

BOTANICAL SOCIETY OF THE BRITISH ISLES

# WELSH BULLETIN

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Royal Fern  
*Osmunda regalis*



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## EDITORIAL

In this Jubilee Year we wish to express our loyalty to and appreciation of Her Majesty Queen Elizabeth II. No doubt some of our members will have been involved with planting commemorative trees and other local ceremonies. Many more will have participated in the celebrations which marked Jubilee Day.

The Botanical Society of the British Isles has, of course, long been honoured by Royal Patronage. Her Majesty Queen Elizabeth the Queen Mother became our Patron in 1965, after the death of Her Royal Highness The Princess Royal.

As 1977 is also the 50th anniversary of the opening of the National Museum of Wales it seemed appropriate to include an article reviewing the history of the Museum's Department of Botany. Thanks to the co-operation of several of our members it has been possible to make this number rather larger than has been usual in recent years. May I appeal to members to send in even more contributions to make next winter's bulletin a really bumper number, in support of our recently appointed new co-editor, Mr. R.H. Roberts, whose address is : Quinton, 51 Belmont Road, Bangor, Gwynedd. Mr. Roberts takes over from Mrs. I.M. Vaughan who has been co-editor since 1971. This, of course, has been only one of many ways in which Mrs. Vaughan has served the Society over many years and for which she deserves our most sincere thanks.

THE NATIONAL MUSEUM OF WALES  
DEPARTMENT OF BOTANY AND WELSH NATIONAL HERBARIUM

S.G.Harrison

1977 is the 50th anniversary of the formal opening of the National Museum by King George V and Queen Mary (on 21 April) so it seems appropriate at this time to review some of the high lights of the Botany Department's history.

The National Museum came into existence, on paper, in 1907, as an institution incorporated by royal charter. The following year it made a modest start in a room in the City Hall whilst waiting for the erection of the Museum building on a 4 acre site in Cathays Park, Cardiff. In 1910 the first botanical specimens were purchased - a Sago Palm fruit and a small bound collection of "New Zealand Mosses" many of which were later found to be Hydrozoa (the Class of animals to which corals belong), colonial algae, lichens and conifers. There were modest accessions during the following three years but the real start of the Welsh National Herbarium may be said to have been in 1913 when the collections of Cardiff Municipal Museum were transferred to the National Museum. They included an herbarium of more than 3,500 mounted specimens and others unmounted. The Rev. H.J. Riddelsdell of Llandaff donated 474 specimens and there were purchases from such well-known botanists as W.H. Pearson and the Rev. E.F. Linton. That same year No. 35 Park Place was leased for 4 years, with separate rooms for Natural History, Geological and Botanical specimens.

During the First World War, the well-known local amateur botanist Miss Eleanor Vachell took charge of the Botanical Department and Herbarium. C.M. Green B.Sc., appointed Assistant Keeper in charge of the Department which he served all too briefly in 1914, was wounded in France in 1915 and killed in action in 1918.

In 1919 the first Keeper of Botany was appointed - Ethel N. Miles Thomas, D.Sc., F.L.S. In 1920 A.E. Wade was appointed Assistant, the Economic Collections were founded, with specimens from Kew, the Imperial Institute and various commercial sources, and 385 gouache drawings of plants were donated by the artist, medical practitioner Dr. Harry Drinkwater. Personal visits and lists of desiderata circulated by the Keeper increased the number of accessions for that year to 44, more than half the total accessions during the previous 10 years. The actual number of specimens increased tenfold. The first major collection, the D.A.Jones Herbarium of 10,000 specimens, was purchased for £165.

