

BOTANICAL SOCIETY OF THE BRITISH ISLES

WELSH BULLETIN

Editor: I.K.Morgan

No. 47, SPRING 1989



Photocopy of specimen of *Kickxia spuria* in NMW ex herb. J.A. Salter.

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** Note New Recorder

EDITORIAL

It is nice to be able to comment that we now have adequate material to ensure two issues of the Welsh Bulletin. To all contributors I would like to offer my thanks, and I continue to urge BSBI members in Wales to support this hopefully worthwhile Bulletin by writing about interesting species or plant localities in their area.

The delay in the publishing of this Bulletin - and the shortness of this Editorial - is due in part to work pressures on the Editor. The Editor would like to thank the "link-man" at NMW George Hutchinson for his help and, similarly, Gwynn Ellis for his efforts in the past.

I.K. Morgan, Cae Tegeirion, 4 Erw Las, Llwynhendy, Llanelli, Dyfed, SA14 9SF.

HON. SECRETARY'S REPORT

Annual General Meeting, 1988

The Twenty-sixth Annual General Meeting and Sixth Exhibition Meeting of BSBI Wales was held at the Welsh College of Horticulture, Northop, Clwyd on Saturday 23 July, 1988.

On the Friday evening, members resident at the College were treated to a very interesting and informative "perambulation of the gardens". On Saturday morning, members split into two groups, one to look at the flora of a rich woodland and some superb weedy field borders, and the other to go on 'an idiot's guide to grasses'. After a combined lunch, members again split into two groups, one to look at a salt-marsh at Flint, and the other to see limestone grassland on Halkyn Mountain.

After tea, the Chairman opened the Annual General Meeting. She informed members of the sad death of Mr S.G. Harrison, a former Chairman of the Committee for Wales and long time member of the committee, and the meeting stood in silent tribute. Apologies for absence were received from S.B. Evans and the minutes of the last AGM, published in the Welsh Bulletin No. 46, Spring 1988, were taken as read.

The Chairman, in her opening remarks, welcomed all members present and offered the congratulations of the meeting to Goronwy Wynne on being awarded a doctorate for his 'Ecological Flora of Flintshire', this was endorsed by acclamation. She then reminded members that this was the second year of the Monitoring Scheme and that only 2-3 months remained for recording to be completed, and finally thanked the Hon. Secretary and treasurer for their work, all leaders of field meetings, and the officers of the Welsh College of Agriculture, Northop.

The Hon. Secretary then gave his report on the last years activities. He started by giving a short appreciation of the work the late S.G. Harrison had carried out on behalf of the BSBI in Wales. He then reported that although the Committee for Wales was at full strength, he had to report, with regret, that Mr Ian Morgan had decided to resign from the Committee although remaining as Editor of the Welsh Bulletin. Mr Morgan was thanked for his efforts on our behalf. Two changes in Welsh vice-county recorders were announced; Mr M. Morris, recorder for v.c. 49 (Caernarfon), and Miss Ann Powell, recorder for v.c. 43 (Radnorshire), had both decided to resign. They were to be replaced by Mr N. Brown (v.c. 49) and Dr D.R. Humphreys (v.c. 43). Both Miss Powell and Mr Morris were warmly thanked for their services as county recorders.

Two issues of the Welsh Bulletin had been published since the last AGM and the editor, I.K. Morgan, and the authors of papers were thanked for their contribution.

The Monitoring Scheme continued to make progress in Wales and it was reported with pleasure that indications were that all 10km squares and tetrads will be adequately covered by the time the scheme ends. As in the previous year, most 1988 field meetings were associated with the Monitoring Scheme and it was noted with interest that although there had been a reduction in numbers attending individual meetings, the combined totals were higher, and each meeting had been easier to lead, and participate in.

Jean Green and Goronwy Wynne were thanked for the efficient way they had organised the meeting, and led the days field meetings. The NCC was also thanked for allowing their offices at Plas Gogerddan and Llandrindod Wells to be used for committee meetings, and the National Museum of Wales for secretarial assistance and production of the Welsh Bulletin.

Members were then reminded of the following day's field meeting and those to come later in the year, and finally were invited to attend the evening's lecture by Bruce Ing and the exhibition meeting.

The Treasurer, Mr R.D. Pryce, then gave his report on the financial situation, which was satisfactory. A balance sheet was circulated to all present (reproduced below). The report was received with thanks.

Statement of Accounts from 1 January 1987 to 31 December 1987.

Receipts	£	Payments	£
BSBI Welsh Bulletin	40.00	Envelopes for	
Rubus meeting		Welsh Bulletin	5.00
accommodation	283.35	Accommodation	
Carmarthen Recording		(Rubus & Recording)	537.62
accommodation	255.75	Refund to A. Rundle	
AGM Accommodation	223.50	(cancelled accom-	
Interest to 20.11.87	9.92	modation)	45.75
Total	£812.52	Accommodation (AGM)	213.25
		Total	£801.62
			£
		Carried forward from 1986 (General & Special Accounts)	395.68
			10.90
		Total	£406.58

Statement of Accounts from 1 January 1988 to 30 June 1988

Receipts	£	Payments	£
Bulletin subscriptions	3.00	Bulletin Postage	46.38
Total	£3.00	Production of Bulletin	
		Nos 43,44 & 45	250.00
		Total	£296.38

	£
Carried forward from 1987 (General & Special Accounts)	406.58
Excess expenditure over income 1.1.88 to 30.6.88	293.38
	<hr/>
Total	£113.20
Balance in Bank & Cash in Hand on 30.6.88	£113.20

ELECTIONS

Officers

The Hon. Secretary, R.G. Ellis and Hon. Treasurer, R.D. Pryce, were both nominated for re-election to their respective posts and, in the absence of any other nominations from the floor, were duly elected.

Committee Members

S.B. Evans, Q.O.N. Kay, I.K. Morgan and G. Wynne were due to retire under rule 5 of the constitution and were eligible for immediate re-election. I.K. Morgan had decided not to seek re-election, but the other three members had indicated their willingness to stand again, and Dr George Hutchinson was nominated by the Committee for Wales to fill the vacancy. In the absence of any other nominations from the floor, S.B. Evans, Q.O.N. Kay and G. Wynne were re-elected and G. Hutchinson elected, to serve on the Committee for Wales for a period of two years.

Under Any Other Business it was reported that a children's Flower Painting Competition had been organized for local (Clwyd) Watch groups by Mr J. Phillips, under the auspices of the NWNT. The entries formed part of our exhibition meeting and had been judged by Mrs M. Todd; small prizes had been donated by BSBI Wales. There then followed a short discussion on field meetings held in Monitoring Scheme squares, after which, in the absence of any other business, the chairman declared the Annual General Meeting closed and invited members to look at the exhibits.

EXHIBITS

J. Briggs : Montgomeryshire Canal
Miss A.P. Conolly : West Lley Pteridophytes
R.G. Ellis : Some puzzle plants
R.G. Evans : Some Gwent plants
Mrs J.A. Green : *Vicia sativa* subspecies
: Map of interesting botanical sites in Clwyd
J. Phillips : British Post Office stamps, A botanical theme
: Wild flower painting competition
Mrs M. Todd : Wild flower paintings
: Wild flowers of North Wales drawn by Hugh Morriston
Davies, M.D., M.Ch., F.R.C.S. (1893-1965)
G. Wynne : Botanical quiz
: *Senecio cambrensis*
: Draft copy of Flora of Flintshire

Slides were shown by several members.

COMMITTEE FOR WALES, 1988-1989

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

Officers:

Chairman	Mrs J.A. Green
Vice-chairman	Mr T.G. Evans
Secretary	Mr R.G. Ellis
Treasurer	Mr R.D. Pryce

Committee members:

Mr N. Brown*	Mr S.B. Evans
Mr P. Day*	Dr G. Hutchinson
Mr M. Porter*	Dr Q.O.N. Kay
Mr R.G. Woods*	Dr G. Wynne

*Members due to retire in 1989

RUBUS IN WEST LLEYN, 1988

The brambles of the Lleyn peninsula appear never to have been extensively or systematically studied. In the summer of 1988 an opportunity arose to remedy this deficiency: during a three day visit to West Lleyn in August by AN some 18 species (microspecies) of *Rubus* were added to the W. Lleyn flora, giving a current total of 24 species and two hybrids.

Prior to this visit a mere 6 species were known from the area this century, with nothing recently identified from the extreme western part: only a brief incursion into the eastern fringe of W. Lleyn having been made (by AN) in 1976 when the following were noted:-

Rubus tuberculatus, *R. incurvatus*, *R. cardiophyllus*, *R. ulmifolius*, *R. bartonii*, *R. caesius*.

