BSBI NEWS

January 1996

Edited by R. Gwynn Ellis

No. 71

Dept. of Botany, National Museum of Wales

Cardiff CF1 3NP

Campanula pyramidalis at Tottenham Hale, del. Brian Wurzell © 1995 (see page 44)

ADMINISTRATION
AS AT DECEMBER 1995

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COUNCIL NOMINATIONS

Nominations for vacancies on Council, in writing, signed by two members of the Society and accompanied by the written consent of the candidate to serve, if elected, should be sent to the Hon. General Secretary, at the above address to arrive BEFORE FEBRUARY 1st 1996 (see *Yearbook 1996* for the list of present Council members May 1995-1996).

MARY BRIGGS, Hon. General Secretary

NOTES TO CONTRIBUTORS

My thanks to all who sent in typed copy of their contributions for this issue, but don't forget that handwritten copy is still accepted. If you do type future contributions it will be a great help if you follow some standard conventions by looking at past numbers of *News*. For instance, titles of papers and author's names are always in CAPITALS and English names are always given (except sometimes in long lists). Keep your formatting to a minimum, please **do not** put Latin names in *italics* or underline them (they are more difficult to scan in successfully), I will do this later, but do indicate if a word or phrase needs special emphasis.

REMINDER

Keep to hand and do not throw away your *BSBI Year Book **1995*** (yellow) in which a complete list of members (December 1994) is published. In *BSBI Year Book 1996* (green) only the new members and **changes** to the 1995 list are published.

IMPORTANT NOTICES

REGIONAL MAILINGS

Before discarding the envelope which contained this mailing would you please check your address details, in particular the postcode. To enable us to communicate with members on a regional basis, software is being written to sort the membership database into areas based on groups of post-codes. To ensure that you are included within the appropriate area group please advise the Hon Treasurer of any correction needed. Please quote your membership number which appears on the first line of the address label.

SUBSCRIPTIONS

New Subscription rates were approved at the last Annual General Meeting as follows:

Members in Britain and Ireland:	
Ordinary and subscriber members	£18.00
Junior members	£9.00
Senior members	£12.00
Family members	£2.00
Members overseas:	£20.00

In the case of members paying by direct debit the above rates will be applied as from 1st January 1996.

MIKE WALPOLE, Hon Treasurer.

CONTRIBUTIONS INTENDED FOR *BSBI NEWS* 72
should reach the Editor before
FEBRUARY 28th 1996

COMMENT

ATLAS 2000 STARTS NOW!

I am delighted to say that we have obtained funding for this project at last. Contracts have been signed with DOE & ITE, allowing for four summers' fieldwork (1996-1999) with delivery to the publishers in 2000.

Full details, a launch and instructions will be a feature of the next *BSBI News*. In the meantime we have advertised for an Atlas Organiser who will start work in February, although a temporary assistant has been working since November.

A varied programme of additional Field Meetings has been arranged — see enclosed leaflet. Please come and help the project get under way by attending any of these or the other field meetings detailed in the *Year Book 1996*. We may be able to help special cases with travelling expenses.

DAVID PEARMAN, President

DIARY

N.B. These dates are supplementary to those in the 1996 Calendar in *BSBI Year Book 1996*.

1996

JANUARY
24 Data Analysis course, The London Environment Centre (see page 53)
FEBRUARY
8 Geographic Information Systems (GIS) course, The London Environment Centre (see page 53)
MARCH
9 Mediterranean Botany, Conference, Botany School, Reading (see page 51)
SEPTEMBER
17-20 European lowland wet grasslands, International Conference, Czech Republic see page 52)

See also page 78 for dates of 1996 Botany Tours at home and overseas and the leaflet distributed with this mailing for extra Atlas 2000 field meetings.

EDITOR

EDITORIAL

Thanks to all who have sent their good wishes on my impending retirement next March. Unfortunately for those who thought they had got rid of 'that ***** Welshman', I have no intention of retiring as Editor of *BSBI News*, I may be sacked but I won't retire — yet!

Congratulations to Clive Stace and his colleagues at Leicester for arranging and hosting an excellent Annual Exhibition Meeting. It was a real boon to have plenty of space to view the exhibits, and to be able to sit down and relax and have a chat with friends over a cup of coffee. Sadly I missed the official lunch, which I hear was much enjoyed by all, but had the consolation of a pint of the local 'Devil's Brew' which certainly warmed my cockles.

Akeroyd's whereabouts — again

John Akeroyd wishes to dispel dark rumours that he has moved from Wiltshire. Although he now lodges in Hindon, he (and Abby the Tabby) should still be contacted at the address in the 1995 *Year Book* (telephone/fax also unchanged). Many of you will have seen that John edits a new publication on plants. *Plant Talk* is the first global magazine on Plant Conservation and covers a wide range of topics in a readable, concise style. The contents include news and features on major conservation initiatives, successes, techniques and personalities, new *Floras* and *Red Data Books*, and new protected areas.

Notice to Contributors. Please see inside front cover for a reminder about 'house style', etc. and also page 59 for Brian Rushton's reminder to authors of Field Meeting reports about providing English names. A little thought can save editors an awful lot of unnecessary work!

Vice-county. What is the correct abbreviation for vice-county? I consistently use in *BSBI News* vice-county (vice-counties) abbreviated to v.c. (v.cc.). But logically the abbreviation should be v.-c. (v.-cc.). Other members use VC (VCC) or vc (vcc). It would be useful to have a standard abbreviation used by all, what do members think? Please let me know.

GWYNN ELLIS, Editor

HON. GENERAL SECRETARY'S NOTES

Congratulations to: Duggie Kent, appointed an Honorary Research Fellow at the Royal Botanic Gardens, Kew. Duggie tells me that he has been spending days in the Herbarium and Library there for more than half a century, working on references for *The Historical Flora of Middlesex*, *List of Vascular Plants of the British Isles*, etc., etc., and particularly for *BSBI Abstracts*.

AGM 1996: With this mailing you will receive the programme and booking form for the AGM 1996 at Royal Botanic Gardens, Kew. We have been promised that there are many new projects to be seen since our last visit to Kew in 1992.

Bookings for Field Meetings: Also with this mailing is the *Year Book 1996*, including the Field Meeting Programmes. Can I remind those booking (when required), or mailing enquiries for field meetings to **PLEASE SEND A S.A.E.** A s.a.e. considerably helps the leader, not only with the stamp but as a time saver — but several 1995 field meeting leaders reported that these were not sent.

Referees: Also in the *Year Book 1996* under *Recorders and Recording* you will see that the section on referees has been written by Dr Mary Clare Sheahan. Mary Clare has kindly agreed to keep the Panel of Referees and Specialists updated and organised on behalf of Records Committee. Referees are appointed by Records Committee (on behalf of Council), and the Panel published annually in the *Year Book*, with amendments in the April and September numbers of *BSBI News*. When appointing a referee we hope to find a volunteer who has a deep knowledge of the group (preferably with some publication(s) on the genus) — **and** some spare time for the enquiries. When it is helpful to a botanist researching a critical group to receive specimens from members around the British Isles, this is the ideal situation — then both the referee and the enquirer receives help.

It is a privilege of BSBI membership to request the time and knowledge of the referees, and enquirers should try to ensure that they help by complying with the individual specimen requirements as published in the *Year Book*. Flora writers or others planning to send a number of specimens to a referee, please remember to write first to negotiate a suitable time for the packet to be sent. 'Parcels arriving every other day in season' as described by one referee must be somewhat daunting?

Every ten years or so all the referees are contacted to assess how the system is working — a considerable task with 100+ referees and specialists on the Panel. Mary Clare has just carried out this survey for us, and we record many thanks to her for this and for organising the current list — also for agreeing to update the Panel in future numbers of *BSBI News* and *Year Books*.

Courses in Basic Botany

A frequent enquiry is for a course on basic botany, but with botany no longer in the National Curriculum these are difficult to find. Alan Harrington will be giving a course of lectures — *An Introduction to the Flowering Plants* — at the Natural History Museum, London on ten Monday evenings from 8th January 1996. Mainly on morphology, basic taxonomy and nomenclature. To enrol phone the Centre for Extra-Mural Studies, Birkbeck College 0171-631-6654 for application form.

Tailpiece. Other's Weeds — from the Iris Newsletter of the Alberta Native Plant Council:

> 'When the City of Calgary notified the public of its intention to spray Nose Hill park and other natural areas in the city as part of their weed control program, the Botany Study Group of the Calgary Field-Naturalists decided to get involved, and come up with a less environmentally damaging alternative to chemicals.'
>
> The group looked for volunteers who could come out for a few hours on either a weekend or weeknight in June, to hand-pick *Linaria vulgaris* Common toadflax (Bastard toadflax in Canada) and *Tragopogon dubius* Goatsbeard — both are introductions from Europe and aliens in Canada.

MARY BRIGGS, Hon. General Secretary

RECORDERS AND RECORDING

The current list of v.c. recorders is published in *BSBI Year Book 1996* pages 11-15.

The death of Frances Le Sueur, v.c. recorder for Jersey was reported with regret in *BSBI News* **70**. A few weeks before she died, Frances had been considering the future of the recording on the Island, and we are pleased to welcome Mrs Margaret Long, her colleague for many years, and Mrs Joan Banks, who is Chairman of the Botanical Section of Société Jersiaise, as joint v.c. recorders for Jersey. Correspondence please to: Mrs J. Banks, 122 Les Cinq Chenes, St Saviour Jersey JE2 7YE.

With the more detailed recording now required for the new Atlas we will be appointing recorders also for the Islands of Guernsey, Alderney and Sark and hope to announce these in *BSBI News* **72** in April.

We also welcome new recorders in Ireland for:

H16 W. Galway Mr John Conaghan and Mr Andrew Bleasdale

H18 Offaly Mrs Aideen Austin

Con Breen retires from W. Galway, but is still the recorder for H23 Westmeath.

We send many thanks to the retiring recorders:

Dr John C.D. Lamb, who has been v.c. recorder for Offaly since 1976; and to David McClintock who retires from the Channel Islands (other than Jersey) after being recorder from 1961-1982 for all the Channel Islands, and since 1982 for C.I. excepting Jersey. David, who has been visiting Guernsey for 49 years, published *The Wild Flowers of Guernsey* in 1974. Again we send our thanks to all recorders.

MARY BRIGGS, Hon. General Secretary

REFEREES' LIST UPDATE

Periodically the Society contacts all referees to see whether things are running smoothly, if they are being over- (or under-)worked, and whether they are happy to continue. I was asked to do this last summer, and the survey which was carried out has resulted in many changes in this year's Referees' List (*BSBI Yearbook 1996*), both in the names of referees and in the instructions they give. There have also been several changes of address, and this year you will find all referees' addresses listed immediately after the Referees' List in the *Yearbook*. There have also been changes in the list of taxa covered, and we welcome all the new referees who have agreed to help, and thank those who have taken on extra taxa.