In 1922, Dr. Thomas was replaced by H.A. Hyde, B.A., formerly of Downing College, Cambridge and then Biology master at Tonbridge School. The western section of the new museum building was completed and Botany was allocated a short gallery on the first floor. The E.M. Holmes Herbarium of 3,400 hepatics, mosses and lichens was purchased. Opportunities to add to the collections by donations, purchases or exchanges were taken whenever appropriate: the A.R. Horwood collection (7,000+, in 1923), J.A. Wheldon (30,000, in 1925), A.E. Wade (5,300, in 1925). By 1926, the year when Dr. (later Sir) Mortimer Wheeler resigned after 2 years as Director (he had previously been Keeper of Archaeology), the Herbarium total was c.92,000 specimens (excluding the economic collections).

In 1927, Botany moved into the new Reardon Smith Gallery on the ground floor, in the S.E. corner of the building. The J.E. Griffith Herbarium was purchased (c.4,800 specimens and also books formerly the property of the Rev. Hugh Davies, author of *Welsh Botany* (1813)). Miss E.A. Jenkins B.Sc., made the first of many wax models of plants for which the Department was to become noted. Then in 1928 came the W.A. Shoolbred bequest of c.10,000 specimens, said at the time to be "probably the most valuable botanical gift yet made to the Museum" - Dr. Shoolbred was for many years actively engaged in the study of the flora of the Chepstow district and his herbarium contains not only the plants collected in that area, but also valuable series from the Scottish Highlands, and it is rich in brambles and hawkweeds.

The rapidly increasing size of the herbarium collections obviously presented accommodation problems and successive batches of new cabinets had to be ordered. In 1930-31 the first half of the east wing was completed and Botany took over a permanent 'Reserve', departmental offices, a large room for the Herbarium and a room for use as a laboratory. The East Wing galleries were opened by Prince George in October 1932 but were not opened to the public until the following July. A donation of 192 stoneworts from Canon G.R. Bullock-Webster, the expert on Characeae, supplemented the 42 specimens previously purchased from him. A habitat group, using models and dried specimens, entitled "Rock Plants of the Gower Coast" was completed in 1933-34. It can still be seen now (1977) in the Botany in Wales Gallery (renovated, of course), together with "Mountain Plants of Snowdonia" which was based on materials collected from Clogwyn Du'r Arddu in 1936.

In 1938 Dillwyn's *Herb. Brit. Confervae*, a bound volume of 277 filamentous algae arranged in order of Dillwyn's *British Confervae* (London, 1809), was received from the National Library of Wales. Lewis Weston Dillwyn, F.R.S. (1778-1855) the Swansea porcelain manufacturer, was also a distinguished naturalist and author of 'Botanist's Guide through England and Wales' (with D. Turner) and 'Materials for a Fauna and Flora of Swansea and the neighbourhood' (1848) and other works.

Over the years the lists of collectors and donors have contained many locally, nationally and internationally well-known names. An Index of Collectors is being compiled which is already (1977) estimated to contain about 5,000 names, so any selection has to be very restricted until the Index is complete and, it is hoped, eventually published. Two British botanists in particular must be mentioned, E.C. Wallace and J.E. Lousley, as they have contributed a great deal to the Welsh National Herbarium since the 1920's, both personally and through the Botanical Exchange Club (which later became the Botanical Society of the British Isles), and in the case of Mr. Wallace, through the British Bryological Society. It was a great loss to British botany when Mr. Lousley died last year.

In 1944 the herbarium (c.10,000 mainly bryophytes) of the late H.H. Knight was described as probably the largest and most important donation of cryptogamic plants ever received by the museum. When reporting these large collections one must not forget those who may have contributed as many specimens but in smaller parcels, for instance S.G. Charles who sent donations annually from 1924 to 1948, and Mrs. I.M. Vaughan, who has been sending specimens for more than a quarter of a century. Even during World War II the Museum was not forgotten by its unpaid collectors, resulting in an increased representation of specimens from North Africa, the Near East etc.

The Eleanor Vachell Bequest was another major accession, in 1949. It comprised the C.T. and E. Vachell Herbarium of 7,000 specimens, mainly collected by Miss Vachell and especially rich in material from Glamorgan, also books, botanical diaries and records. The link with Miss Vachell remains as the Department is at present engaged in compiling a new Flora of Glamorgan in collaboration with the University Colleges of Cardiff and Swansea, and Cardiff Naturalists' Society which received another bequest from Miss Vachell for this purpose.