Prior to 1950 the only traced published records are by Griffith (1895) who, in his Flora, enters *R. dumoniensis* "Near Abersoch" (SH32); *R. incurvatus* "Abersoch" (SH32); "*R. koehleri* var *pallidus*" (= *R. dasyphyllus*) "On the beach, Pwllheli" (SH33); and *R. caesius* "Abersoch" (SH32). In 1933 P.M. Butler collected on Bardsey Island (SH12) plants which were identified at BM(NH): the *Rubi* were sent to Rev. Riddelsdell; apart from "mildewed" and inadequate specimens, he listed (BM.MS. 1933) "*Rubus rusticanus*" (= *R. ulmifolius*), "*Rubus rusticanus*" hybrid?; *Rubus* cf probably *R. corylifolius* (agg). A more recent specimen collected on Bardsey in 1983 by A.C.R. Henderson was determined (by AN) also as *R. sect. Corylifolii*. Other herbarium specimens, dating from last century, include:-

R. cardiophyllus, Pwllheli (SH33), G.C.D(ruce), (n.d.) (Hb Druce OXF).

R. cardiophyllus, Abersoch (SH32), J.E.G.(riffith), Spt 1891 (Hb Druce OXF).

R. incurvatus, Penllech (prob. SH23), (C. Bailey), 12.09.1888, (Hb MANCH).

Of the 18 species now (1988) added to W. Lleyrn, five are NCR's for Caerns., v.c. 49:- *R. raduloides*, *R. conjungens*, *R. leyanus*, *R. amplificatus* and *R. dentatifolius* (fig. 1). They all show major extensions of range: *R. raduloides* new for western Wales; *R. conjungens* with no previous Welsh record north of southern Cardiganshire, and only a dozen or so all told in Wales; *R. amplificatus* very sparse in Wales with only one prior western entry (in Cardiganshire); and *R. leyanus*, although well represented in southern Wales north as far as south Cardigan/south Radnor, has only one locality - apart from a Dee-side spot - to the north in Wales: a very recent Anglesey one. For *R. dentatifolius* both prior records in north Wales lie well to the east of Gwynedd.

Two further species particularly rare in Wales, but already known from Caerns. v.c. 49 are *R. infestus* and *R. vigorosus* (fig. 2); the former known from north Caernarvonshire and the latter just a little to the east of W. Lleyrn to the north of Criccieth; but neither have more than some half dozen or so other Welsh 'squares' recorded.

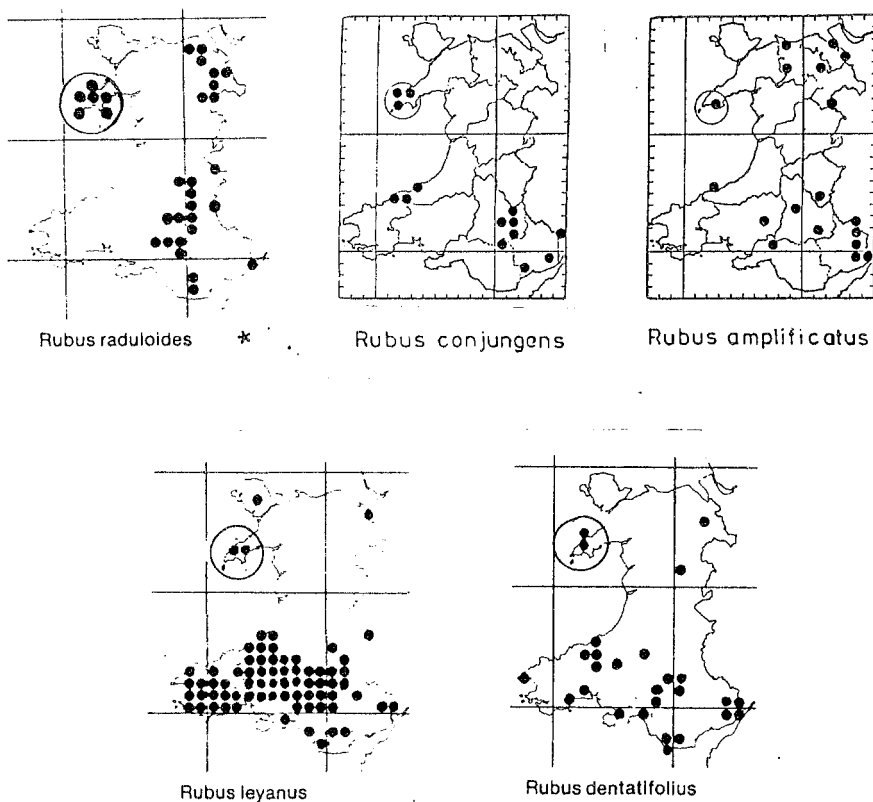
Two local north Wales endemics, barely known outside of Gwynedd: *R. monensis* and *R. riparius* (fig. 2) now have their range extended to cover western Lleyrn; *R. ordovicum* (fig. 2) with a similar narrow NW Wales - Gwynedd area, but recently also discovered near Dublin (Allen, 1988) was found to be frequent in all seven 10km squares.

Of distributional interest too, is the extension further west into SW Caernarvonshire of the two species *R. dumnoniensis* and *R. lanaticaulis* (fig. 3) both with a markedly western range in the British Isles: the frequency of the former in W. Lleyrn emphasizes this. *R. wirralensis* (fig. 3) somewhat less restricted to western Britain and with an 'Irish Sea' predominance, now also shows an extension into west Caernarvonshire. *R. lindleianus* (fig. 3) which is widespread in western Britain but uncommon in coastal areas was only seen once: again new to W. Lleyrn.

The remaining additions to the W. Lleyrn list are predictable westerly extensions of species widespread and common in N. Wales and Anglesey as a whole (figs 3,4).

Two hybrids were also added for the area:- *R. caesius* x *R. ulmifolius* and *R. ordovicum* x *R. ulmifolius*, but are to be expected in this coastal area.

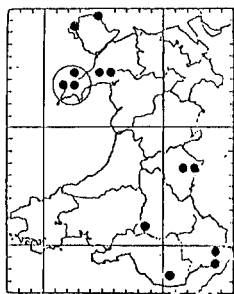
The total of 24 species seen comes close to that estimated before this survey, which, in spite of the limitation of the number of localities sampled in the time available does suggest that few significant future additions are likely. Nevertheless it might be worth listing those species not seen on this occasion, which, judging by the maps now available (Edees & Newton, 1988), might be expected and thus worth batologists looking out for when visiting the area. These are:- *R. scissus*, *R. bertramii*, *R. silurus*, *R. vestitus*, *R. lentiginosus*, *R. effrenatus*, *R. griffithianus*, *R. semiglaber* and perhaps *R. lindebergii*, all of which are to be found in the foothills of the N. Wales mountains.



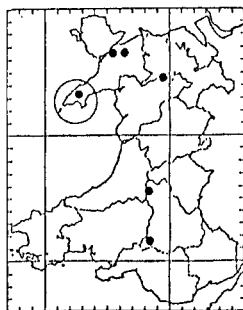
Five species new to Caerns.v.c.49 showing major extensions of Welsh range to N. and NW. Wales.

* This and subsequent maps of this format have been modified from Ellis (1983).

Fig. 1

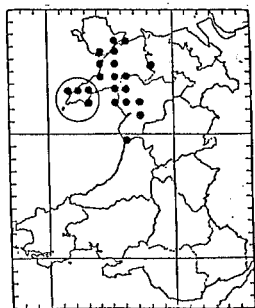


Rubus vigorousus

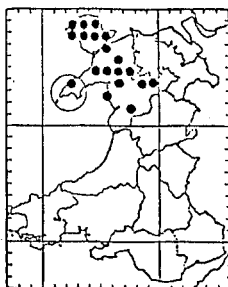


Rubus infestus

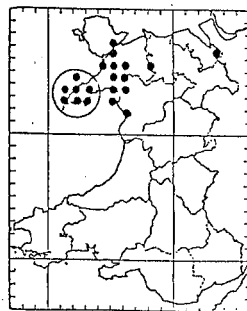
Two species very rare in Wales but already recorded from Caerns.



Rubus riparius



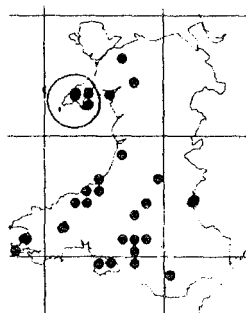
Rubus monensis



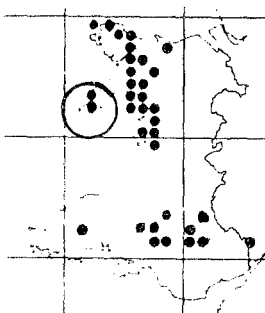
R.ordovicum

Three species almost entirely restricted to Gwynedd;
R.ordovicum alone occurring (Co.Dublin) outside N.Wales.

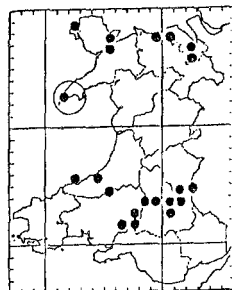
Fig. 2



Rubus dumoniensis



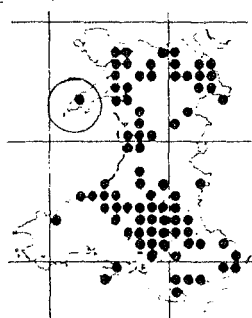
Rubus lanaticaulis



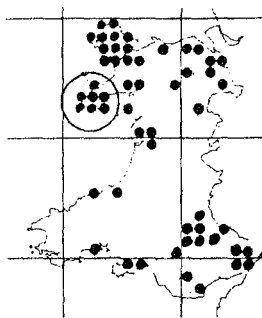
Rubus wirralensis

New to W.Lleyn, though already known in Caerns.v.c.49.

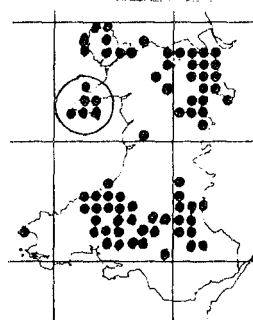
Western (British) species; R.wirralensis mainly around the North Sea.



Rubus lindleianus



Rubus cardiophyllus

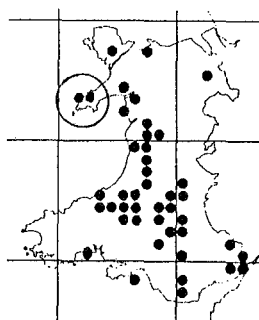


Rubus tuberculatus

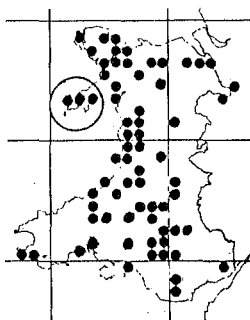
R.lindleianus: new to W.Lleyn, though widespread in inland Caerns. and elsewhere in Wales but sparse coastally.

