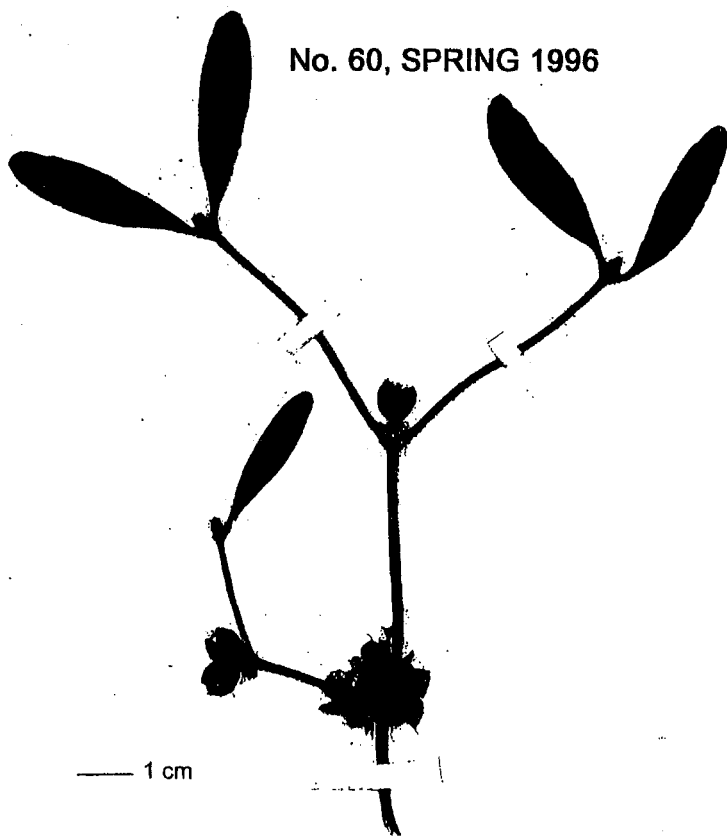


BOTANICAL SOCIETY OF THE BRITISH ISLES

WELSH BULLETIN

Editor : R. D. Pryce

No. 60, SPRING 1996



No 267. *Viscum album*
Common Mistletoe

On an Apple Tree in Upper Bangor

December 17th, 1876. ⁹⁴⁵⁷

Photocopy of specimen of *Viscum album* (Mistletoe) at NMW

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All back issues of the BSBI Welsh Bulletin are still available on request (originals or photocopies). Please send cheque (made payable to BSBI Wales), @ £1 per issue, which includes p & p, to - Dr G. Hutchinson, Department of Botany, National Museum & Gallery, Cathays Park, Cardiff CF1 3NP, specifying the issue number, or year (which would have to include the season or month). Large runs - price negotiable.

EDITORIAL

I am in no doubt that you will all be aware of the Atlas 2000 Recording Scheme in which it is intended to re-record the distribution of all of the vascular plants of the whole of the British Isles at the 10km level in order to provide a complete update of the existing *Atlas of the British Flora*. The recording for the original Atlas was mostly done in the 1950s and therefore, by the time the new work is published, those records will have been around for forty or fifty years. In the intervening period we have had the BSBI Monitoring Scheme, now already ten years old, and more recently Scarce Plants monitoring, but the re-recording of the complete flora has not been tackled. Now, thanks in no short measure to the BSBI President, funding has finally been negotiated and the mechanics of undertaking the task been decided. The next issue of BSBI News will contain detailed instructions for recording.

This issue of the Welsh Bulletin appears at the start of the "official" recording period for the Atlas project. As such, many Welsh vice-county recorders have submitted articles giving an up-to-date report on the state of recording in their vcs. Some require very little extra input to meet the Atlas recording criteria but others will need a good deal of effort to achieve the required coverage in the three field seasons allotted to complete the task.

In my own case, time is the main problem that I am always fighting against and I am sure that other recorders are in the same situation. I would therefore like to appeal to all members, particularly those with time to spare, to become involved by volunteering your skills in order to lighten the load on the recorders. The work of the recorder does not only involve field recording. Many hours are spent preparing master record cards, dealing with records from other sources or inputting records into computer databases in order that the raw data may be analysed and is in a form that can be more easily and quickly abstracted. And that does not include liaison with the county Trusts, contact with CCW, instructing field-workers, gaining access permissions, writing reports, lecturing, etc, etc. Please help!

Many of the field meetings arranged for the next three seasons are aimed at recording for the Atlas in areas needing attention. The greater the number attending these meetings, the more ground will be covered and the more useful recording done. Please make every effort to attend.

My appeal for articles for the Bulletin, printed in the last issue, fell largely upon deaf ears. Particular thanks therefore, to Jean Green for her short note and to Gordon Knight who has again submitted some more interesting observations from Pembrokeshire. Further articles would be most welcome from other members.

Richard Pryce

ANNUAL GENERAL MEETING, 1995

The 33rd Annual General Meeting and 13th Exhibition Meeting of BSBI Wales was held at The Royal Welsh Show ground, Llanelwedd, Builth Wells, Powys on Saturday July 8 1995.

On the Friday, members staying or living in the area enjoyed an evenings visit to a local NNR, Cors y Llyn and on Saturday morning and early afternoon, Ray Woods and Andrew Fergusson of CCW led members in exploring another NNR, Rhosgoch Common and mire, before returning to Llanelwedd for the AGM. A full report of these two meetings together with the Sunday meeting to another NNR at Nant Irfon can be found in *BSBI News* 71: pages 62-64.

After tea, the Chairman Paul Day opened the Annual General Meeting. He first welcomed the new President David Pearman and his wife Anita to their first Welsh AGM and a new vice-president (Gwynn Ellis) to his 18th. Apologies for absence were received from Stephen Evans and Elsa Wood. The minutes of the last AGM, published in the *Welsh Bulletin* No 59, Summer 1995 pages 4-7, were then taken as read and accepted without amendment.

The Chairman, in his opening remarks, welcomed the 30 or so members present and thanked the Officers and members of the Committee for Wales for the help and support he had received in his first year in office. He also thanked David Humphreys and Ray Woods for finding the present venue and for organising the AGM. After a short report on the past year's activities of the Committee he invited the President, David Pearman, to address the meeting.

President's Comments on Atlas 2000 and BSBI Co-ordinator

Atlas 2000

The President reported that despite setbacks in getting sponsorship for the project from DoE, the project was still going ahead and he hoped to have better news to report at the Recorders Conference in September.

BSBI Co-ordinator

Membership of the Society was static and falling amongst the professionals and conservationists. Despite the fact that the BSBI had overwhelming superiority in taxonomic expertise, it was more and more being taken for granted, and taken for free, by many bodies including the Country Agencies. One reason was the proliferation of databases and 'consultants' and the difficulty v.c. recorders had in gaining access to records.

To counteract these trends funds had been sought and received from the Country Agencies and from private trusts to appoint a full time co-ordinator on an initial three-year contract to improve communication between the BSBI, the Country Agencies and other organisations and to provide information and help to v.c. recorders on computerisation of records. The post would be advertised and an appointment made in the autumn. Once a co-ordinator was in post, selected v.c. recorders would be given financial help in purchasing computers.

John Topp asked if the Millennium Fund and Darwin Initiative had been approached for funds for Atlas 2000. David Pearman replied that filling in the necessary forms

was a mammoth task and one of the roles of the Co-ordinator would be in fund raising. Trevor Evans, Jean Green and Peter Jones all welcomed the initiative in providing financial help to recorders who wanted to computerise their records. John Topp also welcomed the BSBI's initiative in getting a Co-ordinator and hoped that his programme would be given full publicity in *BSBI News*. Goronwy Wynne asked about training for v.c. recorders and David Pearman suggested that this would be built into the contract. He also queried whether v.c. recorders were necessarily the best persons to do all the computer work for their county or could this be done by a computer literate person appointed by the recorder.

Arthur Chater wondered if replies to the questionnaire sent to all members had been searched for people willing to help with computer work and was assured that this would happen and any volunteers contacted.

The President was congratulated on his efforts in getting so much done for the Society in such a short space of time.

Hon. Secretary's Report

The Hon. Secretary, Gwynn Ellis, then gave a short report on the last year's activities.

He commented that the Committee for Wales had remained at full strength throughout the year.

