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EDITORIAL

Once more it has been principally three of the most loyal supporters of this Bulletin - Jean Green, Ann Conolly and Richard Pryce who have been kind enough to provide articles for this latest edition.

Jean has described one of her favourite botanical localities, Ann has outlined research into some historical records of the Lleyn flora whilst Richard has summarized last year's progress in botanical recording in Carmarthen. To all three I am most grateful and once more I end this (brief) editorial with the perennial plea for more short notes or articles.

Finally, my home address has changed to:-

Cae Tegeirian,
4 Erw Las,
LLWYNHENDY,
Llanelli,
Dyfed SA14 9SF

'Cae Tegeirian' means 'orchid field', named so because of the large Dactylorhiza majalis ssp. praetermissa spikes that grace the unkempt grass below the orchard. I was reluctant to use the full Welsh name for Dactylorhiza majalis ssp. praetermissa ('Tegeirian y Gors Deheulog' according to Gwynn Ellis' excellent 'Flowering Plants of Wales') for it is enough trouble to get contributors to write notes for the Bulletin and additional writing might scare some off!

AQUATIC PLANTS IN THE MONTGOMERY CANAL

In 1985 an MSC-funded ecological survey of the Montgomery Canal was set up with the aim of investigating the biological resources of the canal and their conservation after restoration. The study is reaffirming the botanical interest of the canal. A fuller account is planned for BSBI News.

The canal runs from Welsh Frankton (Shropshire) to Newtown (Powys) with 37 of its 55 kilometres in Wales. Much of the English length is dry but in Wales all, except the last 3 km at Newtown are still in water. Most of the Welsh length (20 of 37 km) has been notified as SSSI on the basis of its unusually diverse aquatic flora. Ten species of pondweed (Potamogeton) occur along with a variety of other aquatic macrophytes. Potamogeton species recorded during the 1985/86 season comprise P. alpinus, P. berchtoldii, P. compressus, P. crispus, P. friesii, P. natans, P. obtusifolius, P. pectinatus, P. perfoliatus, P. praelongus and P. x lintonii (P. crispus x friesii). Ceratophyllum demersum, Zannichellia palustris, Luronium natans and species of Callitriche, Myriophyllum and Charophyta also occur. The canal is the only site in Wales for P. friesii and P. compressus. It is also arguably the best Welsh site for P. praelongus and, with Anglesey, Callitriche hermaphroditica. The canal is a well known site for L. natans, a species now virtually confined to disused canals (others include Huddersfield Broad and Narrow Canals and the Rochdale Canal). It is particularly frequent in the Montgomery Canal.

For recording purposes, the survey divided the canal into kilometre sections. In 1985/86 Callitriche hermaphroditica was recorded in 32% of the Welsh km sections, Luronium natans in 84%, Potamogeton compressus in 78%, P. friesii in 11% and P. praelongus in 11%. Other interesting species recorded in the

canal during the survey include Lemna polyrhiza, Butomus umbellatus and Ranunculus circinatus. Hydrocharis morsus-ranae has been recorded as recently as 1974 and still occurs in the English section of the canal.

A Bill to enable full restoration to navigation is currently being presented to parliament by British Waterways Board (BWB). Projected boating levels exceed those known to damage aquatic plant communities and so BWB, in conjunction with NCC, are establishing 'offline' reserve areas to conserve the communities. The reserves, which are being developed by the ecological survey team, include 3.5 kilometres of disused sidearm at Guilsfield, existing winding holes (turning areas) and new sites excavated specifically for the purpose.

The survey is sponsored jointly by British Waterways Board and Community Task Force (North Wales).

J.D. Briggs and C.E. Tandy, Montgomery Canal Ecological Survey, Preston Montford Field Centre, Montford Bridge, Shrewsbury, Shropshire, SY4 1DX.

CEFN YR OGOF (The ridge of the Cave)

To seek and find a rare plant is a highlight of any botanical outing, but there is an equal pleasure in the discovery of a beautiful site, with a wide range of habitats and interesting plants.

Cefn yr Ogof is such a place. It's a ridge of limestone ending in a north-facing cliff overlooking Liverpool Bay and the busy A55 road. Once washed by the sea, the cliff now provides nest sites for jackdaws, rockcloves and fulmars. Steep woods fall away from the foot of the cliff to the coastal plain. The woods are cool and mossy, while the cliff top is open and wind-swept, covered with close turf and wild flowers.

The mixed woods contain oak, ash, beech and larch, also sweet chestnut and Turkey oak (Quercus cerris).

Saplings of Turkey oak are growing in the clearings with hemp agrimony (Eupatorium cannabinum) wild basil (Clinopodium vulgare) and hundreds of common spotted orchids (Dactylorhiza fuchsii). I found two spikes of ivy broomrape (Orobancha hederæ) by the path, and I expect more will appear later in the year.

Harts-tongue fern (Phyllitis scolopendrium) and wild clematis (Clematis vitalba) thrive in the shade, and there was one plant of stinking hellebore (Helleborus foetidus) on a rocky outcrop.