R.cardiophyllus, R.tuberculatus: further extension of range in W.Caerns. parallels that in Anglesey for these mainly Marches and S.& W.England species.

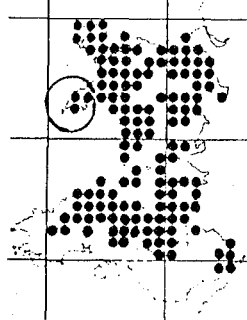
Fig. 3



Rubus pyramidalis

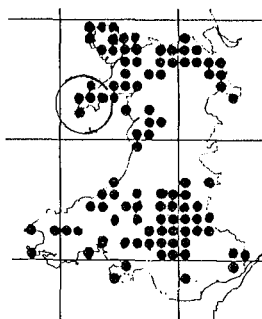


Rubus nemoralis

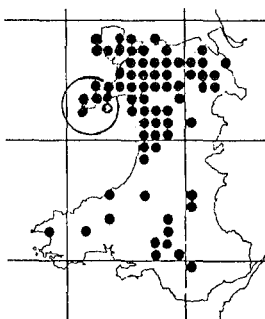


Rubus dasyphyllus

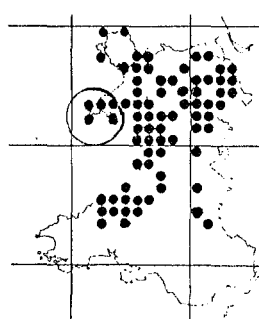
Widespread and common species not previously recorded from W.Lleyn, but extension to here predictable.



Rubus polyanthemus



Rubus incurvatus



Rubus bartonii

R. polyanthemus: as above but not previously recorded from W.Lleyn. R. incurvatus, R. bartonii: widespread in Wales, already known in W.Lleyn, gaps there now filled.

Fig. 4

Ecological note

The main features of Lleyn are its exposure to winds from every quarter and its proximity to the sea. Woods are small and confined to small valleys in the lee (i.e. SE facing portion) of the hilly back-bone of the peninsula. Brambles are best developed in these more sheltered areas but are also widespread and common on the lower moorland slopes except those directly open to on-shore winds. Here they inhabit road and trackside banks often in the shelter of stone and turf walls and also occur in some quantity on scrubby gorse slopes.

Bushes may be stunted or damaged in the inhospitable spots and then present difficulties in identification; recognition is least difficult during the flowering season of mid-July to mid-August when the floral characters offer clear and conclusive evidence of identity.

Table of *Rubus* species collected and determined by Alan Newton Aug. 7-10, 1988. Record of 10km sq. grids (all SH = 23/).

- 1) Species not previously recorded this century from West Lleyn
* new to Caerns., v.c. 49 pre 1900.

<i>Rubus ordovicum</i>	SH 12,13,22,23,24,32,33.
<i>R. polyanthemus</i>	SH 12,13,23,24,33
<i>R. dummoniensis</i>	SH 23,33, & 32 updated from Griffith (1895).
<i>R. riparius</i>	SH 13,23,32,33.
<i>R. infestus</i>	SH 23.
* <i>R. raduloides</i>	SH 12,13,23,24,32,33.
<i>R. vigorosus</i>	SH 13,23,24.
<i>R. dasyphyllus</i>	SH 22,23, & 33 updated from Griffith (1895).
<i>R. pyramidalis</i>	SH 13,23.
<i>R. lindleianus</i>	SH 23.
<i>R. nemoralis</i>	SH 13,23,33.
* <i>R. conjugens</i>	SH 12,13,23.
* <i>R. leyanus</i>	SH 23,33.
<i>R. lanaticaulis</i>	SH 22,23.
* <i>R. amplificatus</i>	SH 22.
<i>R. wirralensis</i>	SH 12.
<i>R. monensis</i>	SH 23.
* <i>R. dentatifolius</i>	SH 23,24.

and the hybrids:- *R. caesius* x *R. ulmifolius* SH 12
R. ordovicum x *R. ulmifolius* SH 32

- 2) Additional 10km sq. grid records for taxa previously recorded from West Lleyn. (Update from 1976 signified by () ; earlier by .

<i>R. tuberculatus</i>	SH 12,22,23,24,32 & (33).
<i>R. bartonii</i>	SH 12,13,23 & (33).
<i>R. incurvatus</i>	SH 12,13, 23, 24 & (33).
<i>R. cardiophyllus</i>	SH 12,13,22,23,24, & 32, (33).
<i>R. caesius</i>	SH 13, 24 & 32.
<i>R. ulmifolius</i>	had already been recorded from all seven

10km sq. areas (by various recorders), but is now confirmed (AN) for 1988 for all.

Summary of taxa found in each of the seven 10km sq. areas.

SH 12 (Aberdaron-Uwchmynydd)	10 species + 1 hybrid
SH 13 (Llangwnadl (west)-P. Iago)	13 species
SH 22 (Cilan-Porth Neigwl-Rhiw)	7 species
SH 23 (Botwnnog-Tudweiliog)	21 species
SH 24 (Porth Dinllaen)	10 species
SH 32 (Abersoch-Cilan)	8 species + 1 hybrid
SH 33 (Pwllheli-Rhyd y Clafdy)	13 species.

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- Edees, E.S. & Newton, A. (1988). Brambles of the British Isles. London.
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- Griffith, J.E. (1895). Flora of Anglesey & Carnarvonshire. Bangor.
- MS. BM(NH) MS: BFG 49B (1933).

Alan Newton, 10 The Fairways, Leamington Spa, Warwickshire, CV32 6PR.

Ann Conolly, 25 Brocks Hill Drive, Oadby, Leicester, LE2 5RE.

THREE EARLY RECORDERS OF CARMARTHENSHIRE PLANTS

Although the recording of the Carmarthenshire flora dates back to 1662 when John Ray recorded *Juncus acutus* "from sandy meadows about Kidwelly" (May 1967), it is not until the last part of the 19th Century that the study of the vice-county's plants gained momentum.

In 1796, the well-known Welsh antiquarian and poet Iolo Morgannwg (Edward Williams 1746/7-1826), travelled through Carmarthenshire (and elsewhere in South Wales) noting, amongst other things, the landscape and agricultural use made of those areas through which he passed.

For example, around Llannon (22/50) he noted that he entered "a very dreary and boggy tract of the county, almost hedgeless, houseless and woodless," and that he observed "the 'cotton willow' (presumably *Salix repens*) in some places on a soil very different from that whereon I many years ago saw this plant...near Deal in Kent." Iolo Morgannwg also noted that "whortleberry plants (*Vaccinium oxycoccos*)...appear plentifully, a plant peculiar to bogs."

This area around Llannon is still boggy and rough in parts with stands of bog myrtle *Myrica gale*, royal fern *Osmunda regalis* and other local bog plants. It is in this locality that James Motley recorded the bog gentian (*Gentiana pneumonanthe* in c.1850 which May (1967) curiously and inexplicably considered an error. (Motley was too good a botanist to make such a mistake, and the habitat was correct for this now extinct v.c. 44 species). These boggy tracts around Llannon are still of conservation interest in spite of suffering from agricultural reclamation, afforestation and lately, peat extraction.

For those interested, a thorough account of Iolo Morgannwg's travels written by Muriel Bowen Evans, appears in the 1988 (Vol. 24) edition of 'The Carmarthenshire Antiquary'.

About half a century later (in 1848) Lewis Weston Dillwyn, (1778-1855) resident at Penllergaer in West Glamorgan, produced a 'Materials for a Fauna and Flora of Swansea'. This list is full of interest to the Carmarthenshire botanist and contains many records made by James Motley (d. 1859) who did so much work on the flora of SE Carmar, and whose herbarium (and manuscript flora of the Llanelly area) were mostly destroyed during the 1941 Blitz of Swansea (they being held in the Royal Institution).

LEWIS WESTON DILLWYN:

MATERIALS FOR A FAUNA AND FLORA OF SWANSEA, 1848

(not published)

Records of relevance to Carmarthenshire extracted from the botanical chapter of the above book, a copy of which is held in the Reference Section of the Swansea Public Library. These records are listed below, comments and grid references (in brackets) are those of the current author.

CHAPTER 5: BOTANY, p.26

Alisma (=Baldellia) *ranunculoides* (found) ... and by my friend Mr Motley, in marshes among the sandhills at Pembrey.

Arabis hirsuta... It is also found on the sandhills, both at Kenfig and Pembrey, by Mr Motley.

Arundo (=Calamagrostis) *Epigejos*... Has been found near Loughor and also about Llanelly (Llanelli) and Pembrey, by Mr Motley.

Apisidium irrigum Found by Mr Motley, at Quarry Mawr, by Felin Fole, (Felinfoel, 22/50) near Llanelly.

Atriplex rosea Discovered by Mr Motley.

Barbarea praecox (=verna) Found by Mr Motley, in fields by Felin Fole near Llanelly.

Bromus velutinus (=secalinus) Schrad. Found by Mr Motley at Llenlliedy near Llanelly.

B. madritensis L. Found on rubbish thrown out of Genwen quarry (21/550997) near Llanelly by Mr Motley.

Callitriche pendunculata (=hamulata) Found by Mr Motley in Llwyn Owen (presumably Llyn Llech Owain 22/56-15-) near Cross Hands near Llanelly.

Carduus acanthoides ... by Mr Motley between Pembrey and Kidwelly.

