Bach). In small quarry, Todleth Hill, SO2.9(W). A.K.Thorne, 2008.
- +74/5.19. *Saxifraga tridactylites* (Rue-leaved Saxifrage) (Tormaen Tribys). A thriving colony at edge of old station platform, Dovey Junction, SN697.980, C.Forster-Brown, 2007.
- *‡74/8.1. *Tellima grandiflora* (Fringecups) (Clychau'r Clawdd). Rare. One plant in shade in scrub and grassland, Llanymynech Hill, SJ260.217, R.A.Dawes, 2008.
- +77/19.13. *Trifolium micranthum* (Slender Trefoil) (Meillionen Hopysaidd Eiddil). 2-3 plants in grassland field near quarry edge, Todleth Hill, SO286.937, A.K.Thorne, 2007.
- *‡79/2.2. *Myriophyllum aquaticum* (Parrot's-feather) (Pluen Parot). A clump 1m across in canal near Walls Bridge, SJ263.208, R.A.Dawes, 2008.
- +84/1.7. *Epilobium roseum* (Pale Willowherb) (Helyglys Gwelw). Trackside, Dolforwyn Wood, Abermule, SO158.957, A.Daly, 2008.
- *‡113/2.1. *Nymphoides peltata* (Fringed Water-lily) (Lili'r-dŵr Eddïog). rare, A very small quantity in canal near Wern Reserve, SJ25.14, A.K.Thorne, 2008. With *Hydrocharis morsus-ranae*.
- *116/15.01×4. *Myosotis* ×*suzuae* (*M. scorpioides* × *M. laxa*) (a hybrid forget-me-not). Pool edge, Dolydd Hafren, SJ206.003, A.O.Chater & M.Rand, 2008.
- *119/1.1. *Hippuris vulgaris* (Mare's-tail) (Rhawn y Gaseg). ?‡One sq. m. stand in canal near habitation (may be introduced), Montgomery Canal, Arddleen, SJ261.159, A.K.Thorne, 2008.
- +120/1.6. *Callitriche brutia* (Pedunculate Water-starwort) (Brigwlydd Coesog). Inundation hollow in pasture near Wern Reserve, SJ212.139, A.O.Chater, 2008.
- 129/1.1. *Campanula patula* (Spreading Bellflower) (Clychllys Ymledol). Steep bank along track and edges of fields near Corndon Farm, SO30.94, BSBI & CCW, 2008. Approximate update of old site but with three separate sites clearly identified, total of six plants.
- +‡129/7.2. *Lobelia erinus* (Garden Lobelia) (Bidoglys yr Ardd). River shingle, Dolydd Hafren, SJ20.00, M.Rand, 2008.
- +130/3.1. *Sherardia arvensis* (Field Madder) (Mandon Las yr Ŷd). Two plants at base of old wall, Newtown Hospital, SO10.92, C.A.Small, 2008.
- +135/28.140. *Hieracium exotericum* agg. (Jordan's Hawkweed). Several plants in oak woodland, Prospect Wood, SN988.827, A.K.Thorne, 2008, det. D.McCosh.
- +‡135/55.3. *Anthemis cotula* (Stinking Chamomile) (Camri'r Cŵn). Six plants along edge of tarmac on laneside, Nainfa, Felin Dymol, SN921.917, A.K.Thorne, 2008, det. J.Woodman.
- 138/1.1. *Hydrocharis morsus-ranae* (Frogbit) (Ffugalaw Bach). Extensive stands along canal margins extending across three monads, Montgomery Canal, Arddleen, SJ25.15, A.K.Thorne, 2008. 1st record for 30 years, was thought to have become extinct.

- *152/11.1. *Cyperus longus* (Galingale) (Ysnoden Fair). ‡On edge of pool at Dolydd Hafren, SJ201.001, R.A. Dawes, 2004. 1st record, non-native site. Refound at SJ201.001 and a second clump located at Dolydd Hafren, SJ207.003 both by BSBI, 2008.
- +152/13.1. *Rhynchospora alba* (White Beak-sedge) (Corsfrwynen Wen). Several small patches in extensive M19 type mire, Allt Ddu, SN895.948, A.K.Thorne & B.I.S., 2007.
- 152/16.27. *Carex pseudocyperus* (Cyperus Sedge) (Hesgen Gynffonnog). Small stand by pool in floodplain near Llandrinio, SJ282.161, A.K. Thorne & W.I.J. Thorne, 2007. 1st site in county not along the canal.
- +152/16.34. *Carex strigosa* (Thin-spiked Wood-sedge) (Hesgen-y-coed Benfain). Several plants in damp woodland, Red House Reserve, Abermule, SO169.968, A.K.Thorne, 2008.
- +152/16.46.a. *Carex viridula* ssp. *brachyrrhyncha* (Long-stalked Yellow-sedge). 20-30 plants, with *Carex dioica*, in mineral-rich flush, Ffrydd yr Ystrad near Talerddig, SN916.981, C.Forster-Brown, 2006, conf. A.O.Chater.
- +153/12.9. *Festuca vivipara* (Viviparous Sheep's-fescue) (Peiswellt Bywhiliog). A few plants at edge of blanket bog, above Trannon, SN907.969, C.Forster-Brown, 2006. Scattered with *Deschampsia flexuosa*, *Eriophorum vaginatum* & *Molinia caerulea*.
- +153/18.4. *Poa humilis* (Spreading Meadow-grass) (Gweunwellt Ymledol). Near White Grit, SO31.97, A.K.Thorne, 2007.
- +153/39.8. *Agrostis vinealis* (Brown Bent) (Maeswellt-y-cŵn y Mynydd). River valley hillside, Pistyll Rhaeidyr, SJ06.28, A.K.Thorne, 2006; +Caerbwla, SJ00.08, A.K.Thorne & Mont. Field Soc, 2007, +Valley mire, The Glyn Wildlife Site, SN92.84, A.K.Thorne, 2007; +Moorland, E of Lake Vyrnwy, SH98.24, A.K.Thorne & Mont. Field Soc, 2008. This species was not often separated from *Agrostis canina* in 1996 Flora.
- +†153/59.2. *Hordeum murinum* (Wall Barley) (Haidd y Mur). Several plants in pasture, Llansanffraid, SJ218.204, A.K.Thorne, 2008.
- +158/24.16. *Allium vineale* (Wild Onion) (Nionyn Gwyllt). Pont Llogel SSSI, SJ037.150, R.D.Pryce, 2008; +Several plants in roadside grassland near Llantsanffraid, SJ216.211, A.Hazlehurst, S.Swindells & A.K.Thorne, 2008. With *Teucrium scorodonia*, *Stellaria holostea*, *Hyacinthoides non-scripta*, *Crataegus monogyna* & *Ulex* sp.
- 162/2.2. *Cephalanthera longifolia* (Narrow-leaved Helleborine) (Y Galdrist Gulddail). Two flowering plants and seven very young plants with *Pteridium aquilinum* in oak woodland near Kerry, SO150.880, M.Jannink, 2008. Found close to the original and only site, not seen for 30 years.

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

- +2/1.1. *Selaginella selaginoides* (Lesser Clubmoss) (Cnw-p-fwsogl Bach). Cliffs of Aran Benllyn, SH8.2, J.T.Hughes & M.&C.Rand, 2008. 1st post-1977 record for hectad.
- +4/1.7. *Equisetum sylvaticum* (Wood Horsetail) (Marchrawnen y Coed). Quite extensive along a roadside ditch, Coed Craig Crogen, SJ0.3, S.E.Stille, 2008.
- +6/1.1. *Osmunda regalis* (Royal Fern) (Rhedyndyn Gyfridwy). Four healthy plants in wet ground above Llanelltyd, SH7.1, R.Gwynn, 2008.
- +7/1.1. *Cryptogramma crispa* (Parsley Fern) (Rhedyndyn Bersli). East cliff of Aran Benllyn, SH8.2, J.T.Hughes & M.&C.Rand, 2008. 1st post-1970 record for hectad; Scree at Bwlch y Groes, SH9.2, S.E.Stille, 2008. Confirms the hectad record.
- +11/1.1x2. *Polypodium xmantoniae* (*P. vulgare* × *P. interjectum*) (a hybrid polypody). Wall at Pale, Llandderfel, SH9.3, P.M.Benoit, 2008. A convincing example, with imperfect spores and intermediate stomata and sporangial annuli.
- +15/1.1. *Phyllitis scolopendrium* (Hart's-tongue) (Tafod yr Hydd). Mortared wall, Afon Caletwr, Bala, SH9.3, P.M.Benoit, 2008. 1st post-1970 record for hectad.
- +17/1.2. *Polystichum aculeatum* (Hard Shield-fern) (Gwrychredynen Galed). Carreg y Fran, SH9.1, J.T.Hughes, 2008; +Afon Caletwr, Bala, SH9.3, P.M.Benoit, 2008. 1st post-1970 record for hectad.