Two issues of the *Welsh Bulletin* had been issued since the last AGM; nos. 58 & 59. The editor Richard Pryce was again congratulated on the high standard that he had maintained. George Hutchinson was also thanked for his hard work in planning and producing the *Bulletin*. He hoped that members would continue to send in notes and articles for publication and commented that the *Bulletin* continues to be produced outside the National Museum of Wales, camera ready copy being prepared by George Hutchinson.

The Secretary then reported that nine field meetings had been arranged in Wales in 1995. The 5 held so far had been well attended and bookings for most of the others were adequate but spaces were still available. David Humphreys was thanked for the splendid programme he had arranged. In 1996 it was hoped to arrange more field meetings; some would be square bashing meetings to help with recording for the Atlas 2000 project; others would be traditionally led meetings to areas of interest. All members were again urged to help in the Atlas 2000 project, preferably by taking on one or more hectads (10 km squares) allocated by their vice-county recorder, or by attending field meetings aimed at recording for the project.

The Secretary then remarked that one of the items discussed by the Committee for Wales over the past year had again concerned the need for a Welsh Botanic Garden and another the new Habitat Directive. A list of Welsh sites considered to be of international importance, drawn up by CCW, had been discussed. The apparent lack of conservation strategies and possible reduction in numbers of staff with expertise in biological conservation, of the new Welsh unitary authorities had also received some attention as had the production of lists of rare and threatened plants in each of the Welsh vice-counties.

He then thanked the various organisations that had helped the Society in Wales over the last twelve months, including: the CCW for allowing the Committee for Wales to meet in its offices at Plas Gogerddan, Aberystwyth and Llandrindod Wells;

the National Museum of Wales for secretarial assistance, for production of the *Welsh Bulletin*, and for its help in many other ways; the officers and staff of Neuadd Henllan and the WJEC Pavilion on The Royal Welsh Show Ground Llanelwedd for looking after us so well; and finally to Ray Woods and David Humphreys for all the hard work they have put into organising this meeting.

The Secretary then reminded members of the field meeting to be held at Abergwesyn and Nant Irfon the following day, led again by Ray Woods.

Finally, he reminded members that after the Meeting, two talks would be held, one before dinner by Ray Woods on *Conserving Plants- A Diverse Strategy?*, and the other, after dinner, by Mike Porter on *The Flora of Brecknock - the first quarter century*. There would also be plenty of opportunity to look at the various exhibits and slides.

Hon. Treasurer's Report

The Hon Treasurer, Peter Jones, then gave his first report on the financial situation which was again satisfactory. A balance sheet (reproduced below) was circulated. He was warmly thanked for his efforts on our behalf in his first year as Hon. Treasurer.

BSBI Committee for Wales Statement of Accounts from 1 January to 31 December 1994

RECEIPTS

	£
Bulletin subs./back nos.	338.00
From BSBI Treasurer	0.00
Ferryside receipts	687.95
Rubus meeting receipts	1792.15
total	1592.45

Carried forward from 1993

Excess payments over receipts

Bank account balance: deposit

current

PAYMENTS

	£
Bull. no. 56	176.58
Bull. no. 57	99.87
Ferryside accom.	618.49
Rubus accom.	389.18
total	1284.12

£

257.03

}

= 565.36

308.33

198.71

}

= 565.36

366.65

Peter S. Jones (Hon. Treasurer, Committee for Wales) July 7 1995

Elections

In the elections that followed The Hon Secretary, Gwynn Ellis, Hon Treasurer Peter Jones and Hon Field Secretary, David Humphreys were re-elected unopposed to their respective posts.

Nigel Brown, Trevor Evans, Elsa Wood and Ray Woods were due to retire under rule 5 of the constitution and were eligible for immediate re-election and had indicated their willingness to stand again and were duly re-elected to serve on the Committee for Wales for a further period of two years.

AGM and Exhibition Meeting, 1996

The 1996 Annual General and Exhibition Meeting will be held at the Welsh College of Horticulture, Northop, Flintshire from Friday August 30th to Monday September 2nd.

In the absence of any other business, the Chairman declared the meeting closed.

COMMITTEE FOR WALES, 1995-1996

Following the election of officers and members at the Quadrennial and Annual General Meeting, the composition of the Committee for Wales is as follows:

Officers

Chairman and Welsh Rep. on Council	Mr P. Day
Vice-chairman	Mr R.D. Pryce
Secretary	Mr R.G. Ellis
Treasurer	Dr P.S. Jones
Field Meeting Secretary	Dr D. Humphreys

Committee Members

Mr A.O. Chater*	Mr N.H. Brown
Mr S.B. Evans*	Mr T.G. Evans
Dr G. Hutchinson*	Mrs E.G. Wood
Dr Q.O.N. Kay*	Mr R.G. Woods
Mr M. Porter*	Dr G. Wynne

* members due to retire in 1996

BOTANICAL SOCIETY OF THE BRITISH ISLES

34th WELSH ANNUAL GENERAL MEETING

and 14th EXHIBITION MEETING

Friday August 30th to Monday September 2nd 1996: Welsh College of Horticulture, Northop, near Mold, Flintshire

Programme

Friday August 30th

- 6.00 Dinner
 - 7.00 Wild plants of the College Grounds: Botanising with Jean Green
 - 8.30 Exhibits and Slides
- Please note: number of slides per person limited to 25

Saturday August 31st

- 8.30 Breakfast (collect packed lunch)
 - 10.00 Meet at the College for Field Meetings
- There will be a choice of:-
1. Conducted visit to a limestone site - Leader Goronwy Wynne
 2. Recording in groups, mainly in coastal habitats, for ATLAS 2000
- 3.00 Tea
 - 3.30 Meeting of Committee for Wales
 - 4.15 Annual General Meeting
 - 5.00 Discussion *Which way now?* Panel chaired by Jean Green
 - 6.00 Dinner
 - 7.30 Public Lecture by Mr Pete Cunningham, Curator of Ness Botanic Gardens: *Hills and Valleys of Central Asia*
- Discussion, exhibition, etc.

Sunday September 1st

- 8.30 Breakfast (collect Packed Lunch)
 - 10.00 Meet at College for Field Meetings. A choice of:-
1. Conducted visit to local nature reserves
 2. Recording for ATLAS 2000
- 6.00 Dinner
 - 7.00 Informal tour of College Gardens with a member of staff

Monday September 2nd

- 8.30 Breakfast
- 10.00 Optional recording for ATLAS 2000

ACCOMMODATION

All single rooms with wash basin

Bedrooms, meeting rooms, and dining rooms are all in the same area of the College

No dogs, please, on Field Meetings

COST

Bed and Breakfast £21.00; Dinner £4.50; Packed lunch £2.50; Conference fee £2.00

Further details and booking forms from Dr Goronwy Wynne, Gwylfa, Llicswm, Holywell, Clwyd CH8 8NQ. Tel. 01352-780689

WELSH FIELD MEETINGS – 1996

SATURDAY 11th MAY FFYNNONGROEW, FLINTSHIRE (v.c. 51) Leader: Dr G. Wynne

A meeting in a coastal area and a narrow wooded valley to record for Atlas 2000. Meet at 10.30 a.m. at SJ/141820 on A548 at the east end of Ffynnongroew at the turning for Pen-y-ffordd, opposite footbridge over railway. No dogs please. Please send bookings to Dr D.R. Humphreys, Knill Court, Presteigne, Powys LD8 2PR, and not to the leader.

SATURDAY 18th MAY ABBEYCWIMHIR, RADNORSHIRE (v.c. 43) Leader: Dr D.R. Humphreys

A meeting to record in an area of rural and forested Radnorshire in which there is a great dearth of post-1987 records. To include recording for Atlas 2000. Meet at the Picnic Site 1 mile west of Abbeycwmhir, SO/039705 (about 5 miles east of Rhayader) at 11.00 a.m. Please send bookings to Dr D.R. Humphreys, Knill Court, Presteigne, Powys LD8 2PR, and not to the leader.

SATURDAY 25th MAY PENTREFOELAS, DENBIGH (v.c. 50) Leader: Mrs J.A. Green

A meeting to include recording for Atlas 2000 in areas in SH/84, 85, 94 and 95. Meet in the Visitors Car Park at Pentrefoelas on A5 at SH/873514 at 11.00 a.m. Meet again here at 4.00 p.m. to discuss findings and return cards. Please send bookings to Dr D.R. Humphreys, Knill Court, Presteigne, Powys LD8 2PR, and not to the leader.