The following referees, some of whom have been providing a service to the Society for forty years and more, have said that they would now like to resign, and we should like to say how grateful we are to all of them for their assistance over the years. They are: Dr Kery Dalby, Mr Graham Easy, Dr L.C. Frost, Dr K.M. Goodway, Dr David Hambler, Dr Nigel Hepper, Mr John R. Palmer and Mr P. Taylor.

We have been able to find replacements for some of the taxa left vacant; however we would still like to find referees for *Galium*, *Herniaria* and *Utricularia*.

We also thank everyone who made offers to help with identification in the questionnaire which was sent to all members in 1993. If your offer has not been taken up it may be because the subjects suggested are already covered by other referees, or perhaps because the Records Committee felt that they did not offer too much of a problem to members since the publication of Clive Stace's *New Flora of the British Isles*. But a note will be kept of the names of all those who offered, in case vacancies arise in the future.

I should like to thank all the referees who kindly answered the questionnaire which was sent to them last summer. I haven't replied to you all personally, but I hope you will find that your instructions

and suggestions have been dealt with in the *Yearbook*, and that you will let me know if you have any further comments or problems.

This exercise has given referees an opportunity to voice their views and make useful comments on the way the service is being used. One recurrent gripe was that some people sending specimens still do not follow the instructions given, so that some long-suffering referees receive too little material for accurate identification, poorly pressed plants, or even 'bags of silage' as one referee put it. And some forget to enclose postage for a reply. So please, before sending anything in, do read the general instructions as well as the particular requirements for some plant groups. I think that the refereeing system is one of the BSBI's most valuable resources, and we are very fortunate to be able to call on the advice of so many experts.

MARY CLARE SHEAHAN, 61 Westmoreland Road, Barnes, London SW13 9RZ

THE CO-ORDINATOR COMETH!

Cameron S. Crook - BSBI Co-ordinator. Photo © C.S. Crook 1995

In the President's Introduction to *BSBI News* **70** David Pearman suggested, in his inimitably enthusiastic style, that the Co-ordinator would, by the next *BSBI News*, have been chosen. He was not wrong. But, not only has the Co-ordinator been chosen, through some skilled negotiation with my previous employer, I'm here, in post and up to full steam, having started one whole month earlier than expected! So what do I intend to do now I am here?

Well, broadly speaking, the task ahead falls into two main areas:

(1) to improve data flow between BSBI and BRC, and

(2) to forge links between BSBI, the Country Agencies at both national and local level and other bodies such as Plantlife, County Wildlife Trusts, etc.

In addition to these main goals, I have been charged with the tasks of:

raising the professional profile of the society

acting as a central point of contact to other bodies, especially the Country Agencies

and pursuing the idea of Link persons to help the vice-county recorders with their ever increasing workload

to name but a few.

In order to meet these goals it is intended that the v.c. recorders will be assisted in becoming familiar with computers so their records can be sent to BRC in electronic format. Sending records in this way saves considerable time and resources as manual records take far longer to input into the BRC database than do computerised ones. Alternatively v.c. recorders who have no desire to run a computer will be linked with others who are willing to computerise records on their behalf. For new and existing computer users, a standardised procedure for disseminating plant records to the BRC is being developed so that we all know what data is required by BRC and in what format. Hopefully, these measures will vastly improve the flow of data between BSBI and BRC and subsequently, the Country Agencies.

Of course, it cannot happen over night. Nevertheless, the development of BSBI Approved Software is well underway and it is hoped that at least 12 v.c. recorders who are not currently using computers, will have them by the end of the next six months. Furthermore, the following six months will be spent in training, through local or regional seminars, those v.c. recorders or Links who require it. Six months later still, another 12 v.c. recorders will become computerised or at least their records will be held on computer with the ultimate aim of 36 v.c. recorders to be newly computerised and with these and existing computer users (currently about 46) sending their records to BRC in electronic format by the end of the next three years.

On the Country Agency front, all those of the mainland (CCW, EN, JNCC and SNH) have been contacted (the Irish agencies will follow soon) and informal consultation procedures have been discussed. These initial meetings at the national level will be consolidated over the coming months: the next step will be to contact officers from the respective authorities at the local and regional level for it is here that most of the day to day botanical liaison between BSBI and the agencies is likely to take place.

A tall order indeed but with your help it can be done. Out there amongst our 2,700 members there must be people who are able to use a computer, who may not already own one but would be happy to computerise records on behalf of their local v.c. recorder. Similarly, there must be members who are willing to learn to use a computer and assist existing computer users in computerising their records. If you are one of these people, don't be shy, please contact me. If however, you are a good communicator, especially if you are familiar with the inner workings of the Civil Service or a County Wildlife Trust for instance, you may fancy becoming a Link person who can act as a sort of Public Relations officer between the v.c. recorders and the Country Agencies or NGOs. Again, I would like you to contact me. There are numerous projects awaiting someone willing to have a go. An example is the BSBI Database at Leicester where there are several projects waiting to be completed — if only there was someone to extract information from journals and files... 'nough said.

Everyone has a viewpoint on how their Society (or Co-ordinator) should work or how things can be improved. In that vein, I would welcome any ideas or suggestions that members have towards the goals we are, or should be, working towards. In line with the new 'quids-in' philosophy of today, there will be a cash prize for the hundredth (reasonable) suggestion!

Finally, if I can paraphrase the words of another great president — 'Ask not what your Society can do for you but what you can do for your Society'. I look forward to hearing from you.

CAMERON S. CROOK, Co-ordinator

VICE-COUNTY 103 (MID EBUDES) — RECORDER REQUIRED

The recorder for v.c. 103 has resigned and despite having made approaches to a number of individuals and organisations we have been unable to find anyone prepared to undertake this commitment. The v.c. consists of the Isle of Mull with its associated small islands and the Islands of Coll and Tiree. There may well be someone, with an interest in islands or who holidays regularly on one or more of these islands, who would wish to be considered for the post.

The Mull area was extensively surveyed by staff from the British Museum (Natural History) in the 1960s so there is an excellent background of botanical information available. In the past few years detailed recording has been carried out in Coll and Tiree.

An offer to be considered for the recordership or a request for further information should be made to the undernoted:

PETER MACPHERSON, BSBI Committee for Scotland, 15 Lubnaig Road, GLASGOW G43 2RY

THE OCCUPIERS' LIABILITY ACT [IRELAND], 1995

During the past few years, especially in parts of the west of Ireland, there has been an increase in the number of signs erected with messages such as 'TRESPASSERS WILL BE PROSECUTED'. Landowners and occupiers have become increasingly reluctant to allow recreational use of their land, not only because of careless or malicious trespass but increasingly because of fear of being sued by trespasser or visitor for accidental injuries sustained. One or two BSBI members have reported being refused access while botanising and also being handed, by farmers, copies of newspaper articles which referred to farmers' liability. For a period of time it appeared entirely possible that even forest planted by the state and subsequently privatised would become 'out of bounds' for recreational purposes because of the costs of obtaining adequate insurance cover. Naturally owners and occupiers did not see why they should be liable for accidents which might happen to uninvited 'visitors'. Farmers, in particular, were very concerned that they might be successfully sued by trespassers, although there appears to be no record of such a successful action in court.

Intensive lobbying over a number of years, by land owners and occupiers and by recreational users who feared total exclusion from a large portion of the countryside, was successful in obtaining a political response. The issue was considered by the Law Reform Commission at the request of the Government and ultimately the Commission's recommendations resulted in the presentation of a bill to parliament,. The bill was passed and became the Occupiers' Liability Act, 1995, which took effect on 17th July 1995. This Act simplifies and clarifies the law on liability of occupiers by giving it a firm statutory basis. Until then the law in this area was governed by common law resulting from a number of key judicial decisions in legal cases over a long period of tine.

The new law repeals the common law duties, obligations and rights of occupiers and replaces them with the statutory provisions contained in the Act. Under the Act there are three categories of entrant, namely visitor, recreational user and trespasser. The occupier still has a duty towards the recreational users and trespasser not to intentionally injure the person or damage the property of the person, nor act with 'reckless disregard'. In deciding whether an occupier has acted with reckless disregard the courts most take all the circumstances into account including the farmer's awareness of the danger and the trespasser's or recreational user's own behaviour.... Occupiers may modify their duty by the erection of appropriate signs where a known hazard exists, e g 'DANGER ... DO NOT ENTER .... BEWARE OF THE BULL ...', etc.

The Irish Farmers' Association (IFA), supported by a number of organisations with environmental or recreational interests such as *An Taisce* (The Irish National Trust), the Irish Orienteering Association and *Coillte* (The company with responsibility for the state forests), have drawn up the IFA Farmland Code of Conduct for recreational users. This code covers many aspects of behaviour from the closing of farm gates to dog control. It also reminds organisations that they should make arrangements for access in a structured and controlled way and of the continued importance of having adequate insurance to protect both the entrant and the property owner.

It is anticipated that the enactment of this legislation will lead to a significant easing of tension for botanists. But the best available advice continues to be that the occupier's / owner's permission should still be sought before proceeding onto the property.

References

The Occupier's Liability Act. 1995. The Government Publications Office, Dublin.

The IFA\FBD guide to the Occupier's Liability Act, 1995, incorporating the Farmland Code of Conduct. Irish Farmers' Association, Dublin.

Disclaimer: This article is not a legal interpretation of the Occupier's Liability Act, 1995. Anyone seeking a legal interpretation of the Occupier's Liability Act, 1995, should read the Act and obtain legal advice.

DAVID W. NASH, 35 Nutley Park, Donnybrook, Dublin 4.

GUIDELINES FOR THE PREPARATION OF COUNTY RARE PLANT REGISTERS

Criteria for species to include:

1. All taxa in *British Red Data Book 1: Vascular Plants* (Edn 3)* which occur in the area (see below), with special indication if they are Scheduled under the Wildlife and Countryside Act 1981.
2. All Nationally Scarce taxa which are labelled as such in *Scarce Plants in Britain* (Stewart, Pearman & Preston 1994).
3. All taxa endemic to Britain.
4. Internationally rare taxa cited in the Bern Convention, IUCN Red Data lists or EU Habitats Directive which are not covered by 1-3 above.
5. All native taxa which have occurred wild in the area since 1950 which now occur in 3 or fewer sites. A site is defined as an area not exceeding 1 km square in extent (i.e. a moveable 1 km square) or a single continuous habitat.
6. Any other native taxon in the area which occurs in 10 or fewer sites which could move into the rare category in the foreseeable future because of its recent rapid decline, identifiable threats or the frailty of the habitat.
7. Any non-native taxon which has been long established in 3 or fewer sites which is of special biological, historical or cultural interest.