- *‡24/1.1. **Laurus nobilis** (Bay) (Llawrwydden). Several young plants flourishing amongst gorse and bramble, Dinas Oleu, Barmouth, SH6.1, P.M.Benoit, 2008.
- *‡32/1.0ccxori. **Platanus xhispanica** (**P. occidentalis** × **P. orientalis**) (London Plane) (Planwydden Llundain). A number of young trees planted in wet ground near Pandryodyn, Dolgellau, SH7.1, P.M.Benoit, 2007.
- *‡37/1.1. **Juglans regia** (Walnut) (Coeden Chaw Ffrengig). One large old tree at Arthog Hall Farm, SH6.1, was declining in the 1950s and is now (2009) gone; One small tree by the old lifeboat station, Porkington, Barmouth, SH6.1, was destroyed during railway work in the 1990s. Any other records of Walnut in v.c.48, in the 'wild' or not, would be welcome. P.M.Benoit.
- ‡039/3.1. **Castanea sativa** (Sweet Chestnut) (Castanwydden Bêr). A fine large tree on the roadside at the Old Lodge, Arthog, SH6.1, P.M.Benoit, when felled in 1955, showed c.150 growth rings, dating it back probably to 1805 – hence inevitably referred to as the Trafalgar tree.
- +51/1.10. **Hypericum humifusum** (Trailing St John's-wort) (Eurinllys Ymdaenol). Llyn Lliwbran (Llymbren). SH8.2, M.Lawley, 2008. 1st post-1970 record for hectad.
- +57/1.11. **Viola lutea** (Mountain Pansy) (Trilliw y Mynydd). Llyn Lliwbran (Llymbren). SH8.2, P.Owen, 2008. 1st post-1970 record for hectad. Photograph in *BSBI News* No. 110, plate 2 (2009).
- +‡62/1.6. **Sisymbrium orientale** (Eastern Rocket) (Roced y Dwyrain). ©Dumped soil on building site, Cors-y-gedol, Barmouth, SH6.1, P.M.Benoit, 2007.
- +‡62/15.5. **Arabis caucasica** (Garden Arabis) (Berwr-y-cerrig yr Ardd). A conspicuous fine patch along 15m of the road in a wild place in Cwm Cynllwyd, Llanuwchllyn, and another smaller patch near a cottage, SH8.2, D.O.Elias, 2008. +Llandderfel, SH9.3, recorded in 19th century by T.Ruddy; +still flourishing on roadside mortared walls in the village, SH9.3, and at 2006, Pale, SH9.3, 2008; both P.M.Benoit.
- *‡74/8.1. **Tellima grandiflora** (Fringecups) (Clychau'r Clawdd). One plant in fertile woodland, Coed Cors-y-gedol, Dyffryn Ardudwy, SH5.2, P.M.Benoit, c.2005. Known there for many years.
- +‡75/32.33. **Cotoneaster simonsii** (Himalayan Cotoneaster) (Cotoneaster Simons). One plant on the side of a new road at Bala, SH9.3, P.M.Benoit, 2008.
- +99/1.3. **Acer campestre** (Field Maple) (Masarnen Fach). ‡A number of small trees (planted not natural), part of the 'landscaping' of the bypass near Bont Fawr, Dolgellau, SH7.1, P.M.Benoit, 2008.
- [†109/1.1. **Vinca minor** (Lesser Periwinkle) (Perfagl Fach). The record from Mallwyd, SH8.1, in *BSBI Welsh Bulletin* No. 82, p.32 (2008) is the first recent record for the hectad, not for the vice-county. P.M.Benoit.]
- +‡124/12.1. **Kickxia elatine** (Sharp-leaved Fluellen) (Llysiau-Llywelyn). Garden weed at Penhelig, Aberdyfi, SN6.9, P.M.Benoit, 1985. A modest updating from pre-1970 in this, the only Merioneth site.
- +124/16.9. **Veronica scutellata** (Marsh Speedwell) (Rhwyddlwyn Culddail y Gors). 4-5 plants in unimproved boggy pasture, Cefn Prys, Llanuwchllyn, SH8.2, D.O.Elias, 2008.
- +‡124/17.ellxspe. **Hebe xfranciscana** (**H. elliptica** × **H. speciosa**) (Hedge Veronica) (Pedwar-banbyd y Berth). Shrub, on bank facing the sea at Llanaber, SH6.1, J.A.Webb, 1941, (*Fl. Pl. Wales*: p.133); missed in the *New Atlas*. It was severely damaged in the hard winters of 1946-7 and 1962-3 but each time eventually recovered. Still there and flourishing 2008, P.M.Benoit.
- +124/19.3. **Melampyrum pratense** (Common Cow-wheat) (Gliniogai). Nant y Barcut, SH8.2, J.T.Hughes & M.&C.Rand, 2008. 1st post-1970 record for hectad.
- *124/20.3x7. **Euphrasia anglica** × **E. nemorosa** (a hybrid eyebright). Sand dune turf, Morfa Harlech, SH5.3, G.Halliday, 1993, LANC, det. A.J.Silverside. 1st record.
- +124/24.2. **Rhinanthus minor** (Yellow-rattle) (Cribell Felen). Dryish flushed cliff, E cliffs of Aran Benllyn, SH8.2, J.T.Hughes & M.&C.Rand, 2008. 1st post-1970 record for hectad. +Bryn Pen Llyn, Llandrillo, SJ0.3, S.E.Stille, 2008.
- +†130/6.7. **Galium mollugo** (Hedge Bedstraw) (Briwydd y Clawdd). Wall outside farmhouse, Carrog, SJ1.4, S.E.Stille, 2008. 1st post-1970 record for hectad.

- [135/11.1. *Centaurea scabiosa* (Greater Knapweed) (Y Bengaled Fawr). ‡Mapped as native in the *New Atlas*, the plants at Aberdyfi, SN6.9, form a single colony (the only *C. scabiosa* known in v.c.48) on a railway embankment and are surely an accidental introduction with ballast.]
- +†135/48.1. *Tanacetum parthenium* (Feverfew) (Y Wermod Wen). ‡Roadside at Pale, Llandderfel, SH9.3, P.M.Benoit, 2008. 1st post-1970 record for hectad.
- +†135/5.4. *Carduus nutans* (Musk Thistle) (Ysgallen Bendrom). Still in duneland on Morfa Dyffryn, SH5.2, P.M.Benoit & D.J.Brown, 2008, where first recorded in June 1950.
- [152/16.1. *Carex paniculata* (Greater Tussock-sedge) (Hesgen Rafunog Fawr). The plants at Dolgoch, SH6.0, recorded in *BSBI Welsh Bulletin* 82: 32 (2008) were the first recent record for the hectad, not for the vice-county. (There are recent records from other sites in v.c. 48).]
- +‡153/17.3. *Briza maxima* (Greater Quaking-grass) (Crydwellt Mawr). Edge of car-park by ex-Woolworth store, Barmouth, SH6.1, P.M.Benoit, 2007.
- [‡160/1.1. *Yucca recurvifolia* (Curved-leaved Spanish-dagger) (Iwca). Before this is reported as a 'wild' Merioneth plant it should be recorded that the species was widely planted in the spring of 2008 at the car-park and bus station at Barmouth as part of a project to beautify the town in anticipation of a tropical summer - but that, alas, did not happen. P.M.Benoit.]

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

- +1/1.1. *Huperzia selago* (Fir Clubmoss) (Cnwp-fwsogl Mawr). Heather moorland, Mynydd Cilgwyn, Carmel, SH49.54, S.Thomas, 2008.
- +1/4.1. *Diphasiastrum alpinum* (Alpine Clubmoss) (Cnwp-fwsogl Alpaid). Heather moorland, Mynydd Cilgwyn, Carmel, SH49.54, S.Thomas, 2008.
- +4/1.4x5. *Equisetum xltorale* (*E. fluviatile* × *E. arvense*) (a hybrid horsetail). Roadside bank & ditch, Clwt y Bont, SH57.63, W.McCarthy & M.Stead, 2008.
- +9/1.1. *Pilularia globulifera* (Pillwort) (Pelenllys Gronynnog). Stony lake shore, Llyn y Gader, Rhyd Ddu, SH56.51, W.McCarthy, D.Evans & J.Bratton, 2008.
- *16/5.dia. *Cystopteris diaphana* (Greenish Bladder-fern). Walls and banks, Glynllifon, SH4.5, M.Rickard, 2006, conf. F.Rumsey.
- +17/3.2x3. *Dryopteris xcomplexa* (*D. filix-mas* × *D. affinis*) (a hybrid male-fern). Wood above Moelyci farm, Tregarth, SH59.66, S.Thomas, 2007.
- +39/4.5x6. *Quercus xrosacea* (*Q. petraea* × *Q. robur*) (a hybrid oak). Hedgebank, Chwilog, SH4.3, J.&H.Lowell, 2007.
- +‡44/1.1. *Amaranthus retroflexus* (Common Amaranth) (Blodyn Amor). Wall base, Abergwyngregyn, SH65.72, W.McCarthy, 2008.
- +61/2.11x12. *Salix xmultinervis* (*S. cinerea* × *S. aurita*) (a hybrid willow). Roadside hedge, Llanrug, SH53.62, W.McCarthy, 2008.
- *62/12.3. *Rorippa islandica* (Northern Yellow-cress) (Berwr Melyn Gogleddol). Riverbank W of Afon Glaslyn, Beddgelert, SH59.47, M.Wilcox & B.Tregale, 2008.
- +62/31.1. *Coronopus squamatus* (Swine-cress) (Olbrain). Disturbed roadside, Bethel, SH53.65, W.McCarthy & J.Bratton, 2008.
- +‡62/38.1. *Hirschfeldia incana* (Hoary Mustard) (Mwstard Llwyd). Disturbed roadside, Bethel, SH53.65, W.McCarthy & J.Bratton, 2008.
- +‡62/40.1.a. *Rapistrum rugosum* (Bastard Cabbage) (Bresychen Ddeilgrech). Roadside verge following roadworks, Pentir, SH57.67, W.McCarthy, 2008.
- *©69/1.pru. *Primula xpruhonicensis* (Hybrid Primula). One clump with reddish/purple flowers on roadside verge, East of Crug House, Bethel, SH51.65, W.McCarthy, 2008. 1st record.
- *‡70/1.2. *Pittosporum tenuifolium* (Kohuhu) (Llwyn Cohwhw). Established on steep wooded slope, Bangor, SH58.73, S.P.Chambers, 2005. 1st record.
- *‡75/8.2. *Rubus tricolor* (Chinese Bramble) (Llwyn Mwyar Trilliwi). Pathside; By coast path, Pwllheli, SH3.3, J.&H.Lowell, 2007; On bank above farm, Dolwyddelan, SH79.53, W.McCarthy, 2008. 1st record.