FRIDAY 7th to MONDAY 10th JUNE LLANDOVERY, CARMARTHENSHIRE (v.c. 44) Leader: Mr R.D. Pryce

A meeting to record in under-worked areas of Carmarthenshire for Atlas 2000 and the Carmarthenshire Flora Project. Both upland and lowland areas will be included and participants will be divided into small groups in order to cover as much ground as possible.

The meeting will again be based at the highly acclaimed Llwyn Celyn Guesthouse on the western outskirts of Llandovery (SN/760347). It is situated on the north-west bank of the River Tywi adjacent to the A40, and is within easy walking distance of Llandovery Station. Approximate cost of the weekend accommodation in either single or double rooms is expected to be about £90 per person, and will include bed, breakfast and evening meal from Friday evening to Monday morning. Non-resident participants will be welcome, and evening dinner will be available at Llwyn Celyn.

All seven rooms have been provisionally reserved, but it is essential to book NOW so that extra costs are not incurred should some rooms remain vacant. Please send bookings immediately to Richard Pryce, Trevethin, School Road, Pwll, Llanelli, Dyfed SA15 4AL, or phone 01554-775847. Closing date for bookings was Friday 26 January 1996, although if you wish to attend it may still be possible to arrange accommodation at the Llwyn Celyn if you reply to the leader now

SUNDAY 16th JUNE
COLBY LODGE, PEMBROKESHIRE (v.c. 45)
Leader: Mr S.B. Evans

A meeting to include recording for Atlas 2000. Meet at Colby Lodge Car Park, (National Trust) SN/157081 at 10.30 a.m. (Off A477 near Amroth). Under-recorded rural and coastal squares in SN/10 will be visited, preferably in small groups led by an experienced botanist.

Please send bookings to Dr D.R. Humphreys, Knill Court, Presteigne, Powys LD8 2PR, and not to the leader.

SUNDAY 23rd JUNE
CASTLE CAREW, PEMBROKESHIRE, (v.c. 45)
Leader: Mr S.B. Evans

A meeting to include recording for Atlas 2000. Meet at Castle Carew Car Park, at SN/046036, at 10.30 a.m. Under-recorded rural and coastal 1 km squares will be visited, preferably in small groups led by an experienced botanist.

Please send bookings to Dr D.R. Humphreys, Knill Court, Presteigne, Powys LD8 2PR, and not to the leader.

SATURDAY 13th JULY
LLANBRYNMAIR, MONTGOMERYSHIRE, (v.c. 47)
Leader: Mrs M. Wainwright

A meeting to include recording for Atlas 2000 in the Hectads SH/80 and SH/90, and to check some old locations mentioned in the *Flora of Montgomeryshire* (1995). There will be a choice of upland walking, or road- and river-side. Meet at the car park in Llanbrynmair, SH/898028 at 10.30 a.m.

Please send bookings to Dr D.R. Humphreys, Knill Court, Presteigne, Powys LD8 2PR, and not to the leader.

SUNDAY 14th JULY
PEN-Y-FAN, MONMOUTHSHIRE (v.c. 35)
Leader: Mr T.G. Evans

A meeting to help in recording tetrads in the area of SO/10, SO/20 and ST/19, ST/29. Meet at Pen-y-fan Pond Car Park, SO/197007, at 11.00 a.m.

Please send bookings to Dr D.R. Humphreys, Knill Court, Presteigne, Powys LD8 2PR, and not to the leader.

SATURDAY 10th AUGUST
TEIFI POOLS, CARDIGANSHIRE (v.c. 46)
Leader: Mr A.O. Chater

A meeting to see the aquatic flora of six lakes, including *Luronium*, *Subularia* and both *Isoetes* species. Moderately strenuous walk of 6 km. Meet at SN/795680, 500 m. north of Llyn Egnant at 11.00 a.m. Access is from Ffair Rhos on B4343 at SN/740680. If water levels are too high only three lakes might be visited, and the afternoon spent on nearby moorland.

Please send bookings to Dr D.R. Humphreys, Knill Court, Presteigne, Powys LD8 2PR, and not to the leader.

SATURDAY 17th AUGUST
GLANHIRIN, RADNORSHIRE & CARDIGANSHIRE (v.cc. 43 & 46)
Leaders: Mr A.O. Chater & Dr D.R. Humphreys

A meeting in the remote uplands of Mid-Wales to include recording for Atlas 2000. The hectad SN/87 is almost bisected by the Cardiganshire — Radnorshire border, and this area has few roads and tracks, so that records on either side of the County boundaries will be valuable.

Meet at SN/877733 on the road between Cwmystwyth and Rhayader, where the track to Glanhirin crosses the River Elan, at 11.00 a.m. Footwear suitable for wet hill-walking.

Please send bookings to Dr D.R. Humphreys, Knill Court, Presteigne, Powys LD8 2PR, and not to the leader.

FRIDAY 30th AUGUST to MONDAY 2nd SEPTEMBER
WELSH AGM and EXHIBITION MEETING
WELSH COLLEGE OF HORTICULTURE, NORTHOP, FLINTSHIRE (v.c. 51)
Leader: Dr G. Wynne

The meeting will be based at the Welsh College of Horticulture, Northop, near Mold (SJ/237689). It will begin with dinner at 6.00 p.m. on Friday followed by some local botanising. There will be field meetings at 10.00 a.m. on Saturday, Sunday and Monday, all starting from the College. The AGM will be at 4.15 p.m. on Saturday. On Saturday evening there will be a public lecture *Hills and valleys of Central Asia* by Peter Cunningham, curator of Ness Botanic Gardens

Accommodation, in single rooms, including dinner and packed lunch, is available at the attractive price of £28 per day. The meeting is open to non-residents and day visitors, but all meals must be booked in advance.

Further details and booking forms from Dr Goronwy Wynne, Gwylfa, Licswm, Holywell, Clwyd CH8 8NQ. Tel. 01352-780689.

SATURDAY 14th SEPTEMBER
RIVER DEE, FLINTSHIRE, (v.c. 51)
Leader: Dr G. Wynne

A meeting on the banks of the River Dee and adjacent industrial areas and/or wetlands to include recording for Atlas 2000. Meet at 10.30 a.m. at SJ/368657 on B5129 west of Saltney, at south end of footbridge over River Dee at Higher Ferry House. No dogs please.

Please send bookings to Dr D.R. Humphreys, Knill Court, Presteigne, Powys LD8 2PR, and not to the leader.

SATURDAY 5th OCTOBER
NATIONAL MUSEUM & GALLERY OF WALES, CARDIFF
Leader: Dr G. Hutchinson

A meeting to examine undetermined and unconfirmed vascular plant specimens from field work for the Carmarthenshire Flora project, and from elsewhere if time allows. Referees and other specialists especially welcome.

Arrive from 10.00 a.m. onwards at the main entrance hall of the Museum. (ST/184769). There is ample parking space in the Museum's car park at the rear of the building (fee £1 all day). Participants limited to 20.

Details of main plant groups involved and further information from the leader Dr G. Hutchinson, Department of Botany, National Museum & Gallery, Cathays Park, Cardiff CF1 3NP, to whom bookings should be sent.

ATLAS 2000, THE WELSH PERSPECTIVE

An instruction manual on how to record for the Atlas 2000 project will be included with the April 1996 mailing of *BSBI News* together with several other goodies pertaining to the project. In this short note I would just like to emphasise a few points and to explain how I, as Welsh Co-ordinator, intend to handle things.

The first point that needs emphasising is that recording hectads (10 km squares) for Atlas 2000 is open to the whole membership, indeed it is essential that as many members as possible do take part in the project if it is to be completed on time and is as comprehensive and up-to-date as it needs to be. So do make contact with your resident vice-county recorder, or the recorder(s) for the area where you go on holiday, get some recording cards from them (or from the address below), and start recording.

