

BOTANICAL SOCIETY OF THE BRITISH ISLES

# WELSH BULLETIN

*Editor : R. D. Pryce*

**No. 66, WINTER 1999**



*Lavatera arborea* – one of the earliest flowering plants recorded from v.c. 35 (see p.19).  
(Illustration from Sowerby's 'English Botany')

## CONTENTS

Editorial .....	3
Annual General Meeting, 1999 .....	5
Chairman's Report .....	5
Hon. Secretary's Report .....	5
Hon. Treasurer's Report .....	6
Elections .....	6
Committee for Wales, 1999-2000 .....	6
Any other business .....	7
38th Welsh Annual General Meeting and 18th Exhibition Meeting, 2000 .....	8
Welsh Field Meetings - 2000 .....	10
<i>Epilobium x obscurescens</i> Kitchener & McKean new to Wales .....	13
<i>Rhinanthus angustifolius</i> C. C. Gmel., Greater Yellow-rattle recorded in error for Wales .....	14
Overlooking <i>Sibthorpia</i> .....	15
Some account of the history of botanical exploration in Monmouthshire .....	18

All back issues of the BSBI Welsh Bulletin are still available on request (originals or photocopies). Please send cheque (made payable to BSBI Wales), @ £1 per issue, which includes p & p, to - Dr G. Hutchinson, Department of Biodiversity & Systematic Biology, National Museum & Gallery, Cathays Park, Cardiff CF10 3NP, specifying the issue number, or year (which would have to include the season or month). Large runs - price negotiable.

## EDITORIAL

It seems that just recently this column has regularly been the bearer of sad news. I have to report that Annie-Mary Pell passed away in November. Many of you who have worked on the Glamorgan and Carmarthenshire Floras will remember her thorough and informed field work. She lived and worked for many years in Mountain Ash where she more or less single-handedly recorded the local squares for the Glamorgan Flora. In Annie-Mary's terms recording was not completed until every cliff and churchyard had been visited and every weed and casual accounted for! On retiring she moved back to her native Carmarthenshire taking up residence in a new bungalow built adjacent to her family farm in Capel Hendre. She was able to remember plants growing in her fields from when she was a girl in the inter-war years – most outstanding of which was probably *Spiranthes spiralis* (Autumn Lady's-tresses), a species on the brink of extinction in the county. She was an enthusiastic contributor to the Carmarthenshire Flora Project in the 1980s and early 90s. The Capel Hendre tetrad and adjacent squares are some of the most intensively recorded in the vice-county. A major project she undertook was to visit many of the church and chapel graveyards in the vice-county, recording a species list from each. She ultimately wrote this up in the *Welsh Bulletin* (**43** pp 31-35 and **44** pp 11-14) having made several important discoveries. But it was her own Capel Hendre Chapelyard which was dearest to her heart and which she had studied since girlhood. Failing health latterly prevented her from undertaking fieldwork but she still enjoyed the 'weeds' which appeared in her garden. Indeed it was only a couple of months ago that I was invited to inspect *Geum* x *intermedium* (Hybrid Avens) which had appeared in one of her flower borders! I extend deepest sympathy on your behalf to her family.

I also have the sad task to report the death this week of Thelma, Trevor Evan's wife, following a long illness. May I therefore extend our deepest sympathy to Trevor and his family.

contd

Turning to the future, by now you no doubt have managed to collate all your Atlas 2000 records and vice-county recorders are well advanced in their submissions to Trevor Dines. Now that the goal is in sight I think we deserve to pat ourselves on the back, knowing that the final hurdles will be expertly negotiated by David Pearman, Chris Preston, Trevor and the other 'team' members, with publication targeted for mid 2001.

This issue of the Welsh Bulletin contains Carter's final, previously unpublished, Welsh county botanical history. Other county accounts have appeared over the years in other publications and this, Monmouthshire, completes the series. We are very grateful to Gwynn Ellis for making it available for publication. It appears in its unedited form so, therefore, may not reflect the current status of recording in the county. Nevertheless it provides a good historical account comparable with those which Carter produced for the Welsh vice-counties.

Finally may I wish you all Season's Greetings and a pleasant and prosperous start to the new millennium.

R. D. Pryce, 17/12/99

## ANNUAL GENERAL MEETING, 1999

The 37<sup>th</sup> Annual General Meeting and 17<sup>th</sup> Exhibition Meeting of BSBI Wales was held at Coleg y Drindod, Carmarthen on Saturday, 21<sup>st</sup> August 1999 with 42 members present. The Chairman, Richard Pryce, welcomed the participants who included a number from outside Wales. Apologies were received from, Trevor Evans (the best wishes of the meeting were expressed to his wife, Thelma, in her illness [Thelma died in December 1999]), Stephen Evans, Joe Phillips, and Julian Woodman. The minutes of the previous AGM were accepted as a correct record without amendment. There were no matters arising.

### CHAIRMAN'S REPORT

The Chairman extended a special welcome to Mrs Mary Briggs (President) and Mr David Pearman (Ex-President). He remarked that it was 10 years since the Welsh AGM was last in Carmarthenshire, and it was encouraging to be present at such a successful meeting. Atlas 2000 had occupied a great deal of time in the last year and good progress has been made in most Welsh counties. He reported that Paul Loveluck (Chief Executive CCW) had agreed in principle to release botanical records to County Recorders. He also stressed the need for Local Authorities to identify sites below SSSI standard *viz a viz* planning; and there was also a need for County Recorders to make lists of rare plant sites for the planning authorities.

Mr R.H. Roberts of Bangor was congratulated warmly on being awarded the H.H. Bloomer award by the Linnean Society for his services to botany.

The Chairman offered his personal thanks to all who had contributed to the success of the Society in Wales during the year, especially to Gwynn Ellis (Secretary), Peter Jones (Treasurer), George Hutchinson (production of *Welsh Bulletin*) and David Humphreys (Field Meeting Secretary).

### HON. SECRETARY'S REPORT

The Honorary Secretary, Gwynn Ellis, commented on Committee membership and reported that Nigel Brown had resigned and Ian Bonner had been co-opted and subsequently elected to full membership. Nigel was thanked for his help as Committee member over many years.

Two issues of the *Welsh Bulletin* had been published, including Plant Records for 1996 and 1997. It was hoped that the 1998 records would appear before Christmas 1999 [they will now be published in the Spring 2000 issue. All the Recorders were thanked for their work, and special thanks were due to Geoge Hutchinson for help with production of the *Bulletin*.

Nine field meetings had been held in Wales during the year. In 2000 it is hoped to arrange a similar number, to 'good' sites, with no 'square bashing'! David Humphreys was again thanked for his efforts in arranging an interesting and varied programme.

Thanks were also due to CCW for the use of their offices in Aberystwyth and Llandrindod for committees, to the National Museums and Galleries at Cardiff for help with printing, and to Coleg y Drindod for the use of their facilities for the present AGM.

Mr Richard Pryce was thanked for chairing the present meeting and for his work during the year. The 2000 AGM was planned to take place in Bangor, possibly much earlier than usual in June to allow a field trip to the Great Orme.

### HON. TREASURER'S REPORT

The Hon. Treasurer, Peter Jones, reported that the financial situation was satisfactory and there was no need to ask for any contributions from the BSBI central fund; profits from the AGM helped to subsidise the *Welsh Bulletin*. Wendy McCarthy was thanked for helping to organise the 1998 AGM.

The present balances were: – Current Account – £201; Deposit Account – £356

The financial statement was approved and the Treasurer was thanked.

### ELECTIONS FOR COMMITTEE FOR WALES, 1999-2000

The Hon. Secretary, Gwynn Ellis, Hon. Treasurer, Peter Jones, and Hon Field Secretary, David Humphreys, were re-elected unopposed to their respective posts. But it was pointed out that Peter Jones wished to retire as Treasurer and a replacement must be found before the next AGM. Mr I.R. Bonner, Mr P. Day, Mr T.G. Evans, Mr J. Phillips, Mrs E.G. Wood and Mr J.P. Woodman were all due to retire under Rule 5 of the Constitution and were eligible for immediate re-election. All had indicated their willingness to stand again and were duly re-elected for a period of two years.

### COMMITTEE FOR WALES, 1999-2000

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

#### Officers:

Chairman and Representative on Council	Mr R. Pryce
Vice-Chairman	Dr G. Wynne
Secretary	Mr R.G. Ellis
Treasurer	Dr P.S. Jones
Field Meeting Secretary	Dr D.R. Humphreys

**Committee Members:**

Mr I.R. Bonner

Mr A.O. Chater\*

Mr P. Day

Mr S.B. Evans\*

Mr T.G. Evans

Dr G. Hutchinson\*

Dr Q.O.N. Kay\*

Mrs W.N. McCarthy\*

Mr J. Phillips

Mr M. Porter\*

Mrs E.G. Wood

Mr J.P. Woodman

Mr R.G. Woods (CCW Observer)

\*members due to retire in 1999

[Mr Andy Jones (CCW Rare plants officer) was co-opted to the Committee at its November meeting]

**ANY OTHER BUSINESS**

Mrs Mary Briggs (President) responded to the welcome. She will report to the general meeting of the BSBI congratulating Wales on its self-sufficiency. Dr David Humphreys asked that all requests for field meetings be passed to him.

Goronwy Wynne: Minutes Sec. *pro tem*.

## 38th ANNUAL GENERAL MEETING 18th EXHIBITION MEETING

**Friday 9th - Sunday 11th June 2000**

**Brambell Building, School of Biological Sciences, University of Wales,  
Bangor**

There will be field visits to:

- Treborth Botanic Gardens, near Bangor, and the surrounding woodlands and shore of the Menai Strait (Coedydd Afon Menai SSSI).
- Cors Bodeilio, one of the finest fen nature reserves on Anglesey where *Ophrys insectifera* (Fly Orchid) and *Dactylorhiza traunsteineri* (Narrow-leaved Marsh Orchid) grow on tussocks of *Schoenus nigricans* (Black Bogrush).
- The Great Orme, Llandudno, which is rightly famous for many rare and scarce species such as *Helianthemum oelandicum* subsp. *incanum* (Hoary Rockrose), *Silene nutans* (Nottingham Catchfly), *Cotoneaster cambricus* (Wild Cotoneaster) and *Hypochaeris maculata* (Spotted Cat's-ear).