- +75/9.13×14. **Potentilla** ×**suberecta** (**P. erecta** × **P. anglica**) (a hybrid tormentil). Hedgebank, Maenan, SH81.65, W.McCarthy, 2008.
- +‡77/6.1. **Onobrychis viciifolia** (Sainfoin) (Y Godog). Six plants on factory demolition site, Llandudno Junction, SH80.77, W.McCarthy, 2008.
- +77/25.5. **Genista hispanica** (Spanish Gorse) (Eithinen Sbaen). Two bushes on bank at path side, Caernarfon, SH45.60, W.McCarthy, 2008.
- *†81/1.2. **Lythrum hyssopifolia** (Grass-poly) (Gwyarllys Dail Isop). ‡On bare sandy earth, North Wales Golf Course, Llandudno, SH776.807, W.McCarthy, 2008, det. C.P.Preston. In an area where grass turfs had been removed and the resulting bare sandy earth had become colonised by annuals such as *Anagallis arvensis*, *Matricaria discoidea*, etc. 1st record.
- *91/2.7. **Euphorbia serrulata** (Upright Spurge) (Llaethlys Syth). ‡Wall-base, Beddgelert, SH6.4, A.Showler, 2008. 1st record.
- +103/1.9. **Geranium sanguineum** (Bloody Crane's-bill) (Pig-yr-aran Ruddgoch). ‡Possibly introduced on grassy lane bank, Morfa Dinlle, SH44.58, D.Evans, 2008.
- +‡103/1.17. **Geranium macrorrhizum** (Rock Crane's-bill) (Pig-yr-aran Wreiddfawr). Riverbank, Nant y Coed, Llanfairfechan, SH69.74, W.McCarthy, 2008.
- +‡110/2.1. **Lycium barbarum** (Duke of Argyll's Teaplant) (Ysbeinwydden Hardd). Persisting by ruined cottage, Bethel, SH53.65, W.McCarthy & J.Bratton, 2008.
- +118/23.1×2. **Mentha** ×**verticillata** (**M. arvensis** × **M. aquatica**) (Whorled Mint) (Mintys Troellennog). River bank, Aberdesach, SH42.51, W.McCarthy, 2008.
- +‡118/23.2×3. **Mentha** ×**piperita** (**M. aquatica** × **M. spicata**) (Peppermint) (Mintys Poeth). Sandy coastal path, Aberdesach, SH42.51, D.Evans, 2008.
- +124/12.1. **Kickxia elatine** (Sharp-leaved Fluellen) (Llysiau-Llywelyn). Disturbed soil bank by new housing, Myntho, SH30.31, W.McCarthy & M.Stead, 2008.
- +©129/7.2. **Lobelia erinus** (Garden Lobelia) (Bidoglys yr Ardd). Disturbed roadside, Bethel, SH53.65, W.McCarthy & J.Bratton, 2008.
- +135/30.4. **Filago minima** (Small Cudweed) (Edafeddog Fach). Stony track, Bwlch y Ddeufaen, Llanfairfechan, SH68.72, W.McCarthy & J.Bratton, 2008.
- +‡135/73.1. **Calendula officinalis** (Pot Marigold) (Melyn Mair). Roadside verge following roadworks, Pentir, SH57.67, W.McCarthy & M.Stead, 2008.
- +©135/79.1. **Helianthus annuus** (Sunflower) (Blodyn yr Haul). Roadside verge following roadworks, Pentir, SH57.67, W.McCarthy & M.Stead, 2008.
- +142/1.21. **Potamogeton pectinatus** (Fennel Pondweed) (Dyfrllys Blaenllym). Brackish pools, Dinas Dinlle, SH43.55, W.McCarthy & J.Bratton, 2008.
- +‡148/2.4. **Lemna minuta** (Least Duckweed) (Llinad Bach). Small pools in recently felled woodland, Rhydlios, SH19.30, W.McCarthy & M.Stead; Disused reservoir, by Pink Farm, Great Orme, SH77.83, W.McCarthy; both 2008.
- +151/1.13×14. **Juncus** ×**surrejanus** (**J. articulatus** × **J. acutiflorus**) (a hybrid rush). Heathy field by road, Aberdaron, SH26.29, W.McCarthy, 2008, conf. P.M.Benoit.
- +152/3.3. **Eleocharis uniglumis** (Slender Spike-rush) (Ysbigfrwynen un Cibyn). Gravelly lake shore, Llyn y Gader, Rhyd Ddu, SH57.51, W.McCarthy, J.Bratton & D.Evans, 2008.
- +‡153/17.3. **Briza maxima** (Greater Quaking-grass) (Crydwellt Mawr). Roadside, Chwillog, SH44.38, J.&H.Lowell, 2007.
- *‡153/46.2. **Polypogon viridis** (Water Bent) (Barfwellt y Dŵr). Wall base, Abergwyngregyn, SH65.72, W.McCarthy, 2008. 1st record.
- +‡153/70.pum. **Setaria pumila** (Yellow Bristle-grass) (Cibogwellt Melyn). ©Wall base, Abergwyngregyn, SH65.72, W.McCarthy, 2008.
- +155/1.1. **Typha latifolia** (Bulrush) (Cynffon y Gath). Pool near Afon Wydden, Penrhyn Bay, SH82.80, W.McCarthy & J.Bratton, 2008.
- +‡158/12.2. **Lilium pyrenaicum** (Pyrenean Lily) (Lili Ddrewllyd). Roadside bank, Rhydyclafdy, SH30.35, W.McCarthy & M.Stead, 2008.
- *‡159/8.1. **Crocus vernus** (Spring Crocus) (Saffrwm y Gwanwyn). One plant with purple tepals on roadside verge near Bethel, SH51.65, W.McCarthy, 2008. 1st record.

- *‡159/13.1. *Crocospia paniculata* (Aunt-Eliza) (Modryb Leusa). Wet heath, Rhosgadfan, SH50.56, W.McCarthy & J.Bratton, 2008. 1st record.
 +‡159/13.3. *Crocospia pottsii* (Pott's Montbretia) (Crib-y-ceiliog Potts). Roadside, Chwilog, SH44.39, J.&H.Lowell, 2007.

DENBIGH, v.c. 50 (comm. Mrs D. Williams)

- +2/1.1. *Selaginella selaginoides* (Lesser Clubmoss) (Cnwp-fwsogl Bach). Mynydd Hiraethog, Pentrefoelas, SH885.594, T.Knight, 2007.
 +4/1.3. *Equisetum variegatum* (Variegated Horsetail) (Marchrawnen Fraith). Rhosesmor Quarry, Maeshafn, SJ215.669, T.Knight, 2007.
 +4/1.9. *Equisetum telmateia* (Great Horsetail) (Marchrawnen Fawr). Near Burton Green, SJ3.5(P), J.Shanklin, 2008.
 +5/2.1. *Botrychium lunaria* (Moonwort) (Lloer-redynen). Several plants, Minera, SJ201.585; +Maeshafn, SJ204.614; both P.Day, 2008.
 +6/1.1. *Osmunda regalis* (Royal Fern) (Rhedynen Gyfrdwy). Mynydd Hiraethog, Llangernyw, SH896.600, T.Knight, 2007.
 +15/3.1. *Ceterach officinarum* (Rustyback) (Duegredynen Gefngoch). Llandynan, SJ1.4(X). D.Williams, 2008. 3rd record.
 +17/3.3. *Dryopteris affinis* (Scaly Male-fern) (Marchredynen Euraid). Bryneglwys, SJ1.4; +Ruthin, SJ1.5; both J.A.Green, 2007; +Nant Mill, SJ2.5(V). D.Williams, 2008.
 +17/3.3c. *Dryopteris affinis* ssp. *borreri* (Scaly Male-fern) (Marchredynen Euraid). Llandynan, SJ1.4(X), D.Williams, 2008. 3rd record.
 +‡20/1.1. *Abies grandis* (Giant Fir) (Ffynidwydden Fawr). Bryneglwys, SJ1.4; +Ruthin, SJ1.5; both J.A.Green, 2007. 2nd & 3rd records.
 +‡20/2.1. *Pseudotsuga menziesii* (Douglas Fir) (Ffynidwydden Douglas). ©Bryneglwys, SJ1.4, J.A.Green, 2007.
 +‡20/3.1. *Tsuga heterophylla* (Western Hemlock-spruce) (Sbriwsen-Hemlog y Gorllewin). ©Pont Petreyal, SJ0.5(F), D.Williams, 2008.
 20/7.1. *Pinus sylvestris* ssp. *scotica* (Scots Pine) (Pinwydden yr Alban). N. Wrexham, SJ3.5, J.A.Green, 2007.
 +‡20/7.2. *Pinus nigra* (a pine). Near Rossett, SJ3.5(U), J.Shanklin, 2008.
 +‡21/3.1. *Thuja plicata* (Western Red-cedar) (Cedrwydden Goch). Ruthin, SJ1.5, 2007; +Clocenog, SJ0.5, 2008; both J.A.Green. 1st recent records.
 +28/2.1. *Trollius europaeus* (Globoseflower) (Cronnell). Small population on both banks of River Conwy, SH798.544, W.McCarthy, 2008.
 +28/13.18. *Ranunculus hederaceus* (Ivy-leaved Crowfoot) (Crafanc-y-frân Dail Eiddew). Pont Petreyal, SJ0.5(F), D.Williams, 2008.
 +28/17.4. *Thalictrum minus* (Lesser Meadow-rue) (Arianllys Bach). Rhyd y Foel, SH9.7(D), D.Williams; +Maeshafn, SJ200.612, D.Williams & J.A.Green; both 2008.
 +‡31/5.7. *Fumaria officinalis* (Common Fumitory) (Mwg-y-ddaeir Cyffredin). Sloping field near crossroads, between Betws yn Rhos & Dawn, SH878.735, W.McCarthy, 2008.
 +33/1.1. *Ulmus glabra* (Wych Elm) (Llwyfen Lydanddail). Bryneglwys, SJ1.4, J.A.Green, 2007.
 +34/2.1. *Humulus lupulus* (Hop) (Hopys). Llandynan, SJ1.4(X), D.Williams, 2008.
 +‡36/1.2. *Urtica urens* (Small Nettle) (Danhadlen Fach). Betws yn Rhos, SH9.7(B), D.Williams, 2008.
 +‡36/3.1. *Soleirolia soleirolii* (Mind-your-own-business) (Mam Miloedd). Moel Famau, SJ199.611, D.Williams & J.A.Green, 2008.
 +39/1.1. *Fagus sylvatica* (Beech) (Ffawyddden). Bryneglwys, SJ1.4, J.A.Green, 2007.
 +‡39/3.1. *Castanea sativa* (Sweet Chestnut) (Castanwydden Bêr). Bryneglwys, SJ1.4, J.A.Green, 2007.
 +40/1.1. *Betula pendula* (Silver Birch) (Bedwen Arian). Ruthin, SJ1.5, J.A.Green, 2007.