In addition to donations, bequests and purchases, large numbers of specimens have been added to the collections by exchanges with other institutions. This has been a particularly valuable means of obtaining foreign material, obviating the need for expensive collecting expeditions abroad at least for this specific purpose. In recent years there have been exchanges with museums, Universities and research stations in America, France, Holland, Sweden, Finland, Denmark, Mexico, Poland, Romania and Tadzhikistan. In earlier years many British specimens were received from the Botanical Exchange Club, Watson Botanical Exchange Club and British Bryological Society.

In 1941 the Keeper and Dr. D.A. Williams of St. David's Hospital started the first day-to-day census of atmospheric pollen to be made in Europe, with a pollen trap on the roof of Llandough Hospital. In the following year seven other pollen-trapping stations were set up, one of them at the National Museum of Wales. This trapping continued until 1962. In 1945 Hyde and Williams coined the term 'Palynology', for the study of pollen and spores. This is now a firmly established field of science, with a number of different branches and applications.

In 1961 the Assistant Keeper, Dr. Brian Seddon, founded the Lake Flora Survey, enlisting the help of other botanists (and non-botanists, such as sub-aqua club members) in recording the distribution of aquatic plants in lakes throughout Wales, from 1961 to 1966 when he resigned and R.G. Ellis was appointed Assistant Keeper.

The completion of the West Wing released additional gallery space for the Departments of Geology and Botany. In 1966-67 exhibits were completed in the new Cryptogamic section in display units designed by the botanical artist.

In 1968 the Department was awarded its third Gold Medal by the Royal Welsh Agricultural Society for an exhibit of timbers of Welsh trees at the Royal Welsh Show. Over the years it has also been awarded several silver and bronze medals.

In the following year the Keeper became Honorary Curator of the British Bryological Society's Herbarium, which was transferred to Cardiff from the British Museum, (Natural History).



1971 saw the re-opening of the ground floor Glanely Gallery in which the Departments of Botany, Geology and Zoology had collaborated with the Display team in producing exhibits illustrating several different environments typical of those found in Wales. A.R. Perry was appointed to the new post of Assistant Keeper in charge of non-vascular cryptogams, i.e. mosses, fungi, algae, lichens, etc.

The Botany in Wales Gallery, opened in 1975, incorporates a Wild Plant Table and exhibits illustrating the basic principles of plant identification, the work of early botanists and modern developments, recreation and conservation, and pollution. There is a table for temporary exhibits.

Today, in 1977, the herbarium total is c.230,000 specimens and continues to increase. The exhibits in the galleries are constantly being changed or upgraded. The 3rd edition of 'Welsh Timber Trees' was published recently and work is in hand on new 'Welsh Ferns', 'Welsh Flowering Plants' and the Flora of Glamorgan. The Department can look back with some pride on more than 50 years of development.

#### A selection of Notable Events in Departmental History.

- 1907. Royal Charter.
- 1919. First Keeper appointed - Ethel N. Miles Thomas D.Sc., F.L.S.
- 1920. A.E.Wade appointed as Assistant.
- pre 1921. Department occupied 35 Park Place, later moving into new building and occupying part of the suite of offices now housing Archaeology.
- 1922. H.A. Hyde B.A., replaced Dr. Miles Thomas. Botany allocated short gallery then known as 'square' gallery on 1st floor. Herbarium confined to the first cupboards purchased. Plant tables showing a display of Welsh plants in gallery.
- 1927. Formal opening April 21st. Botany moved to new 'Reardon Smith' gallery (now Unity of Science). Exhibits split into Ecological, Classification and Applied Botany sections.