The AGM on Saturday afternoon will be held in the Brambell Building, School of Biological Sciences, University of Wales, Bangor. You will be able to see the University Herbarium and a stunning collection of zoological specimens in the Biological Sciences Museum. The AGM will include short talks by several speakers, plus a longer illustrated talk on the plants of Anglesey in the evening after a buffet supper.

### Outline Programme:

#### **Friday 9th June - Treborth Botanic Garden**

- 5 pm Registration. Tea and coffee available
- 6 pm Tour of Gardens or Coedydd Afon Menai SSSI
- 8 pm There are several pubs and restaurants fairly close to Treborth serving evening meals.

#### **Saturday 10th June - Cors Bodeilio and AGM**

10 am **Cors Bodeilio**

Guided walk across fen and associated calcareous grassland

Packed lunches can be ordered - see Booking Form (with January mailing of BSBI

News)



- 2 pm **AGM at Brambell Building, University of Wales, Bangor**  
 BSBI Exhibits, University Herbarium and Zoology Museum  
 Tea and biscuits will be available at about 3.30 pm
- 3 pm Committee for Wales
- 4 pm Talks by:  
 Sarah Whild - Threatened Plants Database  
 Trevor Dines - Atlas 2000 Progress  
 And by a CCW member of staff about recent results of botanical survey work
- 5.30 Welsh AGM
- 6.30 Buffet Supper in the Common Room and Museum
- 8 pm Illustrated talk about Anglesey plants, followed by a selection of members slides
- 9.30 Close

### **Sunday 11th June - The Great Orme, Llandudno**

- 10 am Meet in car park for a guided walk (to finish about 4 pm).  
 Packed lunches can be ordered - see Booking Form

### **Domestic Arrangements**

Participants are asked to make their own arrangements for accommodation, and for a meal on the Friday night. A wide choice of accommodation is available locally, but it is wise to book early. Options include:

- University Halls of Residence (B&B *en suite* single £17.62). Phone 01248 388088 and quote "Botanical Society Welsh AGM" to make a booking (please note there is an uphill walk between the AGM building and the halls).
- Goetre Isaf Farmhouse, Caernarfon Road (B&B single £17.50)                      01248 364541
- British Hotel, Bangor (B&B single £25)    01248 364911
- Campsite (£5 per unit) on Straits between Bangor and Treborth                      01248 362618

Or phone the Tourist Information Office (01248 352786) for an accommodation booklet.

All booking forms must be returned with an A5 stamped addressed envelope and full payment to

Mr I. Bonner, Cae Trefor, Tyn y Gongl, Anglesey, LL74 8SD by **30th April, 2000**.

Forms have been sent to all members of the BSBI with the January mailing of *BSBI News* and extra copies are available from Mr R.G. Ellis, 41 Marlborough Road, Roath, Cardiff CF23 5BU.

Full **programme details and location maps** will be sent to participants from February onwards.

## FIELD MEETINGS PROGRAMME 2000

**SUNDAY 7<sup>th</sup> MAY**

**FENNS MOSS, BETTISFIELD, DENBIGH (v.c. 40)**

**Leaders:** Mrs J.A. Green and Mr P. Day

This extensive raised bog is a National Nature Reserve with unique insect and plant communities. It is the only lowland site in Wales for *Rubus chamaemorus*, which should be flowering. Also *Andromeda polifolia*, *Drosera rotundifolia*, *Rhynchospora alba* and *Teesdalia nudicaulis*. We will see the response of the flora to EN/CCW restoration work. Numbers limited to 25.

Meet by old railway bridge just south of Bettisfield church SJ/481.359; carry lunch, boots or wellingtons essential.

Please send bookings to the leader Mrs J.A. Green, Coed Duon, Tremeirchion, St Asaph, Denbighshire LL17 0UH Tel: 01745254.

**FRIDAY 9<sup>th</sup> JUNE to SUNDAY 11<sup>th</sup> JUNE**  
**WELSH AGM and EXHIBITION MEETING**  
**UNIVERSITY, BANGOR**

Field meetings will include visit to Treborth Botanic Garden, to Cors Bodeilio one of the internationally important Anglesey fens, and to the Great Orme.

Further details and booking forms will be included in the January mailing. Bookings to I.R. Bonner, Cae Trefor, Tynyngogl, Anglesey LL74 8SD. Tel: 01248 852651

**SATURDAY 17<sup>th</sup> JUNE**  
**TIR STENT, MEIRIONNYDD (v.c. 48)**  
**Leader:** Dr D.A.W. Hill

A botanically rich common-land SSSI east of Dolgellau, comprising marshy grass, heath and woodland, with base rich and acid rock outcrops. Moderate walking and scramble. Bring packed lunch and footwear suitable for wet hill walking.

Meet at phone kiosk, Tabor Road, SH/754.173 at 11.00 a.m. Numbers restricted to 15. Please send bookings to the leader Dr D.A.W. Hill, Gwynfryn, Colley Way, Reigate, Surrey RH2 9JH. Tel./Fax: 01737-242753.

**SATURDAY 24<sup>th</sup> to TUESDAY 27<sup>th</sup> JUNE**  
**LIANDYBIE, CARMARTHENSHIRE (v.c. 44)**

**Leader:** Mr R.D. Pryce

A Carmarthenshire Recording Weekend, at Glynhir Mansion, Llandybie, Ammanford.

**Programme: -**

**Saturday 24 June** meet at Glynhir for lunch at 1:00 p.m.

After lunch recording and monitoring in the vicinity of Glynhir

**Sunday 25 June** recording and monitoring at a coastal site or Tetrad recording/species monitoring for the Carmarthenshire Flora Project

**Monday 26 June** Tetrad recording/species monitoring for the Carmarthenshire Flora Project.

**Tuesday 27 June** Disperse after breakfast: tetrad recording for those who wish.

Glynhir is located about 2 km east of Llandybie on the western flank of the Black Mountain at SN/640.151. The River Loughor runs through the estate and at one point it plunges over a 10 m waterfall into a rocky gorge from where *Hymenophyllum tunbrigense*, *Asplenium trichomanes* subsp. *trichomanes*, *Chrysozplenium alternifolium* and *Geum* × *intermedium* have been recorded in the past. Pleasant woodland and unimproved grassland on both add and limestone rocks occur within walking distance and these complement the walled orchard and vegetable garden adjacent to the mansion.

The mansion is run by the Jenkins family who pride themselves in their hospitality and the provision of first class facilities. Vegetables are home grown and freshly prepared cuisine contribute in no small way to the enjoyment of any stay at Glynhir. Cost of accommodation for the weekend is approx. £120.00 inclusive. We regret that accommodation for the Friday night will not be available.

Ten places have been reserved initially but early booking is essential in order to secure your place. There can be no guarantee of accommodation for late bookings but it is hoped that more members may be accommodated as long as there is free space available at Glynhir. Please apply to the leader as soon as possible, and in any case before 31<sup>st</sup> January.

Mr R.D. Pryce, Trevethin, School Road, Pwll, Llanelli, Carms., SA15 4AL. Tel./Fax:01554 775847; Email: PryceEco@aol.com

**SATURDAY 8<sup>th</sup> JULY**  
**ELAN VALLEY, RADNORSHIRE (v.c. 43)**

**Leader:** Mr R.G. Woods

A meeting to see the herb-rich hay meadows of the shores of the lakes of the Elan Valley. Meet at the Car Park adjacent to the chapel at SN/909.638 at 11.00 a.m. This is at the south-west end of the bridge across Caban-coch reservoir.

Please send bookings to Dr D.R. Humphreys, Knill Court, Presteigne Powys LD8 2PR tel.: 01544-267379 and not to the leader.

**FRIDAY 14<sup>th</sup> to SUNDAY 16<sup>th</sup> JULY**  
**RUBUS MEETING, ABERGAVENNY, MONMOUTHSHIRE (v.c. 35)**

**Leader:** Mr M. Porter

Friday evening will provide the opportunity to look for some of the 'new' Corylifolians. On Saturday we will go west to the fringe of the coal measures south of the Brecon Beacons. On Sunday we will travel east to the Wye valley and our itinerary will include Brecon Hill, Trelleck and other haunts of Augustin Ley.

Bookings and further information available from Mike Porter, Aberhoxy Farm, Cyffredyn Lane, Llangynidr, Crickhowell, Powys NP8 1LR

**SATURDAY 15<sup>th</sup> JULY**  
**LLYN FANOD and LLYN EIDDWEN, CARDIGANSHIRE, (v.c. 46)**

**Leader:** Mr A.O. Chater

The morning will be spent at Llyn Fanod and the afternoon at Llyn Eiddwen. Both lakes are Wildlife Trust West Wales Reserves, and have a wide range of aquatic and swamp species. Much boggy ground, wellingtons essential.

Meet at 11.00 am by the road junction at SN/607.645, just north of Llyn Fanod.

Please send bookings to the leader, Mr A.O. Chater, Windover, Penyrangor, Aberystwyth, Cardiganshire SY23 1BJ Tel.: 01970 617409.

**SATURDAY 16<sup>th</sup> SEPTEMBER**  
**DYFI SALT MARSHES, CARDIGANSHIRE ( v.c. 46)**

**Leader:** Mr A.O. Chater

A meeting to explore the tidal banks of the Afon Leri, adjacent brackish ditches and salt marshes along the Dyfi estuary (low tide at 5.00 p.m.). Easy walking but wellingtons essential.

Meet at 11.00 am at Ynyslas Dunes NNR car park (fee) SN/610.941.

Please send bookings to the leader, Mr A.O. Chater, Windover, Penyrangor, Aberystwyth Cardiganshire SY23 1BJ Tel.: 01970 617409.

***Epilobium x obscucescens* Kitchener & McKean new to Wales**

On the BSBI Craig Ogwr meeting on 18 July 1999, we found the hybrid between *Epilobium brunnescens* (Cockayne) Raven and *E. obscurum* Schreber = *E. x obscucescens* Kitchener & McKean new to Wales (confirmed G. Kitchener 1999).

The hybrid was found growing with both parents in a *Chrysosplenium oppositifolium* flush on the side of a cutting on a forestry track below Tarren Rhiw-maen, Nant-y-moel (grid reference SS/928. 946). It was obviously intermediate between the two very different parents in morphology, but was flushed a distinctive dark purple quite different to the green of *E. obscurum* or the bronze of *E. brunnescens*. It had a somewhat diffuse growth form, and the fruiting pods were very narrow and sterile. Three patches were present spread over an area of about 1 m<sup>2</sup>, indicating that it had probably been present for some time.