- +40/1.2. *Betula pubescens* (Downy Birch) (Bedwen Lwyd). Bryneglwys, SJ1.4, J.A.Green, 2007.
- +†43/1.13. *Chenopodium ficifolium* (Fig-leaved Goosefoot) (Troed-yr-ŵydd Dail Ffigys). Worthenbury, SJ4.4, Anon., 2007.
- +43/3.2. *Atriplex prostrata* (Spear-leaved Orache) (Llygwyn Tryfal). Llandynan, SJ1.4(X), D.Williams, 2008.
- 46/9.1. *Moenchia erecta* (Upright Chickweed) (Clust-y-llygoden Seth). Glyndyfrdwy, SJ1.4(L), D.Williams, 2007.
- +†46/16.1. *Spergula arvensis* (Corn Spurrey) (Troellig yr Ŷd). Sloping field near crossroads, between Betws yn Rhos & Dawn, SH878.735, W.McCarthy, 2008.
- +46/17.4. *Spergularia rubra* (Sand Spurrey) (Troellig Arfor Coch). Farmland near Fenn's Moss, Bettisfield, SJ471.370, T.Knight, 2008.
- +†47/5.4. *Fallopia convolvulus* (Black-bindweed) (Y Glymog Ddu). Sloping field near crossroads, between Betws yn Rhos & Dawn, SH878.735, W.McCarthy; +Betws yn Rhos, SH97B, D.Williams; both 2008.
- +47/8.13×19. *Rumex xpratensis* (*R. crispus* × *R. obtusifolius*) (a hybrid dock). Pont Petreyal, SJ037.520(F), D.Williams, 2008. conf. M.Stead, 4th record.
- +47/8.14. *Rumex conglomeratus* (Clustered Dock) (Tafolen Fair). Llandynan, SJ1.4(X), D.Williams, 2008.
- +51/1.4. *Hypericum hircinum* (Stinking Tutsan) (Dail-y-Beiblau Drewllyd). Denbigh, SJ0.6, J.A.Green, 2007.
- +51/1.6. *Hypericum perforatum* (Perforate St John's-wort) (Eurinllys Trydwl). Llandynan, SJ1.4(X), D.Williams, 2008.
- +51/1.12. *Hypericum pulchrum* (Slender St John's-wort) (Eurinllys Meinsyth). Ruthin, SJ1.5, J.A.Green, 2007.
- +51/1.14. *Hypericum hirsutum* (Hairy St John's-wort) (Eurinllys Blewog). Wrexham Industrial Estate, Wrexham, SJ391.507, T.Knight, 2008.
- +51/1.15. *Hypericum montanum* (Pale St John's-wort) (Eurinllys Gwelw). Maeshafn, SJ200.612, D.Williams & J.A.Green, 2008.
- +57/1.1. *Viola odorata* (Sweet Violet) (Fioled Bêr). Bryneglwys, SJ1.4, J.A.Green, 2007.
- +†57/1.13. *Viola arvensis* (Field Pansy) (Trilliw'r Tir Âr). Sloping field near crossroads, between Betws yn Rhos & Dawn, SH878.735, W.McCarthy, 2008.
- +61/1.2. *Populus tremula* (Aspen) (Aethnen). Llandynan, SJ1.4(X), D.Williams, 2008.
- +†61/1.3×del. *Populus xcanadensis* (*P. nigra* × *P. deltoides*) (Hybrid Black-poplar) (Poplysen Ddu Groesryw). Near Rossett, SJ3.5(U), J.Shanklin, 2008.
- +†61/1.3×del.Ser. *Populus xcanadensis* 'Serotina' (*P. nigra* ssp. *nigra* × *P. deltoides*) (Black-Italian Poplar) (Poplysen Ddu Groesryw'r Eidal). S of Wrexham, SJ3.4, K.Thorne, 2007.
- +©61/1.3.Ita. *Populus nigra* 'Italica' (Lombardy Poplar) (Poplysen Lombardi). Planted near Burton Green, SJ3.5(P), J.Shanklin, 2008.
- +©61/2.03×bab. *Salix xsepulcralis* (*S. alba* × *S. babylonica*) (Hybrid Weeping Willow) (Helygen Wylofus). Planted near Burton, SJ3.5(P), J.Shanklin, 2008. 1st recent record.
- +62/7.2. *Erysimum cheiri* (Wallflower) (Blodyn y Fagwyr). Rhyd y Foel, SH9.7(C), D.Williams, 2008. 4th record.
- +62/12.6. *Rorippa amphibia* (Great Yellow-cress) (Berwr Melyn Mawr). Worthenbury, SJ44, Anon., 2007.
- +62/12.1. *Rorippa nasturtium-aquaticum* agg. (Water-cress) (Berwr-y-dŵr). Near Rossett, SJ3.5(U), J.Shanklin, 2008.
- +62/14.8. *Cardamine hirsuta* (Hairy Bitter-cress) (Berwr Chwerw Blewog). Near Burton Green, SJ3.5(P), J.Shanklin, 2008.
- +62/22.1.agg. *Erophila verna* agg. (Common Whitlowgrass) (Llysiau'r-bystwn Cynnar). Nant Mill, SJ2.5(V), D.Williams, 2008.
- +†62/25.1. *Capsella bursa-pastoris* (Shepherd's-purse) (Pwrs y Bugail). Near Rossett, SJ3.5(U), J.Shanklin, 2008.

- +62/27.1. **Teesdalia nudicaulis** (Shepherd's Cress) (Berwr y Bugail). +Cefn Coed Isaf, Maenan, Llanrwst, SH786.685, W.McCarthy, 2007. +Glyndyfrdwy, SJ1.4(L), D.Williams, 2007, 2nd record.
- +62/30.2. **Lepidium campestre** (Field Pepperwort) (Pupurlys y Maes). All-weather pitches at Darland High School, Wrexham, SJ374.576, T.Knight, 2008.
- +62/35.1. **Sinapis arvensis** (Charlock) (Mwstard Gwyllt). Near Burton Green, SJ3.5(P), J.Shanklin, 2008.
- +65/2.1. **Rhododendron ponticum** (Rhododendron) (Rhododendron). Clocaenog, SJ0.5, J.A.Green, 2008.
- +65/7.1. **Andromeda polifolia** (Bog-rosemary) (Andromeda'r Gors). Mynydd Hiraethog, Pentrefoelas, SH892.597, T.Knight, 2007.
- 65/12.8. **Erica vagans** (Cornish Heath) (Grug Cernyw), Rhyd y Foel, SH9.7(D), D.Williams, 2008. 2nd record.
- +69/1.1. **Primula vulgaris** (Primrose) (Briallen). Bryneglwys, SJ1.4, J.A.Green, 2007.
- +73/2.1. **Umbilicus rupestris** (Navelwort) (Deilen Gron). Y Ffrwd, SJ3.5(C), D.Williams, 2008.
- +73/5.10. **Sedum rupestre** (Reflexed Stonecrop) (Briweg Felen). Pisgah quarry, Llangollen, SJ267.407, J.A.Green, 2007.
- +73/5.11. **Sedum forsterianum** (Rock Stonecrop) (Briweg Gymreig). Basic crag, Llanrhaeadr-ym-Mochnant, SJ123.284, P.L.Thomas, 2008. Previously recorded at this site in 1999.
- +73/5.16. **Sedum anglicum** (English Stonecrop) (Briweg y Cerrig). Nant Mill, SJ2.5(V), D.Williams, 2008.
- +74/5.15. **Saxifraga granulata** (Meadow Saxifrage) (Tormaen y Gweunydd). Llangollen, SJ224.432, J.A.Green, 2008.
- +75/6.1. **Filipendula vulgaris** (Dropwort) (Y Grogedau). In bare chippings at edge of old railway line near peat milling works at Whixall Moss, Bettisfield, SJ478.367, D.J.Evans, 2008.
- +75/8.142. **Rubus ulmifolius**, [Elm-leaved Bramble]. Planted near Burton, SJ3.5(P), J.Shanklin, 2008. 1st recent record.
- +75/21.5. **Rosa spinosissima** (Burnet Rose) (Rhosyn Bwrned). Llanefydd, SH973.715(Q), J.A.Green, 2008.
- +75/21.19. **Rosa micrantha** (Small-flowered Sweet-briar) (Drysiën Bêr Fân-flodeuog). Quarry, Clocaenog near Llangollen, SJ038.521, J.A.Green, 2008.
- +75/22.3. **Prunus cerasifera** (Cherry Plum) (Coeden Goeg-geirios). Denbigh, SK0.6, J.A.Green, 2007.
- +75/22.14. **Prunus laurocerasus** (Cherry Laurel) (Coeden Lawrgeirios). Bryneglwys, SJ1.4; +Ruthin, SJ1.5; both J.A.Green, 2007.
- *75/35.4. **Crataegus crus-galli** (Cockspurthorn) (Draenen Wen Sbardunog). Denbigh, SK0.6, J.A.Green, 2007. 1st record.
- +75/35.8. **Crataegus laevigata** (Midland Hawthorn) (Draenen Wen Lefn). ‡By River Conwy, SH7.5; +Rhos on Sea, SH8.8; +Holt, SJ4.5; all J.A.Green, 2007.
- +75/27.2. **Malus domestica** (Apple) (Coeden Afalau). Planted near Rossett, SJ3.5(U), J.Shanklin, 2008.
- +77/7.1. **Anthyllis vulneraria** (Kidney Vetch) (Plucen Felen). Minera Quarry, SJ2.5(L), D.Williams, 2008.
- +77/14.1. **Vicia orobus** (Wood Bitter-vetch) (Ffachysen Chwerw). Llyn Brenig, SH9.5, J.A.Green, 2007.
- +77/15.12. **Lathyrus nissolia** (Grass Vetchling) (Ythysen Feinddail). Wrexham Industrial Estate, Wrexham, SJ389.502, T.Knight, 2007.
- +77/25.2. **Genista tinctoria** (Dyer's Greenweed) (Melynog y Waun). Pant Farm near Rhosllanerchrugog, Llangollen, SJ293.458, T.Knight, 2008.
- +77/26.1x2. **Ulex europaeus** × **U. gallii** (a hybrid gorse). Llanefydd, SH972.718(Q), J.A.Green, 2008. 1st or 2nd record.
- +85/1.1. **Cornus sanguinea** (Dogwood) (Cwyrwsyn). Pisgah quarry, Llangollen, SJ267.407, J.A.Green, 2007.
- +88/1.1. **Euonymus europaeus** (Spindle) (Piswydden). Bryneglwys, SJ1.4, J.A.Green, 2007.