Secondly, although the Atlas 2000 project is based on the hectad, your records will be of much more use and interest if they can be allocated to a smaller recording unit such as a tetrad, or, better still, a named site. In other words try not to use just one recording card for a whole hectad. If you have time use a different card for the various sites you visit (but make sure that if the site covers more than one square, use a separate card for each square). Admittedly, this does take a little longer in the field and means carrying more cards about with you, but the benefits far outweigh the disadvantages. It also means a little more work for the VC recorder as s/he will have more cards to deal with, but the quality of the records will be that much better. It would also be preferable to use separate cards for each visit to a square or site, but again this is not mandatory. If, for whatever reason, you only want to use one card for one hectad and to use the same card for each visit then your records are perfectly acceptable and welcome.

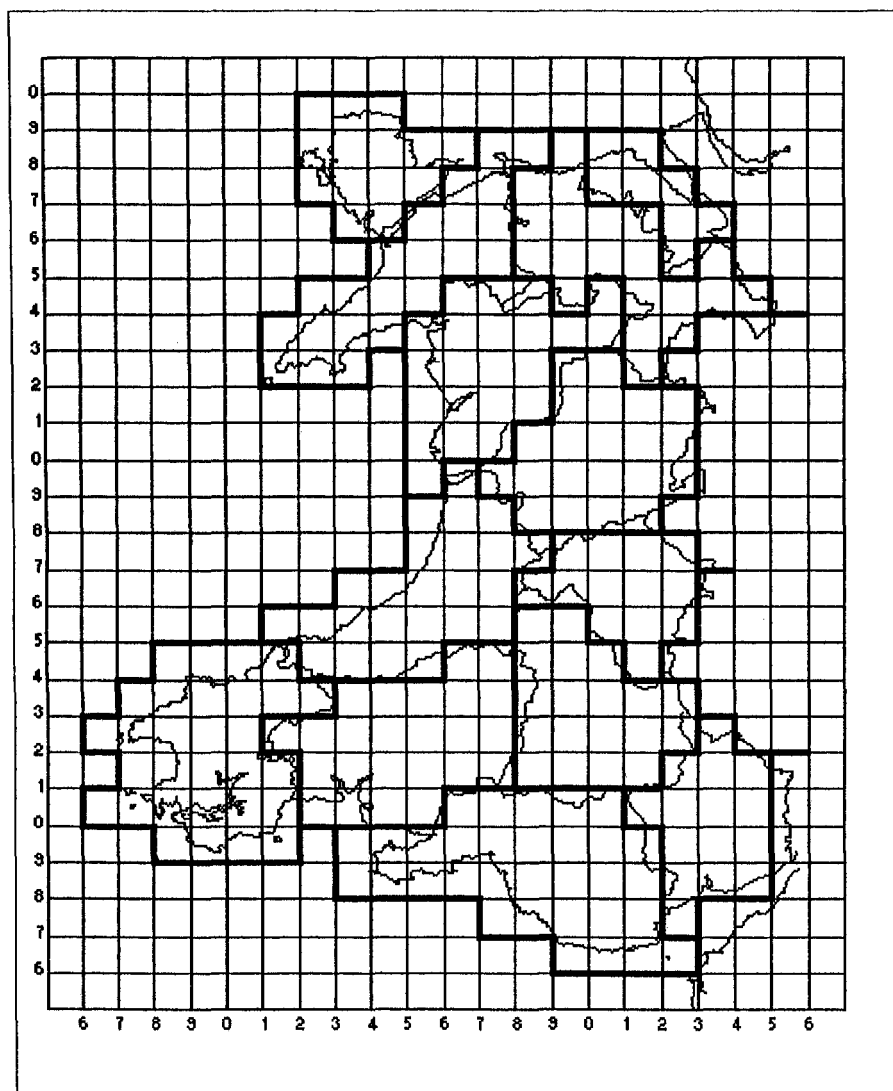
Thirdly, you may wish to send your cards to the appropriate VC recorder after each recording session. In any case it is essential that all your records for that year are sent to him/her at the end of each recording season. On no account should you accumulate cards until the end of the project. The more the work load of the VC recorders can be spread the better.

It has been decided by the Atlas 2000 working party that only one VC recorder be responsible for one hectad, hectads falling within more than one vice-county being allocated to the VC recorder with the largest share of the hectad. The map on page 14 shows how the boundary squares of Welsh vice-counties have been allocated. It is important that this map be consulted to ensure that you send your records to the correct recorder. Ensure that records are clearly marked to indicate to which vice-county they belong.

Finally, to make the task of inputting records into the BRC database easier (and to reduce the chance of mistakes occurring through transcription errors), it has been decided that all records from Welsh squares will be computerised before being forwarded to BRC. Many Welsh vice-county recorders have computers and some will do this themselves, I will do it for the others and for those that are not yet computerised or have no wish to be computerised.

GWYNN ELLIS, Welsh Regional Co-ordinator Atlas 2000, c/o Dept. Botany, National Museums and Galleries of Wales, Cathays Park, Cardiff CF1 3NP

ATLAS 2000
WELSH BOUNDARY SQUARE ALLOCATION - MAP



Atlas 2000: Current state of affairs in v.c. 35 (Mons.) October 1995

I have filled in BSBI Field Cards, Wales, RP27s for all 25 hectads in v.c. 35. The following people have taken responsibility for and are doing the majority of the recording in the hectads after their names :-

Heather Colls SO 41; Brian Gregory SO 51; Shirley Rippin SO 22; Paul Smith ST 19, 29 & SO 10; Colin & Glenys Titcombe ST 48; Julian Woodman started ST 18 but has moved on. Adrian & Elsa Wood SO 40 & 50. I am finding covering the other 15 hectads too onerous.

Also sending in records are Sam Bosanquet, John Harper, George Hutchinson, Martin Jones, Derek Upton, Rae Vernon and John Wohlgemuth. Many of the records are due to numerous people, who helped when the bulk of the records were made in the 1985 - 90 period.

In the following lists the hectads underlined are whole hectads of 25 tetrads, the others are part hectads, to be combined with parts outside the V.C. The figures following each hectad number indicate plants recorded 1987-95, 1990-95, 1987-89, 1980-86, 1970-79 and pre-1970 respectively:-

ST 27	354 (265 + 89), 34, 1, 3.	:	ST 18	384 (269 + 115), 2, 0, 0.
ST 28	638 (479 + 159), 24, 1, 4.	:	ST 38	697 (592 + 105), 102, 65, 1.
ST 48	692 (652 + 40), 38, 22, 1.	:	ST 58	532 (476 + 56), 23, 0, 0.
ST 19	490 (440 + 50), 23, 0, 0.	:	<u>ST 29</u>	663 (619 + 44), 27, 0, 0.
<u>ST 39</u>	630 (408 + 222), 18, 0, 7.	:	<u>ST 49</u>	687 (653 + 34), 80, 9, 0.
ST 59	756 (694 + 62), 64, 30, 5.	:		
SO 10	543 (490 + 53), 1, 0, 0.	:	<u>SO 20</u>	627 (387 + 240), 15, 0, 0.
<u>SO 30</u>	718 (533 + 185), 27, 2, 1.	:	<u>SO 40</u>	608 (532 + 76), 59, 1, 1.
SO 50	705 (686 + 19), 35, 6, 2.	:	SO 11	348 (50 + 298), 13, 0, 0.
SO 21	636 (538 + 98), 42, 3, 0.	:	<u>SO 31</u>	581 (305 + 276), 41, 1, 1.
SO 41	479 (457 + 22), 13, 1, 0.	:	SO 51	628 (614 + 14), 24, 3, 2.
SO 22	417 (405 + 12), 9, 8, 2.	:	SO 32	443 (302 + 141), 13, 0, 0.
SO 42	330 (327 + 3), 83, 1, 1.	:	SO 23	189 (186 + 3), 60, 0, 0.

This includes 100 microspecies of dandelions, 20 of hawkweeds, 31 of blackberries with 2 hybrids, and 5 of eyebrights with hybrids.

From the above list, it is obvious that county cover has been good, but I would like to see all extant species recorded post-1990. ST38 contains Newport Docks and rubbish tip, which were far richer in species in the '70s and '80s before large areas of the docks were hard-surfaced and the environmental health people sanitised the tip, thus many alien species will not be re-found. ST 27, 18, 58 and SO 11 & 23 consist of less than 5 tetrads. On the other hand ST 27, 28, 38 & 39 and SO 20, 30, 31 & 32 are ripe for updating, and what is needed is 8 people to take responsibility for one each.