* To be published in 1996 by JNCC but the list of species to be included can be obtained in advance from Nick Hodgetts, Species Conservation Branch, JNCC, Monkstone House, Peterborough PE1 1JY. Tel: 01733 62626. Fax: 01733 555948

The Area:

Earlier editions of these Guidelines recommended that the area be based upon a political unit at the County or regional level. Such is the present chaos as a result of recent boundary changes that Plantlife Link and the BSBI have now agreed that it would be preferable and easier for compilers if future County Rare Plant Registers were based on Watsonian vice-counties. It would then be the user's responsibility, with guidance from compilers, to refer to appropriate Registers when conservation issues are being considered.

As vice-counties and their boundaries are not always understood by local authorities a clear statement of the basis of the Register and maps should be included.

The Publication:

In the previous edition of these Guidelines we recommended a pragmatic approach to the area covered by a published Register but suggesting it might be that of a Wildlife Trust citing the Wildlife Trust of Bedfordshire, Cambridgeshire and Huntingdonshire as an example. As this Trust has now been joined by Northamptonshire, which already had a Rare Plant Register, the frailty of our recommendation is exposed. It now seems more sensible to publish a separate Register for each vice-county.

Format and contents of the publication

Two kinds of publication which include county rare plant information are still being prepared:

1. The 'County' Rare Plant Register
   a) A simple statement of the criteria upon which the Register is based followed by a print out from the data base (see below), bound with a cover stating its origin (e.g. Wildlife Trust and BSBI County Recorder). This can be updated frequently and would only be available to the relevant authorities concerned with conservation in the area. A recent example is Ceredigion (v.c. 46) (A.O. Chater 1995) printed by Countryside Council for Wales.
   b) A published booklet which includes details of the distribution of each taxon past and present, and information about their habitats and the main threats, which is available on sale to the public. A recent example is *Rare Plants of Shropshire* (1995) prepared by the Shropshire Flora Group and published by Shrewsbury and Atcham Borough Council.
2. A County Red Data Book
   These include all the major groups of plants and animals in the 'county' like those published for Lincolnshire and Dorset. These are 'glossy' publications promoting the cause of protecting rare species and publicising the Trusts.

   These tend to be unsatisfactory because the very different criteria for birds and plants, for example, means that the percentage of the county's birds included is much higher than that of the plants giving an unbalanced view of conservation priorities.

It is recommended that the Register be updated at least every five years: this is easier with the single discipline content of 1a) & 1b) than with the multi-discipline County Red Data Book

It is recommended that wherever possible Wildlife Trusts and BSBI County Recorders collaborate in the production of Registers: ideally the data should be stored on a Trust computer using the Recorder software now available to most Trusts.

LYNNE FARRELL & FRANKLYN PERRING September 1995

NOTES AND ARTICLES

LEVELS OF REPRODUCTIVE ACTIVITY IN FERNS

Has anyone else noticed the apparent lack of reproductive activity in native ferns this year?

For the last 20 years or so I've taught plant diversity to our first year students of a Biological Sciences degree programme starting in late September or early October; by about the third week I've usually reached the Pteridophytes and to illustrate the range of forms present in the group we use a combination of greenhouse grown material and frond material collected from a local site. This site is Downhill Forest (Irish Grid Reference C/76.35), about 1 km from the north Londonderry coast. It is an odd mixture of planting with many species of both conifers and broad-leaved species — the canopy and hence the ground flora are quite varied. During all this time therefore we have always collected the same species from the same site at virtually the same time of year. Normally, we have had no difficulty in obtaining fronds showing sporangial development and *Dryopteris* spp. (Buckler-ferns), *Polystichum setiferum* (Soft Shield-fern), *Osmunda regalis* (Royal Fern), *Asplenium ruta-muraria* (Wall-rue), *Polypodium vulgare* (Polypody), *Phyllitis scolopendrium* (Hart's-tongue) were all guaranteed to provide fronds with copious reproductive material (sporangia) and usually it took little time to find enough for between 50 and 90 students.

However, this year things were very different. We normally collect *Dryopteris* spp. and *Polystichum setiferum* from a mixed population on a damp, somewhat eroded slope under a mixed conifer/broad-leaved canopy but this year very few fronds had developed sori. On those fronds which showed sporangial development, the sori were of relatively restricted distribution on the fronds and the sori were considerably smaller than normal. (Later, in the laboratory, these sori proved to have only a small number of sporangia.) Extending the search to adjacent areas was just as fruitless. We then proceeded to another area to collect *Polypodium vulgare*. Again this was very disappointing — there were hardly any sori and on many fronds where there was some development this seemed to have been aborted. *Phyllitis scolopendrium* was equally sterile. In this case, the tell-tale white lines (the indusia) on the under side of the fronds showing where sori should have developed were clearly present but only in a few cases were actual sporangia found and then these were in very small numbers. In the case of *Osmunda regalis* there were fewer fronds showing reproductive activity and on those that were the length of the sporangial mass was considerably reduced, averaging just 6 cm. Only a small amount of *Asplenium ruta-muraria* is usually collected and it is not possible to comment as confidently on whether there had been a similar reduction in sporangial production in this species. However, it did prove much more difficult to find suitable fronds and in the end we abandoned our search with far less than we actually needed.

Concerned that the lack of reproductive activity might be restricted to this woodland, four other similar woodlands were visited, all within about 20 km of Downhill Forest. These other woodlands had a more restricted range of ferns (*Osmunda regalis* was absent from all of them, *Asplenium ruta-muraria* was only present in one wood and *Polypodium vulgare* was only present in two) but the general pattern was repeated. In these latter cases, however, there has been no history of monitoring as there had been at Downhill for comparison.

So, what has been responsible for this apparent lack of reproductive activity. It is tempting to believe that the exceptionally dry and warm conditions this summer persuaded the plants to desist this year from sporangial production. The phenomena was common to a range of ferns growing in a variety of habitats — *Osmunda regalis* on the edge of a lake with a permanently waterlogged soil (even this year) whilst *Polypodium vulgare* and *Asplenium ruta-muraria* were on the top and sides of old walls. This suggests that if it is related to the exceptional conditions this summer it may be low humidity rather than a dry soil that is the cause. Ironically, this year has seen exceptional fruit and seed production in many of the native and non-native trees in the area.

These observations illustrate the usefulness of recording the 'performance' of the same species at the same site over a number of years — this form of monitoring could easily be undertaken by the BSBI membership. In the meantime, I would be grateful for any comments on whether the phenomenon described here is restricted or whether anyone else has noticed similar reductions in reproductive behaviour in ferns this year. If there are sufficient returns, I will publish a consolidated account.

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LARIX IN THE BRITISH ISLES

This article is based on a paper presented to the Vice County Recorders at their conference in Lancaster on the 9th September 1995.

Introduction

There are some ten (or so) species of *Larix*, of which eight may be found growing in cultivation in the British Isles, and five of these have been recorded growing in the wild. And it is these five species; *L. decidua*, *L. gmelinii*, *L. kaempferi*, *L. laricina* and the hybrid between *L. decidua* & *L. kaempferi*,

L. × *marschlinsii*, which will form the basis of this short paper looking briefly at their biology, ecology and the identification.

The Larches are a group of closely related species within the family Pinaceae. A close ally is *Pseudolarix amabilis* known as the Golden Larch, a single species genus from South East China which occurs rarely in cultivation in Britain. The Larches represent one of only two other common groups of deciduous conifers, the other two being the Dawn Redwood, *Metasequoia glyptostroboides*, and Swamp Cypresses, *Taxodium* spp. The latter are in fact within a different family, Taxodiaceae — the Redwoods which include the Giant Redwoods of California.

The species of larch most likely to be encountered in Britain are *L. decidua* the European Larch, *L. kaempferi*, the Japanese Larch and their hybrid, *L.* × *marschlinsii*. Two other species have been recorded; *L. gmelinii* and *L. laricina*, but these are rare in cultivation in Britain being confined mainly to collections and arboreta.

But looking briefly at these less common species:

L. gmelinii occurs as two geographical varieties — var. *gmelinii*, distributed through NE Asia, and E Siberia, from Manchuria to Kamchatka and was introduced into Britain in 1827, and, var *japonica* which is confined to Kurilen, USSR and is very rarely found in cultivation.

L. laricina, the American Larch or Tamarak occurs in N America from the Polar Circle in Alaska and Canada southward to N Pennsylvania, Minnesota and Illinois. There are two varieties, var. *lutea* found in Minnesota and var. *parvistrobus* found in Pennsylvania. The latter does not occur in cultivation.

Other species which occur in cultivation to a lesser or greater degree include:

L. griffithiana which occurs in the mountains of the Himalayan regions of E Nepal, Sikkim, W Bhutan and the W Szechwan province of China; *L. lyallii* which occurs in W North America from British Columbia, Canada, to Washington State, USA and is again, a montane species rarely found in cultivation; *L. mastersiana*, found in W China, Szechwan province, west from Kuan Hsien in the Niu-Tou-Shin Mountains, closely related to *L. occidentalis* which occurs in W North America — from British Columbia, Canada, to Montana, USA; *L. potaninii*, found in W China in the mountains of Shan-si Province to the Tibetan Border, and finally, *L. sibirica* which is widely distributed from NE Russia to W Siberia.

Larix hybrids in cultivation:

Being closely related, *Larix* species hybridise frequently and there are a number of hybrids in cultivation worldwide such as *L.* × *czekanowskii* Szafer (*L. gmelinii* × *L. sibirica*)

L. × *eurokurilensis* Rohm & Dimplmeier (*L. decidua* × *L. gmelinii* var. *japonica*)

L. × *pendula* (Soland.) Salisb. (*L. decidua* × *L. laricina*)

But in Britain only one hybrid is known to occur frequently — *L.* × *marschlinsii* (*L. decidua* × *L. kaempferi*).

