

BOTANICAL SOCIETY OF THE BRITISH ISLES

WELSH REGION BULLETIN

Editor : S.G. Harrison, B.Sc., F.L.S.

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Cardiff, January, 1971



PROGRAMME OF FIELD MEETINGS FOR 1971

- May 22nd                    PONTROBERT, near Meifod, Montgomeryshire.  
Mr. Langshaw Rowland is to hand over  
9-10 acres of mixed woodland on his  
estate to the N.W.N.T. and the  
Montgomeryshire Field Society. This will  
be the venue of the meeting, leaving the  
Old School, Pontrobert, at 11 a.m.
- June 19th                    LLANSANTFFRAED-IN-ELVEL, Radnorshire,  
map reference SO/100549, and thence to  
an unnamed bog near Cefnbychan Farm,  
SO/079556.  
Leader: Miss Ann C. Powell.
- July 3rd & 4th              ABERDARON & LLEYN PENINSULA, Caernarvon.  
A two-day meeting, visiting coastline  
owned by the National Trust at  
Porthysgo, near Aberdaron (a good  
community of maritime plants with some  
interesting calcicoles) and an inland  
site in the Lleyn peninsula.  
Early booking is advisable, at one of  
the two hotels in Aberdaron.  
Leaders: Miss Ann Conolly and Dr. Lacey
- September 25th            A.G.M. Gregynog Hall.  
and 26th

For confirmation and further details of meetings,  
apply to the Welsh Region Secretary: Mr. M. Porter,  
Ynys Villa, Llangynidr, Crickhowell, Breck.

BOTANICAL SOCIETY OF THE BRITISH ISLES - WELSH REGION

ANNUAL GENERAL MEETING

GREGYNOG HALL NEAR NEWTOWN, 3rd OCTOBER, 1970

Secretary's Report

During the morning session there were interesting talks from Dr. Peter Moore of the Department of Botany, King's College, London and Dr. Franklyn Perring of the Biological Records Centre, Monkswood. The correlation, by Dr. Moore, of his pollen analysis from peat deposits on the slopes of Plynlimon with various local historical events, proved a fascinating exercise! The problems involved in conserving the rarer species in our flora were outlined by Dr. Perring. The urgency of the problem was stressed and some of the measures being undertaken to tackle it were discussed.

After lunch Mr. J.W.L. Zehetmayr, Conservator of Forests for South Wales, described some of the ways in which the Forestry Commission are attempting to make their forests more attractive habitats for a wider variety of wild life.

The business part of the meeting commenced with the Chairman's address in which he explained that the Council was considering a proposal to abolish group membership, except for schools. He thought that the position of Natural History Societies and County Trusts merited further consideration. As a result, a recommendation that Natural History Societies and County Trusts should continue as corporate members of the society was passed by the meeting, for communication to the Co-ordinating Committee.

The Chairman noted that he would be editor of 'Nature in Wales' in the near future and would therefore need to be replaced as editor of the Bulletin.

The Hon. General Secretary, Mrs. I.M. Vaughan, reporting on the 1970 Field Meetings and E.C.Y. Exhibitions, commented especially favourably on the exhibition 'Man and the Countryside' at the National Museum of Wales.

Two successful publications, involving B.S.B.I. members, were mentioned - 'Welsh Wildlife in Trust', edited by Dr. Lacey and 'Pembrokeshire Plants' by Mr. T.A. Warren Davis.

Members had been involved in giving evidence at three public enquiries :- the Brianne reservoir scheme, the Montgomery Canal and Pembrey Burrows.

The following members were re-elected to serve on the Welsh Region Committee :

Messrs. D. Davies, J.W. Donovan, S.G. Harrison,  
Dr. W.S. Lacey

Mr. M. Porter was elected as Hon. General Secretary in succession to Mrs. I.M. Vaughan, to whom thanks were expressed for her invaluable work during her term of office. Mrs. Vaughan was then elected to the Welsh Region Committee. Dr. W.S. Lacey was unanimously elected as Welsh Regional Representative on Council in succession to Mr. T.A. Warren Davis.

A discussion ensued on proposals for the conservation of part of the Montgomery Canal. This was continued on Sunday during a visit to the areas recommended for conservation.

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Of the three papers read at the 1970 A.G.M., Mr. Zehetmayr's contribution has been slightly abbreviated for this Bulletin and Dr. Moore's summarized more briefly as he has given references to previously published works in which more detailed information can be found. Owing to shortage of space, Dr. Perring's paper is being held over until the next number of the Bulletin.

#### The light thrown on recorded history by palynology

Dr. Peter Moore gave an interesting talk about his work on the changing vegetation of West-Central Wales in the light of human history. (1) (2). This work was carried out at the Department of Botany, University College of Wales, Aberystwyth.