This hybrid has previously been recorded from East Cornwall (V.c. 2) and Antrim (H39) (Kitchener & McKean 1998). Specimens have been deposited in the National Museum of Wales (NMW).

**Reference**

Kitchener, G. D. & McKean, D. R. (1998). Hybrids of *Epilobium brunnescens* (Cockayne) Raven & Engelhorn (Onagraceae) and their occurrence in the British Isles. *Watsonia* **22**: 49-60.

Tim Rich, Mark Lawley, Ralph Martin & Julian Woodman

***Rhinanthus angustifolius* C. C. Gmel., Greater Yellow-rattle  
recorded in error for Wales**

The only accepted Welsh record for the Red Data Book species *Rhinanthus angustifolius* C. C. Gmel., Greater Yellow-rattle is by G. C. Druce from near Llyn Coron, Anglesey (Roberts 1982; Ellis 1983). The record is based on specimens in the Fielding-Druce herbarium in Oxford University (OXF) collected by Druce on the 'marshy side of Llyn Coron, July 1900', at least one of which was determined by Dr. J. v. Sterneck as *Alectorolophus major* (Ehrh.) Rchb. (= *Rhinanthus angustifolius*).

The specimens were re-examined in 1999 by TCGR. The specimen determined by Dr. J. v. Sterneck lacks a flowering head and is indeterminable, but a duplicate on another sheet with other material from Anglesey has small flowers with open mouths and is clearly *Rhinanthus minor* L. Both plants have the same growth form and almost certainly represent the same taxon. We therefore reject the Anglesey *Rhinanthus angustifolius* record.

Once again, herbarium specimens have been proved invaluable for verification of old records. Thanks to Serena Marnier and Stephen Harris for access to OXF.

#### References

- Ellis, R. G. (1983). *Flowering plants of Wales*. National Museum of Wales, Cardiff.
- Roberts, R. H. (1982). *The flowering plants and ferns of Anglesey*. National Museum of Wales, Cardiff.
- T. C. G. Rich, *Department of Biodiversity and Systematic Biology, National Museum & Gallery of Wales, Cardiff CF10 3NP*
- R. A. Jones, *Countryside Council for Wales, Plas Gogerddan, Aberystwyth, Dyfed SY23 3EE*

### Overlooking *Sibthorpia*

During the Llandovery BSBI Meeting in June 1999 we spent a day monitoring the populations of *Saxifraga granulata* in the Cennen valley below Trapp. We were surprised to find that *Sibthorpia europaea* was frequent along the shaded river banks, often growing close to the *Saxifraga*, as it had not been recorded in this valley before. *Saxifraga granulata* had been recorded on a number of occasions by several very competent recorders, and we could only assume that they had completely overlooked the more abundant *Sibthorpia*.

David Pearman in Plant Crib 1998 shows that *Sibthorpia* can be difficult to distinguish from *Glechoma* and the two species of *Chrysosplenium*, but we found that there were several other plants in the Cennen valley sites for which *Sibthorpia* could easily be mistaken at a casual glance, including even *Saxifraga granulata*. To alert members to look perhaps more carefully at leaves of this general pattern than they might already be doing, we show here a selection of similar leaves in the form of a quiz. The answers are given at the end of the Bulletin. All the species, except for *Chrysosplenium alternifolium* which is from David Pearman's garden, were from the Cennen sites.

Seedlings of *Filipendula ulmaria* is one of the most deceptive, and *Sibthorpia* growing amongst it in a marsh by the Teifi had been overlooked by one of us (A.O.C.) on several visits until Jim Bevan visited the site and spotted it at once. Once suspected, *Sibthorpia* is usually easy to confirm by its habit, flowers or the characters given in the *Crib*, but it is the initial spotting that can be difficult.

Richard Pryce & Arthur Chater



A



B



C



D





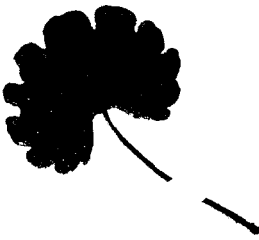
E



F



G



H

# Some account of the history of botanical exploration in Monmouthshire

By P.W. Carter

(Prepared for publication by R.G. Ellis)

*Price W. Carter (1898-1971) had a special interest in the history of botanical exploration in Wales and elsewhere. He wrote detailed papers on the subject for all of the thirteen old Welsh counties, but only 11 were published in his lifetime (see Appendix at end), two remained in manuscript only. One of these, on Pembrokeshire, was prepared for publication by Gwynn Ellis and published in two parts of Nature in Wales (NS) in 1987 and 1988. The second and last remaining account – on the history of botanical recording in Monmouthshire has again been prepared for publication by Gwynn Ellis and is published here.*

*The present paper, the first of two to deal with Monmouthshire, follows closely the wording and style of the original manuscript by Price Carter. The only liberties taken in preparing it for the press are: to give modern scientific and English names throughout, even in quotations (where they are enclosed in square brackets), and to standardise the references to cited works, these are spelt out in full when first mentioned and thereafter given in abbreviated form. A few words or phrases have been added to the original text when considered necessary to avoid ambiguity and these are enclosed in square brackets.*

*It is important to remember that Carter's manuscript was completed before 1960 and no mention is made of the many botanists who have been active in the County in the last 40 years.*

## Part 1

'Below Brecknockshire and Herefordshire to the South lies Monmouthshire formerly called The County of Monmouth, call'd formerly WentSet and Wentsland and by the Britains, Gwent (from an ancient City of that name)'. Thus the writer in Camden's *'Britannia'* [vol. 2, 1772] described this county. Leland had written 'The soil of all Venteland is of a dark reddish earth fully of slaty stone and other greater of the same colour. The country is also somewhat mountainous and well replenished with woods, also very fertile of corn, but made there study more to pastures which be well enclosed'.

John Leland, born in London in 1506, was educated at St Paul's School and at Christ's College Cambridge, at Oxford and at Paris. He took Holy Orders and sometime before 1530 became Library Keeper to Henry VIII. His descriptions of England and Wales, based on his journeys of 1536-1543, during which he read the local chronicles in the monasteries, were called *Comentaria Angliae* by John Stow but renamed *Itinerary of John Leyland* by Thomas Burton in 1598. This same John Leland, as G.M. Trevelyan pointed out, 'saw the crash of monastic masonry throughout the country, the sudden impact of a king's command that had been maturing for two centuries past.' (*English Social History*, 1942) It may well have been true that the farm lands of many of these monasteries had been let out to laymen, as happened to the lands of the larger estates later on.

Within the confines of the county of Monmouth are to be found the remains of several monastic establishments which, in their active days, were centres of learning, of crop production and of the cultivation of herbs and of healing. Chief of these was Tintern Abbey and few abbeys can have been more exquisitely lovely either in itself, with its Decorated style at its earliest and best, or in its surroundings. Tintern was founded for Cistercians 860 years ago in 1131 by Walter de Clare, Lord of Chepstow, though the church was not consecrated until 1288. Llanthony Priory was an Augustinian establishment founded, some maintain, on the site of a chapel supposed to be the residence of St David the titular Saint of Wales, early in the 12th Century (1108-1136) by Hugh de Lacy, Lord of Hereford, for the Augustin friars. Its title was the Priory of Llandewi yn nant Honddu (the church of St David in the Honddu valley). In Stephen's reign the majority of the monks migrated to the daughter house at Gloucester, probably because of raids by the Welsh, but it was later reoccupied and reconstructed. There was a Cistercian abbey at Caerleon, and establishments at Newnham and Llantarnam, an old Bene-

dictine priory in Abergavenny, a priory at St Kinemark and alien priories, subject to supervision from elsewhere, at Goldcliff, Llangwin and at Chepstow where the splendid Norman church was once that of a Benedictine priory, (a cell of Bermondsey in London), [those] at Baffe and Malpas were also cells. At the Reformation eighteen religious houses persisted in Monmouthshire.

Mr A.E. Wade (1895-1989), one time Assistant Keeper of Botany at the National Museum of Wales, Cardiff informed me that 'the earliest records for flowering plants in Monmouthshire are to be found in John Parkinson's *Theatrum botanicum*, 1640'. The records are as follows:

*Saxifraga aurea* [*Chrysosplenium oppositifolium*, Opposite-leaved Golden-saxifrage], p. 425. 'It always groweth in moist places by Well sides or other standing and sometimes running waters, and sometimes also in moorish grounds, as about *Tidnam* in the Forrest of *Deane*, at *Ashford*, and *Iden* in *Kent* at *Chepstow* in *Essex* [sic], and in divers other places.'

*Alchymilla major vulgaris* [*Alchemilla vulgaris* agg., Lady's-mantle], p. 538. '[It]... groweth naturally in... the pastures nigh *Tidnam* [Gloucestershire], and *Chepstow*, and in other places of this land;...'

*Malva arborea marina nostras* [*Lavatera arborea*, Tree-mallow], p. 306. 'Our owne Country tree Mallow, groweth in an Island called *Dinnie*, three miles from *Kings Roade* and 5 miles from *Bristow* [sic],...'

*Xanthium sive Lappa minor* [*Arctium minus*, Lesser Burdock], p. 1223. 'and the last in two or three places betweene *Tidenham*, and *Chepstow* in the foote way.'

Another of the earliest records of a specific plant in the county is one that John Goodyer received on a scrap of paper dated 5th March 1657. 'At Judge Rumsey's, 3 miles from Abergavenny groweth the Sweet Willow as I remember the plant I saw was called. Robert Baskett.' Rumsey lived in Glamorganshire in 1658. Mr A.E. Wade informed me that *Myrica gale* was known as 'Sweet Willow' though in Ray's *Synopsis* ed. 2, p. 292, *Salix pentandra* is called 'Bay-leaved Sweet Willow'. This *Salix* has never been recorded for Monmouthshire but is a more likely plant than *Myrica gale* (Sweet Gale, Bog-myrtle) at Llanover House, Llanover Park, near Abergavenny where Walter Rumsey (1584-1660) a Welsh judge lived and was interested in the propagation of trees and the making of ponds.