On the cliffs, rock whitebeam (Sorbus rupicola) is common with many seedlings in cracks, and some mature specimens in the woods below. These can be picked out in spring, recognisable by their whitebacked leaves, which open late.

There seems to be little grazing of the cliff top, allowing ploughman's spikenard (Inula conyza), golden rod (Solidago virgaurea), and lesser meadow rue (Thalictrum minus) to flourish. Also small scabious (Scabiosa columbaria), hawkweeds (Hieracium spp),

harebell (Campanula rotundifolia), and wild cabbage (Brassica oleracea) make a colourful show. The wild cabbage grows in the most inaccessible cracks in the cliffs, also among gorse patches on the top. It is seeding under the trees at the foot of the cliff where it makes an unusual woodland plant (it was not flowering here).

From the top of the hill there is a fine view along the coast, with its busy road and railway and many caravan camps. The hilltop is quiet, and the turf is yellow with common rockrose (Helianthemum nummularium). The earlier flowering hoary rockrose, (Helianthemum canum) is also abundant, preferring the more exposed edges and rock outcrops. There is kidney vetch (Anthyllis vulneraria), field madder (Sherardia arvensis) and salad burnet (Sanguisorba minor) in the turf, and it was pleasing to find several flowering patches of cat's foot (Antennaria dioica).

On the steep western slopes the grasses are interesting. Avenula pubescens is dominant with Festuca spp and Arrhenathrium elatius. Under the cliffs is the less common Avenula pratensis with its smooth stem, smaller panicle and stiff glaucous leaves. There are tufts of Bromus erectus and the smaller grasses Briza media, Koeleria macrantha, Trisetum flavescens and Vulpia bromoides.

Coming down to the screes there are four species of Cotoneaster. C. microphyllus is dominant, with C. horizontalis, C. microphyllus var. conspicuous (confirmed by Mr E. Easy) and C. simonsii, Among the loose stones are black horehound (Ballota nigra), burnet rose (Rosa pimpinellifolia) and wild madder (Rubia peregrina) - this latter is an uncommon plant in the county. The slender mountain St. John's wort (Hypericum montanum) grows with yellow wort (Blackstonia perfoliata), common centaury (Centaureum erythraea) and marjoram (Origanum vulgare), and in shallow soil on the floor of the quarry was a patch of pale flax (Linum bienne), most of which had shed their

petals. In the grass on the floor of the quarry were many pyramidal orchids (Anachamptis pyramidalis) and several bee orchids (Ophrys apifera).

A most rewarding place to visit, and interesting at any time of year, Cefn yr Ogof is one of the chain of limestone outcrops of the North Wales coast. Each has its own character and its own special features. From the Great Orme in the west, to Graig Fawr in the east, each outcrop has developed a characteristic flora and it was interesting that I did not find spiked speedwell (Veronica spicata) or dark red helleborine (Epipactis atrorubens) which occur on other hills nearby. Further visits are needed to fully explore the area.

Jean A. Green, Coed Duon, Tremeirchion, St Asaph, Clwyd.

MANUSCRIPT RECORDS FROM LLEYN IN GRIFFITH'S COPY OF HIS
FLORA OF ANGLESEY AND CARNARVONSHIRE

The finding of J.E. Griffith's own copy of his Flora of Anglesey and Carnarvonshire 1985, now in Bangor Library, has been described by Marchbank (1986). This copy is interleaved and contains manuscript entries of additional localities and a few additional taxa. R.H. Roberts (1984) has given an account of these entries, and listed many of the more important. Understandably the records he has selected to quote are mainly ones from Anglesey and only a few from Caernarvonshire (v.c. 49), none from Lleyn. Recently, I have been able to peruse this copy of Griffith's Flora, now in safe keeping with the librarian (Marchbank, 1986), and have extracted those few entries pertaining to West Lleyn. These are given below. Included also are three or four others, which are either known to be just outside the West Lleyn eastern margin, or possibly so: these are preceded by the symbol . There still remain a number from other parts of Caernarvonshire, mostly from near Llanberis or further north. It is assumed, as Roberts indicates, that the manuscript entries are in Griffith's hand, and that those without a recorder's name are his own. Taxa not otherwise recorded from West Lleyn are given an asterisk; grid references are added in brackets, otherwise the entries are as written (or deciphered).