Carex ampullacea (=rostrata) ... by Mr Motley on several bogs in Carmarthenshire.

C. curta ... and by Mr Motley on those (bogs) of Llanon, Llanelly and Llanarthney.

- C. laevigata* ... said by Mr Motley to be common about Aberafon and Llanelly.
- C. muricata* ... found by Mr Motley among the ruins of Kidwelly Castle.
- C. pendula* ... about the waterfall at Glyn Hir, (22/642152) near Llandeibie, (where it still grows), and found by Mr Motley in several other places in the vale of the Gwendraeth.
- C. riparia* ... gathered by Mr Motley in the Gwendraeth river, near Pontnewydd, (22/446073, again where it still survives) and in other places near Pembrey and Kidwelly.
- C. vesicaria* ... found on the banks of the Gwendraeth-fach, above Kidwelly Tin-mills (22/422079) by Mr. Motley.
- Carum verticillatum* Abundant in moist pastures throughout the neighbourhood.
- Cauculis* (=Turgenia) latifolius Mr Motley found three specimens in a field by Felin Fole.
- Chenopodium muralis* (=murale) Found by Mr Motley on rubbish at Pembrey.
- C. rubrum* ... in the marsh at Pembrey by Mr Motley.
- Oniscus eriophorus* (=Cirsium eriophorum) ... Found also by Mr Motley on ballast heaps about the Llanelly Docks. (21/49: wrongly attributed to Dillwyn by May (1967)).
- Erysimum cheiranthoides* Found by Mr Motley in a turnip field between Capel Llandarry (Llandyry, 22/434049) and Penybedd (22/413028) near Pembrey.
- Festuca loliacea* (=x. Festulolium loliaceum) In moist pastures not infrequent, and found mixed with *F. pratensis*, near Trimsaran by Mr Motley.
- Galanthus nivalis* Mr Motley says that it is completely naturalised in some place about Llanelly and Trimsaran. (22/45-04-).
- Galium anglicum* (=parisiense) Found in corn fields at Llanlliedy near Llanelly by Mr Motley.
- Gentiana pneumonanthe* Once found by Mr Motley in a bog near Llanon. (Llanon, 22/54-08-). (This bog has been extensively drained or afforested, though areas still remain).
- Gentianella campestris* Found near Kilymaenllwyd (Pwll, 22/476015) by Mr Motley.
- Gnaphalium dioicum* (=Antennaria dioica) Mr E. Forster found it between Carreg Cennen Castle and the source of the Loughor.
- Hymenophyllum wilsonii* Found by Mr Motley on rocks besides the Lliedi River opposite Ystrad-fair (22/517037) near Llanelly. (This site is now submerged under a reservoir).

Hypericum maculatum Discovered about Kidwelly by Mr Motley.

Inula helenium ... Mr Motley ... who describes it to be rather common in Carmarthenshire.

Juncus coenosus (= *Isolepis cernua*) ... and by Mr Motley only an inch high near the old harbour at Pembrey.

Leontodon palustre (= *Taraxacum palustre*) Mr Motley says, that in Carmarthenshire it is common in bogs.

Leonurus cardiaca ... and has been found at Kidwelly by Mr. E. Forster.

Linaria repens ... plentiful by roadsides in many places about Llandilo, (Llandeilo) Llangattock (Llangadog) and Llandovery.

Linum usitatissimum ... found by Mr Motley in abundance on rubbish from a deep cutting at Pencilogi (22/533007) near Llanelly.

Malva verticillata (See Hooker's London Journal of Botany, Vol. VI p. 257, tab. 7). Found by Mr Motley in cornfields at Ty'r Fran (22/51-01-) near Llanelly, and it singularly happens that *M. crispa* has been found in the same fields with it.

Mentha piperita (= *M. x piperita*) ... but Mr Motley thinks he has found it certainly wild, and in very great abundance, about three or four miles above Pontardylais. (Pontarddulais - the above site maybe in Glamorgan or in Carms.).

Mentha rotundifolia ... been found by Mr Motley in the burial ground at Felin Fole near Llanelly, and also with *M. sylvestris* on the banks of the Loughor, above Pontardylais.

Myosotis palustris (= *scorpioides*) Mr Motley informs me that he has discovered the *M. repens* of Don, on the banks of the Gwendraeth-fach near Kidwelly; and the *M. versicolor* of Lehman, on hedgebanks about Spitty (21/55-98-), which he also considers rare.

Nasturtium sylvestre (= *Rorippa sylvestris*) ... found on the banks of the river above Kidwelly by Mr Motley.

Oenanthe pimpinelloides ... Mr Motley informs me that the variety, called *O. lachenalii* abounds on the Loughor and Llanelly marshes.

Oenothera biennis ... informed by Mr Motley that it "covers hundreds of acres of sandhills at Pembrey, certainly wild" (Early evidence for the establishment of *Oenothera* on the burrows at Pembrey. *O. biennis* here may refer to *O. stricta* or *O. nova-scotiae* (= *O. cambrica*)).

Orobis sylvaticus (= *Vicia orobis*) It has been found by Mr Motley in the neighbourhood of Llanelly.

Osmunda regalis In ditches by the roadsides and other wet places; not infrequent. (*Osmunda* still survives on parts of the coalfield, both in Carm. and Glam.)

Petroselinum sativum (=crispum) Mr Motley informs me that he has found the "common parsley in great abundance, and apparently wild, on the sea bulwark of Llanelly marsh".

Polypodium phegopteris (=Phegopteris connectilis) and at Glyn-hir (22/642152, still surviving) near Llandebie. (Llandybie).

Pyrus torminalis (=Sorbus) ... found also by Mr Motley in the Glyn Abbey (22/44-07-) woods near Kidwelly. Perhaps still surviving in the ancient woodland at Cwm Clydach or Coed-y-Glyn near Glyn Abbey.

Ranunculus fluitans Found by Mr Motley in the Gwendraeth Fach river above Kidwelly and in the Loughor river above Pontardylais.

R. parviflorus Discovered in abundance on the Castle Hill (22/409071) at Kidwelly by Mr Motley.

Rhodiola rosea (=Sedum rosea) Found by Mr D. Llewelyn on the highest rocks about Llyn y Fan fach (22/80-21-etc). (Discovery wrongly attributed to Augustin Ley (1896) by R.F. May. It is difficult to understand why May (1967) considered this species as extinct in the county, as the thriving populations around Llyn y Fan fach are immediately apparent to the visitor).

Rhynchospora alba Found by Mr Motley in the dingle above Felin Fole near Llanelly.

Ribes nigrum Found by Mr Motley in marshes near Pembrey.

Rosa micrantha Glyn gwernen near Kidwelly.

R. stylosa ... about Trimsaran. (22/45-04-)

Rubus nemorosus Found by Mr Motley in abundance on the embankment of the Llanelly and Llangennech railway and on the banks of the old canal at Pembrey.

R. plicatus Found in moist places about Llanelly and Llanon by Mr Motley.

R. suberectus (=R. nessesensis) Mr Motley has found it plentifully above Felin Fole. (Felinfoel 22/51-02-).

Rumex sanguineus ... found by Mr Motley at Pont-y-yeats, near Llanelly, and on the roadside near Glyn Abbey.

Sagina maritima Found by Mr Motley on the sea bulwark at Tir-tene* and Tir-cattrish,* in Llanelly marsh. (*these dwellings have now vanished).

Salix The following have been found about Llanelly and Kidwelly by Mr Motley:-

Salix alba, aquatica, aurita, caprea, cinerea, x
forbyana, fragilis, fusca, argentea, holosericea,
laurinea, oleifolia, triandra, viminalis, vitellina.

Sanguisorba officinalis ... by Mr Motley on dry pastures about Glyn Abbey.

Scirpus sylvaticus Found on the banks of the Gwendraeth Fach near Kidwelly by Mr Motley.

Vinca major "Ferryside by Llan Ishmaels, (St. Ishmaels 22/36-08-) it grows in patches of at least $\frac{1}{4}$ acre, among the rocks, certainly wild" (Motley).

(*Vinca major* still grows here, alongside the railway line SW of St. Ishmaels church. An established alien rather than a 'wild' indigenous species.

Viola flavicornis (=canina) Mr Motley has observed that it is common in sand on the sea coast.

V. lutea The Black Mountain. (Mynydd Du 22/62 & 22/72. Extreme grazing pressures in the present century have presumably eradicated this species).

Zostera angustifolia ... has been occasionally observed by Mr Motley, washed upon the beach in abundance at Pembrey

Lastly, William Davies - or to give him his bardic title, Gwilym Teilo published in 1848 a botany section in his book "Llandeilo-Vawr and its Neighbourhood: Past & Present". This too holds many interesting records, some of which are now listed.

Clematis vitalba - 'Pant-llyn limerocks' 22/61-16- (where it still grows)

Trollius europaeus - near Cwrt Bryn-y-beirdd 22/66-18- (probably now lost to agricultural reclamation).

Helianthemum vulgare (=H. nummularium) - Carreg Cennen 22/668191

Drosera rotundifolia - wet lands above Tregib 22/62

Rhamnus cartharticus - Garn Hill 22/59-16- (*Rhamnus* is still frequent on this stretch of limestone).

Genista tinctoria - abundantly in Gwynfe 22/72

Poterium sanguisorba (=Sanguisorba minor) - in meadows

Myrrhis odorata - at Gwynfe c.22/72

Viscum album - found lately at Rhiw'r Adar (=Bird's Hill 22/603449) on old apple trees; but now extinct.