- 1928. First facilities for making models in the department.  
By this time 56 oak herbarium cabinets had been installed.
- 1931. 1st half of East Wing completed, occupied permanent  
herbarium and offices.
- 1932. October - East Wing opened by Prince George.
- 1933. Public admitted to East wing, 1st habitat group (forerunner  
of diorama) installed - 'Rock Plants of the Gower Coast',  
can still be seen (renovated, of course) in the Botany in  
Wales Gallery.
- 1935. Herbarium re-arranged in accordance with Druce's British  
Plant List (previously in London Catalogue order).
- 1937. Further habitat group 'Mountain Plants of Snowdonia' (also  
still in use and frequently admired).
- 1941. Dr. D.A. Williams (physician, St. David's Hospital) and  
H.A. Hyde (botanist, N.M.W.) embarked on first day-to-day  
census of atmospheric pollen to be made in Europe. Carried  
out at one station only (Llandough Hospital) for one year  
trial period.
- 1942. Seven other stations set up, one at N.M.W. (on roof). This  
trapping continued until 1962.
- 1944. D.H. Knight collection acquired. 'Most important donation  
of cryptogamic plants to date'.
- 1945. Herbarium re-installed after withdrawal during war years.  
The term 'Palynology' was coined by Hyde & Williams for the  
study of pollen and spores. It is now a firmly established  
field of science with a number of different branches and  
applications.
- 1947. Steel cabinets purchased to house Cryptogams. Keeper visit-  
ed centres of research in pollen and pollen allergy in the  
U.S.A. at expense of Welsh National School of Medicine.
- 1948. The Eleanor Vachell Bequest of c.7,000 specimens, together  
with books and botanical records, especially rich in  
material from County of Glamorgan.
- 1953. Gold Medal at Royal Welsh Show.
- 1957. " " " " " "

- 1958. Temporary exhibition (6 months) in Circular gallery 'Paper and its uses'.
- 1959. Cultivated Plant Table revived (withdrawn during war). Illustration collection reorganized and housed in Solander boxes.
- 1960. British Association for the Advancement of Science in Cardiff - co-operation and participation by Keeper and others.
- 1961. Retirement of A.E. Wade; his successor Dr. B. Seddon commenced Lake Flora Survey in 1962.
- 1962. Retirement of H.A. Hyde, succeeded by S.G. Harrison. Four Forestry dioramas installed.
- 1963. Emphasis on modernization and expansion. Powerful research microscope purchased - 'Leitz Laborlux'.
- 1966. Acquired new gallery space for Cryptogamic section (on completion of West Wing), formerly occupied by Geology. Agricultural Deep Freeze and Freeze-dryer installed. Dr. B. Seddon resigned and R.G. Ellis appointed Assistant Keeper.
- 1967. 'Museums Week' Exhibition. Visitors invited to visit department in 'Behind the Scenes' theme. First of Museum exhibits in Building Society's Window, organized by Botanical Artist.
- 1968. Gold Medal - Royal Welsh Show.
- 1969. Large increase in number of temporary exhibitions. Flora of Glamorgan project launched. The Keeper became Honorary Curator of the British Bryological Society's Herbarium, which was transferred to Cardiff from the British Museum (Natural History).
- 1970. Installation of slide projector in gallery, linked with table case of books from departmental library. 72 new cabinets in reserve - foreign and cultivated angiosperms moved from main herbarium into the reserve. Basement racks installed.

- 1971. Re-opening of Glanely Gallery - example of collaboration between departments. 1st of departmental gallery talks. A.R. Perry was appointed to the new post of Assistant Keeper in charge of non-vascular cryptogams, i.e. mosses, fungi, algae, lichens, etc.
- 1972. Wild M-5 Stereomicroscope bought.
- 1974. New aluminium greenhouse erected. 1st participation in 'Museum Activities' (forerunner of Family Expeditions).
- 1975. Botany in Wales Gallery opened.

Development of the Library & Noteworthy Accessions.