The techniques of pollen analysis have been used to provide greater detail regarding the species composition of the vegetation, as well as more information on the extent of man's influence, than could be obtained from historical documentation. Studies of the results of pollen analysis of samples from various sites on the blanket peats made it

possible to build up a picture of the changes that the vegetation had undergone as various cultures developed and passed on during the past 5,000 years. Some of the sites are close to positions of archaeological interest and some contain datable artefacts. For instance, at Llyn Gynon the blanket peat deposit on the northern side of a large lake contains mediaeval remains. The full and detailed pollen diagram from Plynlimon shows indications of varying degrees of human interference during different periods. The advent of Neolithic man is accompanied by a rapid decline in elm pollen and the first Plantago lanceolata pollen occurs. This has been interpreted as a sign of human occupation and a pastoral type of economy. (3). Later, far more pronounced peaks in Plantago lanceolata and Pteridium aquilinum indicate periods of intensive clearance followed by phases of woodland regeneration. Plantago major, Rumex (acetosa type) and cereal type pollen grains are other indications of human activity, probably a system of shifting agriculture, clearing an area of forest, growing some crops, pasturing animals, then abandoning the area and moving on. This period can probably be correlated with invasions by people of Beaker and Bronze Age culture, from about 1800 B.C.

The Iron Age-Roman period, from the 2nd century B.C. to the 1st century A.D. was human occupation of a more stable type. Evidence of pastoral activity on Plynlimon suggests that the hills were used at least for summer grazing. The Iron Age people built hill forts and their economy was largely pastoral. At Blaen yr Esgair there is correlation between the pollen diagram and the building and constant use of a Roman road. The Romans introduced rye (Secale cereale) and the first pollen grain of the species was found in this period at Plynlimon.

The Dark Ages followed the withdrawal of Roman troops, around A.D. 400. There was a return to tribal warfare and shifting pastoralism, but some settlements occurred. Renewed agricultural activity following the foundation of the Cistercian abbey of Strata Florida in the 12th century could account for the abundance of grazing indicators in this period at Plynlimon.

At the close of the 13th century the Welsh were in rebellion against Edward I, who ordered the woodland to be cleared on a number of named estates to prevent "robberies, homicides and other enormities against the King's peace." Some years later, Edward pursued the rebel Llywelyn ap Gruffydd through West Wales and in the process the Abbey of Strata Florida was damaged. Edward sent £78 compensation

to the Abbey, together with instructions that all woods in the neighbourhood should be cut down. It is quite possible that much of the lowland and valley woods, rich in alder, were cleared at this time, resulting in the marked decrease in alder pollen during the period.

During the 15th century, there was a pause in the destruction of forest which could have resulted from the reduction of the population of Cardiganshire by the Black Death and as a consequence of rebellion against Henry IV.

Later, forest destruction continued as cattle breeding increased and the uplands were enclosed. The process reached its climax during the Napoleonic Wars, when cereals were grown even at high altitudes, hence the abundance of cereal-pollen at Plynlimon. Peace in 1815 was followed by depression and the abandonment of upland holdings. Depopulation continued throughout the 19th century and there was some recovery of woodland, particularly in the uplands. The effects of depopulation were supplemented by deliberate reafforestation, at first by private individuals and later also by the Forestry Commission as can be seen in increased Picea and Pinus pollen.

- (1) Human influence upon vegetational history in North Cardiganshire  
P.D. Moore, Nature 217 (5133) 1006-1009 (1963)
- (2) The changing Vegetation of West-Central Wales in the light of Human History  
P.D. Moore and E.H. Chater, J.Ecol. 57 361-379 (1969)
- (3) The anthropogenic factor in vegetational history.  
I Tregaron and Whixall Mosses  
J. Turner, New Phytol. 63 73-90 (1964)

(The anglicized versions of Welsh place names used in these published papers have been retained, to avoid confusion - Ed.)

## Forestry and Conservation

Mr. J.W.L. Zehetmayr, Forestry Commission

Britain's home-grown timber supplies only about 10% of our needs of wood and wood products. 90% of our requirement is softwood, mainly for building purposes and paper products.

We have a smaller proportion of our land area under forest than almost any country in Europe: 10% in Wales compared with 18% in Belgium and 20-25% in France and Germany.

A wood shortage has been predicted for Europe as a whole in the late seventies.