- Knutia arvensis* - in cornfields, plentiful. (The cessation of corn-growing and agricultural improvement have contributed to this species' great local decline).
- Gentiana amarella* - (=Gentianella) on the Garn lime hills (22/603229), plentiful
- Verbascum blattaria* - at Bird's Hill 22/603229; otherwise only known (in vc 44) at Pembrey Forest 22/40-01-
- Paris quadrifolia* - rare at Penybank c. 22/61-24-? (still found in a few base-rich woods)
- Acorus calamus* - rare (no locality given; otherwise only recorded at the Filter Beds at Felinfoel 22/50, Miss Innes c.1840).
- Lycopodium clavatum* - on Pigyn Sir (Sion) Nicholas, Cayo (Caeo) 22/66-35-
- Polypodium phegopteris* (=Phegopteris connectilis) - wood near Rhydyffynnon 22/61-19-
- P. dryopteris* (=Gymnocarpium dryopteris) - near Cevn cethin (?); generally rare.
- Lastrea foenisecii* (=Dryopteris aemula) - this rare fern is found growing in a wood not far from Golden Grove (prob. 22/58-19-)
- Hymenophyllum tunbridgense* - found on Llyn-y-Van (Fan), 22/82- perhaps mistaken for *H. wilsoni*?; needs checking.
- Osmunda regalis* - at Capel Hendre 22/59-11- and Llanedi 22/58-07- (still locally frequent on parts of the coalfield)

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Acknowledgments

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Iris versicolor

Lord Herberts Lake is the local name for a fishermans lake set in the hills above Machynlleth in Powys. I have been told of an elderly lady living in the area who remembers the reedy swamp at the beginning of the century before this artificial lake was created by the family of Lord Londonderry. Glanmerin Lake, which is the name you will find on the map, was created in about 1906 by damming the Nant Llyn-gwr-drwg, 550 feet above sea level, to fill the boggy hollow. The resulting lake has a circumference of just over 1 km and quite an interesting flora.

Included in my botanical records for the area was yellow flag (*Iris pseudacorus*) for there were numerous large clumps of iris leaves along the lakeshore. Imagine my surprise one summer day when I spotted, not the yellow flag I had expected, but large numbers of blue iris swaying in the breeze. Retracing my steps around the lake I counted no fewer than thirteen well established large stands of blue iris, but could not find a single yellow flag.

Having seen a blue iris in a similar wetland area in Eastern Canada when I was walking a Wilderness Trail, I checked against the Canadian Flora (1,2) and realised that the flower is almost certainly *Iris versicolor*.

The violet-blue flowers of this iris have attractively veined sepals and are on a sturdy stalk among tall sword-like leaves that rise from a basal cluster. There is a characteristic blue staining on the leaves, just above the rhizome. The fruit is bluntly three-lobed with an erect capsule. The rhizome is extremely poisonous, but it used to be dried and taken in small amounts as a cathartic and diuretic by Indians and colonists in Eastern America.

Mr Beaumont, a grandson of Lord Londonderry, assures me that there is no record of any planting having been done at Glanmerin Lake, and that no alterations have been made there since about 1908. However it seems likely that the iris was planted when the lake was created, together perhaps with *Rhododendron ponticum* and possibly *Nymphaea alba* and *Nuphar lutea* which are also in evidence. It has been confirmed by an ex-Mayor of Machynlleth and also by other local fishermen that there have been blue irises along the lakeside since before the First World War.

There is no horticultural maintenance in the predominantly sheep farming land in the vicinity, but the lake itself is looked after by the Corris Fishing Club. One large clump of *Iris versicolor* has been bulldozed for drainage purposes, and the rhizomes tossed about mechanically on either side of the ditch. However they rooted themselves quite happily, and within a few months two new large clumps had re-established themselves, so the iris is obviously very much at home in its present habitat. There are unconfirmed reports that the blue iris has been seen along the Dovey Estuary and also near Morben-isaf where the Bog Myrtle (*Myrica gale*) grows, but I myself have not found it in either of these places.

Iris versicolor had become naturalised in a reed swamp in Ullswater and in other places in Britain for some considerable time (3).

- 1 "The Audubon Society Field Guide to North American Wild flowers" by William Niering & Nancy Olmstead, Professor of Botany, Connecticut College and Nancy C. Olmstead, Research Associate, Connecticut Arboretum 1979.
- 2 "A Field Guide to Wildflowers of Northeastern and North-Central North America" by Roger Tony Peterson and Margaret McKenny, 1974.
- 3 "Flora of the British Isles" by Clapham, Tutin and Warburg. 2nd Edn. 1962.

Mrs M. Case, Les Ruisseaux, St. Brelade, Jersey, Channel Isles.

TWO WELSH BRAMBLES IN THE ISLE OF WIGHT

No, not the Isle of Man - the Isle of Wight!. Highly unlikely though it sounds, a bramble hitherto known only in North-west Wales (v.c. 46-49) and another which, while not exclusively Welsh, has its headquarters in Pembroke, were both identified in 1988 as inhabitants of a short stretch near the coast of Central Southern England.

The supposed Welsh endemic, *Rubus effrenatus*, was described by Alan Newton only as recently as 1974. It had been confused with another North Wales speciality, *R. lentiginosus*, but unlike that it has pink petals as well as both pricklets and glands. Its diffuse and intricate panicle with strikingly long patent peduncles and pedicels additionally give it a very distinctive look.

In 1982, on two successive days, I came across a bramble that was new to me growing in profusion in two widely-separated localities in the south-east of Wight. The first of these was the remains of a once-extensive common (now mainly a golf course) inland of Sandown, the second a north-facing area of downland well to the rear of St. Catherine's Point, the southernmost tip of the island. On my submitting a sample to Newton the following winter, he was unable to suggest a name and I wrote it off as presumably just one more form of purely local origin, the product apparently of a cross between *R. sprengelii* and some glandular-aciculate species.

Late last summer I found cause to look inside the folder of *R. effrenatus* in the British Museum and notice that two sheets were of an untypical, much laxer state of the species which at once recalled this mystery plant of Wight. Careful comparison led me to the conviction that they were indeed identical; but on my resubmitting one of my specimens with this suggestion, Newton decided that, while it had some similarities to *R. effrenatus*, its rachis armature was far too weak for that. Renewed study, however, more than ever convinced me that I was right, and subsequently a wider range of material has succeeded in shifting and converting him to my view.

What a North Wales bramble is doing in Wight is anyone's guess. Perhaps there is, or has been in the past, a migration route of berry-eating birds (in particular thrushes) which runs south-south-eastwards from the Irish Sea and out across the English Channel. It may be no coincidence that there is also a colony in Wight (a little further to the east) of another bramble, *R. angusticuspis*, which is otherwise known only in south-east Wales and the southern Welsh marches. But in that case the point where the birds temporarily paused on their passage must have been

singularly well-chosen, for the bracken-covered downland bordering a small oakwood hanger must be the closest approximation Wight has to offer to the habitats favoured by *R. effrenatus* in its North Wales homeland.

Besides being an obvious place for birds to halt before making the lengthy flight across the English Channel, this line of downs which towers over and shelters the southern coast of Wight is ecologically remarkable in itself. Blasted by winds off the Channel and repeatedly enveloped in sea-fogs, its climate is markedly oceanic. More unusually, though, the chalk here is capped with sizeable expanses of gravel, so that after a stiff climb one finds oneself, most unexpectedly and incongruously, on a kind of heathland altiplano.

I had vaguely been aware for some years that St. Boniface Down, which overlooks Ventnor and is the highest point in the island, bears some heath-loving brambles (to judge from last-century records), but it was only in 1988 that I eventually got round to paying it a visit. After toiling up its steep southern face in sweltering heat, I received from it the greatest shock of my batological life: the summit plateau proved to be entirely covered by a beautiful glandular bramble that at the time seemed quite unfamiliar. Accompanying it were several other species that are more or less uncommon. As an experience it was what I imagine ascending into heaven must be like.

It was only a day or so later that I realised I had collected that same glandular bramble in Wight six years before: on rides in the centre of the island's largest piece of woodland, Parkhurst Forest (where it was only in small quantity and looked like a recent arrival - no doubt from the huge St. Boniface Down population). Alan Newton had remarked on its distinctiveness when sent it, but at the time it failed to ring a bell with him.

I then had one of those brainwaves that are impossible to account for, which sent me rushing to the description of '*R. nigricatus*' in Watson's monograph (the name by which he knew *R. aequalidens*). It seemed to fit my bramble with almost miraculous exactitude. In *Rubus*, even so, descriptions can be misleading and it was imperative to see some authentic material. Unfortunately, though, I was on holiday and I had to contain my impatience for several weeks before I was able to get to London and go to the British Museum to check my hunch. Once there, it was obvious immediately that I had been right: this was *R. aequalidens* without the slightest doubt. A month or two later Newton was to join me in exulting over this remarkable extension to the known range of that species.

One by one the brambles that we thought Wales had all to itself have been turning up in other areas. Following the discovery of *R. ordovicum* in several places round Dublin in 1987 the species that can still be claimed as endemic to the Principality are down now to only three: *R. celticus*, *R. monensis* and *R. riparius* (though *R. fuscicortex* and *R. perdigitatus* stray only just across the border). Rumour has it, however, that a fresh batch is shortly going to be described, so after suffering this depletion the well is to be replenished - and not before time.

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EVERY BSBI RECORDER'S DREAM?

A computer-based biological record system
developed in West Wales for the Amstrad 1512

1. A BSBI Policy for use of Computers in Recording?

Would you like to be able to concentrate on field recording, yet have instant access to all your records in whatever combination or form you require?. The answer has to be 'Yes', especially if the instant access includes the ability to print in your own study:

(a) species lists for a site visit (in both scientific and vernacular names); aggregate lists for squares or individual sites or sites of a particular type, for any time period;

(b) maps at 1km, tetrad, 5 x 5 km or 10 km levels for time periods of your choice;

(c) individual species lists as in the traditional green index drawer cards;

(d) lists of locations recorded by observer, by habitat, by altitude or any combination for each 10km square, or the whole VC, and numerous other manipulations such as coincidence mapping.