- 1914. Library Cataloguer appointed.
- 1917/18. Gerarde's Herball.
- 1923. Ferns of Great Britain & Ireland (Nature Printed).
- 1926. Historiae Plantarum Joannis Raii.  
Study of Nature, Linnaeus, Dublin 1786\*
- \* (According to Miss Hetty Edwards, in her Presidential Address to the Cardiff Naturalists' Society, one of the most notable books in the department's library).
- 1927. Vols. 1 & 2 of the Botanical Magazine.
- 1930/31. Iconum Botanicarum Index Londonensis, G.A. Pritzel.  
Arboretum et Fruticetum Britannicum, J.C. Loudon,
- 1931/32. Gardening Illustrated (Vols. 27-53).  
The Garden (42 Vols.)
- 1932/33. Gardening Illustrated (Vols. 16-26).  
Monograph & Iconograph of Native British Orchidaceae.
- 1933/34. Plant Sociology; A Manual of Timbers of the World;  
Filices Britannicae.
- 1936/37. Proceedings & Journal of the Linnean Society.  
Thornton's Temple of Flora; 24 Volumes & 142 pamphlets  
'of algological interest'.

- 1937/38. The Ferns, F.O. Bower;  
36 Volumes of English Botany, J. Sowerby.
- 1938/39. Index Kewensis; Flora Agaricina Danica.
- 1939/40. Herefordshire Pomona.
- 1940/41. 1st 66 Volumes of Curtis Botanical Magazine;  
Supplements to Index Loninensis.
- 1941/42. Medicinal Plants, 4 Vols., Bentley & Trimen.  
Curtis, Botanical Magazine, Vols 67-75.; Flora  
Londinensis - New Edition (1817-1828) 5 Vols.;  
Journal of Botany, Hooker.
1946. Genus Pinus, Lambert.
- 1947/48. Silva of North America, 14 Volumes.
- 1952/53. Histoire des Arbres Forestiers de l'Amerique.....  
containing plates from Redouté drawings.  
Rhododendrons and the various hybrids.
- 1955/56. 1st 8 volumes of the New Phytologist.
- 1957/58. Flora von Nord & Mittel Europa, plus many others.
- 1958/59. Icones selectae plantarum..... E. Kaempfer,  
plus many others.
- 1962/63. Exotica; A Modern Herbal, M. Grieve.
- 1963/64. Gardener's and botanists dictionary, P. Miller 4 Vols.
- 1964/65. Increase in book grant. Many gaps filled in Journals.  
Journal of Applied Botany.
- 1966/67. Many smallish books on Lower Plants.
- 1967/68. The New Botanic Garden, Sydenham Teak Edwards.  
(Gift of 'Friends').
- 1972/73. Curtis' Botanical Magazines - to fill gaps (black and  
white plates).
- 1973/74. Annals of Botany, on Microfiche. (Gift of 'Friends').  
Flora of Java.

Plus many journals, periodicals etc. of importance. Greatest  
additions to the departmental library being made since World War II  
Double dates refer to Annual Reports, in some instances the books  
may have been received in the previous year.

## THE WILD SERVICE-TREE IN MERIONETH.

P.M. Benoit, Pencarreg, Barmouth.

For vice-county 48, Merioneth, the Wild Service-tree (*Sorbus torminalis*) was recorded by T. Salwey in the Barmouth guide of as long ago as 1863<sup>1</sup> "On a rock below the road between Barmouth and Hendremynach" - an unusually detailed description of a botanical location at that time, for Hendremynach is less than a mile from the centre of Barmouth as it was in the 1860's. In more than a century the place has changed, and I have not found the tree there though I have often botanised there.

In the B.E.C. Report for 1919<sup>2</sup> Wild Service-tree at Hendremynach was published as a new county record on the authority of D.A. Jones. But this was probably in fact a mere quotation of Salwey's record.