In the high-rainfall uplands of Wales, much of which had been degraded by grazing and burning for centuries, forestry is virtually the only alternative use of land to sheep farming. Here is the basis for an expanding industry, particularly in the light of the excellent growth rate of conifers in Wales. The main task of the Forestry Commission is to increase wood production both by its own efforts and by encouragement of private woodland owners. In some parts of Wales, forests are now part of the country scene as they have not been for centuries. In the industrial valleys of the south, forests have largely supplanted agriculture on the hills between the mining valleys. The Forestry Commission must also "have regard to the desirability of conserving the natural beauty and amenity of the countryside" and provide for public access and recreation. One simply cannot justify conserving all hardwood trees, but claims that Wales is in danger of losing her deciduous woodlands or that one will not be able to see Wales for conifers are unjustified. There are 20,000 acres of managed broad-leaved Forestry Commission and private woodlands, and more than 100,000 acres of unmanaged woods. It is not Forestry Commission policy today to convert these wholesale to conifers and it is doubtful whether as much as 1,000 acres is being converted per year. The Nature Conservancy is informed of all Forestry Commission acquisitions and has an opportunity to comment. Recently, management of a small broad-leaved wood acquired with a Welsh hill-farm was handed over to the appropriate Naturalists' Trust. In another case, the Commission has offered not to acquire a wood if the Nature Conservancy wish to buy it as a Nature Reserve.



The net extension of forest per year may be estimated at about 5,000 - 7,000 acres, or 1% to 1½% of the land area of Wales in a decade, so by the end of the century we may have 13% - 14% of woodland.

The Commission's lesser responsibilities may conflict mutually - public access may hinder conservation, particularly of rarities, or reserved sporting rights in leased forests may preclude public access and aid conservation. In the uplands, there is often little left to conserve on bare hillsides with a minimal flora and fauna after centuries of grazing and burning. On those areas 'devastated by fire and tooth', to use Frazer Darling's verdict on the Scottish Highlands, afforestation immediately leads to a richer wild life following fencing, draining and exclusion of fires. Even at the 'lifeless thicket stage', there is shelter, increased bird life especially on the margins, even more mammals - voles, polecats, deer - though rarely in Wales - and foxes - or so the farmers insist!

In the thinning stage the ground flora spreads in from rides, margins and unplanted areas. Once one arrives at the felling and regeneration stages, which will really start in the 70's and increase in the 80's and 90's, the diversity of the forest will be apparent to all who today see only the uniformity of young conifers. More than one third of our area in Wales was planted in the 50's, so that it is now 10-20 years old and about as many feet tall. Thus we have today more of what has been called the ugly duckling phase than we ever shall again. The forest of the future, with stands of all sizes and an abundance of margins or interfaces will be a reservoir for wild life more varied and more effective than large tracts of open moor, or thicket, or mature woods would provide on their own.

There are two provisos :

- a) Wild life must be controlled to prevent excessive damage to trees or to neighbouring crops or flocks. This may be done by letting sporting rights or by employing skilled rangers. Controlled shooting of deer has been developed to maintain an acceptable population, e.g. in Margam forest behind Port Talbot. The use of suspensions of fungal spores to control butt-rot by other fungi is preferable to using chemicals. Selective chemicals such as simazine take over from the poisons of the past.

b) The use of chemicals for weeding and removing unwanted growth must be strictly controlled, with strict regulations as to weather conditions, areas to be treated, handling, residues, etc. Most such operations are selective or cover only a proportion of the ground and are not used in amenity or catchment areas. In addition, and most important, the number of chemical interventions in a rotation of 50 years is likely to be small - 2 or 3 - and thus in a forest as a whole there is little chance of a Silent Spring - far less than in any form of intensive agriculture.

Finally, 5 or 10% of any forest is not used for producing timber, nor for any commercial purpose. This forest waste will include the nature reserves - over fifteen in Wales today - managed by or in agreement with the Nature Conservancy or Naturalists' Trusts: unplantable or uneconomic screes, crags, gorges, nooks and crannies - parts of over 20 SSSI's including 400 acres of gorge and waterfall in one forest; over 1,500 acres of woodland in South Wales. These are, or will become, as near undisturbed natural habitats as we have and act as reserves and refuges for fauna and flora.

Let us not forget the road verges and rides: I have seen in one afternoon, in two successive Augusts, 10 - 12 species of butterfly on 100 yards of road verge lined with hemp agrimony in Draethen forest, within 5 miles of Cardiff - 20% of the British species if you allow for the one or two common ones I did not see, and this was on the edge of 18 year old Japanese Larch replacing scrub and hardwood.

The persistence of plants will be no surprise to this society; cases known to me are Trollius and Triglochin at Inverleiver over 30 years, 1930's, 1948, 1964 and Grass of Parnassus at Forest of Ae 1948-1957.

My knowledge of Wales is shorter. I am watching chalk plants on rides above Dinas Powis where 245T was used in an adjoining crop of Tsuga heterophylla - Western hemlock - to combat bramble. Species include two Hypericum, Blackstonia and Erythraea.

If you know of rare plants or habitats in Commission Forests, please tell the local Head Forester or District Officer and we will see what we can do to conserve the area. Recently we have taken steps for Trollius in Towy.