- +Lepidium neglectum Thell. Pwllheli Miss Cobbe (SH33)
- +Lepidium virginicum L. Pwllheli Miss Cobbe (SH33)
- +Hypericum linarifolium Bodvean (SH33) Pwllhelli
(SH33) and Abererch (SH33 or
43)
- +Erodium pimpinelloides
Sibth. Pwllheli, Cobbe (SH33)
- *Aster linosyris on the cliffs between
Aberdaron and Porth Oer, Mrs
Orton Aug 1911 (SH12)

<i>Artemisia absinthium</i>	Cilian Point (SH22)
<i>Petasites fragrans</i>	nr Abersoch (SH32)
<i>Arctium minus</i>	Abersoch! (SH32)
<i>Carduus nutans</i>	Under Castellmarch near the shore (SH32)
<i>Silybum marianum</i>	Under Castellmarch near the shore (SH32)
<i>Serratula tinctoria</i>	nr. Abersoch (SH32)
* <i>Hypochaeris glabra</i> var <i>rostrata</i>	nr. Gimlet Rock, Pwllheli C. & G. Cobbe (SH33)

The reliability and validity of some of these records cannot now be ascertained and has to be taken at face value, but publication seems warranted, not least to alert us to those rarities not previously thought to occur in western Llyn. The most interesting, and, if correct, by far the most important of these is *Aster linosyris* (L.) Bernh. (Goldilocks Aster), for which Ellis (1983) gives only three sites in Wales, only one of which is from North Wales viz: Gt. Orme's head (1870; 1979): all are on sea-cliffs on Carboniferous Limestone. The absence of any Carboniferous Limestone from Llyn casts some doubt. On the other hand, the mainly Pre-cambrian rocks of the coast concerned (Uwchmynydd) do nevertheless exhibit "spectacular exposures of the Gwna melange" which contain clasts of "dolomite, limestone, quartzite, phyllites, greywackes and pillow lavas in a green basic matrix", moreover "some of these blocks...measure several metres across" (Brinley Roberts, 1979). Cutting through these rocks in places are Tertiary dykes of dolerite. The base-rich rocks, even limestone, thus available, perhaps accounts for the presence on these cliffs of the very restricted Rock Sea Lavender: *Limonium procerum* (C.E. Salmon) Ingrouille ssp. *procerum* var *procerum* (Ingrouille & Stace, 1986) near St Mary's Well, and of *Geranium sanguineum* (Bloody Cranesbill) near Porth Oer, and hence makes more plausible an occurrence of the *Aster linosyris* on these same cliffs.

The recorder of the *Aster linosyris*, 'Mrs Orton', is presumed to be Mrs Anne Orton, wife of Kennedy J.P.

Orton F.R.S, Professor of Chemistry at U.C.N.W. Bangor from 1903-1930 (Obits. F.D.C., 1930; H.K., 1931) and who is known to have been "a great gardener and very knowledgeable about plants" (Mrs W.K. Orton, pers. comm., 1987). But without knowing the basis of the identification and therefore its reliability, some uncertainty must remain, although the record was clearly accepted by Griffith. There was every opportunity for Mrs Anne Orton to have had expert botanical guidance, for, apart from knowing J.E. Griffith, who lived in Bangor, and doubtless also R.G. Phillips, the Professor of Botany there, she was the daughter of the Rev. W. Clement Ley F.R. Met. Soc., and thus the niece of his younger brother the Rev Augustin Ley (1842-1911). Joint author (with Rev W.H. Purchas) of the Flora of Herefordshire (1889), Augustin Ley was highly regarded for his botanical work, not only in Herefordshire, but in many other counties especially in Wales, and particularly for his work on the critical genera of Rubus (Brambles) and Hieracium (Hawkweeds). His botanical rambles took him to many parts of Wales:- e.g. Snowdonia in 1886, Cwm Idwal 1900 (with Rev W.R. Linton), Great Orme 1904 (B.E.C. Reports). In 1904 he surely would have stayed with his niece when he found a bramble 'near Bangor' 'new for Great Britain' (Ley, 1905); but he had died in the April preceding the discovery of the Aster linosyris (Obits, 1911,1912).

Although there is no documentation of Mrs Anne Orton having botanized on the Lleyn coastal cliffs, there is good circumstantial support. Professor Orton was not only a keen ornithologist, studying especially hawks, and a mountaineer often in Snowdonia, a member of the Climbers Club, but apart from Snowdonia he is also known to have enjoyed cliff coastal walks, and in later years, at least, to have visited Lleyn (Obits., F.D.C., 1930; H.K. 1931). What more natural that whilst the husband is admiring the Choughs on the Uwchmynydd cliffs, that the wife is observing plants on the same cliffs?; species that she would have been familiar with on the Great Orme. Although it is not directly known whether the 'Mrs Orton' of the Aster linosyris

entry and Mrs Anne Orton of Bangor are one and the same, it would be an incredible coincidence were there to have been another Mrs Orton in this, in pre-war days, remote "un-visited" coast; bearing in mind that even today this un-Welsh name is all but unknown for a resident of Caernarvonshire. Although, in the absence of a specimen, one cannot entirely rule out an error for Inula crithmoides L. (Golden Samphire) which grows on these same cliffs today; it is known that Mrs Anne Orton was herself a skilled rock-climber; this greatly enhances the likelihood of a correct identification. A special search seems called for of the many suitable but largely inaccessible cliffs.