The concept of a home computer superceding the Veteran Series green card index drawers is not new, and has been discussed in meetings and BSBI News on several occasions. Members have shared their experiences of their computers and their programmes. Many recorders and members have, however, little interest in the technical aspects. What most are waiting for is an inexpensive system that a novice can manage with no tuition, and one that offers sufficiently exciting prospects to justify the inevitable upheaval. Until recently, the uncertain benefits from such a change deterred all but the most adventurous (or foolhardy!) from trying the new technology. After all, pioneering is often expensive and time-consuming, so it is best to wait and let others solve the inevitable teething problems. Let the reckless incur the high cost of purchasing equipment, spend inordinately long hours in transferring records from the trusted cards and, more importantly, struggle to produce the ideal system for handling our sort of data. How are cautious recorders to know when this risky pioneering phase has been passed?. We need to receive advice from the Society which means the Society must prepare a policy on computer systems for recorders. If it does not offer advice (or resources) there is the certainty that incompatible systems will be followed across the country and that other organisations - nationally or locally based - will develop or expand their own higher plant databases. The co-ordinated approach to recording, for which the BSBI is renowned, could be seriously eroded. The authors look to the Records Committee to at least draft some guidelines for members, and hopefully to acknowledge the enormous potential benefits that could accrue to recorders and the Society from a planned approach to the adoption of computers by recorders.

(2) Progress in West Wales

In late 1986, the authors each obtained an Amstrad PC 1512 20 Megabyte hard disc computer. One of us (SJC) had already used an earlier Amstrad to handle his Odonata records for West Wales, and had some experience of computers. The other author (SBE) had no knowledge of or interest in computers but had been very impressed by Richard Pryce's pioneering with a BBC computer on the plant records for Carmarthen. The machines cost £1000 each at that time (by early 1988 they could be bought new for c. £700). Epson FX-800 printers were later purchased for £300.

At the beginning of 1988, SBE still had no interest in or aptitude for computers, but was a total convert to the use of computers in biological recording having entered over 50,000 plant species records. All Pembrokeshire 1987 records had been entered shortly after collection or receipt. In addition a start had been made on earlier VC 45 records, including virtually all woodland and churchyard data. SJC had continually expanded the programme during the year as well as adding his 1987 invertebrate records.

The programme is a comprehensive biological data storage and retrieval scheme, designed not just for BSBI recorders but also for recorders of groups other than higher plants and ferns. It is equally suited to use by individual recorders or by networks of recorders from within a local naturalist trust. Such a network would in fact constitute a local biological record centre, but based on the recorder's own home as merging of files between different recorders is possible. Because the Amstrad 1512 is on the IBM standard, exchange of information between IBM compatible machines held by other conservation organisations will be possible.

At present, the programme is operational for VCs 44, 45 and 46. Once the appropriate VC map is incorporated, it would function for any VC. The remaining Welsh VC maps are being added shortly in co-operation with the Botany Department of NMW.

A. Entering records

Records within the system can be regarded as copies of recording cards. They contain all the information that is normally on standard Monks Wood Biological Record Centre cards. They are principally stored at a 1km square level, i.e. a 4 fig. or 6 fig. grid reference is required. These records can then be associated with "site" records by the inclusion of a site number, and with compartments on a "site" by the inclusion of a compartment number. Site details are incorporated separately and include text field of any length for site description, management diary etc. Sites can be of any size which are of some interest or unity for recording purposes. If active nature reserves or other kinds of complex sites are involved, these can be further divided into compartments. Records can also be entered at coarser levels - at tetrad, 5 x 5 km and 10 km square level, but these cannot be associated with sites or habitats. Standard information entered at the 1 km level includes: grid reference, full date, name of location, habitat, VC number, observer, determiner, altitude, site reference (if needed), compartment (if needed), and species lists.

Species lists can be entered by name or BRC number, but the speediest way is to enter by card. The two Welsh plant cards - the old RP6 and the new RP12 - along with the Welsh RP 17 monitoring card, are available. They appear on the screen as required and one "ticks" the appropriate species with an electronic pointer or "mouse". At the end of the card, additional species can be entered by BRC number or name. The chosen species then appear on the screen for checking. It is practical to enter a well completed card of 100 species in 15 minutes. Abundance values for each species can be incorporated, but this slows the whole process.

Incidental records for other groups such as butterflies or odonata are easily added at the same time, and such information can later be passed on to one's fellow recorders in these fields.

Rare species population forms can be entered separately with text fields of any length available for general notes. Such separate entry enables the compilation of frequency of association to be determined for rare species.

The NCC/RSNC habitat classification used for the standard mapping of Sites of Special Scientific Interest is available when inputting site records at the 1km level. For multiple habitat record cards, habitat details are omitted. Selection of any level of the hierarchy is possible, giving 180 choices altogether.

The taxonomic lists include the option of a rarity weighting. For plants, standard NCC/BSBI scores have been used of 100 for Red Data Book species (less than sixteen 10km squares), of 40 or 50 for Notable species (less than 100 but more than fifteen 10 km squares in the Atlas) and 3 for local rarities as defined by the BSBI (3 or less sites in the VC). As distribution change, the scores can be altered through the taxonomic files.

New or naturalised species can be added to the taxonomic files at any time.

B. Sorting and Retrieval of Data

Maps

Data is transferred to the maps store at the 1 km/tetrad 5 x 5 and 10 km levels. More manipulations can be made with the 1 km map than with the others.

Maps are arranged in BRC number and one can jump between any chosen species. Maps can be copied and, at the 1 km level, maps include frequency of occurrence by habitats. Any individual map dot can be instantaneously traced back to its source record by using the electronic pointer. The maps show 2 symbols for different time periods, and these time periods can be changed. Each map is dated and the total number of 1 km squares is shown. Sums of rare species scores are mapped separately for national and local scores in sequence from lowest to highest scores. Habitats are also mapped. The basic maps are at VC level, but they can be combined to form regional maps. There is the facility to prepare coincidence maps for any combinations of species. These maps will show where certain combinations of species occur in the vice county. Naturally there is also a summary map which depicts the squares for which records are held, and this is available at 1 km or coarser level.

Individual Species List

Lists of records for individual species can be shown or printed arranged by grid reference order. These lists include 6 fig. grid reference, data, recorder, habitat, site name and summary of associated recorders. Numbers of 1 and 10 km squares and total numbers of records for the species are displayed. This is the equivalent of the traditional single species card.

Aggregate Species Lists

Lists of all species recorded for 1 km, tetrad, 5 x 5 km and 10 km squares for any chosen time period can be produced with automatic adding of number of times each species has been recorded, and of total numbers and rarity scores. Instead of long species lists, this information is also available in card format. The RP 12 card is printed out on two sides of A4 with records underlined.

The text is easier to read than the original card, and is ideal for taking out on repeat visits to sites or squares. Similar aggregate lists can be produced for a site or types of sites and habitats.

Species Listings following a Field Visit

The results of a field visit complete the full species lists can be produced for passing on to the owner or occupier, or for file records. The list can be reduced to contain only vernacular names if appropriate.

Summary Data

Listings of record details without full species lists can be produced for the 10 km squares and also for different observers, habitats and altitudes, or any combination. These lists, which are by grid reference order, enable rapid access to the state of coverage and are especially useful for different habitat types or, for example, with the recent BSBI monitoring scheme.

Herbarium Species

At the request of NMW, the programme is being extended to cater for Herbarium collections. This modification is integrated with the main programme. Again there is also a text file containing fuller specimen descriptions, and labels are printed automatically.

Access to the Data

Many records are of a sensitive nature, so a password is needed to fully operate the system. Without it, no records may be added or edited, and limited information on rare species is disclosed. With a password, there are two levels of access. The basic level enables access to all species details and allows editing of records entered by the same recorder, or adding of new records. The advanced level of access allows editing of all records.

The system runs on a computer with a 20 megabyte hard disc. The space at present occupied usefully is as below:

Operating System	0.9 megabytes	
Programmes	1.5 megabytes	
Records	0.6 megabytes	about 60,000
Taxonomic files	0.7 megabytes	about 4000 species
Recording cards	0.1 megabytes	about 11 groups
Maps	0.4 megabytes	about 2000
Site files	0.04 megabytes	about 150 sites
Observer Details	0.08 megabytes	200 records

The system has been designed to be operated by someone with no experience or real interest in computers. After switching the machine on a series of options is presented on the screen. Selection of these options directs the operation of the computer. Switching between word processing operations, records and maps is automatic and allows the operator to follow areas of interest through the data stored in the machine without effort.

No doubt many members would view the above prospects with very mixed feelings. More of a nightmare than a dream? On the other hand, the handling of the ever-growing volume of plant records for Pembrokeshire was itself becoming an increasing nightmare, so perhaps there was little choice.

S.B. Evans, Glan-y-mor, Dinas Cross, Newport, Dyfed, SA42 0UQ.
S.J. Coker, Mountain, Clarbeston Road, Dyfed, SA63 4SG.

This represents the situation as it was at the end of 1987. Several major improvements have been made since, details of which are available from the authors. Ed. .