Looking at the group as a whole, the Larches can be split into two sections:

Sect. Multiseriales Patschke	**Sect. Pauciseriales** Patschke Which includes all the species which occur in Britain.
L. griffithiana	*L. kaempferi*
L. mastersiana	*L. laricina*
L. potaninii	*L. sibirica*
L. lyallii	*L. decidua*
L. occidentalis	*L. gmelinii*

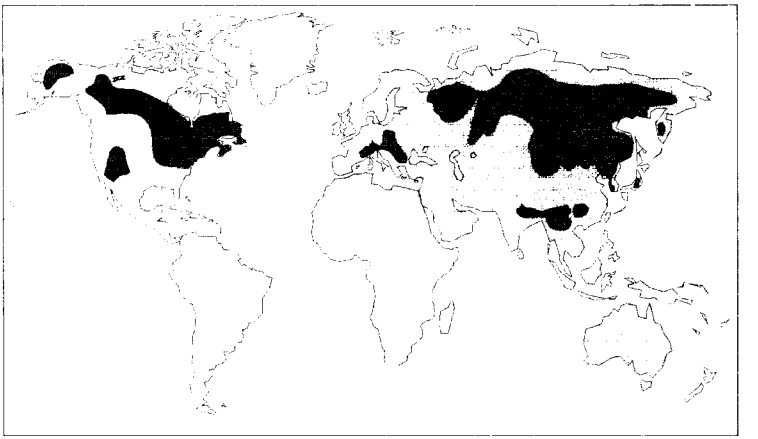
Larix — General

Ecology

The larches are pioneer species occurring early on cleared land or in open areas of woodland where there has been a tree fall and being light demanding need an open canopy to regenerate within a woodland. Often, trees die and regenerate in large groups, much like in the clear felling operations used in British Forestry. Larch is tolerant of most soils except dry, shallow chalk. Climatic requirements range from extreme continental, through montane to moderate maritime conditions dependant on the species. The genus is susceptible to woolly aphid, larch canker, and rust.

Distribution

World Distribution of *Larix*



There are some ten to fifteen species of larch worldwide according to some authorities which are distributed across the northern temperate regions. Three species cover almost the entire circumpolar plains (*L. sibirica*, *L. gmelinii*, & *L. laricina*), the remaining seven being relict species on the mountains to the south.

Biology

The larches are monoecious (rarely, with bisexual flowers), male and female flowers intimately mixed. Flowers open in March/April, usually the female first (but not always). Seeds are shed in Autumn of the 1st year but cones persist and hence, are a good diagnostic feature on mature trees. Seed bearing begins at 10-15 years old which is typically early for pioneer tree species. Good seed crops (masts), occur at 25-30 years old with the best seed set after a mild Spring, and dry warm Summer in the previous season. Good masts occur around every 5 years on average.

Identification

Looking in more detail at the three commoner species which occur in Britain the principal species can be distinguished as follows.

Larix decidua Miller

Twigs straw- or pale yellow-coloured
Leaves in whorls (on second year and older twigs) on spur-like projections
Young (1st year) twigs, set singly spiralling round the shoot
Needles rich-green above
2-3(-6) cm long with parallel sides
No conspicuous stripes beneath
Cone-scales straight, not recurved at apex (but may be wavy)
Cones ovoid, 2-3.5 cm long

Detail of *Larix* cones and leaf arrangement. Top centre – *L. laricina*, centre left – *L. decidua*, centre centre – *L. kaempferi*, centre right – *L. × marschlinsii*, bottom left – *L. gmelinii*. All del. C S Crook © 1995

Introduced pre-1629. Distribution: Alps, Savoy to the Tyrol and Wienerwald; isolated patches, Sudeten Mountains (var. *sudetica*), Tatra (var. *tatrensis*), Carpathians; and Vistula Valley, Poland (var. *polonica*). Commonly grown in Parks, Gardens, Forestry Plantations and Shelter Belts.

Larix kaempferi (Lindley) Carriere

Twigs dark orange-red (not straw- or pale-yellow as in *L. decidua.*)
Needles blue-green to grey-green (not rich-green)
Needles with conspicuous greyish or whitish stripes beneath (unlike *L. decidua* which are unstriped)
Needles broader than *L. decidua*
Best diagnostic feature: Cone-scales recurved at apex
Cones broadly ovoid, 1.5-3.5 cm

Introduced, 1861. Distribution: Central Honishu, Japan. Endemic. Uncommon as a parkland tree. Occasionally in smaller gardens. Most often used in forestry plantations especially those in Wales.

Larix* × *marschlinsii Coaz

Most easily confused with *L. kaempferi*
Twigs greyish-yellow in 2nd year (not dark orange-red as *L. kaempferi*)
Leaves greyer than *L. decidua* (but not as bluish-green as *L. kaempferi*)
Stripes less conspicuous with fewer stomata than *L. kaempferi*
Cone-scales like *L. kaempferi* but abruptly bent down at tip (not curved)
Cone otherwise like *L. decidua* but longer (3.5-4 cm), 1.25-1.5 × as long as wide

Origin in cultivation. The Duke of Atholl planted 11 Japanese and 2 European Larch, 1897, Dunkeld House, Scotland. Progeny were noted for their exceptional vigour and paler shoots. Intermediate between parents. Some were more towards Japanese Larch, others more towards the European. Back-crosses occur frequently.

The other two species *L. gmelinii* and *L. laricina* are unlikely to be encountered in the field so they will not be dealt with here in great detail. Briefly: *L. gmelinii* has un-curved cones like *L. decidua* but smaller (2-2.5 cm) and more squat, with far fewer scales (*L. decidua* has 30-50, *L. gmelinii* 20-40). Similarly, *L. laricina* has un-curved cones but smaller again (1.5-2 cm) and with fewer scales — 12-15. These two can be separated by *L. gmelinii* having bright green flattened needles, usually > 3 cm long whereas *L. laricina* has light bluish-green needles which are usually < 3 cm long.

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1995 — A PUNISHING YEAR FOR TREES IN NORTH EAST WILTSHIRE

Floods at the start of the year accompanied a February which was warmer than March. March and most of April were pleasantly mild, but were followed by diabolically spaced and damaging late spring frosts at the end of April and the first half of May (-6° at times). Ash (*Fraxinus excelsior*), Elder (*Sambucus nigra*) and Beech (*Fagus sylvatica*), having started to leaf a month early, in many localities developed a 30 cm covering of frost-blackened shoots and leaves, requiring a new start in June. Two exotic species, Katsura (*Cercidiphyllum japonicum*) and Dawn Redwood (*Metasequoia glyptostroboides*), each made four false starts. I counted in both, four separate frost-blackened or recently collapsed shoots at **each** of dozens of growing points, the shoot lengths ranging down from 20 cm to 2 mm. These aborted growth spurts killed most small and some larger trees.

By mid-August, the record drought was adversely affecting Wiltshire's commonest trees, Hawthorn (*Crataegus monogyna*) and Elder, which both have a virtually 100% coverage of the county (Gillam 1993). Whether in the form of hedge, shrub or tree, there were many elders and hawthorns between Crickdale and the Vale of Pewsey with dead brown leaves covering most or all of the plant. A substantial minority were wholly defoliated by August 16th, sometimes surrounded by shrivelled stinging nettles and broad-leaved docks with brittle inflorescences which had failed to set seed.

One bright note is sounded for those responding to exhortations to plant female and male native Black Poplars (*Populus nigra* subsp. *betulifolia*). Despite cracks like crevasses in flood plain meadows, these native black poplars **at the time of writing** (20/9/95) look fine, even including small saplings. This may reflect the capacity charging of the underground water levels and chalk aquifers following the previous record wet winter months.

Postscript

The native species (and some exotics) recovered during the subsequent moist and warm late September and October of 1995.

Reference

Gillam, B. (1993). *The Wiltshire Flora*. Pisces Publications, Newbury & Oxford.

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NATURALISED SHRUBS IN THE ISLE OF MAN, v.c. 71

This preliminary list of self-propagated shrubs in the Isle of Man, v.c 71, is dedicated to the memory of the late Professor David Webb. As an island botanist he was prepared to accept that alien plants could become part of the flora, as opposed to being one of those who will not even record the presence of Sycamore (*Acer pseudoplatanus*) because it is not a British native. Wits have remarked that they are not quite sure whether floristically v.c 71 should not be v.c H41. Therefore a comparative list may prove particularly useful. Publication of the *Monitoring Scheme* results and Clement & Foster's *Alien Plants of the British Isles* (1994) has made it clear how little Manx data has hitherto appeared in print although insularity gives an advantage, the sea providing a definite and unequivocal boundary.

It seems to the author that it is desirable to record not only the occurrence of species but also the fluctuations in their populations. It is hoped in due course to discover both when commoner species were first generally grown in the British Isles and also when and how they reached Man. This would prove a valuable aid in determining when a dwelling was last occupied, or the main period of a garden. With regard to the latter, it is known that some antipodeans were direct imports by families with sea-going members, or overseas residents. Hebes, a family requiring further study in Man, were also imported as a result of 1890s contact between a Manx resident, Robert Okell, and Robert Lindsay of the Royal Botanic Gardens, Edinburgh. In the following list an attempt has been made to indicate which species are known to grow from seeds, dumped cuttings, or discarded [or water-transported] roots and which have not been found other than planted. Notes are given as to the frequency with which a species appears self-propagated while an asterisk followed by a status code indicates the frequency of planting, e.g., */r = rarely planted.

c = common; recorded in most 10-km squares [12+ in IOM].
f = frequent; known from at least eight 10-km squares.
u = uncommon; known in three to five 10-km squares.
r = rare; recorded from no more than two 10-km squares.
* = relic or denizen; listed because dense thickets may appear naturalised even if the shrub is not self-regenerating.
bs = bird-sown
d = garden discard (of rooted plants)
dc = apparently growing from dumped hedge clippings/prunings.
nw = nursery weeds; liable to be acquired as seedlings with containerised plants.
s = self-sown.
w = propagules apparently carried by water.
+ = becoming more frequent since 1970, partly because of the greater availability of nursery stock & partly as a reflection of extensive development and re-development.

Scientific name	Vernacular name and notes	Status
Aralia elata	Japanese Angelica-tree	r s/d
A. chinensis	Chinese Angelica-tree	u s/d
Arbutus unedo	Strawberry Tree – seldom fruits now in Man	r *
Aucuba japonica	Spotted Laurel – incl. unspotted forms	f dc s
Berberis darwinii	Darwin's Barberry	f bs
B. thunbergii	Thunberg's Barberry – as a relic; other species not recorded	
Brachyglottis monroi	Monro's Daisy Bush	u dc
B. 'Sunset'	Yellow Daisy-bush – known as Magellan Ragwort although properly this is *Senecio smithii*, sometimes self-rooted cuttings	f * d dc w
Buddleja alternifolia	Alternate-leaved Butterfly-bush – 1 hedgerow record	r *
B. davidii	Buddleja / Butterfly-bush – uncommon until later 1960s, now seedlings everywhere: roofs, walls, chimney stacks, riverbanks, dunes, waste ground, etc.	c s +
B. globosa	Orange-ball Tree	u dc +
Buxus sempervirens	Common Box - English native	u *
Choisya ternata	Mexican Orange	u * ?dc
Colutea arborescens	Bladder-senna – a single roadside plant; not common in gardens	r s
Cornus mas	Cornelian-cherry	r * d
C. sericea	Red-osier Dogwood – a single old planting in a trackside hedge in the north of the curraghs, Jurby	r *
COTONEASTER:		
C. bullatus	Hollyberry Cotoneaster	u * bs +
C. congestus	Congested Cotoneaster	r s
C. conspicuus	Tibetan Cotoneaster	u * s +
C. dammeri	Barberry Cotoneaster	u */r s +
C. frigidus	Tree-cotoneaster	f */u s +
C. horizontalis	Wall Cotoneaster; Wallspray	c s +
C. lacteus	Late Cotoneaster	u *
C. microphyllus	'Rockspray' – on 'deads' (mine waste-heaps) & lime kilns	f s +
C. salicifolius	Willow-leaved Cotoneaster	u * +
C. simonsii	Himalayan Cotoneaster; Khasia Berry	c bs +
C. × *watereri*	Waterer's Cotoneaster/ Hybrid Tree-cotoneaster	u * +
C. zabelii	Cherryred Cotoneaster	r s
Cydonia japonica	Maule's Quince – offered for sale into 1960s instead of handsomer garden varieties	u/* r/s
Daphne laureola	Spurge-laurel – herbal relic: frequent in hedges, on hedgebanks, in derelict gardens	f * s
D. mezereum	Mezereon – common denizen prior to 1965; now rare	r *
Drimys winteri	Winter's Bark – denizen in long-neglected garden where known to be a 1920s-30s direct import	r *
Erica arborea	Tree Heather – apparently self-sown, derelict nursery in Douglas area,1990s	u * ?s
Escallonia macrantha	Escallonia known as 'Manx Privet'; two ?seedlings on sea cliff; one ? seedling embedded in wall. Various hybrids as relics/denizens	f*
Euonymus japonicus	Evergreen/Japanese Spindle – known as 'Manx Mistletoe'	f * s +
Fatsia japonica	– mainly relics	u * ?dc/s