There is no reason to doubt the record of Hypochaeris glabra L. (Smooth Cat's Ear), indeed I have long kept this species in mind as a likely one to find in Lleyn, and the habitat is suitable. Although undated, it is known that the Misses Cobbe: Amy B. and Mabel (Harrison, Wedgwood & Druce, 1920) were in Pwllheli in 1919 where they discovered a new site for Eleocharis parvula (Roemer & Schultes) Link ex Bluff, Nees & Schauer (Dwarf Spike-rush) in July (and the Lepidium species likewise). The nearest localities for Hypochaeris glabra in recent years (Ellis, 1983) are SH45, probably Dinas Dinlle, and SH53 which is doubtless at or near the earlier "Near Craig Ddu, Criccieth Rev W.H. Painter" of Griffith 1895 .

For the introduced Silybum marianum (L.) Gaertner (Milk Thistle) the locality indicated, and also that for Carduus nutans L. (Musk Thistle), is north-east of Abersoch, SH 3129; the Carduus is still nearby. The Silybum has been once recorded from the Aberdaron area (SH 12) based on a report (c1979) by a Rhoshirwaen (botanically reliable) farmer of a plant which appeared in a field below his farmhouse. The only other site in southern Caernarvonshire is SH43, which could well be the same locality as Griffith's 1895 earlier "near Criccieth".

Of the other entries, the two alien Lepidium species

have already been reported (Ellis, 1983). For the rest, localities near or close by, are still known for all but the Erodium pimpinelloides Sibth. the precise identity of which I am in doubt, although E. pimpinellifolium (With.) Sibth. and E. cicutarium pimpinellaefolium Sibth. are included within the aggregate E. cicutarium (L.) L' Herit.

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

CARMARTHENSHIRE FLORA PROJECT PROGRESS IN 1986

1986 was another more than satisfactory year in which it can be said that every corner of the county was visited. A glance at the accompanying maps will show that there are now only ten tetrads unvisited, five of which will, at best, only yield *Zostera* and the remaining five are tiny corners, mostly in remote moorland near the Carmarthen Fan.

You have sent me so many records that I will only be able to mention those that are most interesting or important. There has been a marked concentration of new data from the under recorded squares in the northeast and the extreme west of the county.

The recording of native or near-native habitats is one prime function of the Flora Project and some very fine old-meadow sites were discovered in 1986. Probably the best was a rich pasture dominated by *Juncus acutiflorus*, *Carex hostiana* and *Carum verticillatum* near Milo discovered by Ian Morgan (IKM) in which was also growing *Gymnadenia conopsea* and its hybrid with *Dactylorhiza fuchsii*, x *Dactylorhiza gymnadenia cookei*, the first vice-county record (v.c.r) (conf.R.H. Roberts (RHR)), also *Briza media*, *Cirsium dissectum*, *Equisetum sylvaticum*, *Genista tinctoria*, *Geum rivale*, *Pedicularis palustris*, *Triglochin palustris* and *Valeriana dioica* ("a nice site": Derek Wells!). Several rich areas, similar to the Rhosydd of Ceredigion were recorded by Adrian Fowles (APF), for example at Rhydcwmerau, Glyn hir and Glanamman, typically with *Salix repens*, *Serratula tinctoria*, *Genista anglica*, *G. tinctoria*, *Menyanthes trifoliata* etc. Some good *Juncus* dominated sites were seen eg at Cae Iago, Ffarmers where there were numerous large specimens of *Platanthera chlorantha* (IKM & RDP), Whitlery, Court Henry: *Epipactis helleborine* (RDP) and near Llangyndeyrn: *Triglochin palustris*, and *Menyanthes trifoliata* (RDP). A *Molinia* heath near Cross Inn, Llanddeusant, yielded a substantial colony of *Trollius europaeus* with associated *Valeriana dioica*, *Serratula tinctoria*, *Narthecium ossifragum*, *Carum verticillatum*, *Briza media* etc (RDP). Also in SN72, George Hutchinson (GH) recorded *Osmunda regalis*, *Bidens tripartita*, *Valeriana dioica*, *Equisetum sylvaticum* and *Geum rivale* in wet

habitats near to a previously known site for **Trollius** in the Sawdde gorge.

Many upland parts were again recorded by James and Mary Iliff, who seemed to come across numerous rich habitats, particularly wet flushes containing, for example, **Carum**, **Pinguicula vulgaris**, **Equisetum sylvaticum** and **Wahlenbergia hederacea**. It is pleasing to note that these habitats still appear to be in reasonable abundance in the northeast. Similar records were made by Trevor Crosby (TSC) in the Crychan Forest area.

The different habitat preferences of **Carum verticillatum** seem, at last, to be coming to light. The last few year's recording has proved its abundance in the northeast of the county as well as the coalfield in the south (see distribution map). On the coalfield it is ubiquitous in all pastures except the few affected by improved farming methods and those of restored opencast land. Poorly-drained, **Juncus**-dominated enclosures on stiff clayey soil of pH4-5 are the norm and **Carum** is a common species comprising up to 10% of the ground cover. However, it appears to do better where there is less rank competition: it is on better drained soil, often on raised ground above the **Juncus** pastures, where **Carum** is associated, particularly with **Agrostis capillaris**, that the fields turn white with its flowering in July. These better drained areas tend to be the most species-rich and commonly include **Cirsium dissectum**, **Briza media**, **Rhinanthus minor** and Dactylorhizids. However, **Carum** appears to be absent from within two to three km of the coast with the exception of the extreme western cliff flushes where it has been seen associated with **Osmunda**.