The Revd John Ray and Francis Willughby, *en route* to Gloucester, recorded *Paris quadrifolia* (Herb-Paris) and *Gymnocarpium dryopteris* (Oak Fern), in 1662 'in shady lanes near the Abbey Tintern.' This was the first record of the Oak Fern in Wales. Other records by Ray included *Vicia sylvatica* (Wood Vetch), near Caerwent and *Ceterach officinarum* (Rustyback).

Edward Lhwyd recorded *Anaphalis margaritacea* (Pearly Everlasting) on the 'banks of Rymney River for at least 12 miles'. This is a rare plant of moist meadows, native to N. America and Central Asia, long cultivated among our garden Everlastings and established along river sides in Monmouthshire, Glamorgan and Merioneth. In Gough's edition of *Camden's Britannia*, 1806 ed. (ii p. 492) for which Lhwyd collected material, the two rare plants for Monmouthshire appended at the end of the chapter on the county are *Anaphalis margaritacea* on banks of Rhymney river and *Vicia sylvatica* in a wood near Caerwent, obviously Ray's record.

As for other counties there were at about this time several references to this county by travellers, some with comments on the state of Agriculture, others with remarks more strictly botanical. For many roads lead into Monmouthshire and Monmouthshire leads into South Wales. Daniel Defoe in *A Tour through the whole island of Great Britain* (1724-26) wrote:

'This county furnishes great quantities of corn for exportation...; considering the mountainous part of the west of this county 'tis much they should have such good corn and so much of it to spare'.

Perhaps Defoe felt more at home in Monmouthshire than he had done in North and Central Wales, for he had wearied of rocks, precipices and mountains; to him the wildness of it all was objectionable and the inhabitants not to his taste. He wrote 'The devil lives in the middle of Wales'.

Arthur Young in Letter V., written from Monmouth and Glamorgan in 1767 in his *A six weeks tour through the Southern counties of England and Wales* (London 1772), referred to the rotation of crops as being 'Fallow, wheat, barley, oats rye-grass and clover (3-8 years), then

pare and burn' or 'Fallow, wheat, barley, clover (for 2 years), wheat'. Young commented 'the first is miserable husbandry, the latter bad'. In his 'A tour in Wales', *Annals of Agriculture*, 1782, giving the result of his tour in South Wales in 1776 from Milford Haven via Carmarthen and Brecon to Monmouth, he noted that 'much furze and shabby wood' existed in this north sector of Monmouthshire.

Tobias Smollett in *The present state of all nations*, vol. 3, 1769, wrote:

'Tho' the county is in some parts woody and in others hilly yet the air is no where bad nor the soil barren for the hills feed large flocks of cattle, sheep and goats, and the vallies produce plenty of corn'.

William Gilpin in *Observations on the River Wye and several parts of South Wales relative chiefly to picturesque beauty made in the summer of the year 1770* (2nd edn 1789) saw the county with the eye of the artist rather than that of the botanist. He wrote:

'...during the whole course of our voyage from Ross we had scarce seen one cornfield. The banks of the Wye consist, almost entirely either of wood, or of pasturage, which I mention as a circumstance of peculiar value in landscape. Pasturage not only presents an agreeable surface: but the cattle, which graze it, add great variety, and animation to the scene'.

E. Donovan in *Descriptive excursions through South Wales and Monmouthshire in the year 1804 and the four preceding summers*, 1805, wrote:

'Near the walls of Caerwent says a brother tourist (Mr Manby) I observed a curious shrub to vegetate resembling the Elder both in appearance and smell ... called by the Welsh Dawle-gwad-gwyr-marw, which implies its growing from human blood and that it has the reputation of being found only in places formerly the scenes of dreadful contests. It dies with the stalk and rises fresh every spring yielding an abundance of juice which is deemed excellent for swellings or bruises... The beneficial properties of this plant are not exaggerated, more might certainly be added for it proved to be no other than the Danewort or Dwarf Elder [*Sambucus ebulus*] of botanists... It cannot be unworthy of mention that the properties, and, in consequence, the value of that useful article the Kelp remained a secret to the inhabitants of the maritime parts of Wales till within the space of the last 20 or 30 years.'

(Manby, referred to by Donovan, was one of the many tourists into Wales. His tour extended from Clifton to Brecon.)

Skrine in *Two successive tours throughout the whole of Wales*, 1798 wrote of Abergavenny:

'a more beautiful position than this town occupies can hardly be imagined in Nature, bold projecting hills forming on every side a natural basin of no small extent'.

Charles Hassall wrote in *General View of the Agriculture of the County of Monmouth*, 1815:

'it must be observed ... that lime is a favourite manure in every part of this county, and I believe it is everywhere found beneficial on tillage lands'.

The Revd John Lightfoot (1735-1788) who was born in Newent, made one of the earliest strictly botanical travels [in the company of Sir Joseph Banks]. In his *Journal of a botanical excursion in Wales 1773*, he recorded *Brassica oleracea* (Wild Cabbage). This wild state of our garden cabbage is native to sea cliffs in the south and west of Britain and it is interesting that in these habitats it is a perennial and is very floriferous whereas the cultivated forms are usually biennials. Salisbury records one large specimen from the rocks on the Glamorganshire coast which bore over five thousand fruits (*The Living Garden*, 1936). Lightfoot also recorded *Anisantha madriensis* (Compact Brome), a rare grass of dry sandy places; *Hordelymus europaeus* (Wood Barley), another rare grass of woods and thickets on calcareous soils. (*Topographical Botany* 2nd Suppl., 1929), and *Leonurus cardiaca* (Motherwort), a rather rare plant of hedges and waste places, doubtfully truly indigenous.

The writer of *A collection of Welsh tours* 1798, wrote:

'The country between Pontypool and Monmouth is generally well cultivated and rather pleasing; yet did not appear to us so strikingly beautiful as it had been represented; but, perhaps, the enchanting prospects in the vicinity of Brecknock, with which we had so recently been charmed might occasion an apathy to scenes less attractive of admiration'.

J.T. Barber in *A tour throughout South Wales and Monmouthshire* 1803 wrote:

'From Bassaleg the country continues undulating and fertile to the Vale of Machen, where the Rumney emerges from among wild hills and overhanging forests and sweeps through the plain'.

Thomas Purton (1768-1833) born at Endon Hurnell, Bridgnorth, Salop, became a surgeon and practised in London and later at Alcester. Purton was elected a Fellow of the Linnean Society in 1821. He was primarily a mycologist and his [manuscripts] and collection of fungi are housed at Kew. He contributed to our knowledge of the floras of Worcestershire, Warwickshire, Berkshire and Staffordshire and included at p. 747 of *A botanical description of British plants in the Midland counties* vol. 2, 1817, a section on *The plants of Monmouthshire* remarking in his preface:

'In a visit to my worthy and much-esteemed friend the Reverend Francis Homfray, Rector of Llanvayer, near Abergavenny; I discovered the following plants which I have not yet found in Warwickshire or its neighbourhood. They have a place in this work chiefly to show that the soil, situation, mountains etc., of the greatest part of Monmouthshire are so similar to the more interior counties (particularly to those of Shropshire and Worcestershire) that the Botanist must not be disappointed if he should not find many new plants. Most of the rarer plants which I found in Monmouthshire grow also in Shropshire and Worcestershire; but it may be worthy of notice that the wild plants are much more beautiful and luxuriant than they are generally met with; in the more interior counties.

*Cicuta virosa* (Cowbane), in ditches about Clytha and on the Usk, near to Lanvayer. [This is almost certainly an error, *Oenanthe crocata* (Hemlock Water-dropwort) being intended]. *Origanum vulgare* (Marjoram), About Clytha and Usk in great abundance. *Mentha suaveolens* (Round-leaved Mint), about Lanvayer and on the side of the road leading from Abergavenny to Monmouth. *Melampyrum sylvaticum* (Small Cow-wheat), the woods about Abergavenny, at the foot of the 'Sugar-loaf' in great plenty. [E. Lees reported (*New Botanist's Guide*, H.C. Watson, 1835) that he could find only *M. pratense* (Common Cow-wheat) in Purton's station and the record of *M. sylvaticum* is undoubtedly an error.] *Chaenorhinum minus* (Small Toadflax), in the fields about Lanvayer and Abergavenny. *Racomitrium lanuginosum* (Toothed, hoary, fringe-moss), on the top of the 'Sugar-loaf' in very dense patches. *Boletus perennis* (Perennial Boletus), at the foot of the Blorage by the side of the iron railway leading to the stone pits. August. Finis.'

Purton added occasional references to Monmouthshire plant localities in his general text, e.g.: '*Solidago virgaurea* (Goldenrod), between Monmouth and Usk.'

Charles Conway, born c.1797, of Pontrhydyryn, a hamlet two and a half miles south-east of Pontypool, contributed to the Supplement of H.C. Watson's *The New Botanist's Guide*, a Ms list of 83 plants, the date of which was probably 1836, seen in the neighbourhood of Pontnewydd Works, Cwmbran. Mr A.E. Wade has pointed out that Conway's interpretation of 'the neighbourhood of Pontnewydd works', was rather an extensive one since it includes maritime plants like *Beta vulgaris* subsp. *maritima* (Sea Beet) and *Convallaria majalis* (Lily-of-the-valley) which must refer to the records from the Tintern area.