I did not see the species in Merioneth myself until the summer of 1960 when I found a stunted tree of it growing on a rocky bank at Aberamffra harbour on the other side of Barmouth from Hendremynach. Because ~~this~~ was a solitary tree growing by buildings on a quay we classed it in our Contribution to a Flora<sup>3</sup> as probably planted. But some years later - in 1970 - I found the Wild Service in two other places in Merioneth, and the result was that I changed my mind about its status here.

One of the new sites, near the Panorama-lane at Barmouth, is in natural Sessile Oak scrub where the Wild Service (again a solitary tree) is unlikely to have been planted. A total now of three records from Barmouth suggests that it may have been not rare here before so much of the woodland was cleared by man.

More important was that I discovered several Wild Service-trees near Bontddu, about three miles out into the country from Barmouth. These are in fertile natural woodland on basic igneous rock. They are associated with Ash, Spindle, Sanicle and Dog's Mercury and look a perfectly 'native' colony.

It seems likely to me now that the Aberamffra tree of our Contribution to a Flora is a pre-human inhabitant that has survived in spite of man's activities rather than that it is an accidental or intentional introduction by man.

To sum up, the situation in Merioneth in 1977 is that there are four recorded sites for the Wild Service-tree all in the 10km grid square 23/61, and of these one has been lost but the other three currently exist.

I should be glad to hear from anyone who knows of or who finds other Wild Service-trees in the vice-county.

1. SALWEY, T., 1863, in The Tourist's and Visitor's Hand-book and Guide to Harlech, Barmouth, Dolgelley, Towyn, Aberdovey, & their Neighbourhoods, p.129.
2. JONES, D.A., 1920, in Botanical Exchange Club Report for 1919, p.652.
3. BENOIT, P., & RICHARDS, M., 1963, A Contribution to a Flora of Merioneth, ed. 2, p.22.

SEVERN ESTUARY COAST AND LOWLANDS, 1977.

T.G. Evans, v.c. 35 Recorder.

The general public would tend to regard the moors adjacent to the River Severn as a low, flat, wind-swept, rather desolate region best left to the waders that probe the vast mud and gravel expanses left by a retreating tide. In spite of man's interference, the naturalist, and in particular the botanist, still finds it an area of immense variety and interest. Of flowering plants, Eel-grass (Zostera angustifolia) covers large stretches of the gravel beds and is only exposed at low tide. A long line of stumps of a Pleistocene forest, a reminder of a time when much water was locked up in the ice that covered much of Britain, runs along in the mud, parallel to the shore, for half a mile, near Magor Pill. Where the concrete sea-wall ceases there are still salt marshes containing Spartina, Salicornia, Aster, Juncus, Glaux, Artemesia, Sueda, Plantago, Cochlearia, and Armeria communities. Between Magor and Collister Pills

Long-bracted Sedge (Carex extensa) may be found. The rare Bulbous Foxtail (Alopecurus bulbosus) prefers higher more grassy reaches of the salt marsh but is at its best inland of St. Pierre Pill and on the banks of the Ebbw, close to Newport rubbish tip. Slender Hare's-ear (Bupleurum tenuissimum) also prefers the grassy areas, close to the sea walls (banks of earth to prevent flooding) at Caldicot and St. Pierre Pills. Many of the umbellifers formerly to be found on banks close to the salt marsh are now growing on the banks of the reens that drain the moors, though Knotted Hedge-parsley (Torilis nodosa) hugs the Ebbw river bank near the rubbish tip. Another umbellifer, Wild Celery (Apium graveolens), shares a long stretch of salt marsh near St. Pierre Pill with Sea Rush (Juncus maritimus), an uncommon Gwent plant.