North of the coalfield, on the Old Red Sandstone and Lower Palaeozoic rocks, **Carum** tends to be most frequent in **Juncus** dominated fields, areas which have escaped the more intensive agricultural practices eg Whitlerra, Court Henry. It does not appear to be at all common in the ox-bow marshes of the major river flood plains but is often found in **Juncus** marshes in the bottoms of narrow, steep-sided valleys, adjacent to small fast flowing tributaries. It is much less common in the west where its remaining stronghold is in the few small areas of common-land which have so far escaped improvement eg Rhospwlygawnen. In the uplands, base-rich

flushes seem to be the preferred habitat. At the highest elevations (300-400m), plants are usually quite stunted, often growing on a quaking substrate of **Sphagnum** with their roots in running water associated with **Potamogeton polygonifolius** and **Narthecium**. In these circumstances basal leaf rosettes may only be 2-3cm in diameter and flowering stems only 10cm tall.

There were several "organised" meetings during the year. The **Hieracium** Study Group, led by Jim Bevan (JB) and Rodney Burton (RMB), met at Trinity College, Carmarthen in June and many sites were visited particularly on the Carboniferous Limestone and in the northeast of the county. Many records await confirmation but there were several rediscoveries of species collected by Riddelsdell and Ley on the Carmarthen Fan and Black Mountain eg **H. sparsifolium**, **H. saxorum** and **H. scoticum**. The search for hawkweeds on the limestone cliffs at Pendine proved unfruitful though some good records were made on a small area of maritime heath, namely **Trifolium scabrum** and **T. striatum** and IKM made the first confirmed v.c.r of **Daucus carota** subsp. **gummifer** from the same spot later in the year. Incidentally, **H. salticola** was recorded at Bynea during the B.S.B.I. meeting, the third v.c.r.

The annual recording meeting was based at St. David's College, Lampeter and I was still dealing with the resultant flood of records months later! Most notable amongst them, recorded by David Marshall (ADM) and GH, was the first v.c.r of **Rubus rufescens**, (det. ADM, conf. Alan Newton) found south of Llandovery and the first v.c.r of **Holcus x hybridus** and the first confirmed record of **Dryopteris x tavelii**, both from near Gwyddgrug by TSC and Mrs A.M. Pell (AMP). John Killick recorded **Botrychium lunaria**, **Viola lutea**, **Serratula tinctoria** and **Aphanes microcarpa** from Banc Beili Tew, near Llansawel and **Epipactis helleborine** and **Stachys arvensis** near Llanwrda. Jean Green and Pauline Goodhind found flushes with **Hypericum elodes** and **Scutellaria minor** at both Cynwyl Elfed and Llanllwni with **Drosera rotundifolia** and **Wahlenbergia hederacea** also at the latter. A very fine series of flushes in which **Rhynchospora alba** was codominant with **Juncus articulatus** and **Carex demissa** was found in a small area of sheep-walk in the centre of Brechfa Forest (RDP). There was an abundance of associated species including **Carum**, **Wahlenbergia**, **Erica tetralix**, **Drosera**

rotundifolia, **Viola palustris**, **Succisa pratensis** and **Narthecium**. A very sorry looking, freshly burnt-over, basin bog near Horeb, Brechfa contained several skeletons of **Myrica gale** and the remains of one plant of **Osmunda regalis** (RDP), both new 10km square records: the site should repay a second visit in the coming season.

As usual, many records from the Carboniferous Limestone outcrop are noteworthy. The Wildflower Week meeting turned up a substantial colony of **Convallaria majalis** in the woodlands near Carmel, not seen on the v.c. since 1963, but several more colonies were later discovered by IKM towards Pentregwenlais. In fact, several recorders made detailed inspections of the area in 1986 and new sites were found for several species including **Paris quadrifolia**, **Rhamnus catharticus**, **Cornus sanguineus**, **Asperula cynanchica** (all IKM) and **Cerastium diffusum** (GH). Members of Cymdeithas Edward Llwyd discovered a well established colony of **Adiantum capillus-veneris** growing in a non-native habitat in the same area and on the same excursion reported a stand of **Equisetum telmateia**. Further to the west along the limestone ridge, **Euphorbia exigua** was found growing in profusion in an old quarry near Drefach (IKM), the first v.c.r of the species from outside a graveyard, and nearby **Gentianella amarella** was seen to be growing in fair quantity. The same species was growing in "hundreds" on the damp floor of an old limestone quarry near Crwbin (IKM).

At Coygan, a small, largely quarried-away limestone knoll east of Pendine, the few participants of the recording meeting led by John Rees (JR) were unsuccessful in rediscovering **Ophrys apifera**, last seen here in 1925, but did find **Lolium temulentum**, the third v.c.r and first since 1966 (det.GH), **Trisetum flavescens**, **Arenaria leptoclados** and **Orobanche hederæ**.