- +‡90/1.1. **Buxus sempervirens** (Box) (Pren Bocs). Ruthin, SJ1.5, J.A.Green, 2007.
- *‡91/1.2. **Mercurialis annua** (Annual Mercury) (Bresychen-y-cwn Flynyddol). Minera, SJ2.5, J.A.Green, 2007.
- +‡91/2.9. **Euphorbia lathyris** (Caper Spurge) (Llaethlys Caprys). Near Burton Green, SJ3.5(P), J.Shanklin, 2008.
- +‡91/2.10. **Euphorbia exigua** (Dwarf Spurge) (Corlaethlys). Wrexham Industrial Estate, Wrexham, SJ392.502, T.Knight, 2008.
- +94/1.4. **Linum catharticum** (Fairy Flax) (Llin y Tylwyth Teg). Moel Famau, SJ199.611, D.Williams & J.A.Green, 2008.
- +‡98/1.1. **Aesculus hippocastanum** (Horse-chestnut) (Castanwydden y Meirch). Llandynan, SJ1.4(X), D.Williams, 2008.
- +106/1.2.b. **Hedera helix** ssp. **hibernica** (Atlantic Ivy) (Iorwg yr Iwerydd). Near Rossett, SJ3.5(U), J.Shanklin, 2008.
- +107/2.1. **Sanicula europaea** (Sanicle) (Clust yr Arth). Nant Mill, SJ2.5(V), D.Williams, 2008.
- +107/19.7. **Oenanthe aquatica** (Fine-leaved Water-dropwort) (Cegiden-y-dŵr Fanddail). Pond on Wrexham Industrial Estate, Wrexham, SJ388.501, 2007. +Pond in Maelor School grounds, Bettisfield, SJ415.397, T.Knight; both T.Knight.
- +107/22.1. **Silaum silaus** (Pepper-saxifrage) (Ffenigl yr Hwch). Wrexham Industrial Estate, Wrexham, SJ35, T.Knight, 2008.
- +107/28.2. **Apium nodiflorum** (Fool's-water-cress) (Dyfrforonen Swp-flodeuog). Near Burton Green, SJ3.5(P), J.Shanklin, 2008.
- +107/31.1. **Cicuta virosa** (Cowbane) (Buladd). Two ponds near Penley, Worthenbury, SJ423.401, T.Knight, 2007.
- 107/41.1.b. **Heracleum sphondylium** ssp. **flavescens** (Hogweed) (Efwr). R. Conway, SH7.5, J.A.Green, 2007.
- +107/44.1. **Daucus carota** (Carrot) (Moronen). Moel Famau, SJ199.611, D.Williams & J.A.Green, 2008.
- +108/5.2. **Gentianella campestris** (Field Gentian) (Crwynllys y Maes). Eryrys, Minera, SJ200.576, J.A.Green, 2008.
- +‡110/9.1. **Datura stramonium** (Thorn-apple) (Afal Dreiniog). Garden weed, Moel Famau, SJ195.625, J.Phillips, conf. J.A.Green, 2007.
- +111/3/2. **Calystegia sepium** (Hedge Bindweed) (Taglys y Perthi). Llandynan, SJ1.4(X), D.Williams, 2008.
- 116/1.1. **Lithospermum purpureocaeruleum** (Purple Gromwell) (Maenhad Gwyrdilas). Patch 5x5m, in deep shade behind bared wire fence, no flowers seen, Denbigh, SJ049.666, J.A.Green, 2007. Update of record.
- +116/2.1. **Echium vulgare** (Viper's-bugloss) (Gwiberlys). Wrexham Industrial Estate, Wrexham, SJ391.501, T.Knight, 2008.
- +116/15.09. **Myosotis ramosissima** (Early Forget-me-not) (Sgorpionllys Cynnar). Glyndyfrdwy, SJ1.4(L), D.Williams, 2007.
- +118/1.1. **Stachys officinalis** (Betony) (Cribau San Ffraid). Betws yn Rhos, SH9.7(B), D.Williams, 2008.
- +118/1.5x6. **Stachys xambigua** (*S. sylvatica* x *S. palustris*) (Hybrid Woundwort) (Briwllys Croesryw). Llandynan, SJ1.4(X), D.Williams, 2008, conf. J.A.Green. 5th record.
- +118/2.1. **Ballota nigra** (Black Horehound) (Marddanhadlen Ddu). Near Burton Green, SJ3.5(P), J.Shanklin, 2008.
- +118/4.1. **Lamiastrum galeobdolon** (Yellow Archangel) (Marddanhadlen Felen). Nant Mill, SJ2.5(V), D.Williams, 2008. 2nd record.
- +‡118/6.3. **Galeopsis speciosa** (Large-flowered Hemp-nettle) (Y Benboeth Amryliw). Farmland near Fenn's Moss, Bettisfield, SJ478.374, T.Knight, 2008.
- +118/6.4. **Galeopsis tetrahit** (Common Hemp-nettle) (Y Benboeth). Rhyd y Foel, SH9.7(C), D.Williams, 2008.

- +118/6.5. *Galeopsis bifida* (Bifid Hemp-nettle) (Y Benboeth Hollt). Llanefydd, SH973.715(Q), J.A.Green, 2008. 5th record.
- +118/12.1. *Ajuga reptans* (Bugle) (Glesyn y Coed). Bryneglwys, SJ1.4, J.A.Green, 2007.
- +118/18.5. *Clinopodium acinos* (Basil Thyme) (Brenhinllys y Maes). Llangollen, SJ2.4, J.Lawton Roberts, 2007.
- +118/20.1. *Origanum vulgare* (Wild Marjoram) (Penrhudd). Rhyd y Foel, SH9.7(C), D.Williams, 2008.
- *‡118/23.6. *Mentha requienii* (Corsican Mint) (Mintys Corsica). Denbigh, SJ0.6, J.A.Green, 2007.
- +121/1.4. *Plantago media* (Hoary Plantain) (Llyriad Llwyd). N of Graianrhyd, SJ210.571, D.Williams, 2008.
- +123/4.1. *Ligustrum vulgare* (Wild Privet) (Yswyddden). Near Rossett, SJ3.5(U), J.Shanklin, 2008.
- +‡123/4.2. *Ligustrum ovalifolium* (Garden Privet) (Yswyddden yr Ardd). Ruthin, SJ1.5, J.A.Green, 2007.
- +124/1.7. *Verbascum thapsus* (Great Mullein) (Pannog Felen). Llandynan, SJ1.4(X), D.Williams, 2008.
- +‡124/1.12. *Verbascum lychnitis* (White Mullein) (Pannog Wen). A483 embankment near Gresford, Wrexham, SJ339.541, T.Knight, 2008, Known here for several years.
- +124/2.1. *Scrophularia nodosa* (Common Figwort) (Gwrnerth). Llandynan, SJ1.4(X), D.Williams, 2008.
- +124/16.8. *Veronica montana* (Wood Speedwell) (Rhwyddlwyn y Coed). Bryneglwys, SJ1.4, J.A.Green, 2007; +Nant Mill, SJ2.5(V), D.Williams, 2008.
- +124/16.9. *Veronica scutellata* (Marsh Speedwell) (Rhwyddlwyn Culddail y Gors). Llandynan, SJ1.4(X), D.Williams, 2008.
- +‡124/16.24.a. *Veronica hederifolia* ssp. *hederifolia* (Ivy-leaved Speedwell) (Rhwyddlwyn Dail Eiddew). Nant Mill, SJ2.5(V), D.Williams, 2008.
- +124/19.3. *Melampyrum pratense* (Common Cow-wheat) (Gliniogai). Rhyd y Foel, SH9.7(C), D.Williams, 2008. 4th record.
- +124/25.1. *Pedicularis palustris* (Marsh Lousewort) (Melog y Waun). Clocaenog, SJ0.5, J.A.Green, 2007.
- 125/2.2. *Orobancha rapum-genistae* (Greater Broomrape) (Gorfanhadlen Fawr). About 12 spikes under woody gorse, N side of Castell Dinas Bran, Llangollen, SJ226.432, R.Jones, 2008. 1st record at this site since 1973.
- +130/3.1. *Sherardia arvensis* (Field Madder) (Mandon Las yr Ŷd). Maeshafn, SJ200.612, D.Williams & J.A.Green, 2008.
- +130/6.7. *Galium mollugo* (Hedge Bedstraw) (Briwydd y Clawdd). Moel Famau, SJ199.611, D.Williams & J.A.Green, 2008.
- +131/2.1. *Viburnum opulus* (Guelder-rose) (Gwifwrnwydden y Gors). Near Rossett, SJ3.5(U), J.Shanklin, 2008.
- +132/1.1. *Adoxa moschatellina* (Moschatel) (Mwsglys). Nant Mill, SJ2.5(V), D.Williams, 2008.
- +‡133/3.1. *Centranthus ruber* (Red Valerian) (Triaglog Goch). Near Rossett, SJ3.5(U), J.Shanklin, 2008.
- +134/3.1. *Knautia arvensis* (Field Scabious) (Clafrllys y Maes). N of Graianrhyd, SJ210.571, D.Williams, 2008.
- +134/4.1. *Succisa pratensis* (Devil's-bit Scabious) (Tamaid y Cythraul). Inside edge of wood S of stones, 70m E of stile, Minera, SJ263.517, D.Williams & J.A.Green, 2008.
- +‡135/3.1. *Arctium lappa* (Greater Burdock) (Cyngaf Mawr). Rhyd y Foel, SH9.7(C), D.Williams; +Near Rossett, SJ3.5(U), J.Shanklin; both 2008.
- +135/21.3. *Sonchus oleraceus* (Smooth Sow-thistle) (Llaethysgallen Lefn). Near Burton Green, SJ3.5(P), J.Shanklin, 2008.
- +‡135/22.1. *Lactuca serriola* (Prickly Lettuce) (Letusen Bigog). Llandynan, SJ1.4(X); +Nant Mill, SJ2.5(V); both D.Williams, 2008.
- +135/27.2. *Pilosella officinarum* (Mouse-ear-hawkweed) (Clust-y-llygoden). Rhyd y Foel, SH9.7(C), D.Williams, 2008.

- +135/30.1. *Filago vulgaris* (Common Cudweed) (Edafeddog Lwyd). Panorama near Trevor, Llangollen, SJ232.433, T.Knight, 2008.
- +135/40.1. *Solidago virgaurea* (Goldenrod) (Eurwialen). Llandynan, SJ1.4(X), D.Williams, 2008.
- +‡135/40.3. *Solidago canadensis* (Canadian Goldenrod) (Eurwialen Canada). Denbigh, SJ0.6; +Llangollen, SJ2.4; both J.A.Green, 2007.
- +‡135/56.1. *Chrysanthemum segetum* (Corn Marigold) (Melyn yr Yd). Sloping field near crossroads between Betws yn Rhos & Dawn, SH878.735, W.McCarthy, 2008.
- +‡135/59.1. *Matricaria recutita* (Scented Mayweed) (Amranwen Bêr). Near Burton Green, SJ3.5(P), J.Shanklin, 2008.
- +‡135/59.2. *Matricaria discoidea* (Pineappleweed) (Chwynnyn Pinafal). Near Burton Green, SJ3.5(P), J.Shanklin, 2008.
- +135/62.12. *Senecio erucifolius* (Hoary Ragwort) (Creulys Lwyd). Llandynan, SJ1.4(X), D.Williams, 2008.
- +‡135/62.4. *Senecio fluviatilis* (Broad-leaved Ragwort) (Creulys Lydanddail). Worthenbury, SJ4.4, Anon., 2007.
- +135/70.1. *Tussilago farfara* (Colt's-foot) (Carn yr Ebol), Llandynan, SJ1.4(X), D.Williams, 2008.
- 135/81.2. *Bidens tripartita* (Trifid Bur-marigold) (Grabau Teiran). Worthenbury, SJ4.4, Anon., 2007.
- +142/1.7. *Potamogeton alpinus* (Red Pondweed) (Dyfrllys Coch). Canal, Llangollen, SJ204.436, J.L.Roberts, det. C.D.Preston, 2006; +Field near Penley, Bettisfield, SJ422.398, T.Knight, conf. N.T.H.Holmes, 2008.
- +‡151/1.2. *Juncus tenuis* (Slender Rush) (Brwynen Fain). Pont Petreyal, SJ0.5(F), D.Williams, 2008. 3rd record.
- +151/2.2. *Luzula pilosa* (Hairy Wood-rush) (Coedfrwynen Flewog). Nant Mill, SJ2.5(V), D.Williams, 2008.
- +151/2.3. *Luzula sylvatica* (Great Wood-rush) (Coedfrwynen Fawr). Nant Mill, SJ2.5(V), D.Williams, 2008.
- *152/2.2.b. *Trichophorum cespitosum* ssp. *cespitosum* (Deergrass) (Clwbfrwynen y Mawn). Chirk, SJ2.3, S.Stille, 2007. 1st Welsh record.
- +152/3.1. *Eleocharis palustris* (Common Spike-rush) (Ysbigfrwynen). Near Burton Green, SJ3.5(P), J.Shanklin, 2008.
- +152/16.16. *Carex ovalis* (Oval Sedge) (Hesgen Hirgron). Pont Petreyal, SJ0.5(F), D.Williams, 2008.
- +152/16.17. *Carex echinata* (Star Sedge) (Sêr-hesgen). Pont Petreyal, SJ0.5(F), D.Williams, 2008.
- +152/16.27. *Carex pseudocyperus* (Cyperus Sedge) (Hesgen Gynffonnog). Wrexham Industrial Estate, Wrexham, SJ391.507, T.Knight, 2008.
- +152/16.32. *Carex sylvatica* (Wood-sedge) (Hesgen y Coed). Nant Mill, SJ2.5(V), D.Williams, 2008.
- *152/16.47. *Carex pallescens* (Pale Sedge) (Hesgen Welw). Forest road verge near Pont Petreyal, Clocaenog, SJ038.521, J.A.Green, 2008. 1st record.
- +153/12.3. *Festuca gigantea* (Giant Fescue) (Peiswellt Mawr). Pont Petreyal, SJ0.5(F); +Llandynan, SJ1.4(X); both D.Williams, 2008.
- +153/18.12. *Poa nemoralis* (Wood Meadow-grass) (Gweunwellt y Coed). Llandynan, SJ1.4(X), D.Williams, 2008.
- +153/24.2. *Glyceria fluitans* (Floating Sweet-grass) (Melyswellt Arnofiol). Pont Petreyal, SJ0.5(F), D.Williams, 2008.
- +153/24.3. *Glyceria declinata* (Small Sweet-grass) (Melyswellt Llwydilas). Llandynan, SJ1.4(X), D.Williams, 2008.
- +153/51.1. *Bromopsis ramosa* (Hairy-brome) (Pawrwellt Blewog). Bryneglwys, SJ1.4, J.A.Green, 2007.
- +153/64.1. *Phragmites australis* (Common Reed) (Corsen). Near Burton Green, SJ3.5(P), J.Shanklin, 2008.
- +154/1.2. *Sparganium emersum* (Unbranched Bur-reed) (Cleddlys Di-gainc). Llandynan, SJ1.4(X). D.Williams, 2008. 3rd record.
- +155/1.1. *Typha latifolia* (Bulrush) (Cynffon y Gath). Llandynan, SJ1.4(X), D.Williams, 2008.