The coastal reens are still rich and compare well with those of the Somerset Levels, the recording of individual reens would be rewarding to the volunteer and to the distribution picture.

I have Grid. Refs. of the v.c.'s best habitats; monthly study of such habitats would update records and monitor the health of the sites.

Of special concern are the county brambles and all the new splits accompanying the advent of Stace's New Flora.

Term Report: There is room for improvement !

T.G. Evans

Atlas 2000: Botanical recording in Breconshire (v.c.42) 1990-1995

Five main strands can be traced in the progress of the Breconshire Flora project since the last report in 1990.

Fieldwork for the Scarce Species Project and Atlas 2000 provided an opportunity to check on early records and update species maps. These investigations also provided some information about changes in populations of uncommon species. The catastrophic loss of haymeadows highlighted by the Nature Conservancy Council (now CCW) is reflected by the marked decline over the past twenty years of species such as *Listera ovata* and *Platanthera chlorantha*. *Orchis morio* survives in a single locality. Similarly the drainage of many wet fields has led to a considerable decrease in the population of marsh plants like *Trollius europaeus*, *Eriophorum latifolium* and *Dactylorhiza incarnata*. It is of particular concern that the rate of decline does not appear to have been appreciably slower in the part of the vice-county situated within the National Park.

Research on critical groups has led to the description of several new taxa in *Rubus* and *Taraxacum*. Although some of these, e.g. *Taraxacum breconense*, are so far only known from v.c. 42, others first noticed in Breconshire are now known to be quite widespread in Britain. This summer *Rubus ariconiensis*, described in 1994, was found in three localities in S. Devon, and is now recorded from eight vice-counties. At present a project to try to unravel the tangle of *Rubus halsteadensis* is in progress.

Background material is being assembled on various topics ranging from history of botanical recording to data on climate, soils and changes in the pattern of local land use which may help to interpret the species distribution maps. David Humphreys has produced computerised outline county maps for plotting species distributions.

Ray Woods has completed his distribution maps and species accounts for the lichens of Breconshire and he is now working on the bryophytes. Both are being mapped on a 5km basis to correspond to the treatment of the vascular plants. On cliffs in the north of the county he recently discovered the lichen *Dictyonema interruptum*, an association between a Corynebacterium and a Basidiomycete. Apparently this is the first record on mainland Britain for a long time.

Predictably, in view of the comments in the second paragraph, a large proportion of the new records since 1990 have been blackberries and dandelions (27 out of 44). Also to be expected at this late stage in the scheme is the high percentage of aliens in the new finds. Of the few natives reported recently, the highlight was *Elatine hexandra* discovered by Caroline Mosscroft in 1994.

Help from BSBI members visiting Breconshire and willing to record 10 km squares for Atlas 2000 would be greatly appreciated. Some field meetings will be arranged to record a few of the remote areas.

Mike Porter

Atlas 2000: Recording in Radnorshire

Ray Woods 'Flora of Radnorshire' was published in 1993 and was the first complete account of Radnorshire plants. It was based largely on records made by Ray from 1970 onwards, and the maps in the Flora show solid dots relating to the period 1970 to 1992, with the addition of open dots for records made before 1970 and not supplanted by more recent records (see explanation of squares on p.47 of book). This therefore provides the bulk of the records needed for category 2 (1970 to 1986) in the new Atlas 2000. However the records from the monitoring scheme of 1986-1987 have been the basis of new records for category 3 (1987 onwards) of the new atlas, and in the Flora only a relatively small proportion of the records relate to the period since 1987 up to the present day. This is where considerable work now needs to be done to meet the category 3 needs.

For several reasons I am trying to update these records on a 1-km basis. 1-km being the only common factor for hectads, tetrads and quadrants, and moreover has the advantage that these records tend towards being site based. This recording is being done, although with very few active botanists in the county, and is being computer recorded in Alan Morton's MAPRECS and DMAP. Alan has provided me with a most useful extra program called MRUTIL, by which the difference between one group of records and another can be quickly compared and printed out, and is a ready means of providing a "hit list" of species not re-recorded since 1986 and to be looked for in completing a hectad record. For instance in the hectad SO 25 a previous list showed 498 species, but a list made since 1986 showed that 161 of these had not yet been re-recorded and were thus on the "hit list", many of these being quite common plants going unremarked on casual visits. The remedy is either by specific searches or by actual "square-bashing", and a 1-km basis also provides significant distribution information. It is interesting however that the "hit list" is misleading in many instances, such as where a sub-species in one list is mentioned only as the aggregate on the other.

The hectad mentioned above is one of the more accessible areas, but the more hilly districts often have very few roads crossing them, and some help will be necessary to work these areas. There are at present no more than 2 or 3 people doing serious recording. Among the projects for 1996 is a combined meeting in the remote uplands on the border of Rads. and Cards. where a hectad is shared nearly equally between the two counties, to add to vice-county records as well as to the new Atlas.

David Humphreys

Atlas 2000: Recording in v.c. 44, Carmarthenshire to 1995

Since the launch of the Carmarthenshire Flora Project in 1982, all of the 698 tetrads have been visited, most more than once, with the result that the field recording is nearing completion. Most of the records so far collected have been input onto computer using the Biorecs recording system devised by Stephen Coker. Using this software it is possible to easily amalgamate tetrad data into 10km square records for the Atlas 2000 scheme. The result is that there should be little need for much further field recording except maybe for filling in a few gaps and some species monitoring.

The main problem that the Atlas 2000 scheme presents as far as v.c. 44 is concerned, arises from the way I originally input the records. In an ideal world the date of every tetrad visit would have been input. However, in an effort to reduce the time taken to complete the input of the backlog of records made in the first years of the Flora Project and before, they were amalgamated into a date band stretching from 1970 to 1990. In order to satisfy the post 1986 date class proposed for Atlas 2000, I am now, therefore, faced with abstracting all 1987 to 1990 records from the main body of the database. In effect this means going through all the pre-computer tetrad master-cards and re-inputting all post 1986 records. This will be very time consuming and will probably require a similar time commitment to that devoted to the original inputting task. However, it does have the advantage that I will now also be able to adopt both 1970 to 1986 and post 1986 date classes for the Carmarthenshire Flora maps.

In addition, there is a significant backlog of records made in the last few years which have not yet been input. These are mostly of single plant records from different locations (i.e. not a list of species from one locality), determinations of specimens in **NMW** and species to be abstracted from site reports from other organisations.

Critical taxonomic groups have been addressed in recent years through concentrated fieldwork and reference to the national referees. For instance, nearly 100 *Taraxacum*, about 40 *Hieracium* and about 60 *Rubus* species are now known from the vice-county. *Rosa* and *Potamogeton* have received attention in connection with research leading to the publication of new BSBI handbooks. George Hutchinson has been of invaluable assistance in getting to grips with the determination of many confusing groups including *Euphrasia*, *Salicornia*, *Cotoneaster* and *Dryopteris*.

Atlas 2000, therefore, whilst requiring a small amount of additional field work in the vice-county, will have its greatest impact by dramatically increasing the back-room work needed in attending to existing records and getting them into a form acceptable to the scheme organisers. Some offers of help have already been received and it is likely that I will be compelled to take advantage of these in order to meet scheme deadlines.

Richard Pryce

Atlas 2000: Botanical Recording in Pembrokeshire since 1990

A report on plant recording in Pembrokeshire - VC 45 - was presented in the Welsh Bulletin No. 50 in 1990. Steady progress has been made since then with help from local stalwarts Jo and Gordon Hannah and Elizabeth Redd.

Although field excursions continue apace the input of records into BIORECS has faltered. A total of about 175,000 species records have been entered but 18 months of cards are awaiting attention. The store of over 750 rare species population forms is being added to and maintained as well as being constantly used for nature conservation purposes. Tremendous pleasure is obtained from repeat visits to populations first found over 20 years previously especially as so many stands appear to be remarkably stable. These population forms have proved invaluable when responding to queries. They greatly eased the workload that arose during the submission of information for the scarce plants atlas and are currently helping with inputs to the revision of the British Red Data Book for vascular plants. Looking ahead I am sure they will assist the local application of the emerging Biodiversity Action plans for key habitats as well as plant species.