Several new records came from Laugharne Burrows, below Coygan, including the first v.c.r of **Allium scorodoprasum** (JR, det. S.B. Evans, T.G. Evans (TGE) and P.C. Hall), a new **Ophrys apifera** colony, **Asperula cynanchica** and near Pendine, **Scleranthus annuus** (all JR). In addition, a specimen collected in 1984 by JR from near the Witchett Pool has been determined by RHR as **Dactylorhiza fuchsii** x **D. incarnata** (= **D. x kernerorum**), another first v.c.r.

Another important retrospective record and one from a

similar habitat, albeit from the other side of the three estuaries, on Tywyn Burrows, was the first v.c.r of **Carex punctata**, the rather miserable specimen, from an area of mown dune-meadow, collected by Roger Meade and RDP in 1982, having recently been determined by Arthur Chater (AOC) and R.W. David, is now in NMW.

To the east, GH examined the tip of the western breakwater of Burry Port Harbour which is the only terrestrial habitat in SS49P and recorded 32 species including **Trifolium scabrum**, **Picris echioides** and **Geranium rotundifolium**, whilst two plants of **Silybum marianum** were seen growing in a similar situation on the breakwater of Pembrey Harbour (IKM).

The B.S.B.I. meeting at Machynys, Llanelli, led by IKM, proved to be rich in adventives. Several plants of **Datura stramonium** were growing close to the gipsy camp and a magnificent stand of **Solidago gigantea** subsp. **serotina** (det. D.H. Kent) was a first v.c.r. But it was the native species of the disturbed ponds which, to my mind, were of greater interest and included **Berula erecta**, **Hippuris vulgaris** and **Lemna trisulca**. The pond into which a small sprig of **Hydrocharis morsus-ranae** had been introduced a couple of years previously was seen now to be choked with the plant! Other records from Machynys, later in the season, included **Glaucium flavum**, not seen here for many years, and **Atriplex littoralis** (both IKM).

After spending the morning at Machynys, the B.S.B.I. group moved on to Bynea where the **Hypericum elatum** was seen to be in fair abundance. On examining the edge of an adjacent **Typha - Phragmites** marsh a considerable population of **Bidens frondosa** (det. TGE) was discovered about to come into flower, another first v.c.r. The nearby dry, disturbed ground yielded **Veronica agrestis**, **Vulpia myuros** (dominant in closed sward), **Linaria x sepium** and **Carex muricata** subsp. **lamprocarpa** as well as **Hieracium salticola** mentioned above. Nearby at Trostre, three years previously, IKM had submitted a specimen of a suspected **Crataegus laevigata** x **C. monogyna** for determination. This has recently been confirmed by A.D. Bradshaw via NMW, a first v.c.r.

Other coastal records included **Apium inundatum** from Marros (IKM), **Orobanche rapum-genistae** from near Amroth (Bernard Davies) and **Artemisia maritima**, **Bidens tripartita**,

Parapholis strigosa, **Trifolium scabrum**, **T. striatum**, **Calamintha ascendens** and **Juncus subnodulosus** from the Llansteffan area (Heather Sealy-Lewis). Across the estuary at Ferryside, GH did some intensive botanising in the footsteps of R.F. May, in an attempt to refind some of the plants he recorded in the 1960s. George's list was a long one and plants refound included **Anacamptis pyramidalis**, **Stellaria pallida**, **Trifolium micranthum**, **Triglochin palustris**, **Picris hieracioides**, **Carduus tenuiflorus** and **Anchusa arvensis**, whilst new records included **Atriplex littoralis**, **Zannichellia palustris** and **Glyceria x pedicellata** (see below).

Inland marshes have also been of interest during the year. A small stand of **Bidens cernua** was found by AOC in March at Ynys Uchaf, Porthyrhyd and IKM discovered a single plant of **Oenanthe fistulosa** at the same locality later in the year. **O. fistulosa** was also recorded by GH in a marsh near the Johnstown Creamery where it was in good quantity and was growing with **Mentha x villosa** var. **alopecuroides** and **Glyceria x pedicellata**, the latter being a first v.c.r although he also identified it from three other localities: west of Clynderwen, Ferryside and Zabulon, St.Clears. Another notable wetland found by GH was near the source of the Afon Daulan, a tributary of the Taf, at Castellwyran, Llanfallteg West, on the boundary with Pembs. An extensive colony of **Potentilla palustris** grows here, in wooded and marshy ground, adjacent to the stream, with **Equisetum sylvaticum**, **Lythrum portula**, **Viola palustris** and **Scutellaria galericulata**.

In addition to the fern records already mentioned, **Adiantum capillus-veneris** was recorded for the first time in the v.c. growing in a native habitat. A strong colony was found by R.G. Woods and APF on wet tufa below the limestone cliffs of Craig Du, Llanybri. IKM reported significant increases in the populations of **Dryopteris aemula** both at Amroth and Dolaucothi and also recorded several new stations for **D. carthusiana**: Gorslas Bog (with **Potentilla palustris**), in an **Alnus** wood near Ammanford, two plants in a boggy field at Glyn Hir and another two at Nant Melyn.