- +158/33.5. **Narcissus pseudonarcissus** (Daffodil) (Cenhinen-Beidr Wyllt). Coed Bryn-eithin, Maeshafn, SJ221.671, T.Knight, 2007; +Many hundreds W of path, Cilygroeslwyd Wood, Ruthin, SJ123.556, J.A.Green, 2008. 2nd & 3rd records.
- +162/3.4. **Epipactis helleborine** (Broad-leaved Helleborine) (Y Galdrist Lydanddail). In chippings at edge of old railway line by old peat milling works at Whixall Moss, Bettisfield, SJ478.367, A.Hazlehurst, 2008.
- +162/18.5. **Dactylorhiza purpurella** (Northern Marsh-orchid) (Tegeirian-y-gors Gogleddol). Pont Petreyl, SJ0.5(F), D.Williams, 2008.

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

- +‡77/15.12. **Lathyrus nissolia** (Grass Vetchling) (Ytbyesen Feinddail). Disturbed ground, Saith Ffynnon, Whitford, SJ156.776, J.Miller, 2008.
- 107/17.1. **Crithmum maritimum** (Rock Samphire) (Corn-carw'r Môr). Dunes, Gronant, SJ085.844, A.Mclay, 2008. 3rd post 1970
- +108/5.4. **Gentianella amarella** (Autumn Gentian) (Crwynllys yr Hydref). Limestone quarry, Graig Fawr, Meliden, SJ059.804, A.Mclay, 2008. 1st recent record for hectad.
- +116/2.1. **Echium vulgare** (Viper's-bugloss) (Gwiberlys). Disturbed ground on old industrial site, Rhydymwyn Valley Nature Reserve, SJ207.663, J.D.Shanklin & BSBI, 2007.
- +124/16.12. **Veronica catenata** (Pink Water-Speedwell) (Graeanllys-y-dŵr Rhosliw). Old disused industrial site, Rhydymwyn Valley Nature Reserve, SJ2.6D, J.D.Shanklin & BSBI, 2007.
- *‡135/62.3. **Senecio inaequidens** (Narrow-leaved Ragwort) (Creulys Gulddail). Garden weed, in crack between wall and tarmac, Trelogan, SJ118.799, J.Phillips, 2008. 1st record.
- +159/5.8. **Iris foetidissima** (Stinking Iris) (Gellesgen Ddrewllyd). Roadside ditch, Ferry Lane, Saltney, SJ373.663, J.Phillips, 2008.
- +162/3.7. **Epipactis phyllanthus** (Green-flowered Helleborine) (Y Galdrist Felynwerdd). Under beech, Loggerheads, SJ202.626, M.Brummage, 2008. 1st recent record for hectad.
- +162/5/1. **Neottia nidus-avis** (Bird's-nest Orchid) (Tegeirian Nyth Aderyn). Under beech, Loggerheads, SJ202.678, M.Brummage, 2008.

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

- *4/1a. **Juniperus communis** ssp. **communis** (Common Juniper) (Merywen). Coastal ravine, Holyhead Mountain, SH21.82, B.Jones, 2004, det. J.Squirrell & P.M.Hollingsworth. Subsp. only det. using molecular markers in 2008. Species 1st recorded by I.Bullock in 1978 and variously identified as ssp. *nana* and ssp. *hemisphaerica* but these records should be deleted.
- +28/13.10. **Ranunculus auricomus** (Goldilocks Buttercup) (Blodyn-ymenyn Peneuraidd). Hazel woodland, Rhuddlan Fawr, SH48.81, I.Bonner, 2008.
- *‡33/1.1x3. **Ulmus xvegeta** (**U. glabra** x **U. minor**) (a hybrid elm). Single tree (possibly planted) on roadside hedge, Llandegfan, SH56.73, A.Dixon, 2008, det. P.Denne.
- +57/1.7. **Viola lactea** (Pale Dog-violet) (Fioled Welw). Coastal grassland, Porth Swtan, SH30.89, I.Bonner, 2008.
- *‡65/02.arb. **Rhododendron arboreum** (Tree Rhododendron). Woodland, Beaumaris, SH59.75, N.Brown, 2008.
- +69/6.3. **Anagallis minima** (Chaffweed) (Gwlyddyn-Mair Bach). Path edge, Porth Swtan, SH30.89, J.Bratton, 2008, conf. W.McCarthy.
- *‡74/7.1. **Tolmiea menziesii** (Pick-a-back-plant) (Crydllys). Roadside, Beaumaris, SH59.75, I.Bonner, 2008.
- +107/43.3. **Torilis nodosa** (Knotted Hedge-parsley) (Troed-y-cyw Clymog). Rocky knoll, Llanfaethlu, SH30.88, I.Bonner, 2008.

- +‡116/4.7. **Symphytum caucasicum** (Caucasian Comfrey) (Cyfardwf y Cawcasws). Well established in rough ground, Lleiniog, SH62.79, G.Radford, 2008. **herb.I.R.Bonner**. 2nd record.
- +‡116/6.4. **Anchusa arvensis** (Bugloss) (Llysiau'r-gwrid y Tir âr). Potato field, Llanfaethlu, SH30.88, I.Bonner, 2008.
- +‡124/13.4. **Linaria repens** (Pale Toadflax) (Llin-y-llyffant Gwelw). Extends over several square metres of sand dune, Newborough Warren NNR, SH43.62, I.Bonner, 2008, conf. A.O.Chater.
- *‡129/1.9. **Campanula portenschlagiana** (Adria Bellflower) (Clychlys Adria). Sea wall, Beaumaris, SH60.75, E.Phenna, 2008. 1st record.
- +130/7.1. **Cruciata laevipes** (Crosswort) (Llysiau'r Groes). Footpath edge, Llanerchymedd, SH41.85, D.Evans, 2008. Only the 3rd record for v.c. 52.
- *135/6.9×1. **Cirsium xcelakovskianum** (**C. palustre** × **C. arvense**) (a hybrid thistle). Rough grassland, Lligwy, SH496.866, C.Aron, 2008, **herb.I.R.Bonner**, conf. K.Walker.
- *‡135/62.3. **Senecio inaequidens** (Narrow-leaved Ragwort) (Creulys Gulddail). Beside buildings, Gallows Point, Beaumaris, SH598.753, J.Bratton, 2008, **herb.N.Brown**, conf. W.McCarthy.
- *‡147/2.1. **Lysichiton americanus** (American Skunk-cabbage) (Pidyn-y-gog Americanaidd). Streamside, Talwrn, SH49.78, I.Bonner, 2008. Spreading downstream from a pool in SH48.78.
- +148/2.1. **Lemna gibba** (Fat Duckweed) (Llinad Crythog). Shallow pool, Glyn Dwr, Valley, SH28.79, R.Lansdown, 2008. 2nd record and 1st since 1964.
- +152/16.42. **Carex punctata** (Dotted Sedge) (Hesgen Fannog). Single clump on sandy bank, Newborough Forest, SH38.64, I.Bonner, 2008, det. A.O.Chater. 2nd recent record.
- +153/21.2. **Catapodium marinum** (Sea Fern-grass) (Gwenithwellt y Morfa). Rocky knoll c.1km. inland from the coast, Llanfaethlu, SH30.88, I.Bonner, 2008.
- *‡153/60.1. **Triticum aestivum** (Bread Wheat) (Gwenith). ©Laneside, Llanfair PG, SH534.725, P.Denne, 2008. Does not seem to have been formally recorded before.
- *‡159/5.1. **Iris germanica** (Bearded Iris) (Gellesgen Farfog). ©Old heap, Lleiniog marsh, SH619.793, E.Phenna, 2008. 1st record but only as a casual?

THE PLANTLIFE WALES NEWSLETTER – 9

Tir Gofal and plant conservation

The link between the intensification of agriculture and the resulting loss of wildlife over the last 40 years has been demonstrated many times, including the dramatic decline of arable plants shown in the *New Atlas* and reductions in populations of species as diverse as water voles, lapwings, pipistrelle bats and high brown fritillaries. In Wales, such losses of plants from agricultural habitats are well known, especially arable species such as *Galeopsis segetum* (Downy Hemp-nettle, last recorded in 1975 from near Bangor), *Silene gallica* (Small-flowered Catchfly, lost from 93% of historical sites) and *Scandix pecten-veneris* (Shepherd's-needle, lost from 25 of 30 sites). Agricultural intensification applies just as much to non-arable habitats of course though, and many grassland and heathland species have suffered similar fates, such as *Trollius europaeus* (Globeflower, lost from nearly 40% of sites in Carmarthenshire and Ceredigion), *Gentianella campestris* (Field Gentian, lost from 72% of hectads) and *Dactylorhiza viridis* (*Ceologlossum viride*) (Frog Orchid, lost from 69% of hectads), all of which have now been added to the Section 42 list of priorities for conservation in Wales.