PELORIC ROUND-LEAVED FLUELLEN (KICKXIA SPURIA) IN RADNOR

The presence of a single plant of round-leaved fluellen in Radnor on the soil of a forestry loading area by a road near Clyro (SO 2044) would be notable enough, being the only reported sighting of the plant in the vice county and a long way from its headquarters in SE Britain. That about a third of the flowers on each stem were peloric made it that bit more interesting. The normal flowers were short, yellow and snapdragon-like with a deep violet lower lip. A three pronged spur descended from the back of the flower. The peloric flowers were more regular with a longer tube and four to five rounded violet-stained lobes at the tip. Four to five spurs projected radially out from the base of the tube. D.A. Sutton discusses this interesting phenomenon in Watsonia 16, 337 but comes to no conclusion as to its cause.

Peloric fluellen is undoubtedly an ugly name for a very pretty flower. Reminiscent of an incurable disease, it is the sort of thing a Tourist Board would wish to deny occurred in the county, along with spignel, rupture wort and stinking hellebore, no doubt.

R.G. Woods c/o Nature Conservancy Council, Deauville, Spa Road,
Llandrindod Wells, Powys, LD1 5EY.

CARMARTHENSHIRE FLORA PROJECT

PROGRESS IN 1987

Recording did not start in earnest until May due to the late spring. At the beginning of Wildflower Week (16th May), a small party set out to record in the Cross Hands, Whitland tetrad for the BSBI Monitoring Scheme. Nothing spectacular was seen but an unimproved valley mire, dominated by *Molinia* and containing various species of *Carex* and *Carum verticillatum* was seen which repayed a second visit in late June. Most noteworthy, however, was the visit to North Road Cemetery, Whitland after the main party had dispersed. Here more than seventy plants of *Orchis morio* were counted by Mathew Pryce (MJP) and made a spectacular show amongst about five hundred *O. mascula*. These probably constitute the largest populations of the two species in the vice-county.

Also during Wildflower Week, a phone call from Matt Ridley, Chief Ranger at Gelli Aur Country Park, alerted me to his discovery of *Neottia nidus-avis* under a parkland Lime tree alongside the main entrance drive. In fact, eight flowering plants were subsequently counted on 20th May, one of which bore a previous year's spent flowering spike. (Rachel Pryce & MJP). An old record for "Golden Grove" from the early 1950's presumably refers to the same locality.

The second Saturday of Wildflower Week saw another unspectacular meeting held in order to record the Llanpumsaint tetrad for the BSBI Monitoring Scheme. An ornamental series of ponds with adjacent species-rich pastures at Felin Llanpumsaint were probably the highlight of the day: *Carum* was very frequent over a large area and *Potentilla palustris* and *Menyanthes trifoliata* occurred as emergent vegetation. The Afon Gwili near to the ruined farmstead of Glangwili was visited later and was found to contain *Ranunculus penicillatus* whilst across the river, a disturbed, species-rich pasture had *Carum*, *Iris pseudacorus*, *Viola palustris* and *Pedicularis sylvatica* amongst the species recorded (Trevor Crosby (TSC) & RDP).

A week later Ian Morgan (IKM) reported his discovery of a traditionally-managed, base-rich, hay meadow near Abergorlech which supported frequent *Botrychium lunaria*, *Linum catharticum*, *Ononis repens* and *Primula veris* (all new 10km square records) and when the site was revisited on 8th July with Derek Wells (N.C.C. Chief Grassland Scientist), four flowering spikes of *Coeloglossum viride* were chanced-upon by John Hopkins, literally at his feet, whilst discussing the geology of several small sandstone outcrops. This was the first inland record of the species in the vc since 1908. Nearby was an extensive blanket mire with a good stand of *Osmunda regalis*, sadly under threat of afforestation.

A good population of very well grazed *Ophioglossum vulgatum* was recorded on part of the new Dyfed Wildlife Trust reserve at Crug Melyn, Brechfa, at first sight apparently unpromising, comprising principally of tussocky *Molinia* with invasive willow and birch. Trust management should in future improve the chances of the survival of the *Ophioglossum* and diversify the *Molinia* area.

A very fine wetland site, near Bethlehem, known to Mrs Vaughan in the early 1970's was rediscovered when the owners consulted N.C.C. over management. The quality of the area can be appreciated by the fact that *Epipactis palustris* has been recorded sporadically. Other notables included *Rhynchospora alba*, *Hypericum elodes*, *Genista tinctoria* and *G. anglica*. The site is typical of what much of lowland Carmarthenshire must have been like before the great acceleration in agricultural improvement in recent decades and it is very refreshing to have a landowner who is so sympathetic and enlightened as to conserve this important area despite his consequent loss of income.

Another first class site, on this occasion near Glanamman, discovered by Adrian Fowles (APF), was visited by Derek Wells and entourage in July. Consisting of a mosaic of semi-natural grassland habitats, some very rich, undoubtedly the most spectacular species seen was *Gymnadenia conopsea* (eight plants in flower) but nearby were c.25 spikes of *Platanthera chlorantha* together with *Genista tinctoria* amid an extensive drift of *Dactylorhiza*. A large population of *Ononis repens* was noted in an adjacent enclosure and *Carex hostiana* and *Cirsium dissectum* seemed to be almost ubiquitous!. A nearby valley woodland had three plants of *Equisetum telmateia*.

Turning to the north of the vc, a series of heathlands near Rhydcymerau, another of APF's finds, was found to be largely dominated by tussocky *Molinia*, extremely difficult and tiring to traverse, but with frequent plants of *Dryopteris carthusiana*. One small species-rich enclave, under severe threat from encroaching willow and bramble, supported a good population of *Vicia orobus* with two spikes of *Platanthera chlorantha*, *Genista tinctoria* and *Equisetum sylvaticum* close by.

Yet another site studied by APF was the extensive moorland and mire with rocky crags of Cors Bryn Mawr, Nant Fawr and Carn Fawr, north of Ffarmers in SN65Q which had populations of *Vaccinium oxycoccus*, *Empetrum nigrum*, *Carex demissa* x *hostiana* and, on the crags, *Phegopteris connectilis* and *Huperzia selago*.

Carum has at last been found in SN32, in fact at two sites, one of which near Blaenycydd, was a particularly rich valley mire with, for instance, *Hypericum elodes*, *Wahlenbergia hederacea* and *Pedicularis palustris* (George Hutchinson (GH) & RDP). Several new *Carum* stations were also discovered in SN42, most notable being the c100 acres of acid heathland and rhes pastures at Ffynnon Newydd, Llanpumsaint, an area that would repay a detailed resurvey (John Killick, GH & RDP).

Alan Newton led a weekend to record the vc's *Rubus* flora and familiarise local recorders with this daunting group. As a result of effective planning and the efficiency and enthusiasm of the participants, the extent of the ground covered during the three day meeting was astonishing. The "Carmarthenshire Grand Tour" only ended after 52 localities had been visited in seventeen 10km squares, resulting in 280 new *Rubus* records having been added to the vc files, 255 of which were "good" microspecies or *R. caesius*, *R. idaeus* or *R. loganobaccus*, the remainder being undescribed taxa, hybrids or forms. Twelve new vc records were made, viz *Rubus amplificatus*, *R. cardiophyllus*, *R. flexuosus*, *R. insectifolius* cv. Himalayan Giant, *R. rossensis*,

R. scaber and *R. villicauliformis*. There were, in addition, five second vice-county records and the total number of *Rubus* records for the county was more than doubled. A full account of the meeting is published elsewhere (Pryce, 1988d).

Jim Bevan's annual visit included the cliffs above Llyn y Fan Fach and the old limestone quarries of the Black Mountain. He is making considerable progress in sorting out the local *Hieracium* flora and several specimens were collected for study in the lab. Tentative determinations included *H. rectulum* and specimens taken in 1986 from a roadside in Llanedi were *H. lepidulum* (Stenstr.) Omang., a new vc record and second Welsh record.

Taraxacum was not neglected either. Chris Haworth very promptly determined specimens (some comprising very poor or inadequate material) which Annie-Mary Pell (AMP) and I had collected. Of the sixteen identifiable specimens submitted, no less than seven were new vc records!. These were *T. rhamphodes*, *T. pseudohamatum*, *T. croceiflorum*, *T. ancistrolobum*, *T. polyodon*, *T. sellandii* and *T. undulatum*. Chris' patient letter and instructions on how to collect better material in future were very encouraging.

So at last a start has been made on tackling the critical groups but there is still a long way to go.

Despite heavy commitments elsewhere, James and Mary Iliff have again been very active, particularly in the northeast of the county and in Monitoring Scheme square SN72. But probably their most notable contribution this year is a plant collected in 1983 at Cilycwm of *Potentilla erecta* x *P. reptans* = *P. x italica*, a hybrid, although previously produced artificially, new to science in the wild!. Their specimen was exhibited at the BSBI Exhibition Meeting in November by Dr Brenda Harold, who had determined its identity cytologically at Imperial College with Dr Jack Ellis.

Heather Sealy-Lewis has the distinction of being the first recorder to raise the total number of species in her home tetrad (SN31K, Llansteffan) to over 500 with the addition of such species as *Geranium pusillum*, *Thlaspi arvense* and *Festuca nigrescens* (*F. rubra* subsp. *commutata*), a new vc record.

All of the graveyards and burial grounds situated within the BSBI Monitoring Scheme squares were scrutinized by AMP, some have received two or even three visits during the year, a total of sixty sites and 104 visits!. Some of the species she recorded are *Carex muricata* subsp. *lamprocarpa*, *Sanguisorba officinalis*, *Equisetum sylvaticum*, *Galium mollugo*, *Linum catharticum*, *Picris echioides*, *Inula helenium* and *Osmunda regalis*. A truly singular effort - congratulations!. Miscellaneous records during the season included a new site for *Sibthorpia europaea* near Llidiadnenog (TSC), *Melilotus alba* from Penygroes (AMP) and *Centaurea cyanus* which appeared at two separate localities about 2 miles apart, near Porthyrhyd, on the newly excavated cuttings for the Cross Hands By-pass (MJP & RDP).