Conway's list includes:

*Clematis vitalba* (Traveller's-joy); *Ranunculus parviflorus* (Small-flowered Buttercup); *Trollius europaeus* (Globeflower); *Aconitum napellus* (Monk's-hood); *Glaucium flavum* (Yellow Horned-poppay); *Cochlearia officinalis* (Common Scurvygrass); *C. anglica* (English Scurvygrass); *Lepidium campestre* (Field Pepperwort); *Reseda lutea* (Wild Mignonette); *Viola lutea* (Mountain Pansy); *Hypericum androsaemum* (Tutsan); *H. elodes* (Marsh St John's-wort); *Silene uniflora* (Sea Campion); *Stellaria nemorum* (Wood Stitchwort); *Ononis spinosa* (Spiny Restharrow); *Vicia sativa* subsp. *nigra* (Narrow-leaved Vetch); *Lathyrus sylvestris* (Narrow-leaved Everlasting-pea); *Rosa tomentosa* (Harsh Downy-rose); *Sanguisorba officinalis* (Great Burnet); *Ribes rubrum* (Red Currant); *Umbilicus rupestris* (Navelwort); *Oenothera biennis* (Common Evening-primrose); *Bryonia dioica* (White Bryony); *Foeniculum vulgare* (Fennel); *Apium graveolens* (Wild Celery); *Myrrhis odorata* (Sweet Cicely); *Viscum album* (Mistletoe); *Rubia peregrina* (Wild Madar); *Centranthus ruber* (Red Valerian); *Mycelis muralis* (Wall Lettuce); *Cirsium*

*dissectum* (Meadow Thistle); *Chamaemelum nobile* (Chamomile); *Wahlenbergia hederacea* (Ivy-leaved Bellflower); *Campanula patula* (Spreading Bellflower); *Polemonium caeruleum* (Jacob's-ladder); *Blackstonia perfoliata* (Yellow-wort); *Myosotis sylvatica* (Wood Forget-me-not); *Kickxia elatine* (Sharp-leaved Fluellen); *Linaria repens* (Pale Toadflax); *Lycopus europaeus* (Gipsywort); *Mentha spicata* (Spear Mint); *M. suaveolens* (Round-leaved Mint); *M. × piperita* (*M. aquatica* × *M. spicata*) (Peppermint); *Leonurus cardiaca* (Motherwort); *Stachys × ambigua* (*S. sylvatica* × *S. palustris*) (Hybrid Woundwort); *Lamiastrum galeobdolon* (Yellow Archangel); *Galeopsis ladanum* (Broad-leaved Hemp-nettle); *Lamium hybridum* (Cut-leaved Dead-nettle); *Clinopodium ascendens* (Common Calamint); *Scutellaria minor* (Lesser Skullcap); *Primula veris* (Cowslip); *Glaux maritima* (Sea-milkwort); *Plantago maritima* (Sea Plantain); *Chenopodium polyspermum* (Many-seeded Goosefoot); *Beta vulgaris* subsp. *maritima* (Sea Beet); *Euphorbia amygdaloides* (Wood Spurge); *Mercurialis annua* (Annual Mercury); *Empetrum nigrum* (Crowberry); *Ulmus glabra* (Wych Elm); *Salix triandra* (Almond Willow); *S. × mollissima* (*S. triandra* × *S. viminalis*) (Sharp-stipuled Willow); *Spiranthes spiralis* (Autumn Lady's-tresses); *Galanthus nivalis* (Snowdrop); *Narcissus pseudonarcissus* subsp. *pseudonarcissus* (Daffodil); *N. × medioluteus* (*N. tazetta* × *N. poeticus*) (Primrose-peerless); *N. poeticus* (Pheasant's-eye Daffodil); *Convallaria majalis* (Lily-of-the-valley); *Tamus communis* (Black Bryony); *Bolboschoenus maritimus* (Sea Club-rush); *Eriophorum vaginatum* (Hares'-tail Cottongrass); *Glyceria maxima* (Reed Sweet-grass); *Vulpia bromoides* (Squirreltail Fescue); *Bromus secalinus* (Rye Brome); *Elytrigia repens* (Common Couch); *Lolium temulentum* (Darnel).

Edwin Lees in his 'Botanical tour in Hereford, Monmouth and South Wales' (*The Naturalist*, 1, 1837) referred to 16 plants in Monmouthshire and in *The Botanical Lookerout*, 1842 wrote:

'Many of the Welsh and Monmouthshire churchyards are black with a multiplicity of Yew trees; for instance, that of Mahmilade, between Abergavenny and Pontypool which has twelve or thirteen, several most luxuriantly cinctured with ivy and one, whose monstrous bole is thirty feet seven inches in circumference. The Llanfoist yew in the same county is a noble tree... I also remember several very fine ones (Hawthorns), ivy cinctured and with innumerable tortuous arms, on the feathery summit of the Little Skirrid near Abergavenny ... The broken masses of millstone grit on the northern flank of Symond's Yat ... tufted with tall beeches and thicketed with the dark evergreen of hollies and yews, the white Beam tree, green Bilberries;

... [*Athyrium filix-femina* (Lady-fern)] in a delightful exploration of Glyn Clydach... We gathered a branch of [*Sorbus aria* (Common Whitebeam)] from the ruined arches of Tintern... I have found the [Common] Broomrape (*Orobanche minor*) a curious parasitical plant, with purple stem and light brown flowers on many of the walls of the castles of Wales and Monmouthshire which seems a curious habitat for it.

...The Black Mountain from the Vale of Ewias – beautiful Crowberry Bush, *Empetrum nigrum*, laden with its sable fruit, *Vaccinium myrtillus* [(Bilberry)] and on the summit Cowberry (*V. vitis-idaea*).

John Ball reported in the *Botanical Gazette*, 1, 1849, that, during the summer of 1848 he collected a few plants about Llanthony Abbey on the borders of Breconshire and Monmouthshire – 'the boundaries of the counties of Monmouth, Brecon and Hereford being in the immediate vicinity of the Abbey I am not able to distinguish the localities of the species named'. Ball listed:

*Hypericum maculatum* (Imperforate St John's-wort), *Ulex namus* Forst., probably *Ulex gallii* (Western Gorse), the two species were not separated at that time, *Saxifraga hypnoides* (Mossy Saxifrage), *Silaum silaus* (Peppersaxifrage) *Mycelis muralis* (Wall Lettuce), *Vaccinium vitis-idaea* (Cowberry), *Lamiastrum galeobdolon* (Yellow Archangel), *Mentha spicata* (Spear Mint), *Empetrum nigrum* (Crowberry), *Tamus communis* (Black Bryony), *Orobanche hederæ* (Ivy Broomrape, on ivy on the walls of the abbey).

Joseph Woods in 'Botanical notes, the result of a visit to Glamorgan and Monmouthshire in

the latter part of July and the beginning of August 1850' (*Phytologist*, 3, p. 1053), deals mainly with species of *Rubus* mentioning for the county 'a setigerous *Rubus* perhaps a var. of *R. radula*, about Newport – could not always separate *R. discolor* from *R. rhamniifolius* and also two forms seemed to deserve attention, (a). one with the pubescence and panicle of *R. discolor* but the stem on the old shoot with 8 slight furrows instead of being 5 sided and, (b). *R. hirtus* also at Raglan and Monmouth. At the foot of Wynd Cliff a form of *R. corylifolius*'. Woods also recorded *Mentha suaveolens* (Round-leaved Mint) at Monmouth, *Euphorbia ser-riolata* (Upright Spurge), at Tintern. This spurge is found in Britain only along the Wye Valley in West Gloucestershire and Monmouth, and he commented on the absence of *Primula farinosa* (Bird's-eye Primrose), *Geranium sylvaticum* (Wood Crane's-bill) and *Sesleria caerulea* (Blue Moor-grass).

The Rev. Fenton John Arthur Hort DD., LL.D. (1828-92), born in Dublin, was Rector of Hitchen from 1857 to 1872. He was critically interested in the genus *Rubus* and also in the flora of Leicestershire. His collection of plants is housed at Cambridge. Hort wrote on the occurrence of *Orobanchè purpurea* (Yarrow Broomrape) and *Aconitum napellus* (Monk's-hood) in Monmouthshire (*Phytologist* 1851, p. 640).

'On 2nd of this month I had the pleasure of finding a single specimen of *Orobanchè [purpurea]* by the side of a lane a mile or two south-west of Chepstow. A plant of *Achillea millefolium* [Yarrow] grew two or three inches off, and, as none of the other usual victims of the broomrapes were to be seen, that was doubtless the sufferer, although I failed to trace the connexion [sic]. This discovery gives probability to the record for Glamorganshire in the Swansea Guide [see H.C. Watson's *Cybele Britannica*, 2: 231 (1847-1859)]'.

Hort wrote about gathering *Aconitum napellus*:

'about two miles to the west of Chepstow in a secluded valley at the southern end of a winding rent in the Carboniferous limestone hills. The steep sides of the valley covered with native coppice rich in yew and whitebeam, the neighbouring woods contain *Carex digitata* (Fingered Sedge) and *Melica nutans* (Mountain Melick). *Aconitum napellus* is native in France, in Germany as far north as the Eifel, in Denmark and in S. Scandinavia and in Wales is apparently native in three border counties one of them being Monmouthshire (*Cyb. Brit.* 2: 98)'

Hort adds 'it would be interesting to examine the glens of the forest district between Chepstow, Newport and Usk.'

Hort's records for the county include:

*Aconitum napellus* (Monk's-hood), *Lepidium heterophyllum* (Smith's Pepperwort), *Lepidium ruderale* (Narrow-leaved Pepperwort), *Sorbus aria* (Common Whitebeam), *Gentianella amarella* (Autumn Gentian), *Chenopodium polyspermum* (Many-seeded Goosefoot), *Atriplex prostrata* (Spear-leaved Orache), *Rumex* × *pratensis* (*R. crispus* × *R. obtusifolius*) (Meadow Dock), *Carpinus betulus* (Hornbeam), *Luzula forsteri* (Southern Wood-rush), *Carex divulsa* (Grey Sedge), *C. digitata* (Fingered Sedge), *Puccinellia rupestris* (Stiff Saltmarsh-grass), *Brachypodium pinnatum* (Tor-grass), *Elymus caninus* (Bearded Couch), *Parapholis strigosa* (Hard-grass), *Orobanchè purpurea* (Yarrow Broomrape).