At Sudbrook, Gwent boasts its only coastal cliffs. The red and green marls suddenly give way to hard New Red Sandstone cliffs weathered by the Severn into wonderful shapes, crevices and caves. Rock Samphire (Crithmum maritimum) is plentiful in its only Gwent site. One hole supports just one plant of the Sea Spleenwort (Asplenium marinum) - two other plants expired in the drought of the summer of 1976. Two clovers of note cling to the softer sandy banks above the rocks, Trifolium scabrum, tiny and knotted in appearance, is low down and high up on the banks, and Trifolium subterraneum near the upper edge only. The latter has white flowers in pairs and forms fruits that become arrow-head-shaped to help the pedicels to push them into the soil ready to produce the next generation. After an absence of several years this plant has been plentiful this spring. Tree-mallow (Lavatera arborea) has two sites in Gwent, on the Denny and on the marl cliffs at Sudbrook, Duke of Argyll's Teapland (Lycium barbarum) has a precarious hold on the same cliffs which are being eroded away by the tides. The archaeologist would note that half the old iron age fort has been carried away. Bastard Cabbage (Rapistrum rugosum) and the Prickly Lettuce (Lactuca serriola) form a crown to part of these cliffs. To construct the fort, ditches were dug and the earth piled up into banks. The banks are a delight to the botanist. The Chickweed family is represented by Cerastium semidecandrum and C. diffusum.



Both are growing in close proximity to the tiny Early For-get-me-not Myosotis ramossissima, Whitlow-grass (Erophila verna) and Thale Cress (Arabidopsis thaliana); these are followed by Rock-rose (Helianthemum chamaecistus). Two rare grasses in Gwent are Crested Hair-grass (Koeleria cristata) and Meadow Oat-grass (Helictotrichon pratense), they flower here, in June, the latter in its only known Gwent site.

B.S.B.I. News No.12, Feb. 1976 featured my account of the wealth of rare plants in a marsh in Newport Docks.

The reens, in spite of chemical sprays, still contain such plants as Arrowhead (Sagittaria sagittifolia), Frog-bit (Hydrocharis morsus-ranae), Flowering Rush (Butomus umbellatus), Floating Club-rush (Scirpus fluitans), various pondweeds (Potamogeton spp.), Water-crowfoots, including Ranunculus baudotii, Whorl-grass (Catabrosa aquatica), the Club-rushes (Scirpus maritimus and S. tabernaemontani) and the Bur-reeds (Sparganium erectum and S. emersum). Marsh-mallow (Althaea officinalis) adorns the banks at Noah's Ark and near Peterstone. Marsh Arrowgrass (Triglochin palustris) inhabits the shallow inter-connecting ditches at Llandevenny, also favoured by Nodding Bur-marigold (Bidens cernua), Common Meadow-rue (Thalictrum flavum) and Marsh-marigold (Caltha palustris). Rushes and sedges abound everywhere, with uncommon ones occurring in localised places. Carex muricata ssp. leersii at Sudbrook, Carex disticha at Magor, Carex distans at Magor Pill grow on dry banks, wet meadow and in ditches respectively. Bee Orchids (Ophrys spifera), Tree Lupins (Lupinus arboreus), Knotted Clover (Trifolium striatum) and Autumn Lady's-tresses (Spiranthes spiralis) are just a few more unusual of the one hundred and forty plus species that cover a railway embankment at Portskewett. Green Hellebore (Helicorhiza viridis) lies to the east side of Carrow Hill Wood, and three hundred and fifty-plus species of woodland plants still survive in the Minnetts Wood complex, including both Butterfly-orchids, Wild Liquorice (Astragalus glycyphyllos), Autumn Gentian (Gentianella amarella) and a large number of Columbines (Aquilegia vulgaris).

The wood was the last known Gwent site of Daphne mezereum, removed by forestry workers in 1961 to make way for conifers, replacing the deciduous trees previously filling the wood.

The above list is only a tiny representation of the floral wealth of the coast and moors. This could be endangered by possible developments being mooted. The motorway, the conversion of Newport into an Europort, the main line rail are a few of the attractions of the area to industrialists. One industrial concern has already spent a very large sum of money to present a case and win planning permission for a trading estate to be established at a site, which is the first thing to strike the eye, on entering Wales, from England, across the Severn Bridge.