In response to such species declines in Britain and across Europe, the Common Agricultural Policy (CAP) was reformed in 1992 to reduce agricultural production and protect and enhance the environment. One outcome of this reform is the various agri-environment schemes (AES) that aim to improve conditions for wildlife on farms by encouraging farmers to undertake sympathetic management, such as leaving margins of arable fields unsprayed and reducing livestock levels on heaths, in return for a payment to cover the resultant economic losses.

In Wales, the development of a dedicated all-Wales AES began in 1992, with the introduction of Tir Cymen in three pilot areas (Meirionnydd, Dinefwr and Swansea). Although there was no strong evidence of benefits to wildlife, Tir Cymen was considered successful from a socio-economic viewpoint and led to the introduction of the Wales-wide Tir Gofal Scheme in 1999. This whole-farm scheme aims to encourage agricultural practices that will protect and enhance the landscapes of Wales, their cultural features and associated wildlife. There are currently 332,643 ha of land in Tir Gofal through 2969 farm agreements.

In order for payments to be made, farmers enter into agreements whereby various management packages, called prescriptions, are undertaken for a period of between 5 and 10 years. Each prescription is tailored towards benefiting a particular habitat type (such as lowland coastal heath, unimproved neutral grassland and broadleaved woodland) and therefore hopefully the species they support as well. Prescriptions include a range of management actions, such as using low livestock rates and certain grazing dates and not using fertilizer or pesticides, as well as payments for capital work such as blocking drainage ditches, restoring hedgerows and controlling rhododendron. Some of the prescriptions are mandatory (if the habitat is present on the farm, it has to be undertaken), while others are optional (at the discretion of the farmer and project officer).

Many AES Schemes across Europe suffer from a lack of monitoring. Ten years after the launch of Tir Gofal, and despite some monitoring of basic habitat quality, there has been no assessment of whether it is actually benefiting the priority species it's meant to help protect. Such monitoring would demonstrate that the prescriptions are appropriate (i.e., they have the potential to benefit priority species, or that they need modifying), that the right prescriptions are being taken up in the right areas (so that, for example, prescriptions benefiting arable plants are being implemented in areas rich in arable species), and that populations of priority species are actually stable or increasing on farms implementing the prescriptions. Plantlife

Wales has long been lobbying for monitoring of species on Tir Gofal farms, and a consortium of NGOs (led by RSPB and including Plantlife Wales, Butterfly Conservation, the Welsh Wildlife Trusts and the Bat Conservation Trust) has now been funded by the Welsh Assembly Government (who administer Tir Gofal) to undertake monitoring of priority species.

The monitoring project is in two stages and we are about to embark on the second stage. The first stage was a desk-study and asked the question, "What proportion of current Tir Gofal agreements provide all (or some) of the management needs of priority species?" In other words, are the prescriptions appropriate and do they have the potential to deliver the habitat requirements of priority species? If so, what proportion of agreements are undertaking these prescriptions and (critically) are they being undertaken in the right areas? The second stage of the study is field-based and monitors the performance of priority species on Tir Gofal farms as opposed to those on non-Tir Gofal farms. This three-year monitoring programme started this spring and we await results with interest, as the first part has thrown up some fascinating results.

Scoring prescriptions

We decided to examine four groups for which Tir Gofal is often described as benefiting: arable plant species (including *Scandix pecten-veneris*, *Silene gallica* and *Scleranthus annuus*), lowland heathland species (*Pilularia globulifera*, *Chamaemelum nobile*, *Lycopodiella inundata* and *Ranunculus tripartitus*), Juniper (in the uplands) and Pink Waxcap fungi. I'll describe the first three in detail here.

Within Tir Gofal there are 130 prescriptions (and their variations) and capital works. For each of these, each species in the study was scored according to whether the prescription could provide **all** the needs of the species (score 3), **some** of the needs of the species (score 1), **none** of the needs (score 0), or if it could be **potentially damaging** to the species (score -1). For example, the "Uncropped fallow margins" prescription provides all the needs of arable plants (no competition from crop, an unsprayed and unfertilized headland, and annual cultivation in either spring or autumn) so this scored 3. The "Unsprayed cereal, rape & linseed crops" prescription, however, scored 1 as the arable plants would have to compete with the crop, fertilizer is allowed and spring cultivation is preferred. By contrast, the "Rough grass margins" prescription scored -1 (potentially damaging) for arable plants as it can put uncultivated permanent grass in the sites where arable species occur.

Key areas

Next, it was important to be able to ask whether the prescriptions were being taken up in the most important areas for the species in question - it would be of little benefit to priority heathland species if heathland prescriptions were mostly being taken up in the Brecon Beacons, where there is much heathland but very few of the priority heathland species in the study. Key area maps were therefore constructed around clusters of sites where the priority species occurred.

Can Tir Gofal deliver the needs of priority arable species?

Throughout Wales, 90.3% of Tir Gofal agreements include prescriptions that are of at least some benefit to arable plants. This sounds incredibly encouraging, and a potential basis for a massive recovery of these species. However, arable species are highly localised within the farming landscape (they are largely confined to field edges and gateways with appropriate soil conditions) and dispersal is limited, so it is much more appropriate to examine the area of land and the number of fields that are under arable prescriptions. The area of land under management beneficial to arable plants within Tir Gofal throughout Wales is very small, just 3033 ha (2.2% of Tir Gofal land). In other words, a large number of farms have very small

bits of land under these prescriptions. The vast majority of this area is covered by prescriptions that only deliver some of the needs of arable plants (mainly through the "Unsprayed cereal, rape and linseed crops" prescription); only 84 ha (0.1%) of Tir Gofal land under prescriptions that deliver all the needs of arable plants (through the "Uncropped fallow margins" prescription).

More worryingly, an almost identical area (3072 ha or 2.2%) of land is under management that is detrimental to arable species (mainly through the "Spring-sown cereals undersown with grasses and legumes" prescription). When looking at the number of individual fields, though, many more are under beneficial prescriptions than detrimental ones (57700 fields compared to 6700). However, this means that the fields with beneficial prescriptions are much smaller than those with detrimental ones. It appears that it's the smaller fields that hold our remaining arable flora, while larger fields are being managed unsympathetically; a conclusion that will surely ring true for anyone with experience of surveying arable fields.

There is considerable variation in the number of fields with Tir Gofal arable prescriptions between vice-counties (*see* Figure 1). Encouragingly, Pembrokeshire, a classic area for arable plants, has the greatest proportion of fields delivering beneficial options (66.5% of Tir Gofal fields within the county), with Carmarthenshire (47.9%), Ceredigion (43.8%) and Breconshire (41.3%) following closely behind. Given the work undertaken in Pembrokeshire to improve the uptake of arable Tir Gofal options this is encouraging. Unfortunately however, Glamorgan, another county rich in arable plant species, has just 37.3% of Tir Gofal fields with beneficial arable options. The county with the lowest proportion of prescriptions beneficial to arable plants is Caernarfonshire (8.1%); although the Lleyn peninsula is rich in arable plant species, it is only a small proportion of a large, mostly pastoral county.

When looking at the "Uncropped fallow margin" prescription (the only one delivering all the needs of arable plants), all counties have a tiny proportion; Monmouthshire has the highest at 1.3% of fields, but Caernarfonshire, Ceredigion, Meirionnydd and Radnorshire have none.

There is very little difference in the uptake of beneficial Tir Gofal arable prescriptions within or outside the arable plant Key Areas, although there is a marginally greater proportion of land area inside the Key Area, perhaps indicating that larger fields are being taken into prescriptions inside Key Areas. The need for the adoption of arable options has been widely publicised and encouraged through training courses, lectures and circulation of literature. Either these are having little effect or, perhaps more likely given the high level of agreement take-up, only a few land parcels are being placed under these options, and these are generally tiny fragments of land.

Can Tir Gofal deliver the needs of priority heathland species?

Heathland is a very distinct and well-understood habitat type; there are specific Tir Gofal prescriptions designed to improve heathland management and the habitat is readily identifiable in the field, so appropriate prescriptions can be recommended and allocated by project officers accordingly. For these reasons, the uptake of options potentially beneficial to heathland priority plant species is very good throughout Wales. Overall, 45.5% of Tir Gofal agreements include prescriptions that deliver some of the needs of heathland plants, while an encouraging 30.7% deliver all of their needs.

Since heathland does not usually occur in "fields", it is more sensible to examine the area of land under agreements. The area of Tir Gofal land delivering all the needs of heathland priority plants throughout Wales is very high, 29259 ha (21.0% of the total Tir Gofal area), while that delivering some of their needs is also excellent, at 19775 ha (14.2% of the total).

The large area delivering detrimental management (12380 ha or 8.9%), however, must also be noted, and this comes mostly from the "Bog" and "Reedbeds, swamps and fens" prescriptions, which encourage a raising and stabilisation of water levels and discourage grazing, practices that do not encourage priority heathland species (such as *Pilularia globulifera* and *Ranunculus tripartitus*) when found in these habitats.

Not surprisingly for a habitat that is unequally distributed throughout Wales, there is considerable variation between the uptake of Tir Gofal options beneficial to heathland priority plant species amongst vice-counties (see Figure 2). Highest overall delivery is achieved in Radnorshire (22.8% of the Tir Gofal area in the county delivering some needs of heathland plant species, 30.6% delivering all of their needs), followed by Caernarfonshire (12.0% some, 31.3% all), Breconshire (19.8% some, 18.5% all), Denbighshire (15.1% some, 22.9% all) and Ceredigion (21.0% some, 16.7% all). All these counties are rich in heathland. In eastern Wales, Monmouthshire and Flintshire have very little heathland and consequently very much lower proportions of appropriate prescriptions. However, a startling exception to this good news is Pembrokeshire (15.2% of TG area delivering some needs, and 2.4% delivering all needs). With its high proportion of lowland coastal heath and its density of heathland priority species, it's difficult to account for this, especially given the focus on the conservation of these habitats there has been in this county. It may be that most surviving heaths are in formally protected areas (such as SSSIs) and there is little benefit from including them in the Tir Gofal scheme. These arguments may also apply to Glamorgan, which also has a relatively low delivery of Tir Gofal options for heathland plants (17.4% some and 13.2% all), but, in this case, the heathland interest is mainly confined to the Gower peninsula, a relatively small area compared to the rest of the county.