Turning to the Atlas 2000 project, the author recognises that his lack of interest in naturalised species and his impatience with difficult groups will leave Pembrokeshire somewhat under-recorded unless help can be found. Fieldwork between 1987 and the end of 1994 has already listed over 400 species for over half of v.c. 45's ten km. squares so a good start has been made. The two June 1996 field excursions will test the potential for further membership participation in this vital project and similar excursions are planned for subsequent years.

Finds since 1990 have included two new native species, *Carex divisa* found by Jack Donovan and *Elatine hexandra* found by Elwyn Hughes. The discovery of a new location for *Orobancha purpurea* by Mike Higgins and of several new sites for *Ononis reclinata* were also noteworthy.

Stephen Evans

Atlas 2000: v.c. 46, Cardiganshire

Although a great deal of recording has taken place in v.c.46 during the last five years, master cards for tetrads and hectads have not yet been compiled and I have no means of knowing for certain how adequate the coverage is. My impression is that at the hectad level coverage is good. A number of rich sites though have not been re-listed since before 1987 and there will need to be a methodical revisiting of many of these places. Otherwise there should be no difficulty in meeting the Atlas 2000 requirements so far as fieldwork is concerned. I am, however, not yet computerised, so data-handling rather than recording is the big problem.

During the last five years, although a lot of site recording has taken place (including such expert surveys as CCW's Phase II of grassland sites and the Dyfed Wildlife Trust's metal-mine survey), my own fieldwork has shifted somewhat from site recording to tetrad recording. This is partly because many of the better sites have already been recorded, and partly because of the need to cover the ground for a tetrad Flora and for the new Atlas. Square records are now more urgently needed,

and seem likely to be put to better and quicker use, than site surveys. Instead of, for example, spending a whole day listing and describing the vegetation of a site, it now often seems more useful just to list it and describe it briefly and to spend the rest of the time finding other species in the tetrad.

The *Ceredigion Rare Plant Register* was updated earlier this year after a five-year gap, its format refined and computerised by Alan Hale of CCW. An inordinate amount of time has been spent on critical groups such as *Hieracium*, *Rubus*, *Festuca ovina*, *Euphrasia*, *Populus*, *Ulmus* etc., chiefly in collaboration with experts. Visitors and the faithful few local botanists contribute enormously and keep the Recorder on his toes. The chief task now is to become computerised, to compile tetrad lists from existing records, and to cumulate these into hectad lists.

Arthur Chater

Atlas 2000: Montgomeryshire v.c. 47

Last November we published the first full Flora of Montgomeryshire after 11 years of work by a whole team of people. Back in 1990 the real perils of vanishing printers and vanishing money were all ahead of us. There were just the imagined disasters. What if a fire destroyed all our records? Suppose some of the work which had taken weeks to prepare disappeared in the post? These things never happened, but now, five years on, I could write a book about what did. Its title would be 'Take Nothing for Granted'!

For years we had been happy in the knowledge that the National Library of Wales would print for us a Welsh Flora, printed expertly in Wales. Suddenly the Library was required to withdraw from major outside printing. By now prices had risen considerably and our cheapest option was far away in Bath. Just six weeks after all our material had gone off to Bath and we were breathing a sigh of relief, the blow fell. Printer number 2 suddenly shrank like Alice and disappeared from view. By now paper prices were rising steeply and the hunt for a replacement was urgent. Printer number 3 seemed promising and fortunately still in Bath, but he had no typesetters, still apparently a necessity even though almost all of our material was on disc. Separate typesetting we found to our dismay attracted VAT. Even at the eleventh hour disaster threatened again. A funding hiccup forced us to revamp our marketing policy radically, but by now printing was well advanced.

Lest this cautionary tale should persuade aspiring Flora-writers that it is better to travel hopefully than to arrive at publication, there is one great bonus. Atlas 2000 now seems far less daunting. Every record qualifies for a dot, its size depending on when the record was made. Our main task will be to update the records of the commonest plants made during the earliest stages of the project. Although almost certainly still there, they currently qualify for a small dot only.

At the other end of the scale, some of our rarest plants, reduced to a single location or very low numbers, may well have become extinct by the turn of the century. Change goes on and despite pious words, protection is still wholly inadequate. The national rarities, like the plants on Breidden will need further intervention by man to save them from a man-made threat, quarrying.

Finally there are arrivals as well as departures. The long hot summer of 1995 produced two first records, *Lactuca virosa* and *L. serriola*, spotted on the same day but just too late to go into the Flora. By 2000 we hope there will be many more and so the work goes on.

M. Wainwright

Atlas 2000: Recording in Denbighshire (v.c. 50) at the end of 1995

Recording is proceeding steadily, having started with the Monitoring Scheme in 1986.

Seven 10 km squares have been adopted by Geoff Battershall, Jean Hughes, Wendy McCarthy, Jo Philips, Alison Robertson, Jean Robertson and Keith Watson. There is also an informal recording group who meet monthly in the spring and summer in an under-recorded area. We also record butterflies for an on-going survey of Denbighshire butterflies.

There are 39 × 10km squares (or parts of squares) in v.c. 50.

In 4 squares over 500 species have been recorded since 1986

13	..	..	4 - 500	..	..	..	..	..	..
8	..	..	3 - 400	..	..	..	..	..	..
12	..	..	2 - 300	..	..	..	..	..	..
2	..	..	1 - 200	..	..	..	..	..	..
0	..	..	< 100	..	..	..	..	..	..

While all squares have been visited, there are many gaps, and any records are welcome. Often it is common plants that are missing, so I welcome a complete plant list.

One difficulty is the vagary of the v.c. 50 boundary. "Denbighshire" ceased to exist politically in 1974. "Clwyd" included Denbighshire and Flintshire, but with some important boundary changes. In 1996 Clwyd is to split into four pieces, one of which is to be called "Denbighshire". This is going to cause confusion unless we refer to "old Denbighshire" and "new Denbighshire". Few people still use the pre-1974 OS map, so do not know the old v.c. Denbs. boundary. If in doubt I can supply a line drawing of the county, or suggest that records are sent with map refs and routes.

This problem must exist in other counties.

I would be interested to hear comments from other recorders.

Jean A. Green

Atlas 2000: v.c. 51, Flintshire

I have been asked to write something about the "state of recording" in vc 51, - a sort of botanical Queen's Speech for Flintshire. Five years have passed since I responded to a similar request, and during this period (2 years ago in fact) the *Flora of Flintshire* was published, after a gestation period of over 20 years. After a number of distressing hiccups the printers did a nice job, the reviewers have been kind and the public have opened their cheque-books, - in fact, about 850 copies have been sold out of a print run of 1,000.

As one would expect there have been quite a number of new records forthcoming since the *Flora* appeared, - many for tetrads, some for 10km squares (I don't like this new synthetic "hectad" !) and one or two new records for the vice-county. I have had an inter-leaved copy of the *Flora* prepared by a local bookbinder, so that new records can be entered on the blank pages in the appropriate place, as well as on the original BSBI species cards.

Now we must tackle the Atlas 2000 project. We held one or two "official" field meetings last year, (which attracted far more English than local Welsh botanists) and I am busy making up master cards for each of the 10km squares in the county. The next job is to re-activate those good people who worked so hard to collect records for the *Flora*. They have had a well-earned rest for a few years, but now we must "fill in the gaps" and do some serious plant-hunting once more. Flintshire is small, but there are still many corners that have not been properly botanised. How anyone can tackle a county the size of (say) Cumbria on a tetrad basis is beyond my comprehension!

One final note if I could turn back the clock and begin the field work for the *Flora* again, I would try to record far more on a site basis as well as by tetrad. How many times have I been asked for a species list for this quarry or that wood, and have had to concede that I could only provide a list for the relevant tetrad - not really what most people want! Perhaps others have been wiser in this respect, but if you are just starting you might like to learn from my mistake.

And a final, final tit-bit. We've discovered a FEMALE Black Poplar in Flintshire. I wonder how many of those there are around? I suppose that somebody will spoil my fun by telling me that there are dozens!

Goronwy Wynne

AN ANGLO-IRISH BRAMBLE NEW TO WALES

In 1980 A.L.Bull and the late E.S.Edees described as a new species a widespread East Anglian bramble which they had been coming across there for some years. Believing it to be endemic to that region, they named it after the famous queen of the Iceni, Boadicea - more correctly, Boudicca.