The Rev Augustus Ley, 1842-1911 was born in Hereford though he came of a Devonshire family. After graduating at Oxford he was ordained in 1867 and later became vicar of the two parishes of Sellack with King's Capel, near Ross-on-Wye. It was during his residence there that he contributed so notably to our knowledge of the floras of many of the counties in Wales; indeed it is probable that he takes first place as a contributor for several Welsh counties. For Monmouthshire his records included:

*Meconopsis cambrica* (Welsh Poppy), *Fumaria bastardii* (Tall Ramping-fumitory), *Viola hirta* (Hairy Violet), *V. reichenbachiana* (Early Dog-violet), *Polygala vulgaris* (Common Milkwort), *P. serpyllifolia* (Heath Milkwort), *Malva pusilla* (Small Mallow), *Hypericum humifusum* (Trailing St John's-wort), *H. hirsutum* (Hairy St John's-wort), *Trifolium fragiferum* (Strawberry Clover), *T. micranthum* (Slender Trefoil), *Prunus padus* (Bird Cherry), *Rubus saxatilis* (Stone Bramble), *R. plicatus*, *Sorbus latifolia* (Broad-leaved White-

beam), *Saxifraga hypnoides* (Mossy Saxifrage), *Carlina vulgaris* (Carlina Thistle), *Picris hieracioides* (Hawkweed Oxtongue), *Anthemis cotula* (Stinking Chamomile), *Vaccinium vitis-idaea* (Cowberry), *Orhila secunda* (Serrated Wintergreen), *Veronica polita* (Grey Field-speedwell), *V. persica* (Common Field-speedwell), *Stachys* × *ambigua* (*S. sylvatica* × *S. palustris*) (Hybrid Woundwort), *Myosotis secunda* (Creeping Forget-me-not), *Rhynchospora alba* (White Beak-sedge), *Eriophorum latifolium* (Broad-leaved Cottongrass), *Carex viridula* subsp. *brachyrrhyncha* (Long-stalked Yellow-sedge), *C. distans* (Distant Sedge), *C. strigosa* (Thin-spiked Wood-sedge), together with the pteridophytes: *Cystopteris fragilis* (Brittle Bladder-fern), *Dryopteris carthusiana* (Narrow Buckler-fern), *Asplenium viride* (Green Spleenwort), *Equisetum telmateia* (Great Horsetail) (*Botanical Record Club*, 1873-, and *Top. Bot.* 1883). Also *Sorbus rupicola* (Rock Whitebeam), July 1909 (*Journal of Botany*, 1910). See also *J. Bot.* 1872, 1874, 1875.

J.H. Clark in his *Reminiscences of Monmouthshire* 1908 recalls that he was a printer with his father at Chepstow but moved to Usk in 1834 before he attained the age of sixteen. In 1845 he commenced the study of botany in earnest, often accompanied on his rambles by Rev. K. Homfrey, W.H. Nichol, Dr J. Boulton of Usk, and Dr E.Y. Steel of Abergavenny.

In the '*List of the rarer plants to be found in the neighbourhood of Cardiff*', at pp. 83-84 of the booklet *Cardiff and its neighbourhood* (Clark, 1853), a few of the localities cited are located in Monmouthshire.

In his *Handbook to Monmouthshire and South Wales* (Clark, 1861), Clark wrote of Garth Mountain:

'Some parts of the mountain are boggy, and the botanist may find a few plants indigenous to such places, as *Hypericum elodes* (Marsh St John's-wort), *Drosera rotundifolia* (Round-leaved Sundew), *Anagallis tenella* (Bog Pimpernell), *Wahlenbergia hederacea* (Ivy-leaved Bellflower), *Scutellaria minor* (Lesser Skullcap), *Eriophorum angustifolium* (Common Cottongrass), *Hydrocotyle vulgaris* (Marsh Pennywort) and *Carex pulicaris* (Flea Sedge).'

He adds:

'Around Cardiff the soil is varied, and produces a great diversity of plants, among which may be enumerated ...' And here he lists over 40 of the less common species, here omitted for reasons of space.

In his *Handbook to Monmouthshire and South Wales* (1861), Clark, writing of the Wynd Cliff, added:

'The Botanist may discover many rather rare plants, among which may be enumerated the *Wahlenbergia hederacea* (Ivy-leaved Bellflower), *Centranthus ruber* (Red Valerian), *Galium verum* (Lady's Bedstraw), *Ophrys apifera* (Bee Orchid), *Platanthera bifolia* (Lesser Butterfly-orchid), *Catapodium rigidum* (Fern-grass), *Helianthemum nummularium* (Common Rock-rose), *Gentianella amarella* (Autumn Gentian), *Onobrychis viciifolia* (Sainfoin), *Vicia sylvatica* (Wood Vetch), *Anthyllis vulneraria* (Kidney Vetch), *Ornithopus perpusillus* (Bird's-foot), *Viburnum opulus* (Guelder-rose), *Sanguisorba minor* subsp. *minor* (Salad Burnet), *Geranium lucidum* (Shining Crane's-bill), *G. phaeum* (Dusky Crane's-bill), *G. sanguineum* (Bloody Crane's-bill), *Blackstonia perfoliata* (Yellow-wort), *Convallaria majalis* (Lily-of-the-valley) and *Galanthus nivalis* (Snowdrop).'

Clark produced *Sketches of Monmouthshire*, published at Usk, in 1868. He stated that a reprint of *The secret memoirs of Monmouthshire* had been incorporated in the *Sketches*. In the list of Flowering plants, printed as a 44 page appendix, Clark commented on the great diversity of soil, the large tracks of moor, marsh, rich loams and peaty mountains and added that no work on the botanical resources of the county had been published nor had the botanists united their experience to form a list of plants indigenous to the district. Clark listed 531 dicotyledons, 142 monocotyledons, 23 pteridophytes, and two gymnosperms, *Pinus sylvestris* (Scots Pine) and *Taxus baccata* (Yew). He gave the Latin and English name for each flower with its locality within the county. A few later records by Clark appear in *Botanical Record Club* reports.



J. White's *Guide to the town and neighbourhood of Abergavenny*, 1886, pp 74-76, includes a flora 'furnished by a gentleman long resident in the locality'. The introduction states that the Little Skyryd glows with gorse and in some seasons many acres of the lower slopes of the Blorenge are covered with foxgloves which may be seen from miles away. 97 flowering plants are listed by their Latin names but without comment or localities, and 9 pteridophytes. In another edition of this guide reference is also made to the famous Golyinos oak which grew in the estate of that name about four miles from Newport which was a majestic tree -- overspreading 452 square yards and estimated to contain 2426 ft of timber, the bark alone estimated at six tons. This oak was purchased by Mr Thomas Harrison, Purveyor of Plymouth dockyard and Dean Forest, in the year 1810 for 100 guineas. An inland table in the mansion of Llanover was stated to have been made from the root of the Golyinos oak.

William Whitwell 1829-1920 born in Manchester, spent his early years at Llansantffraid in Montgomeryshire where was born that love of nature which became an important part of his life. From 1859 he was a member of the Taxes branch of the Inland Revenue staff and, serving in many districts, he had ample opportunity to become acquainted with different kinds of floras in Britain. A holiday spent in Monmouth provided many records (*J. Bot.*, 1891) including:

*Arenaria serpyllifolia* (Thyme-leaved Sandwort), *Vicia sepium* (Bush Vetch), *V. tetrasperma* (Smooth Tare), *Polygala vulgaris* (Common Milkwort), *Geranium dissectum* (Cut-leaved Crane's-bill), *Conium maculatum* (Hemlock), *Scleranthus annuus* (Annual Knawel), *Humulus lupulus* (Hop), *Allium vineale* var. *compactum* (Wild Onion), *Chara vulgaris* (a stonewort), *Coronopus didymus* (Lesser Swine-cress), *Pastinaca sativa* (Wild Parsnip), *Diplotaxis tenuifolia* (Perennial Wall-rocket) and *Aster tripolium* (Sea Aster).

The Revd H.P. Reader B.A., contributed a list of Monmouthshire cryptogams from the neighbourhood of Usk. (*J. Bot.* 1882. p.220). He also recorded flowering plants for the county in 'New records & localities in Monmouthshire and Gloucestershire' (*J. Bot.* 1886).

*Arabidopsis thaliana* (Thale Cress), *Spergula arvensis* (Corn Spurrey), *Rosa mollis* (Soft Downy-rose), *Bidens cernua* (Nodding Bur-marigold), *B. tripartita* (Trifid Bur-marigold), *Solanum nigrum* (Black Nightshade), *Polygonum aviculare* (Knotgrass), *Cephalanthera longifolia* (Narrow-leaved Hel-leborine), *Potamogeton natans* (Broad-leaved Pondweed), *Carex ovalis* (Oval Sedge), and *Vulpia myuros* (Rat's-tail Fescue).

Samuel Hamilton B.S., M.B., of Newport was medical officer of health for the Marshfield district of the Newport Union. He was an interested naturalist and wrote a small flora, ostensibly for the whole of the county, *The flora of Monmouthshire* 1909, but the records are mainly for the Newport area. Following a reference to the geology of the area there follows, at pp 4-81, the names, localities and times of flowering of 286 Angiosperms, together with 23 pteridophytes and the stonewort *Chara vulgaris*. Hamilton acknowledges assistance from Dr Shoolbred, Archdeacon Bruce of Roggiet and Augustus Purnell of Newport (for information about rare trees). He deplored the non-existence of any Naturalists' Field Club or of a herbarium in Newport Museum.

In the book on *Monmouthshire* in 1909 by Rev. G.W. Wade D.D., and J.H. Wade M.A., the chapter on fauna and flora is by T.W. Proger and W.A. Shoolbred with assistance from the Revd H.J. Riddelsdell. T.W. Proger a businessman of this part of the county who resided at St Fagans in Glamorgan, was interested in the Falkland Islands and he served for some years on the Council of the National Museum of Wales. Obviously Shoolbred's contribution was the most valuable one, especially so since he treated the vegetation from an ecological standpoint. It is pointed out that the flora is both rich and varied the coastal region yielding a number of littoral and salt-marsh plants. On the Old Red Sandstone and Conglomerate formations occur broom and foxglove (both almost absent on the limestone) and with an unusual number of species of brambles. In the woods, primroses, wood-anemone, bluebell, occur with ramsons covering many square yards of open woodland. Shoolbred commented on the remarkable luxuriant vegetation on the mountain limestone adding 'probably no part of Britain possesses so many native yew trees as on Wyndcliff and the adjacent woods, and with the yew some white-beam is associated.'

Plants listed by Shoolbred for the littoral tidal Wye & Severn estuary, 'rhines' [reens] and ditches are:

*Ranunculus baudotii* (Brackish Water-crowfoot), *Glaucium flavum* (Yellow Horned-poppy), *Cochlearia anglica* (English Scurvygrass), *Saponaria officinalis* (Soapwort), *Althaea officinalis* (Marsh-mallow), *Trifolium squamosum* (Sea Clover), *Smyrnium olusatrum* (Alexanders), *Crithmum maritimum* (Rock Samphire), *Pastinaca sativa* (Wild Parsnip), *Armeria maritima* (Thrift), with littoral grasses *Puccinellia maritima* (Common Saltmarsh-grass), *Elytrigia atherica* (Sea Couch), *Parapholis strigosa* (Hard-grass).