It is also interesting to note the high proportion of prescriptions detrimental to heathland plants in some counties. Meirionnydd is the worst of these (14.7%) followed by Montgomeryshire and Radnorshire (both 13.5%), Denbighshire (11.9%) and Ceredigion (11.1%).

As with arable species, there is little preferential uptake of heathland prescriptions within the heathland plant Key Areas, maybe because heathland is such a widespread habitat in Wales. Again, the uptake of heathland options within Key Areas must be addressed, especially in Pembrokeshire.

Can Tir Gofal deliver the needs of upland Juniper?

Very few Tir Gofal prescriptions deliver the needs of upland Juniper. However, because the principle prescription that does so ("Upland heath"), applies to a widespread habitat that is abundant in some areas, quite a large proportion of Tir Gofal agreements in Wales (13.8%) include prescriptions that deliver the needs of upland juniper. The other main prescription delivering at least some of the needs of Juniper ("Unimproved acid grassland") is even more widespread (45.5% of Tir Gofal agreements).

As with heathland, it's more appropriate to look at the area of land under these agreements, as the uplands are not comprised of fields as such. A very large area of land is under prescriptions that meet all or some of the needs of upland Juniper (56724 ha of land or 40.6% of the Tir Gofal area throughout Wales). Encouragingly, prescriptions that have a detrimental effect on upland Juniper make up only a very small area (1461 ha), which come mainly through capital works allowing the burning of heather.

Tir Gofal prescriptions that benefit upland Juniper are clearly distributed in Vice-counties with a large proportion of upland heathland. In Caernarfonshire, 31.6% and 32.8% of the area

of land in Tir Gofal deliver some and all of the requirements of Juniper respectively, and in Merionnydd the figures are 27.3% and 36.3%. Other counties with large upland areas, such as parts of Denbighshire, Montgomeryshire, Breconshire and Radnorshire, all have large proportions of land delivering at least some of the needs of Juniper, while lowland southern counties (Pembrokeshire, Glamorgan and Monmouthshire) have very little.

Of all plant species in this study, Juniper shows the greatest uptake of beneficial Tir Gofal options within its Key Area, partly because the Key Area is very small and precisely defined (based on the remaining fragmentary populations in Snowdonia), and is dominated by upland heath and unimproved acid grassland. The Key Area includes just 48 Tir Gofal agreements covering 2187 ha of land. All these agreements include prescriptions that deliver at least some needs of juniper, and a remarkable 93.8% deliver all its needs. This is reflected in the wild, where regeneration of Juniper is being reported in upland Snowdonia where grazing levels are being reduced through Tir Gofal.

Conclusions and next steps

This study has shown that, while Tir Gofal has the potential to deliver the needs of some priority plant species (especially upland Juniper), there are problems with the poor uptake of the most beneficial prescriptions for other species (particularly in areas where priority species occur) and with the conflicting uptake of detrimental prescriptions. For plants, the area of land under beneficial prescriptions (rather than simply the number of agreements) is crucial. While for heathland species and upland Juniper, a significant area of land is under appropriate management, for arable plants the area is so small and fragmented that a national or regional recovery of species is highly unlikely under Tir Gofal.

Plants are, of course, largely sedentary (at least compared to animals that can more readily move around a landscape) and it is therefore essential that their management needs are provided *in situ*. This normally means within the farm or field in which they grow. While animals can move around a landscape, making use of, for example, seed from an arable area and nest material from a woodland, plants do not have this adaptability and if correct management is not delivered to the sites where they grow, they are in trouble. For this reason, the targeting and uptake of prescriptions in appropriate areas (both Key Areas and to specific farms and fields) is crucial if Tir Gofal is to make a significant contribution to plant conservation.

Most importantly, though, is the need to "ground-truth" these findings, so that the theoretical benefits of Tir Gofal can be tested in the field. Do populations of priority species "do better" on Tir Gofal farms as opposed to those non-Tir Gofal farms? In order to answer this, the next stage of the study is now underway and we are surveying populations of both priority heathland and arable species on 20 Tir Gofal farms and 20 non-Tir Gofal farms over the next three years. If anyone would like to be involved in this monitoring, please do get in touch.

The findings of this study have already contributed to the ongoing review of Agri-environment Schemes. Ironically, however, it has just been announced that all schemes in Wales are to be amalgamated into one new scheme Glastir, and we do not as yet know how current Tir Gofal prescriptions will be translated into the new scheme. What we do know is that other considerations, such as carbon sequestration and water management, will be as equally (if not more) important than biodiversity, and that can only be a cause for concern if agri-environment schemes have any hope of addressing the environmental degradation they were intended to address.

TREVOR DINES, Plantlife Wales Conservation Manager.
trevor.dines@plantlife.org.uk (tel: 01248 387396)

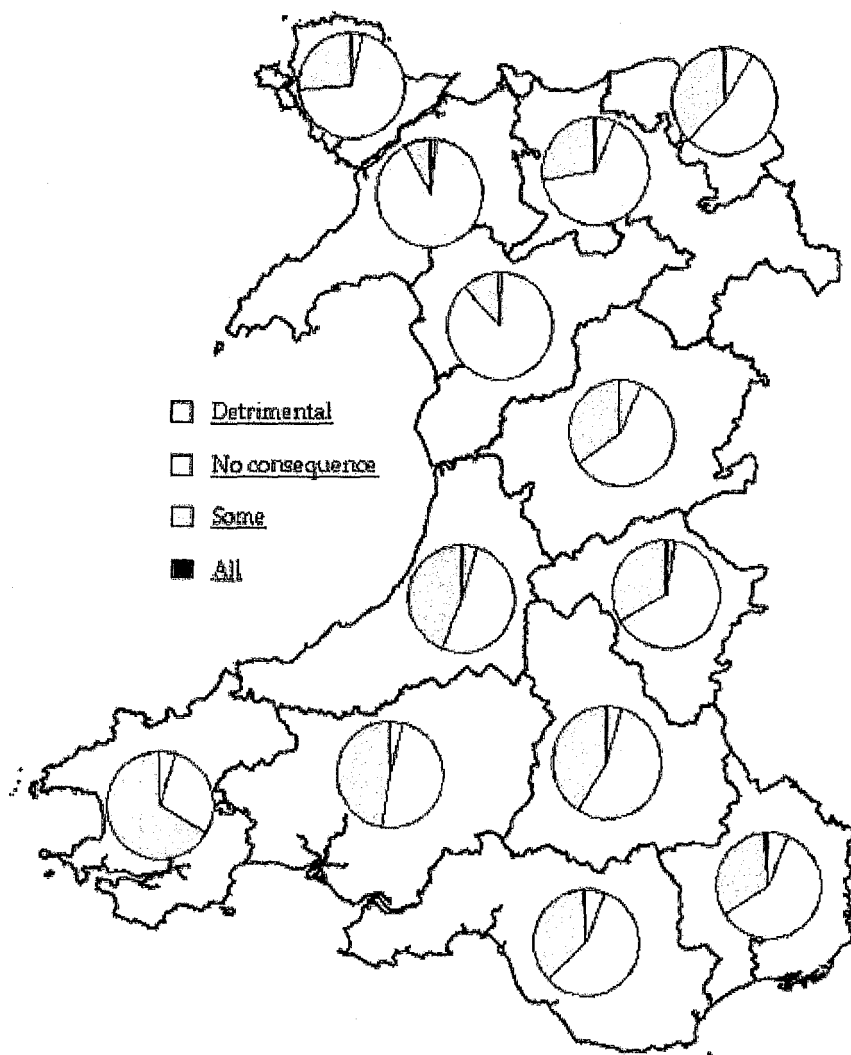


Figure 1. Percentage of fields in each vice-county that deliver Tir Gofal prescriptions affecting arable plant species. Prescriptions may be detrimental to arable plants, have no affect on them, deliver some of their needs, or deliver all of their needs.

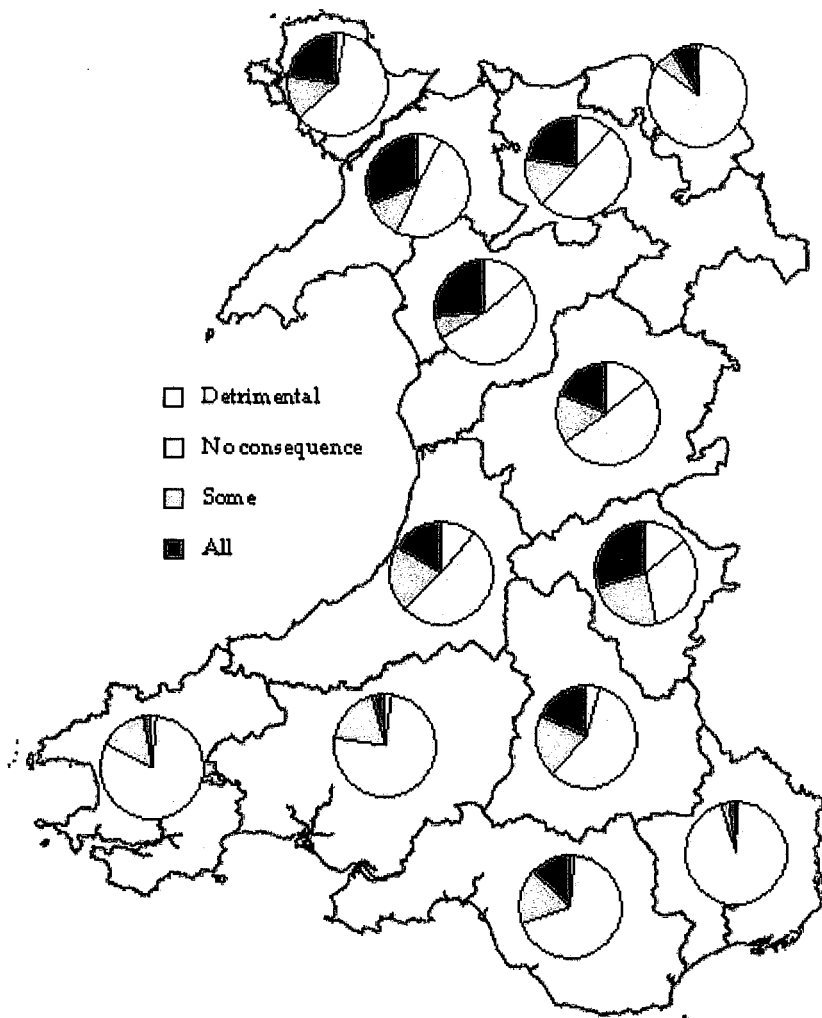


Figure 2. Percentage of Tir Gofal land area within each vice-county that deliver Tir Gofal prescriptions affecting heathland plant priority species. Prescriptions may be detrimental to heathland plants, have no affect on them, deliver some of their needs, or deliver all of their needs.