Scientific name	Vernacular name and notes	Status
Forsythia × intermedia	Forsythia	r dc/w
F. suspensa	Golden-bell	r *
Hedging Fuchsias	introduced to IOM 1824-6	
Fuchsia gracilis	Slender Fuchsia	f * dc ?s
F. molinieri	White Fuchsia	c s
F. 'riccartonii'	Common Fuchsia	c * dc ?s
F. '*microphylla*'	denizen at the Strang for 100yrs+	r *
Garrya elliptica	'Silk-tassel'	u *
Genista hispanica	Spanish Broom	u * ?s
Griselinia littoralis	'New Zealand Broadleaf'	f s/?bs +
HEBE	Hedge Veronicas: present in IOM since late 19th cent.	
H. × franciscana	– appears to be a more recent arrival than the next. Usually variegated form [reverting]; this seems more frost-tender and is seldom naturalised.	u * ?s
H. × lewisii	Lewis' Hebe – common & widespread at pavement wall-bases, on walls & roofs, etc.	c * s dc +
H. × salicifolia	Koromiko, Willow-leaved Hebe – abundantly naturalised in glens, on walls & bridges.	c * s de +
Hedera colchica	Persian Ivy	u * de ?bs
H. helix subsp. *canariensis*	Canary Ivy – Glen Maye & Ramsey [not variegated]	u * dc
Hippocrepis emerus	Scorpion Senna – garden relic at The Grove & Michael old vicarage	r *
Hippophae rhamnoides	Sea Buckthorn	u * s
Ilex × altaclerensis	Highclere Holly – notable specimens in lower Cooildarry	u s
Kalmia latifolia	Calico-bush	r d
Kerria japonica	Jew's Mallow, both single & double	u */dc
Laurus nobilis	Bay – intro. to England 1562	u *
Lavendula angustifolia	Lavender – not recorded self-sown	r * d
Lavatera olbia	W. Mediterranean; England c.1570 – method of self-propagation unknown; usually planted cuttings	u * +
Leycesteria formosa	Himalayan Honeysuckle; increasing since 1960s	f bs +
Ligustrum ovalifolium	Garden Privet	f s w +
L. vulgare	Wild Privet	f s w
Lonicera involucrata	California Honeysuckle	r dc
L. japonica	Japanese Honeysuckle	r s
L. nitida	Wilson's Honeysuckle	f dc
L. pileata	Box-leaved Honeysuckle	r ?dc/s +
L. xylosteum	Fly Honeysuckle [now extinct]	r *
Lycium barbarum	Duke of Argyll's Teaplant	f * ?s
Mahonia aquifolium	Oregon-grape – other species/hybrids now more commonly planted	u * ?s
Muehlenbeckia complexa	Wireplant – relic at Ballameanagh	r *
Olearia macrodonta	New Zealand Holly	c */r s
O. traversii	Ake-ake	u * ?dc
Philadelphus coronarius	Mock-orange	r * ?s
Phlomis fruticosa	Jerusalem Sage	r * ?s/d/dc
Photinia davidiana	Stransvaesia	u ?*/s
Prunus serotina	Rum Cherry – a single tree, presumably planted, in Ballaglass	

Scientific name	Vernacular name and notes	Status
Rhododendron ponticum	Common Rhododendron – not as invasive as in the adjacent islands, perhaps because of Peninsular stock. In UK since c. 1763	f s
Ribes nigrum	Black Currant	c bs
R. odoratum	Buffalo/Golden Currant	r *
R. rubrum	Red Currant	c bs
R. sanguineum	Flowering Currant – said to have been imported about 1826 to make lobster pots.	c bs de +
R. uva-crispa	Gooseberry	c bs dc
Rosa alba	White Rose of York – garden relic, also in hedges	f * ?bs
Rosa arvensis	Field Rose [British native] – 3 old records & 2 current, in gardens	r *
R. centifolia	Cabbage Rose – in hedges & on hedgebanks	u *
R. damascena	Damask Rose	u *
R. gallica	Red Rose of Lancaster	r *
R. glauca	Red-leaved Rose	u s
R. × 'Hollandica'	Dutch Rose	f *
R. rugosa	Japanese Rose	f s l
R. 'New Dawn'	dating from c. 1930	f dc
R. pimpinellifolia	cultivars, e.g. pale yellow; pink on the Ayres	r *
R. rubiginosa	Sweet-briar	f s
R. rugosa	Japanese Rose	c s +
R. virginiana	Virginian Rose – pre-1960s record	
Rubus armeniemacus	Giant Blackberry – single record from Ramsey	?bs
R. idaeus	Raspberry	c * bs
R. laciniatus	Cut-leaved Blackberry	u *
R. loganobaccus	Loganberry	r *
R. spectabilis	Salmonberry	u bs
Rosmarinus officinalis	Rosemary – not recorded self-sown but denizens include large old plants not markedly selected garden types	
Salvia officinalis	Sage – not recorded as an escape; does not always over-winter	
Sambucus canadensis	American Elder – not yet established in the wild, 1995	
S. nigra 'aurea'	Yellow-leaved Elder – large old colonies of large-growing bushes in Central Valley Curraghs & on waste ground; definitely not the last. Apparently spread with cuttings since seldom flowers/fruits. Yellow variegated forms are commoner in commerce. Formerly a *S. nigra* '*laciniata*' cut-leaved, dark-leaved bush self-sown on a Douglas wall.	f *
Spartium junceum	Spanish Broom	u s
Spiraea × *arguta*	Bridal-spray	u * dc
S. japonica	Japanese Spiraea	
'Anthony Waterer'		u */dc +
'Little Princess'	– a nursery weed	u nw/s +
	Brideworts are a group still being researched in the Isle of Man, possibly including some direct introductions from N. America as well as garden hybrids. May locally be very abundant in hedgerows, notably in the main curraghs.	
S. alba (*S. latifolia*)	Pale Bridewort	u *

Scientific name	Vernacular name and notes	Status
Spiraea salicifolia agg.		
S. × *billardii*	Bridewort	u
S. × *douglasii*	Steeplebush	u *
S. × *rosalba*	Intermediate Bridewort	u *
S. × *vanhouttei*	Bridal Wreath	u * dc
Symphoricarpos albus	Snowberry E. USA 1878 - roots sometimes washed downstream	c * w
S. × *chenaultii*	Pink Snowberry	r *
Syringa vulgaris	Lilac – England from 16th century	c *
Viburnum lantana	Wayfaring Tree – relic from use as stock for grafted ornamentals	u *
V. tinus	Laurustinus – scarcely recorded as seeding in Man	u * dc
Weigela florida	– old-fashioned form seeded on leadmine deads east of the Eary dam – also relic/denizen.	u *

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DIVIDED WE CLIMB — IN SUN OR RAIN?

Brian Wurzell's interesting article on split corollas in the Convolvulaceae (*BSBI News* **70**: 24) begs the question of the cause of the splitting. There is some uncertainty about the extent to which this character is genetically controlled, and the extent to which it may be caused by mechanical damage, particularly heavy rain. Clive Stace (1973) reviewed a number of records and concluded that 'The constancy of this character as recorded in the wild argues strongly against the possibility that its expression is governed by growth conditions.' He does not mention mechanical damage, but when I collected *Calystegia silvatica* var. *quinquepartita* from hedges in Llanarth village in v.c. 46 (SN422.576) in 1980, Dick Brummitt warned me that the split corollas might have been caused by heavy rain. In his PhD thesis of 1963 on *Calystegia* he had cited a 1950 specimen in the Kew Herbarium collected from the Isle of Man by Edgar Milne-Redhead which has a note by the collector 'corolla tube deeply divided — a condition said to be due to too much rain!' He also referred to a letter from M.L. Walsh to the effect that the condition is common in Ireland, and that the corolla is divided in bud, clearly suggesting it is genetically controlled. To decide between these conflicting explanations I revisited the Llanarth site on 13 July 1983 after 10 rainless and reasonably calm days and found that the plants still had split corollas, satisfying us that the character was genetic. (I seem to have failed to inspect the buds.) Incidentally, these plants were in full flower whereas the normal *C. silvatica* in the district was mostly not yet out. This colony unfortunately seems to have died out.

In August 1995 I recorded a mixture of *C. sepium* subsp. *sepium* and *C. silvatica* in a hedge bordering the A487(T) in the same village, both with intact corollas. But on 5 September, after very heavy rain, I noticed that almost all the corollas of the *C. sepium* plants had split into 3, 4 or 5 segments, while none of those of the *C. silvatica* were split. In this case the character was clearly caused by rain. I inspected a dozen other colonies of *C. sepium* in the area, some in very exposed sites, but all had intact corollas. This supports a suggestion by Dick Brummitt that some populations may be genetically more prone to splitting in rain than others.

It is probably safe to record the various schizopetallous variants when, as in Brian Wurzell's case, they are growing where one can inspect them regularly, but it would seem unwise to record them on the basis of single sightings, especially in bad weather. Detailed observations on plants with split

corollas would be well worth making, noting whether the corollas are split in bud, the effects of rain or wind on different plants, and the extent to which whole populations may share the characters.

Reference

Stace, C.A. 1973. *Calystegia* — Inheritance of the schizoflorous character. *Watsonia* **9**: 370-371.