Charophyte records included a first v.c.r of **Chara aspera** from Laugharne Burrows and a second v.c.r (and first since 1937) of **Tolypella nidifica** var. **glomerata** from the pool by

the targets on Tywyn Burrows. Both were collected by IKM and determined by Jenny Moore.

It would appear that graveyards were largely neglected with the exception of the recording done by AMP. Myddfai Churchyard can be added to the list in which both *Filipendula vulgaris* and *Lilium pyrenaicum* grow together. AMP also noted *Verbena officinalis* here. Other significant finds were *Pentaglottis sempervirens* at Llandingat Without, Llandovery and *Equisetum sylvaticum* and *Polygonum amphibium* at Gwynfe Church and GH noted the first v.c.r of *Geranium x oxonianum* from John Peel's Church, Taliaris (det R.G. Ellis (RGE)).

Few records were obtained for the B.S.B.I. Arable Weed Survey, the only card having been filled in was by GH for *Kickxia elatine* growing at the edge of a kale field near Clynderwen. Brian Reely, however, found *Fallopia convolvulus* on three roadside sites: near Talog, near Llanpumsaint and north of Cynwyl Elfed.

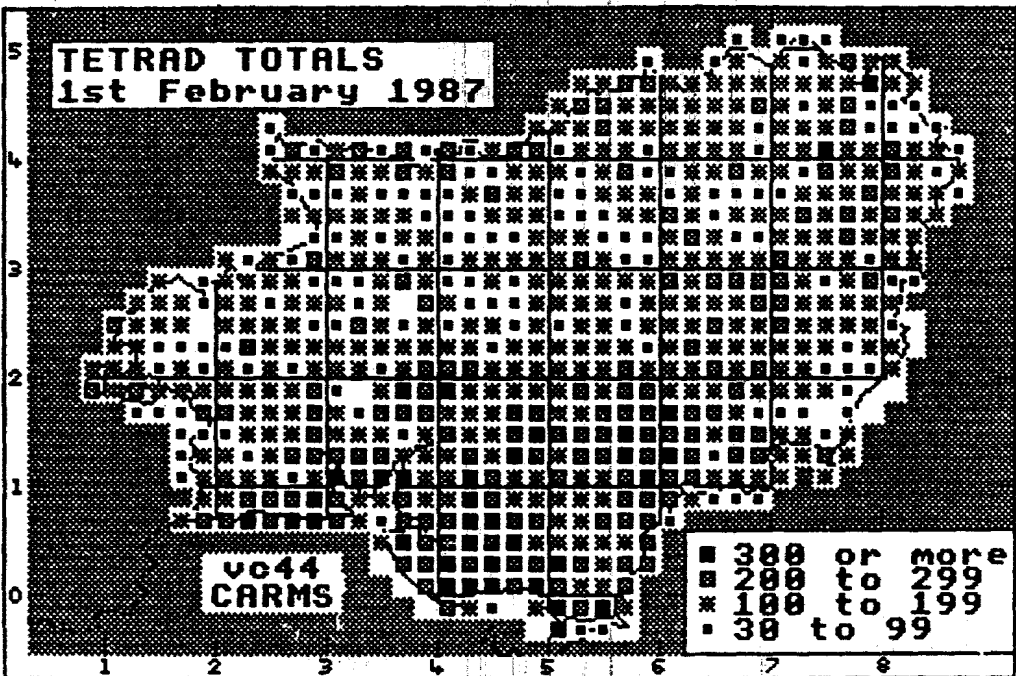
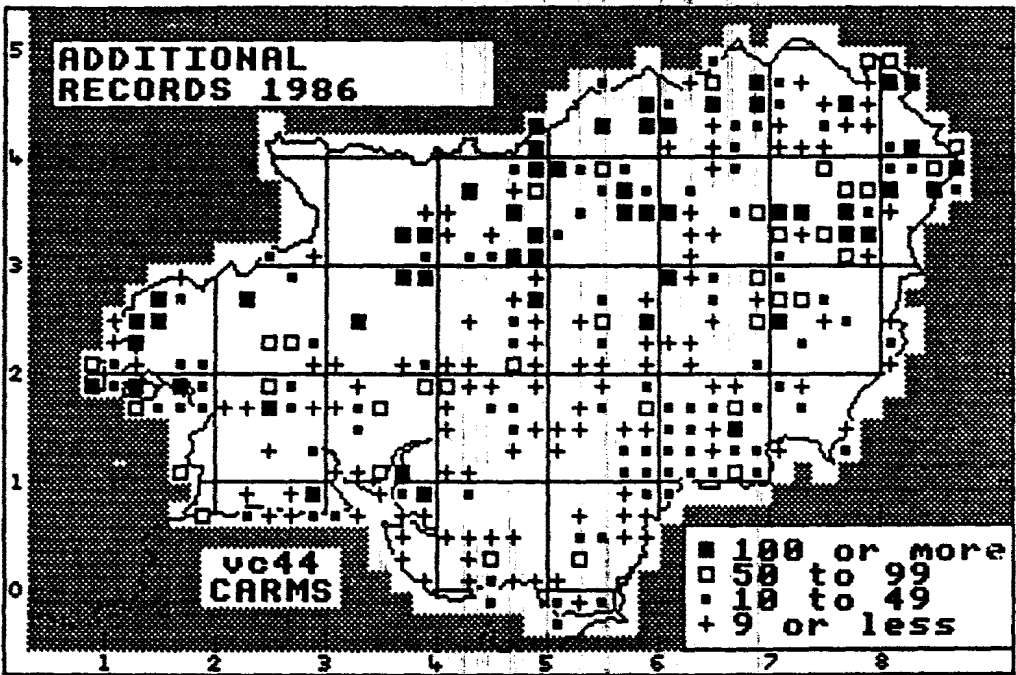
Non-natives of interest recorded during the year included the following: *Linum usitatissimum*, pavement weed, Capel Hendre, AMP; *Spiraea x billiardii*, naturalized, Gellideg, TSC; *Chrysanthemum segetum*, one plant on gravel bank in the Gwendraeth fach, Gellideg, TSC; *Myrrhis odorata*, near Blaenwaun, TSC; *Erysimum cheiranthoides*, roadverge, Carmarthen, RMB, JB & GH and *Erucastrum gallicum*, roadverge, Cross Hands, AMP, 1985, conf RGE, 1986.