That choice of name proved to have been unfortunate, for *Rubus boudicca* promptly turned out to be identical with a bramble common in the south-east of the Isle of Wight and dotted much of the way up the west edge of Hampshire. Almost simultaneously, it was found in the Arden district where Warwickshire overlaps with Oxfordshire. Far more surprisingly, though, it has since been detected in no fewer than six vice-counties in the northern half of Ireland, thinly scattered from Dublin right across to East Donegal. It thus appears to be a western species rather than the eastern one that it was assumed to be initially.

In view of the big gap between Warwickshire and Dublin an intermediate stepping-stone has begun to seem likely, with Wales as the most obvious location for this. In the course of the past year, while going through undetermined Pembrokeshire material at Cambridge (CGE) and Cardiff (NMW) which the late T.A.Warren Davis had sent to B.A.Miles and Edees respectively, I was consequently highly gratified to encounter three undoubted gatherings of *R. boudicca*. The localities in question are :-

1. St. Ishmaels, in moist scrub woodland (SM 817080), 1963, Davis no.63/731.
2. Llys-y-fran, bank of a shady lane (SN 0324), 1966, Davis no.68/1056.
3. Haverfordwest, river bank (SM 9516), 1968, Davis no. 68/1167.

Although Pembrokeshire has a markedly more western florula than the rest of Wales, there is a good chance that this bramble also occurs in the adjoining vice-counties and in the north-west as well. Alec Bull indeed tells me that he believed he had found it in Anglesey some years back, only to fail to convert Alan Newton to the same opinion. It now begins to look as if he may have been right after all.

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CORKSCREW RUSH - *JUNCUS EFFUSUS* FORMA *SPIRALIS* IN CARMARTHENSHIRE

Botanists have been aware that the remarkable corkscrew (or spiral) rush, *Juncus effusus* L. forma *spiralis* (J. McNab) Hegi, occurs in Carmarthenshire (v.c. 44) since at least 12 August 1904, when it was found on a 'grouse moor... [on the] Carmarthenshire Vans', E. Milner-Jones (Nelson, 1993). The specimen resides in the herbarium at Kew. Given the extraordinary twisted shoots of this form of the Soft-rush, it is likely that it was also known to shepherds and other local people long before. Indeed, the name of the next locality from where it was reported is 'Pant brwyn trorum' ("hollow of the twisted rushes"), where a David Davies collected specimens for the National Museum of Wales on 19 July 1933. This locality is given as 'on the path to Llyn y Fan Fach, Rhyblid. Myddfai'. I have been unable to trace this exact locality, even after interrogation of local people.

FAN BRYCHEINIOG

TWYN YR ESGAIR

BREAK OF SLOPE

Slight change in
stream direction

Steeper slopes

Eroded banks
formed by sheep
sheltering in
summer

Location of
Corkscrew Rush

Stream
(Nant Meln)

SKETCH VIEW LOOKING SOUTH-EAST FROM SN814235

Being interested in ascertaining whether this distinctive plant still grew in the county, I asked Mr Denys Smith, who regularly contributes short articles on natural history matters to local newspapers, to enquire whether any readers knew of this taxon. A couple of subsequent correspondents then mentioned that they knew where the plant once grew, though one (Mr Gwilym Evans of Llangadog) had failed to refind it on a recent search. Mrs Mary Williams of Cwman, Llandeilo recalled that her parents used to tell her of the unusual rushes which grew near the catchment of Llechach river and gave more details of one locality:

'As you go from Llanddeusant towards Trecastle on the road going through Mynydd y Llan, over a cattle grid, facing you on the right is a large mound or hill top which we knew as "Tomen Llechach". There used to be a footpath, so I thought - most probably a sheep walk or path. Further on there is another hill again [Bryn Elen, SN 809257] and they grew around there'.

I checked this extensive area (in the autumn of 1993) but failed to find any corkscrew rush. Considering that (see later) I subsequently experienced great difficulty in relocating some corkscrew rush I had been shown a few weeks earlier, it should not by any means be assumed that forma *spiralis* is extinct at this site.

In October 1994, Mr Myrddin Parry of Aberdyfnant Farm, Llanddeusant showed me a population covering an area of c. 6m x 5m growing on a flushed hillside at Cefn Disgwylfa (SN 814235) near Llyn y Fan Fach. It was, it is emphasized, a discrete population and the corkscrew rush did not grow admixed with the ordinary form of *J. effusus*. Within the population, the degree of 'spiralling' varied considerably from mere curved stems to up to half a dozen "twists". For a sketch map of the location of this population, see opposite page.

It is quite possible - indeed likely - that the corkscrew rush still grows elsewhere on the Old Red Sandstone uplands of the Mynydd Du massif, and in addition, probably also survives on the neighbouring uplands of Breconshire. The writer would be interested to hear of any other localities.

Acknowledgements:

May I offer my gratitude to Mr Denys Smith of the Dyfed Wildlife Trust, Dr George Hutchinson of the National Museum & Gallery, Cardiff and, of course, to those local correspondents and farmers who have kindly provided information.

Reference:

Nelson, E. C. (1993). Corkscrew Rush (*Juncus effusus* L. forma *spiralis* (J McNab) Hegi) (Juncaceae) in Ireland and Britain. *Watsonia* 19: 275 - 277.

I.K. Morgan, Countryside Council for Wales, The Old Post Office, 56 Rhosmaen Street, Llandeilo, Dyfed SA19 6HA.

MONITORING MISTLETOE IN CARMARTHENSHIRE

Prompted by the national Plantlife Mistletoe Survey, sponsored by both Plantlife and the BSBI, which has been given much publicity over the winters of 1994/5 and 1995/6, known Carmarthenshire records of *Viscum album* have been followed up and, where possible, checked. The species has always been scarce in the vc. Several records are known from neighbouring Glamorgan to the east but there are no records from Cardiganshire to the north (except for two planted bushes) or from Pembrokeshire to the west.

Fifteen Carmarthenshire records were known prior to the survey. The first, reported in 1858 in "Llandello vawr and its Neighbourhood: Past and Present" by William Davies (Gwilym Teilo) states that *Viscum* had been "found lately at Rhiw-yr-Adar on old apple trees, but now extinct". The site, near Cilsan, has recently been checked confirming the absence of *Viscum*. In the same district O. Donovan, pre 1885, recorded *Viscum* "on oaks in remains of old forest along the courses of the Rivers Towy and Cothi" (Science Gossip XXI, p.174). No recent records of *Viscum* have been made either on oaks or in the Tywi or Cothi valleys.

On 24 February 1995, George Hutchinson and I spent a day visiting six previously recorded sites. Only two were extant: The population reported in Glanamman the previous year proved to consist of thirteen plants, both male and female, in an old apple orchard in the garden of a house. Some plants were very large and all grew at about shoulder height, presumably having been planted many years ago. A single plant recorded near the top of a *Populus x canadensis* 'Serotina' (Black-Italian Poplar) tree about 1km away in 1985 was known to have disappeared by 1987. The tree had continued growing after having been blown over but the *Viscum* had been brought down to a height easily reached by Christmas Mistletoe gatherers. With hindsight this plant was probably bird sown having originated from the Glanamman orchard population.

Unconfirmed reports of *Viscum* in tall trees adjacent to Ffairfach mart field and by the A40 near Manordello were followed up. The species was not found but in both cases large agglomerations of *Hedera helix* (Ivy) were present in the tree-tops. A similar situation was found when I checked a report of *Viscum* in trees at Cynwyl Elfed a few weeks later.

Old apple trees in a garden at Horeb were next visited but only one plant was found despite reports of the species' abundance only a few years previously. The trees were very overgrown with brambles and nettles and some appeared to have succumbed to the competition imposed by these and the *Viscum*. Further enquiries established that *Viscum* still occurred in several gardens in the village, at least one plant having self sown onto a relatively young apple tree.

A 1973 record from Llangadog, attributed to Mrs Vaughan, was searched for next. No sign could be found at the grid reference given but subsequently the details of the record have come to light and despite the site now being rather overgrown, several *Viscum* plants remain in an old apple orchard.