At higher levels and on heathy ground occur:

*Helianthemum nummularium* (Common Rock-rose), *Polygala vulgaris* (Common Milkwort), *P. serpyllifolia* (Heath Milkwort), *Hypericum pulcrum* (Slender St John's-wort), *Rubus saxatilis* (Stone Bramble), *Scabiosa columbaria* (Small Scabious), *Cirsium acule* (Dwarf Thistle), *Vaccinium myrtillus* (Bilberry), *Pyrola minor* (Common Wintergreen), *Gentianella amarella* (Autumn Gentian), *G. campestris* agg. (Field Gentian), *Veronica montana* (Wood Speedwell).

Bog and peat plants on Trelleck Bog:

*Hypericum elodes* (Marsh St John's-wort), *Drosera rotundifolia* Round-leaved Sundew, *Epilobium palustre* (Marsh Willowherb), *Vaccinium oxycoccos* (Cranberry), *Pinguicula vulgaris* (Common Butterwort), *Narthecium ossifragum* (Bog Asphodel), *Rhynchospora alba* (White Beak-sedge), and several 'cotton' plants.

The less common aquatic plants:

*Ranunculus lingua* (Greater Spearwort), *R. fluitans* (River Water-crowfoot), *Utricularia vulgaris* agg. (Greater Bladderwort), *Hydrocharis morsus-ranae* (Frogbit), *Baldellia ranunculoides* (Lesser Water-plantain).

On the mountain limestone in the Wye valley the plants noted were:

*Helleborus foetidus* (Stinking Hellebore), *Cardamine impatiens* (Narrow-leaved Bitter-cress), *Malva moschata* (Musk Mallow), *Geranium sanguineum* (Bloody Crane's-bill), *Astragalus glycyphyllos* (Wild Liquorice), species of *Sorbus* (Whitebeam), *Sedum rupestre* (Reflexed Stonecrop), *Rubia peregrina* (Wild Madder), *Imula conyzae* (Ploughman's-spikenard), *Blackstonia perfoliata* (Yellow-wort), *Orobanche hederæ* (Ivy Broomrape), *Lathraea squamaria* (Toothwort), *Polygonatum odoratum* (Angular Solomon's-seal), *Taxus baccata* (Yew).

Shoobred listed an interesting number of orchids from the Chepstow and Tintern districts:

*Neottia nidus-avis* (Bird's-nest Orchid), *Listera ovata* (Common Twayblade), *Spiranthes spiralis* (Autumn Lady's-tresses), *Cephalanthera longifolia* (Narrow-leaved Helleborine), *Epipactis helleborine* (Broad-leaved Helleborine), *Anacamptis pyramidalis* (Pyramidal Orchid), *Orchis morio* (Green-winged Orchid), *O. mascula* (Early-purple Orchid), *Dactylorhiza incarnata* (Early Marsh-orchid), *D. maculata* (Heath Spotted-orchid), *Ophrys apifera* (Bee Orchid), *O. insectifera* (Fly Orchid), *Gymnadenia conopsea* (Fragrant Orchid), *Coeloglossum viride* (Frog Orchid), *Platanthera bifolia* (Lesser Butterfly-orchid), *Platanthera chlorantha* (Greater Butterfly-orchid).

and there follows an interesting list of ferns and other pteridophytes:

*Peridium aquilinum* (Bracken), *Blechnum spicant* (Hard Fern), *Asplenium adiantum-nigrum* (Black Spleenwort), *A. trichomanes* (Maidenhair Spleenwort), *A. ruta-muraria* (Wall-rue), *Athyrium filix-femina* (Lady-fern), *Ceterach officinarum* (Rustyback), *Phyllitis scolopendrium* (Hart's-tongue), *Cystopteris fragilis* (Brittle Bladder-fern), *Polystichum aculeatum* (Hard Shield-fern), *P. setiferum* (Soft Shield-fern), *Thelypteris palustris* (Marsh Fern), *Oreopteris limbosperma* (Lemon-scented Fern), *Dryopteris filix-mas* (Male-fern), *D. carthusiana* (Narrow Buckler-fern), *D. dilatata* (Broad Buckler-fern), *Polypodium vulgare* (Polypody), *Gymnocarpium dryopteris* (Oak Fern), *Phegopteris connectilis* (Beech Fern), *Ophioglossum vulgatum* (Adder's-tongue), *Botrychium lunaria* (Moonwort), *Equisetum telmateia* (Great Horsetail), *E. arvense* (Field Horsetail), *E. palustre* (Marsh Horsetail), *Lycopodium clavatum* (Stag's-horn Clubmoss), and *Chara vulgaris* (a stonewort).

Other interesting plants listed were:

*Aconitum napellus* (Monk's-hood), *Thalictrum flavum* (Common Meadow-rue), *Brassica nigra* (Black Mustard), *Epilobium lanceolatum* (Spear-leaved

Willowherb), *E. roseum* (Pale Willowherb), *E. tetragonum* (Square-stalked Willowherb), *Oenanthe silaifolia* (Narrow-leaved Water-dropwort), *Sambucus ebulus* (Dwarf Elder), *Valerianella carinata* (Keeled-fruited Cornsalad), *Daphne laureola* (Spurge-laurel), *Narcissus pseudonarcissus* subsp. *pseudonarcissus* (Daffodil), *Galanthus nivalis* (Snowdrop), *Convallaria majalis* (Lily-of-the-valley), *Paris quadrifolia* (Herb-Paris), *Colchicum autumnale* (Meadow Saffron), and *Euphorbia serrulata* (Upright Spurge) in Britain only in Monmouthshire and West Gloucester, Wyndcliff, Tintern, Llandogo, Bigsweir.

This earlier contribution from William Andrew Shoolbred M.C.R.S. (1852-1928) leads on to a brief mention of this interesting medical man whose hobby has earned him as much fame in botanical circles as any surgical skill may have done during his professional career. Born in Wolverhampton, educated in Edinburgh and London, Shoolbred became House-surgeon at St Bartholomew's hospital before settling at Chepstow (1878-79), as assistant to Dr Whyte, where his botanical studies must have divided his interests. He was especially interested in trees and shrubs, rock plants and primulas and the genera *Rubus* and *Hieracium*. His garden at St Ann's, Chepstow looking down over Castle Dell must have been both an inspiration and delight to visitors and townfolk as well as to Shoolbred himself. W.A. Shoolbred had contributed, at various times, many lists relating to the flora of the Chepstow area to several periodicals. These included *Recent additions to the Flora of W. Gloucester and Monmouth* giving about 200 records (*J. Bot.* 1893). 24 more were added in *J. Bot.* 1896, a few additional ones in 1898; *Gloucestershire and Monmouth plants observed June 1901* (mainly around Stroud and Chepstow) by Marshall and Shoolbred; and a few with Ley (*J. Bot.* 1902). Upwards of 70 Shoolbred records appear in *Top. Bot. Supplement*, 1905, and over 160 records for Monmouthshire in *Welsh Flowering Plants* bear his initials. These lists constitute a very considerable contribution from the spare-time hobby of a busy medical man.

Situated as Chepstow is on the border between Monmouth and Gloucester his 'magnum opus' – *The Flora of Chepstow* 1920, contains records from both counties but in Monmouthshire the area covered was from the Wye at Beachley to Bigsweir Bridge and extending about seven miles westward and the area was worked carefully and accurately. Shoolbred was an intimate friend of Rev. E.S. Marshall (1858-1919) who was a vicar of Milford Keevil and Rector of West Monkton and they made botanical excursions together almost every year from 1894-1916. It was fitting, therefore, that this *Flora* should be dedicated to the memory of Marshall and his wife. Apart from the mosses which he had collected, Shoolbred incorporated mosses of the area contributed to his list by Revd A. Ley; a list of Rubi and Rosae of Burton M. Watkins; some records from S. Hamilton's small 1909 *Flora* of the county (this was mainly of the Newport area); and the list of J.H. Clark published in 1868. He consulted the herbarium sheets relating to Monmouthshire in the collection at the British Museum, those of Dr St Brody at Gloucester and those of Revd W. Butt and acknowledged help from the Revds A. Ley, E.S. Marshall and W. Moyle Rogers. Other recorders noted were H.A. Evans, R.H. Morgan, W.R. Price, Dr Clarke, Capt Fraser and reference was made to about 27 others whose names are recorded later. The herbarium compiled by Shoolbred himself was bequeathed to the National Museum of Wales on his death in 1928 and was listed in *Welsh Flowering Plants* as the chief single item among gifts to the collections up to 1934, and the acquisition of this valuable gift accounts for the inclusion of his portrait in the volume from the National Museum.

In 1898 appeared a paper on the 'Mosses of Monmouth' (*J. Bot.* 1898), by that recognised authority H.N. Dixon. The mosses described were those in the herbarium of H. Boswell at Oxford and contained 93 species and varieties collected by Revd A. Ley together with *Pleuroidium subulatum* collected by Miss Armitage. The Caradoc and Severn Valley Field Club visited the Valley of the Wye in their Long Meeting during June 1899 visiting Rocklea, Symond's Yat. Ley was in charge during part of this excursion visiting the Yat and Coldwell Rocks on June 15th. Some forty plants recorded then were named by Ley (*Transactions of the Caradoc and Severn Valley Field Club*, 1899). Yet another paper based on Ley's collection appeared later from Knight and Duncan. H.H. Knight (1862-1944) born at Sutton-Maddock in Shropshire, was mathematics master at Llandoverly College from 1888-1907 when he retired to live in Cheltenham. He was a noted contributor to the flora of Carmarthenshire and later interested himself in the compilation of the long-awaited *Flora of Gloucestershire*. Knight's interest veered from flowering plants to bryophytes. Hence it is not surprising to find that, in collabo-

ration with J.B. Duncan he published a list of 24 additional Monmouthshire mosses from 1911 onward from the herbarium of A. Ley housed in part in Birmingham (*Census Cat. Brit. Mosses*, 1926) and compiled the list of lichens from the Tintern foray of the British Mycological Society (*Trans.* 1926).