References

- R.G. Ellis (1983) Flowering Plants of Wales, Cardiff.
R.D. Pryce (1987) Botanical Report, Spring 1987. Llanelli Nets. News1. Summer 1987.
R.D. Pryce (1988a) Efailwen, Carmarthenshire/Pembrokeshire, 20th June 1987. BSBI News No 48 pp. 49-50.
R.D. Pryce (1988b) Rubus Meeting, Carmarthen, 31st July to 3rd August 1987. *ibid.* pp.52-53.
R.D. Pryce (1988c) Carmarthen, 14th to 17th August 1987. *ibid.* pp. 52.
R.D. Pryce (1988d) BSBI Rubus Meeting, Carmarthen, 1987, BSBI Welsh Bulletin 46: 21-30.
R.D. Pryce, Trevethin, School Road, Pwll, Llanelli, Dyfed, SA15 4AL.

ANNUAL GENERAL MEETING AND WELSH EXHIBITION MEETING, 1989

The 27th AGM and 7th Welsh Exhibition Meeting will be held at Ferryside Education Centre, Ferryside, nr. Carmarthen, Dyfed on Friday 21st July - Monday 24th July.

Ferryside Education Centre is situated on the unclassified road running through the centre of Ferryside about seven miles southwest of Carmarthen at SN369106 on the northern edge of the village. It is best reached from Carmarthen by heading south on the A484 and turning right after about four miles, following the signs to Ferryside, turning right again at crossroads after about 1.5 miles. The Centre is on the left hand side after a further two miles, shortly after entering the village.

Programme

- Friday: Opportunity for participants to record in tetrads for the Flora of Carmarthenshire on the Friday; details from R.D. Pryce.
6.30pm Dinner
7.30pm Brief visit on foot to habitats on the Ferryside foreshore.
- Saturday: 10.00am Meet at the Education Centre for Field Meeting. Meadow heathland sites on W. Coalfield including Carum meadows, will be visited in the morning and early afternoon.
- 4.00pm Tea and meeting of the Committee for Wales
- 5.00pm Annual General Meeting
- 5.30pm Talk: R.D. Pryce 'Progress report on recording for the Flora of Carmarthenshire'.

7.00pm Dinner 7.00:

8.00pm Exhibition and slides

Sunday: 10.00am At Education Centre.
Study of coastal site in the Pembrey and Cydweli area.

7.00pm Dinner
After dinner - examination of specimens in exhibition.

Monday: Disband after breakfast with opportunity to record in tetrads on the way home.

Advance notice would be appreciated of any exhibits or slides but they will be accepted on the day.

Accommodation will be available, in single rooms. Evening meals and a common room will be available for participants attending on a day-by-day basis. Participants should indicate on the booking form whether they require to be allocated a tetrad for recording prior to their arrival at the centre. Alternatively they should meet at Ferryside. For members wishing to attend for only part of the meeting, fieldwork will commence from the centre at 10am on each day except Fridays.

Further details and booking forms are available from: R.G. Ellis, Department of Botany, National Museum of Wales, Cathays Park, Cardiff, South Glamorgan, CF1 3NP. Please apply before July 1st.

BSBI WALES FIELD MEETINGS 1989

SATURDAY 20th MAY

GOWER CLIFFS, GLAMORGAN (v.c. 41) (3)

Leader: Dr Q.O.N. Kay.

A meeting to look at the specialities on the cliffs of western Gower. Meet at Pitton Farm car park (map ref. SS(21)/428.875), just south of B4247 in Pitton village, at 11am; bring packed lunch; stout footwear advised. Numbers limited to 25, priority will be given to those turned away from last year's meeting.

Please send bookings to Mr R.G. Ellis, address on page 2, and not to the leader, before May 1st.

FRIDAY 2nd JUNE - MONDAY 5th JUNE

CARMARTHENSHIRE RECORDING WEEKEND, FERRYSIDE, DYFED (v.c. 44) (7)

Leader : Mr R.D. Pryce.

A Flora of Carmarthenshire Recording Weekend to assist in tetrad recording for the county flora. Single room accommodation (c. £15 per day) will be available at the Ferryside Education Centre (map ref. SN/369.106) but non-residents will be made equally welcome.

Please apply for details and booking forms to Mr R.G. Ellis, address on page 2, and not to the leader. It is essential to book before 14th May 1989.

SATURDAY 24th JUNE

LLANGLOFFAN FEN, DYFED (v.c. 45) (12)

Leader : Mr S.B. Evans

A visit to north Pembrokeshire's finest valley fen. Mixed fen vegetation, some grazed, and carr with broadwalks in places. Species highlights will be marsh fern *Thelypteris palustris* and saw-sedge *Cladium mariscus*.

Meet by the minor road immediately north of the Baptists' pool (map ref. SM/904.319; O.S. 1:50,000 Sheet No. 157), at 11am; bring packed lunch, wellingtons essential.

Please send bookings to Mr R.G. Ellis, address on page 2, and not to the leader.

SATURDAY 1st JULY

GORS MAEN LLWYD, CLWYD (v.c. 50) (16)

Leaders : Mr P. Day & Mrs J. Green

A visit to a variety of wetland habitats, including lake shore, soligenous flushes and blanket bog. At 400 metres, it can be cold; stout footwear and waterproof clothing essential. Bring packed lunch.

Meet at 11am at road junction on B4501 (map ref. SH/978.586; O.S. 1:50,000 116) at north end of Llyn Brenig (North Wales Naturalists' Trust Nature Reserve).

Please send bookings to Mr R.G. Ellis, address on page 2, and not to the leaders.

SUNDAY 9th JULY

LLANRWST, GWYNEDD (v.c. 49) (20)

Leader : Mr N. Brown.

A meeting to explore the flora of some of the many heavy-metal mine sites between Llanrwst and Capel Curig on the edge of Snowdonia.

Meet at 11.00am in the car park (adjacent to Chapel) at the Forestry Commission Offices near Gwydir Castle, Llanrwst, map ref. SH/795.609. Bring stout footwear and a packed lunch.

Please send bookings to Mr R.G. Ellis, address on page 2, and not to the leader.

SATURDAY 15th JULY

LLYN GYNON and LLYN GORAST, DYFED (v.c. 46) (21)

Leader : Mr A.O. Chater.

The meeting, involving a round walk of about 10km, will be to investigate the aquatics of these two rich upland lakes, including *Luronium*, *Isoetes*, *Nymphaea* etc., and will attempt to refind *Pilularia*. Bring grapnels, waterproof footwear and packed lunch.

Meet at Strata Florida, map ref. 22/745.657, at 10.30am.
Please send bookings to Mr R.G. Ellis, address on page 2, and not to the leader.

FRIDAY 21st - MONDAY 24th JULY

FERRYSIDE, DYFED (v.c. 44) (26)
(in conjunction with the BSBI Wales AGM & Exhibition Meeting)
Leaders : Mr R.D. Pryce & Mr I.K. Morgan.

This meeting will be based at the Ferryside Education Centre. Estuarine and dune habitats will be visited after dinner on the Friday evening. Saturday morning and early afternoon will be devoted to examination of meadow and heathland sites on the coalfield, and will be followed by the Wales AGM. In the evening R.D. Pryce will present a progress report on Carmarthenshire flora recording. Sunday's field meeting will be to study coastal sites in the Pembrey and Cydweli area.

Single room accommodation will be available at c. £15 per day but the meeting is also open to non-residents. Field meetings will start from the Education Centre (map ref. SN/369.106) on Saturday and Sunday at 1am prompt.

Please apply for accommodation booking forms or send bookings for the field meetings to Mr R.G. Ellis, address on page 2, and not to the leaders, before 1st July

FRIDAY 18th JULY - MONDAY 21st AUGUST

PTERIDOPHYTE WORKSHOP, BANGOR, GWYNEDD, NORTH WALES (v.c. 49)
(33)
Leaders : Mr A.C. Jermy, Miss J.M. Camus & Mr N. Brown.

The workshop will run from dinner-time on Friday until lunch-time on Monday and will comprise lectures, fieldwork at selected sites and laboratory study. A reasonable knowledge of British pteridophytes will be an advantage as the workshop will explore such topics as morphological and ecological differences between critical species and subspecies.

Accommodation will be in single rooms at the Normal College (George Campus), Bangor, which is near to the University Botanic Garden where Nigel Brown has offered laboratory facilities.

The cost will be £60 (inclusive of accommodation and meals), £50 for participants who need to leave on Sunday afternoon.

To secure a place on this workshop please send £5.00 deposit to Miss J.M. Camus, Dept. of Botany, British Museum (Natural History), Cromwell Road, London SW7 5BD, as soon as possible. A booking form will then be sent to you by return of post, for your decision and confirmation of booking. The £5 deposit is returnable until January 31st, but non-returnable after that date.

COUNTY OF PEMBROKE

WARNING

WILD FERNS

AND

PLANTS

Attention is drawn to the following Bye-law made by the Pembrokeshire County Council on the 25th of May, 1929, viz :-

No Person shall (unless authorised by the Owner or Occupier if any or by law so to do) Uproot any Ferns or other Plants growing in any Road, Land, Roadside Waste, Roadside Bank or Hedge, Common or other Place to which the Public have access.

Every Person who shall offend against the foregoing Bye-law shall be liable for every such offence to a Fine not exceeding, for a first Offence, ~~Five Pounds~~ ^{TWO POUNDS}, and for a subsequent Offence not exceeding Five Pounds.

H. LOUIS UNDERWOOD,

County Offices, Haverfordwest,

Clerk of the County Council.

1st March, 1955.