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SPLIT PERSONALITY IN BINDWEEDS CAN BE DUE TO STRESS

Brian Wurzell's very interesting article on split corollas in Convolvulaceae reminded me of the occurrences of most of these in W. Kent over the years, but also reminded me that for positive confirmation of such forms it was necessary to visit the site at least twice.

The reason for this is that heavy rain can split the corollas in a way indistinguishable from the genuine article, (and may in some cases account for the different types of splitting to which Brian refers.) Years ago David McClintock and I were nearly misled by one of these 'false' varieties on a roadside at Greenhithe after a heavy downpour.

Another reason not to go out botanising in a thunderstorm?

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RECURRING PROBLEMS IN *OENANTHE*

The difficulty of separating *Oenanthe pimpinelloides* (Corky-fruited Water-dropwort) and *O. silaifolia* (Narrow-leaved Water-dropwort) is a well-known one. Having become confident of our ability in this matter, we may be embarrassingly confounded (probably when in distinguished company) by a rogue plant with atypical characters.

The difficulty of separating *O. silaifolia* and *O. lachenalii* (Parsley Water-dropwort) is definitely worse. Not in most cases, maybe, but there is a substantial minority of plants which give rise to extreme uncertainty. Encounters with a succession of such specimens, chiefly from marginal habitats, have led me to write this piece. Leaving anecdote (of which there is plenty) aside, I will attempt to set out the facts, some of which conflict with the textbooks.

Habitat

O. silaifolia — Essentially a plant of river-valley alluvium downstream from chalk or limestone. Super-abundant and luxuriant in lammas meadows, few and miserable where hardening has taken place. The contrast in appearance of plants from these extremes may give rise to mistakes.

O. pimpinelloides — Geographical area restricted, see *Atlas*. Within this, anywhere from wet brackish grassland to raised dry banks, central reservations etc.

O. lachenalii — On saltings primarily, and tidal riversides, but many scattered inland sites in damp places, some or all of which are saline.

Flowering season

O. silaifolia — May and early June

O. pimpinelloides — June to August

O. lachenalii — Late June to November

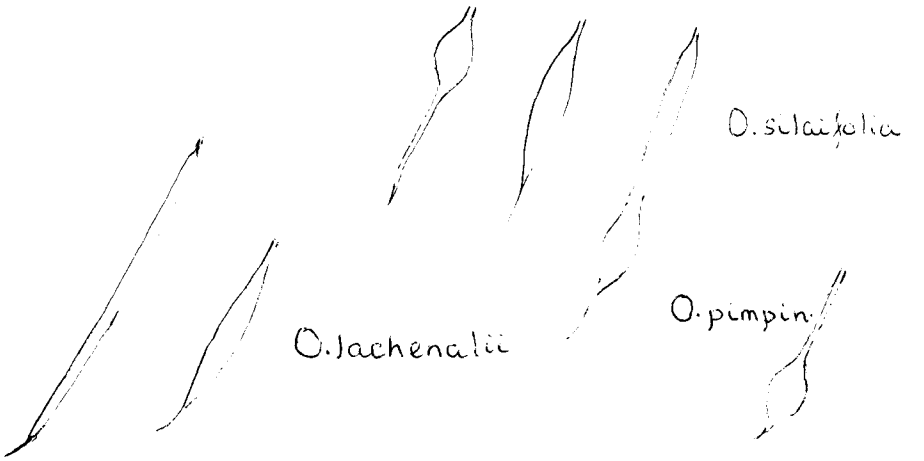
But beware of exceptions!

Roots

O. silaifolia — Ideally globose tubers held close to base of plant, but fusiform tubers on some plants, or even cylindrical ones with globose extremities render this character non-definitive.

O. pimpinelloides — Globose tubers remote from plant base.

O. lachenalii — Elongated cylindrical tubers resembling pipe-cleaners or variations to shortened (3 cm) fusiform ones.



Tubers of *Oenanthe* spp. approx half life size, del. M. Southam © 1995

Stems

O. silaifolia — Hollow and strongly ridged, to 12 mm diameter in large plants.

O. pimpinelloides — Solid, ridged, average diameter 5 mm.

O. lachenalii — Texts say solid, but ?all pressed plants and most live ones are readily compressed. Ridges shallower than in the other spp. Diameter about 5 mm except on occasional giants.

Leaf-lobes

O. silaifolia — Lanceolate and well-spaced. Thin, often becoming shrivelled when pressed.

O. pimpinelloides — Winter/lower are broad, those of later leaves progressively longer and narrower, hence the term 'pimpinelloides'.

O. lachenalii — also has broad lobes on winter leaves, but haphazardly, later lvs have lanceolate or diagnostic oblong-spathulate lobes. All are noticeably dark green and thicker, not shrivelling in the press.

Bracts

O. silaifolia — 0-1.

O. pimpinelloides — Several.

O. lachenalii — Several.

Rays

O. silaifolia — Generally not more than 7-8. About 1 mm diam. in flower, thickening to 1.75 mm in fruit. Usually held so that flowering and especially the fruiting umbellets are well-separated.

O. pimpinelloides — 8-15 somewhat finer than in *O. silaifolia* and not thickening, In fruit the rays tend to converge so as to produce an unbroken upper surface. The rays are also shorter than in the other spp., and the umbel thus smaller.

O. lachenalii — More numerous and distinctly narrower at c. 0.5 mm. More lax, the umbellets separate at all stages.

Bracteoles

O. silaifolia — Broad at the base and overlapping so as to appear connate.

O. pimpinelloides — Very slender and quite separate.

O. lachenalii — Slender with some slight overlapping.

All three spp. have numerous bracteoles.

Flowers

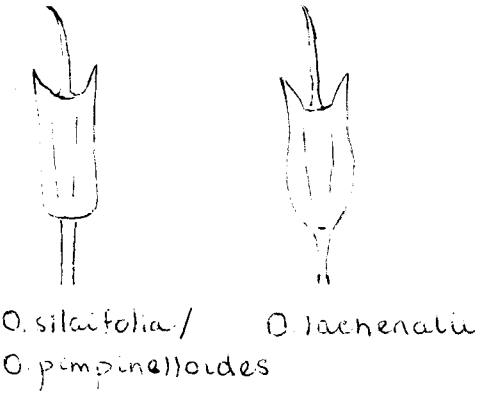
The character whereby some flowers are borne on elongated pedicels and are sterile is most frequent and noticeable in *O. lachenalii*. It can, however, be seen in the other species to a lesser extent. This fallibility is typical of promising diagnostic characters in this group of plants.

Fruit

O. pimpinelloides & *O. silaifolia* — Not readily distinguishable though fruit of *O. silaifolia* is larger with bulkier ridges. Style length does not appear to be consistent. In both spp. the sides of ripe fruit are ± straight and the junction with the pedicel is abrupt.

O. lachenalii — These fruits are separable by reason of their curved shape, which tapers gradually towards the pedicel. The fruits also tend to be red in colour.

In all three species the calyx-teeth are prominent.



Fruits of *Oenanthe* spp. to show junction with pedicel, approx. × 20. Del. M. Southam © 1995

Key

1	Bracts 0-1; rays few, stout; bracteoles ± connate	*O. silaifolia*
1a	Bracts several	2
2	Tubers ovoid, remote from plant base; stem solid	*O. pimpinelloides*
2a	Tubers cylindrical or fusiform; rays slender; fruit sides curved	*O. lachenalii*

It should be mentioned that tubers can be examined without uprooting the plant, by working carefully in from one side with a trowel. I believe that this key and accompanying notes work reliably, even with some problematical specimens, such as those from Kentish saltings, though I would not be surprised if others were produced which were yet more taxing. When confronted with contradictory *Oenanthe* plants it is always helpful to assemble a few known sheets of each species and form a mental picture of the overall characteristics. This should lead to determinations that stand the test of time. Do not include any overseas sheets as there are more trials and tribulations lurking beyond the channel. When DNA tests become cheap and portable we shall perhaps find a few more twists in the tale of these *Oenanthe* species.

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DANISH SCURVYGRASS, *COCHLEARIA DANICA* L. A NEW DIMENSION ON ITS ASSOCIATION WITH MOTORWAYS AND DUEL CARRIAGEWAYS

It is now well-known that *Cochlearia danica* has colonised the central reservation, and sometimes the sides, of motorways and duel carriageways in Britain. It has been suggested that this is partly due to the way road salt is distributed, but also that there may be a predator that eats the plants or seeds that does not care for life on or near central reservations.

In south east England the plant grows almost exclusively on the central reservation. On a journey north during the April flowering period last year I noticed that it started to appear on both sides of the motorways/dual carriageways in the south Midlands and, by the time I reached Nottinghamshire, was equally thick on the sides as in the middle wherever it was possible for it to grow. I have also read that it occurs on middle and sides of similar roads in East Anglia.

I can think of two hypotheses that might explain this. The first is that it is frostier further north and therefore the roads get more salt. Secondly, the predator, if there is one, that prevents the plant from growing on the sides of the motorways in the South East (but will not cross to the central reservation) does not occur in the Midlands or East Anglia.

It would be interesting to compare central-reservation-only distribution and centre-and-sides distribution of *C. danica* with the range of the birds, mammals and possibly insects that might be instrumental in bringing this phenomenon about.

I would be happy to collate my observations if readers would be interested in writing to me giving date, location, map reference, etc., and stating if the plant grew mainly or entirely on the central reservation, or occurred also on the outside edges of the motorway/dual carriageway. Please drive carefully though!

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DANISH SCURVYGRASS — ALMOST THE FIRST INLAND RECORD

As a tail piece to the note by Lansdown and Pankhurst on 'Coastal gravel as a source of *Cochlearia danica* on inland roadsides' (*BSBI News* **69**) it might be of interest that whilst at Rugby (1945-48) with D.E. Allen we discovered *C. danica* on the railway line near Rugby Station while engaged in collecting material for *The Flora of the Rugby District* which David Allen later (1957) published under the auspices of the Rugby School Natural History Society.

The relevant entry runs as follows:

> '*Cochlearia danica* L. (Danish Scurvygrass); Railway tracks, W. of Brandon, near Hillmorton, and on at least two lines just W. of Rugby Station. A maritime species which has appeared on railway tracks in several parts of the Midlands since the Second World War. The Brandon discovery in 1946 missed being the first inland record for Britain by about a month.'

It was suggested at the time that this plant had arrived in coastal sand/gravel ballast. In his introduction David Allen noted that during both World Wars railway tracks could not be kept clear of weeds as usual and this had consequently led to the spread of a number of species.

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COCHLEARIA DANICA AND CENTRAL RESERVATIONS

How *Cochlearia danica* (Danish Scurvygrass) finds its way onto the central reservations of dual carriageways and motorways is still something of a mystery. Richard Lansdown and Tim Pankhurst (*BSBI*

News **69**) have suggested that it could be getting brought in with coastal gravel used in the construction of French drains. This idea has been 'in circulation' for a while now and certainly deserves further investigation.