Felling as well as planting can raise problems: a site for Linnaea borealis was fenced off at felling of a pine stand in South Scotland; but the plant had apparently gone within a few years. One hopes it will reappear as the

site was specially replanted with Scots pine.

Foresters are becoming more careful to leave unusual habitats. Recent cases are the Economic Forestry Group in South Scotland leaving watering for deer and sites for flight ponds, and peat bogs by the Forestry Commission in Rhondda.

Most of the Forest Nature Reserves of the Nature Conservancy and the County reserves in forests in Wales are floristic.

Far too little is known of the sequence of vegetation changes in conifer woods. I noted some in my publications on the planting of peat and heath. There are accounts of the flora in the early stages of some forests - notably Muir and Frazer on Clashindarroch, but on the whole I believe ecologists have shied away from our artificial climax stands of introduced conifers. I am sure a lot of interest will arise in the next decades as the forests are opened up as they mature.

## FIELD MEETING REPORTS, 1970

### TOWYN BURROWS AND MOAT LLANDYRY

Ten people met on 13th June 1970. The vegetation of the disused ports - our intended objective - was desiccated by drought wherefore we switched to Towyn Burrows. Under Corsican Pine in the Forest a patch of Pyrola rotundifolia, forward in bud, measured some 8' by 10'. Ophioglossum vulgatum and Eleocharis quinqueflora had enough moisture in the rides for survival. On the open dunes, though many Dactylorhiza species were in abundance, the Orchis morio of a month earlier had gone to ground completely as also had Centaurium pulchellum and C. littorale. It was too early for Gentianellas or for Liparis loeselii. Calystegia soldanella was much reduced but great mounds of Lathyrus sylvestris were unharmed.

A pool which a month earlier had held Ranunculus tripartitus had sunk without trace save for one disconsolate frog.

At near-by Pinged halt, Linaria supina had seeded freely despite British Railway's dose of weedkiller. Thence to Moat Llandyry where we were entertained to a

magnificent tea by the kindness of Mr. and Mrs. Tallowin. We then toured their interesting wet woodlands (Galanthus nivalis and Impatiens glandulifera extensively naturalised) and took Ranunculus trichophyllus and Potamogeton pusillus from their pond. A torrential thunderstorm made sudden end.

#### SHROPSHIRE UNION CANAL

A party of 11 met on the 4th of July to record plants of the SSSI sector between Tan House bridge and Burgedin lock and of the Guilsfield Arm. A stop was made where road and canal run parallel to see Ranunculus circinatus in flower and look for Luronium natans previously located here but not refound.

In the SSSI sector banks are partly choked with Glyceria maxima despite which plants such as Cardamine amara, Oenanthe fistulosa, O. crocata, Rumex hydrolapathum, Scrophularia aquatica, Butomus umbellatus, Sparganium erectum, S. emersum, Acorus calamus, Berula erecta and Mimulus guttatus were well represented. Sedges included Carex pseudocyperus, C. riparia, C. acutiformis, C. paniculata and C. muricata. Hypericum tetrapterum here supplants the locally commoner H. dubium.

Eleven species of Potamogeton have been recorded but owing to the heavy growth of Ceratophyllum only four were collected on this occasion, Potamogeton natans, P. compressus, P. obtusifolius and P. friesii. Three species of Lemna were found, Lemna minor, L. polyrhiza and L. trisulca and in an adjacent marsh Oenanthe aquatica with Stellaria palustris.

In the Guilsfield Arm Luronium natans was found but not Dactylorhiza praetermissa, present here in 1969.

About 154 plants were recorded on the SSSI and 56 on the Guilsfield Arm but time prevented a full coverage of the latter which urgently needs clearance of overgrown alders.

NATIONAL MUSEUM OF WALES, CARDIFF.

On 5th September a small group of members was conducted round the 'Man and the Countryside' exhibition, the Museum's main contribution to European Conservation Year 1970, occupying the whole of the Main Hall and parts of the Botany and Zoology Galleries and the Library, from 1st July to 15th September. The exhibition illustrated many aspects of man's impact upon the animals, plants and scenery of the countryside from prehistoric times to the present day. It included exhibition material provided by Welsh Region members and alluded to the work of the B.S.B.I. in recording and mapping the flora of the British Isles.

'Man and Nature', a photographic exhibition prepared jointly by the Nature Conservancy and Kodak Ltd., supplemented 'Man and the Countryside'.

The party visited the Welsh National Herbarium, where members had an opportunity to see the extent of the collections and to examine records and specimens. For the duration of 'Man and the Countryside', part of the Herbarium was used as a reference library, where visitors could read books and numerous pamphlets on topics relating to conservation and the countryside.