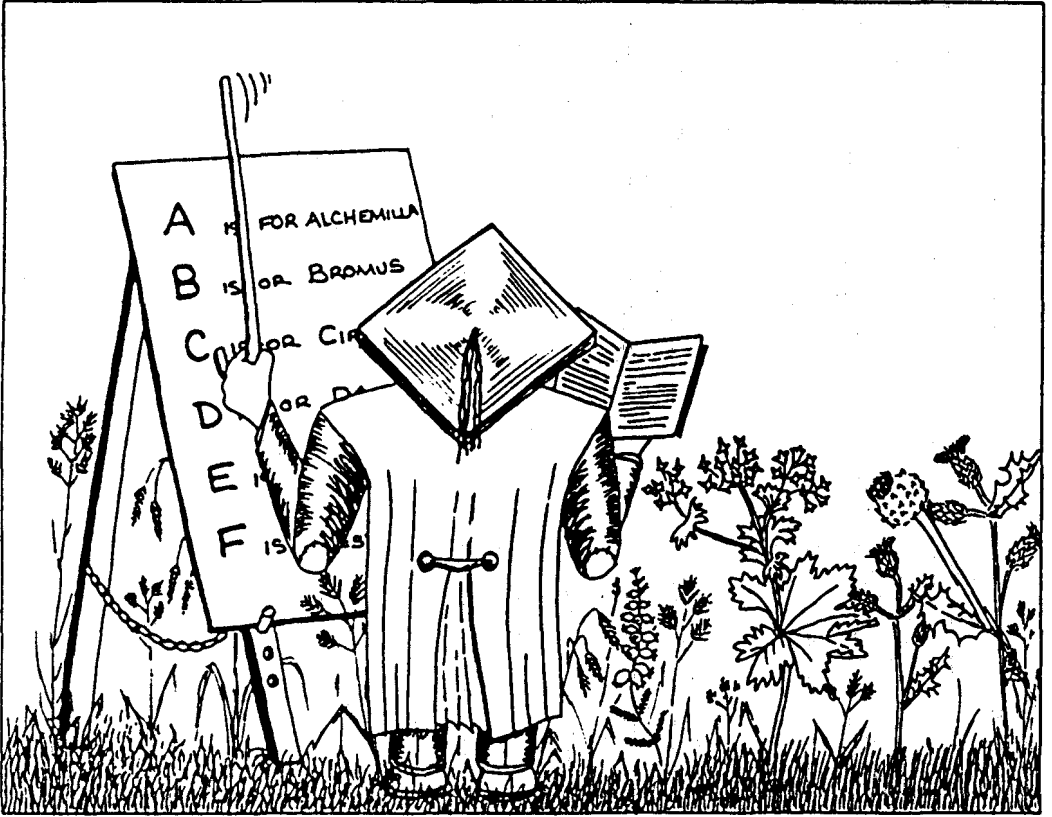
The success achieved so far in the recording project is considerable and I know that the enthusiasm of the participating recorders will continue to produce the results. The tasks for this and the coming years must be threefold: to complete the B.S.B.I. Monitoring Scheme, to increase the number of species recorded in those squares currently with less than two hundred and to try and do something meaningful about the critical taxa. May I conclude by sincerely thanking everyone who has contributed in one way or another, particularly the more prolific recorders and the referees and experts from whom, no doubt, increasing advice will be sought in the future.

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R.D. PRYCE, Rhyd-Deg, Maesybont, Llanelli, Dyfed





The Hon. member for Gwent (v.c.35) instructing his class