The old orchard at Glanrannell Park in which *Viscum* had been recorded around 1920 had been grubbed up within the last twenty years. The owner reported that the trees were in such poor condition that they were beyond resurrection and, in any

case, no *Viscum* had been present at that time. The last site visited was near Cwmann where a large male plant had been recorded in 1970. The farmer's wife complained that the plant had never produced berries but had been lost when the apple tree in which it grew was blown down in about 1985.

Several additional old records have also since been followed up but none have been found to be extant. These include plants at Laugharne, Pendine, Greencastle, Dynefor Home Farm, and Llanelli.

Publicity of the Plantlife Survey in the Carmarthen Journal led to the location of another *Viscum* plant on Apple in a garden at Croesyceiliog and another single plant has also come to light at Bethlehem. It is still possible that some plants occur in gardens in the vc which as yet have not been reported and any further records would be very welcome.

Richard Pryce

THE HARDINESS OF COASTAL PLANTS

Pembrokeshire pokes out into the Atlantic Ocean and Irish Sea. Thus frost is seldom a factor to be reckoned with, but wind "scorching," drying-out and salt spray are, and it is instructive to compare the response of different species to these hazards.

Hedera helix (Ivy)

Scientists studying fluctuations of the ice cap during the Pleistocene have used the presence or absence of *Hedera* in Scandinavia as an indicator of climate fluctuation, its presence, as now, indicating a climate ameliorated by the Gulf Stream, its absence indicating a continental climate. It climbs cliffs here and there along the Pembs. coast, but it is noticeable that the margins of the leathery leaves become severely browned after cold, Siberian-type winds blow down the Irish Sea.

Lavatera arborea (Tree-mallow)

This amazingly hardy, biennial plant is abundant along the Pembs. coast, including its offshore islands, its colonies being replenished and maintained by the high turnover of seeds and seedlings. It thrives on the guano of bird islands, as on Ynys Ddu, Carreg Rhosson, North and South Bishop and no doubt other islands between Strumble Head and St. Davids. Indeed on Ynys Ddu it is normally present as a "jungle." And significantly in my coastal garden it tries to form "jungles" about my compost heap.

There is a limit to its hardiness, however, which was reached on one particular night in Feb. 1987, when an extremely cold north wind blew down the Irish Sea, destroying, so far as I could see, every plant due to flower that summer. But of course the various colonies survived due to the many small first-year plants "waiting in the wings", for the seeds germinate all the year round.

I have seen it growing along the Antrim coast of Northern Ireland, but only occasionally and always in sites well sheltered from the north wind, and I assume this to be the case in all areas further north than Pembrokeshire.

Armeria maritima (Thrift)

Hugging the ground as it does, one would not expect this plant to suffer from cold winds like *Hedera* or *Lavatera*, although when its delicate flowers emerge from the

Erica cinerea (Bell Heather) and *Calluna vulgaris* (Heather)

Both Heathers when they grow with *Ulex* are clearly less susceptible to wind damage, but where they grow in fully exposed situations, as on the steep slopes of gullies where the wind is funnelled up from the sea or on headlands, they are destroyed, *E. cinerea* being the more vulnerable.

Although both species survive for several years on the shallow soils which carpet many cliff tops, they become vulnerable to desiccation in dry summers, when large rust-coloured areas become reduced to dust and whole plants die, as in 1995.

Festuca rubra (Red Fescue)

All the above ground-hugging species, and some others not mentioned, require more or less grass-free sites along the coast for success, and their principal grass competitor is the hardy *Festuca rubra* which carpets headlands and other exposed sites, often to the total exclusion of other grass species.

After wet, mild, grass-growing winters and summers, the above species are suppressed or are quite absent. After grass-killing seasons they multiply. For example, huge areas of *F. rubra* were destroyed on many headlands during the February winds of 1990 and 1991 and the green, cushion-shaped "islands" of *Armeria* started to expand in the years following to exploit the unoccupied niche. But perhaps the easiest and most accessible site for monitoring the fluctuations of coastal wildflower populations is the approach road to Abereiddi (SN 796311) where after the two grass-destroying Februaries of 1990 and 1991 a spectacular display of wildflowers was to be seen in early June, which included *Leucanthemum vulgare*, *A. maritima*, *Anthyllis vulneraria*, *S. uniflora*, *Lotus corniculatus* and *Jasione montana*. But in June 1995, after two very wet winters and summers, this colourful display was very much reduced, the last three species being barely present.

Gordon Knight

ANOTHER ROAD VERGE STORY

Driving near Llansannan, a colourful verge made me stop to have a closer look. On both sides of the road, for 50 yards, an area had been seeded with wildflowers. There were 10 new square records for SH 96:-

Melilotus alba (White Melilot)
Centaurea cyanus (Cornflower)
Anthemis arvensis (Corn Chamomile)
Papaver rhoeas (Common Poppy)
Medicago sativa ssp. *sativa* (Lucerne)
Agrostemma githago (Corncockle) 2nd post 1930 v.c. record
Vicia sativa ssp. *sativa* (Common Vetch) 1st v.c. record since subspecies were defined. Specimen to **NMW**.
Chenopodium album (Fat-hen)
Persicaria amphibia (Amphibious Bistort)
Spergula arvensis (Corn Spurrey)

together with 17 other weed species.

Since we record "railway" weeds, so we are going to have more occurrences of "road" weeds to record. where road contractors have sown wildflower seeds instead of grass seed. They may persist for several years, depending on the cutting regime. They may appear in nearby gardens, or be spread for several miles by road traffic. Do we record these obviously introduced species? I have recorded them, with the description "introduced" and will see how many appear again next year.

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THE TWO HEMLOCKS

It is interesting to compare *Conium maculatum* (Hemlock) with *Oenanthe crocata* (Hemlock Water-dropwort) in Pembrokeshire, where both occur abundantly. At the same time it might be helpful to tidy up some muddled statements in books about their poisonous properties.

Oenanthe crocata, sometimes appropriately called "Dead Men's Fingers" from the appearance of its roots, is frequently described as being very poisonous to humans and to livestock (because of oenanthe-toxin, an unsaturated higher alcohol), but locally sheep and cattle eat it with apparent relish, in the same way that they eat *Heracleum sphondylium* (Hogweed) which isn't poisonous. In fact they can demolish whole stands of it in the wet low-lying sites where it grows. Also the larvae of a small moth, *Depressaria* species - probably *D. daucella*, eat the inflorescences as they do those of *Heracleum*, first webbing the flowers together with silk for protection, after which they crawl down the stem and bore a hole into its hollow centre to mature.

As with *Senecio jacobaea* (Common Ragwort) the poisonous nature of *Oenanthe* is a subject of continual argument, resolved only by recognising that there are degrees of poison. *Oenanthe* frequently grows along nutrient-rich water courses and is just as frequently uprooted during winter floods, and here lies the danger, for the roots of this perennial umbellifer contain a far greater concentration of poison than does the

foliage and they are occasionally eaten by cattle with fatal consequences. Apparently even fish can be killed by it, as there was a local case, a few years ago, where a small river tributary was widened and where occasional *Oenanthe* roots were broken up, releasing the poison.

Conium maculatum (Hemlock), despite its delicate, even beautiful, appearance, has had a reputation for being poisonous for thousands of years. Our ancestors believed that the purple blotches and streaks on its stem were a warning from God, and the herbalist Henry Lyte in 1578 wrote that it was a "naughtie and dangerous herbe". It contains a "cocktail" of poisonous alkaloids, including coniine. *Conium* is a biennial, which explains its occurrence in disturbed ground, particularly if the site is a little bit damp.

I have made every effort over a number of years to discover if anything eats it, and have completely failed. *Daucella* species do not attack the flowers and there are no leaf-beetles attacking the foliage. There are never snails "roosting" on it like they do on *Heracleum*. Moreover the flowers are seldom visited. In fact this summer, 1995, I inspected 100 plants growing in one damp site near the village of Trefin and not one plant was damaged. Furthermore I occasionally found dead flies or beetles on the inflorescences, which made me wonder if they had succumbed to its poisons!

On the basis that "One man's poison is another man's meat", I am reluctant to accept that there isn't some animal that can eat it. I have read somewhere that sheep will eat the foliage of the first year rosettes, like they do *Senecio*, and I believe I saw a willow warbler picking off the green, immature seeds of *Conium*, but that is all. Has anyone else evidence that something eats Hemlock?

Gordon Knight