In support of the 'seed- importation-with-gravel' theory I came up with a couple of cases of isolated *C. danica* occurring in the company of other maritime species (*BSBI News* **55**) — I could understand one maritime species arriving at an isolated spot 'by car', but surely not more than one! Further observations now convince me that I was wrong about this: for example, one short stretch of the A303 in Wiltshire has been successively colonised by *Armeria maritima* (Thrift) (first seen there in 1989), *Puccinellia distans* (Reflexed Saltmarsh-grass) (in 1991) and *C. danica* (in 1993). Anyone coming across this road verge in 1994-95 would have found it hard to believe that these species had arrived there independently of each other, yet this was undoubtedly what happened. I am therefore now inclined to agree with Nick Scott, who considered seed importation with gravel unlikely, except perhaps 'on roads near the coast' (*BSBI News* **56**).

Turning now to the example given in *BSBI News* **69**, I too have seen *C. danica* on the A404 near High Wycombe. But the fact that it occurs along the French drains doesn't have to mean it got there in the gravel: perhaps the French drains simply provide the most suitable habitat for it — a free-draining substrate prone to summer drought, combining with high salt levels to produce plenty of bare ground and relatively little competition from other species.

In my opinion, colonisation of the A404 could easily have been from seed swept (or carried) in by vehicles. Observations elsewhere suggest that individual plants of *C. danica* can frequently turn up 20-30 km away from the nearest known colonies; and within three or four years these (easily overlooked) 'pioneers' may have spawned their own roadside colonies extending to perhaps several kilometres in length. Thus, it is hardly surprising that extensive new inland colonies can appear to turn up suddenly in apparently isolated localities.

By looking at the date of first record for particular stretches of road it is possible to construct plausible 'colonisation routes' for isolated inland colonies. In the case of the A404, the possibilities are endless! For example, it could have got there from the Suffolk coast via the A48 –> Al –> M25 –> M40. Or it could have originated from the (relatively) long-established colonies in Surrey/N. Hants, which were the most likely seed-source for recent colonisation of the M25 between the M3 and M40 junctions, as well as of the M4 near Reading, which links up directly with the A404 via the A423(M).

In England, Wales and Northern Ireland, most dual carriageways and motorways without *C. danica* are now within 'jumping distance' (20-30 km) of existing colonies, suggesting that it will soon have colonised all the suitable habitat currently available. (In addition, in England, records from single carriageway roads are on the increase.) It has yet to establish itself on the extensive road network in central Scotland, although news from north of the border is that in 1995 — after several years of searching — Pete Kinnear has turned it up on the central reservation of the M90 in Fife.

But why central reservations? There's plenty of suitable habitat along outer verges too, but colonisation there has generally been much slower and sporadic. This brings me to a brilliant piece of lateral thinking by Patrick Roper (*BSBI News* **65**), who suggested that *C. danica* trying to establish itself on the outer verge might be getting eaten by some kind of animal which is absent from the central reservation. His theory meant that the central reservation was, in effect, acting as a predator-free 'refuge' for *C. danica*. He wondered whether mice or small birds might be responsible. I'm beginning to think his 'predation' theory might have a lot going for it, and my hunch at the moment is that the mystery predator could be the common-or-garden slug!

In September 1993 I lifted a turf containing several hundred *C. danica* seedlings from the central reservation of the A38 just north of Taunton and brought it into my garden. By the end of January 1994 almost all the seedlings had been 'stripped' by slugs (by torchlight it was easy to catch them in the act!); most plants died as a result, 20+ plants survived but they produced very few flowers. A dozen or so seedlings appeared in the autumn of 1994 but these too were attacked by slugs: three plants survived the winter but only one flowered. This winter (as at 24/11/95) there are six seedlings, two of which have already been 'grazed' by slugs.

And so to the next stage in my testing of the 'slug hypothesis'! This winter I plan to transplant turves containing *C. danica* onto the outer verge of the A38, and then look at levels of slug predation on these as against 'control' turves left *in situ* on the central reservation.

My suspicion is that on the central reservation slugs are either absent or in much smaller numbers than in grassland adjoining the outer verge. I have no way of knowing whether this is so — can anyone suggest how one might find out, without getting killed in the process? If there are any 'slug-ologists' out there I'd be pleased to hear from them!

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WEEPING ELDER, *SAMBUCUS NIGRA* L. f. *PENDULA* Dippel, WILD IN WEST NORFOLK

The weeping form of the common elder, in which the branches are pendulous, is apparently known only in cultivation; indeed Krussmann (1977. *Handbuch der Laubgeholze*. 2nd edition. Vol. 3, 320) and Bean (1980. *Trees and shrubs hardy in the British Isles*. 8th edition. Vol. 4, 319) list the plant with stiff, pendulous branches as a cultivar, *S. nigra* 'Pendula'. The form was first reported and named *S. nigra* f. *pendula* by Dippel (1889. *Handbuch der Laubholzkunde*. 2nd edition. Vol. 1, 168) and came, according to Krussmann (1977), from France in 1884.

During April 1995, while walking on part of the Great Eastern Pingo Trail, on the disused embankment of the Thetford to Swaffham Railway, in West Norfolk (v.c. 28), a short distance north of Breckles Heath at the north-western extremity of Sandpit Plantation, we noticed an extraordinary mound-shaped elder which, on closer inspection, had stiff, pendulous branches. The majority of shoots grew almost vertically downwards, but these did not appear to root when they touched the ground. The shrub was c. 2 metres tall and perhaps 5 metres across. It is most unlikely that this was planted, although it grew on the railway embankment at the edge of a fenced field (planted in 1995 with maize).

This plant can certainly be referred to *S. nigra* f. *pendula* Dippel. As far as we can determine this is the only time it has been reported in the wild in the British Isles. Cuttings were taken and young plants are in cultivation in the National Botanic Gardens, Glasnevin, Dublin.

SUE E. & E. CHARLES NELSON, Tippitiwitchet Cottage, Hall Road, OUTWELL, PE14 8PE, Norfolk

SUBSPECIES OF *FESTUCA OVINA*, SHEEP'S-FESCUE

Wilkinson and Stace (1985) gave a key for distinguishing the species of *Festuca ovina* aggregate in Britain, including three subspecies of *F. ovina*. Stace (1991) gave a similar, but shorter, key for the latter. These two keys distinguish the diploid subsp. *ovina* from the tetraploid subsp. *hirtula* on the basis of awn length, hairiness of leaf-blades and length of stomata.

In May 1990 I collected some plants from Sark (Channel Islands) which seemed to be *F. ovina* subsp. *ovina* and sent them to Stace. He sent one to Wilkinson for determination. Wilkinson (1991) stated: 'In almost all morphological and anatomical features the specimen was distinctly *F. ovina* subsp. *ovina*. Stomatal length is ambiguous but favours *ovina* slightly. Only a chromosome count would make identification more certain.'

In June 1991 Stace collected some plants of the same appearance from the original site in Sark. He (Stace in litt. 1992) reported on the chromosomes: 'The great majority was tetraploid ssp. *hirtula* and diploid *F. longifolia*, but one sample *could* be diploid ssp. *ovina*.' He asked me to collect some further plants, which I did in June 1993. He (Stace in litt. 1995) reported on the chromosomes: '... all the green fescues were *F. ovina* ssp. *hirtula* not ssp. *ovina*. I think that you have proved that these two are virtually indistinguishable on morphological or anatomical grounds.'

I am grateful to M J. Wilkinson and C.A. Stace for their help.

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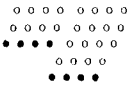
DAISY RAY FLORETS — NUMBER OF ROWS?

Standard floras attribute 1 row of ligulate ray florets to the genus *Bellis* (C.T.M. 1987) although Stace (1991) refers to the *flore pleno* tendency in this genus. I reported that many lawn daisies *(B. perennis)* did not have one but 1½-4½ rows, usually 2 (T.P.O. Nov. '94). The footnote from Martin Cragg-Barber to that article reported hunts for single-rowed wild daisies beneath Snowdon and in coastal Anglesey. None were found!

It is hard to specify the exact number of rows of ray florets in *B. perennis* because of diagonal stacking and partial overlaps of ligules. I have instead checked the insertion points on the receptacles. The outermost **2 rows** (at least) of the receptacular spirals are given over to ray florets, arranged thus  . Even if the ligules seem to be in one row, there are invariably two (or more) of these rows of ray floret receptacular insertion points. Warwick & Briggs (1979) postulate considerable phenotypic plasticity in *Bellis perennis*, with the probability of gene flow between lawn and wild daisies: daisies vary in their genetic potentials, developing in response to both these and environmental pressures. I therefore sought-out one-rowed daisies from 12 different sites in Wiltshire during June 1995. These sites included lawns of obsessive mowers, close-mown grass car-parking areas, and a drought-stricken, downtrodden, chronically overmown (for 20+ years), balding playing field edge in Calne. Some of the most stunted of these little daisies had short thin ligules radiating in just one apparent row, but the ligulate ray florets nevertheless still came from the outermost 2 rows of the receptacular spirals. Less stressed lawn or wild daisies with 1½-2½ or more obvious rows of stacked ligules sometimes had 2½, 3 or even 4-5 (in Lockeridge) outer spiral rings of ligulate ray floret insertion points as shown



Short sections of outer part of receptacles

Outer spiral of disc florets

Many standard floras seem to have given faulty descriptions to one of Britain's most abundant, familiar and best-loved flowers.

DAISY RAY FLORETS — GENE FLOW OVER QUARTER OF A CENTURY

In Wiltshire, Gloucestershire and Cornwall (near Padstow), I've seen, in semi-wild situations, large flore pleno pink daisies presumed to be derived from F1 or later generation crosses between *Bellis perennis* and *B. perennis* 'Monstrosa'. The latter have been cultivated in Europe since the 1400s (Everard et al. 1970). Webb (1976), and Warwick & Briggs (1979) emphasise the phenotypic plasticity and genetic variability within the genus in general and *B. perennis* in particular. In my experience, season, drought, shade, closeness of mowing or grazing, and trampling are all more influential on the numbers of ligulate (and disc) florets and capitulum size than lawn vs. wild, or hilltop vs. valley daisies. I've now tried, unsuccessfully, 14 sources for *B. perennis* 'Monstrosa', but 'We can't sell it. The public think it's untidy and uncontrollably invasive on their lawns and drives'. The rather infertile *B. perennis* 'Pomponette' is proffered instead.

Evidence is given here that *B. perennis* 'Monstrosa' has already passed on certain genetic characters to semi-wild daisy populations, and that these persist and recur over many decades at least. The illustration (page 31) shows a spring 1994 plant from a Lockeridge ½ acre, loosely mown (but never artificially seeded) lawn, once a paddock. The nearest *B. perennis* 'Monstrosa' plants (only 3) had been 150 metres away and died out under cow parsley and nettles in 1969.