H.A. Hyde and A.E. Wade in *Welsh Flowering Plants* (1934) refer to the 760 native species and 157 naturalised ones which, with microspecies of *Hieracium* and *Rubus*, make 1012 species in all for the county. They point out that the county falls into two main geological areas, the Western one on the Coal Measures and an Eastern one, mainly on the Old Red Sandstone, and that the richest botanical areas are the lower Wye Valley, the Wentlooge Level (for aquatic plants) and the Abergavenny area. Of rare plants, *Euphorbia serrulata* (Upright Spurge), occurs in Britain only in the Wye Valley. *Pyrus cordata* (Plymouth Pear) (a curious form of the Wild pear with very small fruit), was recorded near the Hereford border but this is now known to be an error. *Carpinus betulus* (Hornbeam) occupies an area near Chepstow. Hyde recorded *Geranium pratense* (Meadow Crane's-bill), *Galium mollugo* (Hedge Bedstraw), and *Blackstonia perfoliata* (Yellow-wort), whilst A.E. Wade has made the Monmouthshire flora his very special study and concern, and botanists are grateful to him for these studies on the local plants. In *Welsh Flowering Plants* (1934), there were well over 100 county records bearing his initials and the number has increased appreciably since then. Botanists have long awaited his promised *Flora* of this county since his knowledge of its plant-life must be unsurpassed. That his personal knowledge of its flora is not limited to the angiosperms is evidenced by his excellent papers on its hepatics (*North Western Naturalist* XXI, 1946), reminding us that 83 species are recorded, and the mosses (*N.W. Nat.* 1953). A.E. Wade refers especially to the bryological notes and records of Dr E.W. Jones made in the Wye valley and to records of Hepaticae by Miss E.M. Armitage. A.D. Banwell, H.H. Knight, R. Lewis and R. Melville and as collectors, D.A. Jones, A. Ley, A. McKenzie, A.H. Trow and C. Wild. [A.E. Wade's *Flora of Monmouthshire* was finally published by the National Museum of Wales in 1970.]

In *Welsh Ferns* (1940), Hyde and Wade list 19 ferns from the county collected by T.H. Thomas, W.A. Shoolbred, S.G. Charles, G.R. Willan, W.H. Painter, A. Ley, A.E. Wade, H.E. Salmon, R.S. Hutton, H.A. Hyde and J.D. Dean.

W. Fothergill in 'Agriculture of Monmouth' (*Journal of the Royal Agricultural Society*, 1870), related the soil groups to the underlying rocks. He noted that the soils of the Carboniferous limestone were of two major categories:- (a) at higher altitudes producing sweet herbage, excellent for de-pasturing, and (b) at lower elevations deeper soils good for roots and barley. Fothergill noted that:

'sandstones could be rendered tolerably productive by drainage except on the highest parts, that the New Red Sandstone soils produce, in rich abundance, every kind of crop, the lias cold, wet, tenacious clay, the alluvium giving a great variety of productivity.'

The rainfall, ranging from 30 inches along the coast near Newport to 70 inches in the Black Mountains, also very naturally affects the vegetation as does the temperature with its February minimum being so typical of Wales.

This relation of rocks and soils to the vegetation is stressed by A. Rhys Clarke in Part 38 of the *Land Utilization Survey* (1943), reminding us that only the western half of the county experienced glaciation in the Ice Ages. For the soils Clarke stated that rocks of different geological age but of similar texture and general composition - e.g. Devonian and Triassic marls, Carboniferous and Silurian grits, within a given climatic regime produce similar soils. The soil suites present in the county are the Powys, often thin and not usually fertile; the Monmouth, Gower, Neath and Salop suites or series. Of the natural vegetation regions four are delimited:

- a) Moorland, mostly on the coalfield plateau and on the Black Mountains in the extreme north and with isolated masses elsewhere, all with acid soil and shallow. Dr W. Davies and Sir George Stapledon described *Molinia-Nardus* as occupying 27% of the total moorland area, fescue grasses 58% and heather 15%.
- b) True heathland is not extensive. Bracken is found in two well-defined zones, (i) in fescue pastures in the lower altitudes of the moorland, and (ii) in the forest margins of the S.E. sector.
- c) Saltings form a discontinuous narrow strip of salt-marsh between the coastal levels and

the sea.

d) Forest and woodland in 1924 occupied 44,497 acres in the county, 12.8% of the total land area being under woodland.

H.A. Hyde in *Welsh timber trees* (1935), points out that, with 12.8% of the county under wood, Monmouthshire is better wooded than any other county in Wales. He comments too on the fact that yew is clearly native on limestone rocks in the county where it forms a large proportion of the natural vegetation on the limestone cliffs near Tintern. Notable yew trees listed are those at 'The Hendre', at Trevethin, Pontypool and Llanvair Discoed, Wentwood. Other notable Monmouth trees mentioned are the silver-firs at Bertholley House near Newbridge-on-Usk, a walnut at Chepstow Castle, an avenue of sweet chestnuts near Llanfihangel Court near Abergavenny where there are remains of an avenue of very large Scots pines. The biggest beeches in Britain grow in the avenue facing Llantarnam Abbey near Newport and, as mentioned earlier, hornbeam occurs wild in few places in Wales but does so in certain woods in the Chepstow district as noted by Shoolbred. Two large wych elms grow at Moynes Court, Chepstow and a number of fine English elms at Piercefield park, Chepstow, of which only one was left in 1940. As mentioned earlier the famous Golynos oak which grew on Fair-oak farm, Basseleg, was felled in 1810 to provide timber for the Royal Navy and yielded 2426 cubic feet of timber. Within the confines of the county are the former Crown woods at Tintern, a small part of the Forest of Dean proper in addition to large areas of private plantation.

In his book *Picture of Monmouthshire*, 1801, Archdeacon W. Coxe wrote:

'The Church of Kemys Commander between three and four miles from Usk is a small Gothic structure, its cemetery is remarkable for a hollow yew tree, 15 feet in girth within which is enclosed an oak not less than 7 feet in circumference.'

Fred J. Hando in his interesting descriptive book *The pleasant land of Gwent*, 1944, mentions the Forester's Oaks where, from time immemorial, were held the Forest Courts of Wentworth, the majestic oaks and beeches near Moynes Court, and the Scots pines and Spanish Chestnut avenues at Llanvihangel Court.

Vaughan Cornish in *Churchyard yews and immortality* (1946) refers to several fine and aged yews in churchyards of the county as at Bettws Newydd; two ancient yews at St Peter's Goytre; two at St Faith, Llanfoist; a large yew at St David's Llanthewy Vach; fine specimens at St Iltyd, Mamhilad; a hollow yew of great age at Penpergwm, a hamlet near Abergavenny and old yews at St Cadoc Ragan and at St Michael's Tintern.

The county has not been without its sons who have become famous in the sphere of natural sciences. Charles Conway has been referred to already. Alfred Russel Wallace O.M. (1823-1913), was born at Usk. In his early days he did some surveying in Radnorshire, at Rhayader near the source of the Wye, and spent about two years at Neath (*Men of Monmouthshire* Vol. 2. 1933). Wallace travelled in South America from 1848-52 and in the Malay Archipelago 1854-56. From his observations on these travels he wrote *Palms of Amazon*, *Travels on the Amazon*, *Island Life*, and *My Life*, but to naturalists his name will ever be linked with that of Charles Darwin on the origin of species. The spruce *Wallacea* was named after Wallace.

Sydenham Teast Edwards (?1768-1819) born Abergavenny (or Usk) was a botanical artist and became a Fellow of the Linnean Society in 1804. He was the illustrator of R.W. Dickson's *Dictionary of practical gardening*; he accompanied William Curtis on various excursions and made nearly all the drawings for *Curtis's Botanical Magazine* and *Flora Londiniensis* up to 1793.

John Traherne Moggridge (1841-74) born at Woodfield, Monmouthshire, was the son of Matthew Moggridge. For health reasons J.T. Moggridge lived for some years in the French Riviera and, with the help of his father who was a well-known botanist, he published in 1867 a *Flora of Mentone*.

Space does not permit us to do more than remind ourselves that the pleasant land of Gwent inspired much of the prose of Arthur Machen, born in Caerleon and of the poetry of W.H. Davies, born in Newport.

In part 2, briefer mention will be made of a number of recorders who, each perhaps in a small way, have contributed to the plant records for the county.

## Appendix

Papers on the botanical exploration of Wales by P.W. Carter

1946. Botanical exploration in Montgomeryshire. *Montgomeryshire Collections*, **49**: 208-224.
1950. The history of botanical exploration in Radnorshire. *Transactions of the Radnorshire Society*, **20**: 42-58.
1950. Botanical exploration in Cardiganshire. *Ceredigion*, **1**: 77-96.
- 1951, 1957. Botanical exploration in Carmarthenshire. *The Carmarthen Antiquary*, **2**: 113-122 (1951), 166-177 (1957).
1952. Some account of the botanical exploration of Anglesey. *Transactions of the Anglesey Antiquarian Society and Field Club*: 44-68.
1955. Some account of the history of botanical exploration in Glamorgan. *Transactions of the Cardiff Naturalists' Society*, **82** (for 1952-53): 5-31.
1955. Botanical exploration in Merionethshire. *Merioneth Miscellany*, **1**: 1-40.
- 1955, 1956. Some account of the botanical exploration of Caernarvonshire. *Transactions of the Caernarvonshire Historical Society*, **16**: 52-59, **17**: 45-55.
1956. Notes on the botanical exploration of Flintshire. *Flintshire Historical Society Publications*, **16**, *Flintshire Miscellany*, No. **1**: 1-21.
1957. A history of botanical exploration in Brecknock. *Brycheiniog*, **3**: 157-180.
1960. Some account of the botanical exploration of Denbighshire. *Transactions of the Denbighshire Historical Society*, **9**: 114-145.
- 1987, 1988. Some account of the history of botanical exploration in Pembrokeshire. *Nature in Wales* (NS), **5** (1 & 2 for 1986): 33-44, **6** (for 1987): 34-43.

## Answers to Sibthorpia Quiz

- A *Alliaria petiolata*  
 B *Chrysosplenium alternifolium*  
 C *Filipendula ulmaria*  
 D *Geum urbanum*  
 E *Glechoma hederacea*  
 F *Lamium galeobdolon* subsp. *montanum*  
 G *Saxifraga granulata*  
 H *Sibthorpia europaea*