Industrial development could make the problems of the over-use of nitrates on the moors farms, the uprooting of hedges and the spraying of reens by the drainage boards, and the popularity of the area for housing estates pale into insignificance in its effect on the flora and its dependant life.

#### Lathyrus palustris sites in Somerset & in Dyfed.

I.M. Vaughan.

On June 15th, 1977 three of us who have been deeply concerned with the one extant Welsh station for Lathyrus palustris (S.N. Tallwin, G. Tallwin and I.M. Vaughan) made a quick dash into Somerset to see and compare the site of the plant in the Somerset Levels with that in Dyfed. The former has been fully surveyed and described by Professor A.J. Willis whereas the latter has been only incompletely studied owing to difficulties over access; nevertheless a few notes of comparison may be of interest.

Catcott Heath lies about halfway between Glastonbury and Bridgewater in a complex of fenland south of the Mendips whence comes the calcareous element in the deep black organic peat, whereas Pembrey seems to be conditioned by comparatively recent marine influence.

The Marsh Pea enclosure at Catcott is actually only about 10 acres but it has a concentration of notable plants which are at risk from encroaching developments of agriculture and peat extraction. Professor Willis states that it has "a pH value near to neutral and a high mineral content". The water table must be very near the surface which quakes to a firm footfall, unlike the solidity of Pembrey.

Catcott lies very near to Shapwick Heath where Professor Godwin did much work on pollen analysis and archaeological correlations and it is now a National Nature Reserve. Occupational levels date back to late Bronze Age when men constructed "corduroy" trackways of coppiced hazel poles to cope with the flooding; the present trackway does not come up to Bronze Age standards!

The small Marsh Pea enclosure is mainly of open fen with a few shaded patches of Alder and Willow from which the Pea is absent and the dominance is of Filipendula ulmaria, Thelypteris palustris and Calystegia sepium; otherwise the Pea is fairly well distributed over the enclosure though favouring the wetter parts. To our surprise it had scarcely formed flower buds on June 15th whereas the Pembrey plant had opened its first blossoms on June 2nd.

The Pembrey area of about 40 acres is ecologically more diverse; part is dense Phragmitetum; part drier humps where Rumex acetosella, Ornithopus perpusillus and Ulex europaea are dominant; part open wet fen. Both sites are subjected to cattle grazing but Catcott seemed to have suffered more trampling presumably because it has no dry grazing.

The ditches, or Rhines, which enclose both sites are also rich habitats but whereas Pembrey suffered dessication in the drought of 1976 with the consequent non appearance in 1977 of Hydrocharis morsus-ranae, Scirpus fluitans &c. Catcott appeared to have taken no harm and its rhines were graced with Hottonia palustris, Oenanthe aquatica, Ranunculus circinatus &c.

The following table (including rhines) gives some of the more significant species in both stations.

<u>Species.</u>	<u>Catcott</u>	<u>Pembrey</u>
Oenanthe fistulosa	+	+
Oenanthe aquatica	+	-
Peucedanum palustre	+	-
Thelypteris palustris	+	-
Osmunda regalis	+	-
Rumex hydrolapathum	+	+
Cladium mariscus	+	-

<u>Species</u>	<u>Catcott</u>	<u>Pembrey</u>
Hydrocharis morus-ranae	+	+
Hottonia palustris	+	-
Sium latifolium	+	-
Cirsium dissectum	+	+
Lemna trisulca	+	-
Lemna minor	+	+
Juncus subnodulosus	+	-
Scirpus fluitans	-	+
Thalictrum flavum	+	-
Lysimachia nummularia	+	-
Lysimachia vulgaris	-	+
Potentilla palustris	+	+
Galium uliginosum	+	-
Galium palustris	+	+
Galium mollugo	-	+

Two significant families, Orchidaceae and Cyperaceae are omitted because insufficient work has been done on these at Pembrey.

#### References

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Sticky Catchfly  
(*Lychnis viscaria*)

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