Tables 1 & 2 show that these large highly fertile Lockeridge spring daisies are not random mutants. For instance they regularly have many more ray florets than the best clones of the 'Large-flowered' Cambridge daisies grown in the best greenhouse conditions by Hull (1961). Table 2 shows other features which are either characteristic or occasionally found in these five plants, which can be pure white but are more often mainly pink.

Webb (1976) mentions variability linking *B. perennis* with *B. hybrida* and the European *B. sylvestris*, and the last looks very like some of the Lockeridge daisies surviving in shaded areas, with several features in common. Retention of features selected for by mediaeval gardeners occurs when mowing or grazing regimes are not too severe in descendants of mixed wild and *B. perennis* 'Monstrosa' populations, best seen in spring flowering populations. These features can be largely suppressed by changed management regimes, as in the Padstow field. However they have persisted on the Lockeridge 'Paddock-lawn', intermittently obvious, but more often in full ranges of graded intermediates with wild daisies for at least 25 years to date. *B. perennis* 'Monstrosa' characters in modified intermediate forms crop up elsewhere in the village, and I think that they have started to influence the National Trust daisies to the west of Lockeridge in Lockeridge Dene -- and probably further afield.

Population or type	H	W	LD	L1	L2	L3*	L4	C	P
Capitula counted	395	86	11	2	37	9	3	2	2
Av. nos. of ray florets	H1=30 H2=39	40	45	53	64	63*	160	280	383
Ray floret spiral rows on receptacles		2+	2+	3	3+	3+	8	9	8

Table 1. **Gradation of numbers of ray florets**: **H** = Hull (1961), **H1** = Coastal Norfolk, Chilterns & Aberdeenshire mountains & valleys ('Small Flowered' populations), **H2** = Cambridge ('Large Flowered' populations; **W** = Wiltshire lawns & downlands (May 1995), **LD** = Lockeridge Dene; **L** = Lockeridge, **L1** = large disc plants; **L2** = population with large capitula; **L3** = progeny from one L2 plant (as illustrated), left amongst W population (*but developing plants cropped by deer & bank voles, then infected by powdery mildew when protected); **L4** = plants with small discs, like *B. perennis* 'Pomponette' but fertile; **C** = (probable F1) naturally occurring hybrid between *B. perennis* 'Monstrosa' & wild daisy (S of Cirencester); **P** = *B. perennis* 'Pomponette'.

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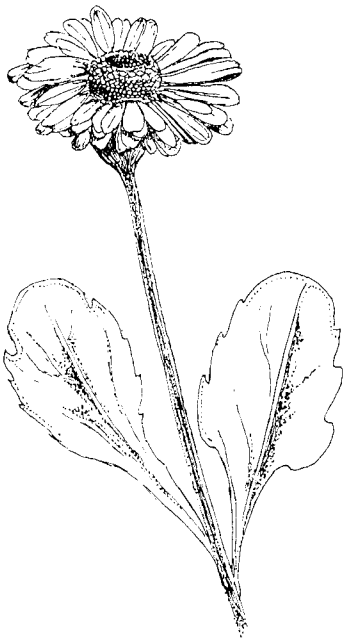
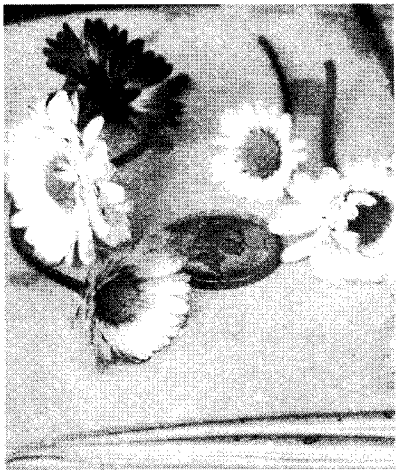
JACK OLIVER, High View, Rhyls Lane, Lockeridge, Nr Marlborough, Wilts. SN8 4ED

Feature	Wild or lawn daisies (Usual measurements)	Large flowered population (Characters mostly in combination)	Rarer forms, spontaneous occurrences (Characters not often in combination)
Flowering	All year, mainly summer	Mainly spring	Mainly spring
Life cycle	Perennial; vegetatively persistent and seeding	Short-lived perennial; rapidly spread by seeding	Annual or Biennial. Progeny (usually) revert to types in centre or left-hand columns?
Ray floret numbers	Range 23-56, mean 40	Range 50-103, mean 64	Range 160-280
Ray floret sizes (incl. ovaries), and shapes of ligules	[0.5]-2.5 × [4]-11, mean 1.5 × 8 mm Oblong-oblanceolate [or linear in stunted forms]	2-3.25 × 8.5-13, mean 2.6 × 11.1 mm Oblanceolate-obovate	3.6 × 14.2 mm Also spathulate form, bifid form, incurved (like Chrysanthemum N.C.S 3B classif.), and *B. perennis* 'Pomponette' type (but fertile). Also form with 2 sharply concentric ligule rings, one row all ½ size
Ligule colour	White. Often some pale pink peripherally & underneath, but fading	Pure white (seldom). Usually magenta when closing, also usually pink or magenta peripherally above, intensifying	Concentric (magenta, white & pink) bands (as in *Chrysanthemum carinatum\tricolor*). Also the opposite, radial red streaks along veins.
Disc floret number	50-90	140-220	20-24
Capitulum diameter	Range 14-25, mean 19 mm	Range 23-33, mean 28.2 mm	34 mm maximum
Scape diameter	0.75-1.25 mm, mid stalk	1-2.5 mm	3 mm. Ridged and/or pentagonal
Indumentum	Patent 0.5 mm hairs lower third of scape, appressed on upper third	Hairs often 1 mm, sometimes dense throughout.	Glabrous or woolly
Leaves on 'scape'	None above rosette	Occasional reduced leaf 5 mm above rosette	Leaves 10 mm or more above rosette, usually single and small.
[Scape length]	[5-100 mm]	[40-100 mm]	[170 mm+]
Leaves	Rosette only. Ungrazed. 20-40(-80) mm	Rosette & raised, the latter grazed by deer & voles. 40-80(-100) mm.	Untidily bunched, irregularly shaped, or fleshy, or phyllodic, or divided, or on stem. Grazed. Sizes variable.

Table 2. Measured comparisons between wild or lawn Wilts. daisies, and the large-flowered population which is presumed to carry *B. perennis* 'Monstrosa' genes. [Square brackets indicate predominantly environmental influences].



Naturally recurring '4-rowed' *Bellis perennis*, with 2 angled leaves above the rosette, and capitulum 33 mm across. From population 'L2' on Table 1 and central column on Table 2.
Del. Katy J. Oliver © 1995



Bellis perennis L2 population (left & right) with lawn daisy (upper centre right above 1p coin)
Photo J.E. Oliver © 1995

NATIONAL VEGETATION CLASSIFICATION (NVC): WOODLAND TYPE DISTRIBUTION MAPS

Since 1986 the woodland section of the NVC has been widely used in surveys both within and outside the conservation agencies. However this information has not been brought together to improve our knowledge and distribution of the types. Over the next few months therefore the Joint Nature Conservation Committee is funding a short project to produce a simple database of where woodland NVC types have been recorded. This will then be used to produce new national distribution maps, but could also be used as a basis for future local and regional work.

I would like to hear from anyone who has NVC records for woodland types (W1-25, but principally W1-19) that they would like to contribute to this database. Listed below is the information that will be included for each NVC record.

There is no way that all NVC records submitted can be checked for accuracy. The intention is not that JNCC centrally would hold all the records, instead it is assumed that most will have already been copied to local record centres, local agency offices, wildlife trusts or National Trust offices, etc. Thus any record on the database can ultimately be cross-checked against an original survey record. Where, however, a survey record is not in the (reasonably) public domain then copies may be needed if the data is to be included.

My hope is that all who contribute records will be willing for them to be made more widely available (hence we are using a simple spread sheet structure).

However if specific site details are confidential, information at the 10-km square level would still be useful.

Objectives and outputs

- To produce an atlas showing the distribution of woodland NVC types by 10-km squares for GB.
- To provide a directory of major woodland NVC surveys, reports and data sources.
- To provide examples of NVC distributions at regional and district levels to illustrate the types of use to which they can be put.
- To identify major gaps in our knowledge of the distribution of NVC types.

Outputs would include:

(a) A spreadsheet listing the following:

- Location
  - 10-km sq.
  - Full grid reference where available
- Site name (if available)
- County
- NVC Type
  - Community
  - Sub-community
- Method of identification
  - by eye
  - quadrats
  - computer matching (and which programme)
- Area (if recorded)
- Number of quadrats (if a quadrat record)
- Date of record
- Information source code

(b) A report with distribution maps, references etc.

If there are any queries please contact me at the address below.

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THREE BATRACHIANS?

What are the relationships between Batrachian amphibians and Batrachian *Ranunculus* (Water-crowfoot)?

Once upon a time some such *Ranunculus* grew in a small pond in Pilling (v.c. 60 West Lancs.). The plants appeared to be intermediate between two species according to the characters listed in Dr S.D. Webster's key (Rich & Rich, *The Plant Crib*), but my first visit was too early in the season for mature fruits, the nature of which provide more variables in the key.

I visited the pond again about two months later and noticed that it had shrunk considerably with only a very shallow depth of water remaining. As I approached, there was suddenly a commotion in the water and a host of young frogs made for the far bank.. They left behind them a considerable number of *Ranunculus* plants with pedicels protruding above the water and mud, but none of the pedicels bore mature fruits. Had the frogs devoured them? Or were the plants infertile hybrids?

This year, which was drier than last year, I visited the pond once more. There was no standing water, but a few small plants of *Ranunculus* survived. Fortunately, there were many healthy looking carpels on the pedicels, so that I was able to complete the diagnosis.

Comparing this year's crop of *Ranunculus* with last year's, suspicion mounted in my mind of the frogs as culprits. History does not relate how the frogs fared after their supposed feast. Am I maligning them unjustly? I should be very interested to learn from any members about any strong connection between plant and amphibian.

Incidentally, the plants keyed out as *Ranunculus* × *lambertii* (*R. aquatilis* × *R. baudotii*) — apparently a fertile hybrid, although not proven in this case by rearing plants from the seed produced.

CHRISTOPHER J. BRUXNER, The Curlew, Broadfleet, Pilling, Preston, Lancs.. PR3 6BT

KING-SIZE BLUEBELLS

My working life is dedicated to the bluebell, which I use as a tool in the study of the symbiosis mycorrhiza. During six years with *Hyacinthoides non-scripta* only once have I seen anything which exceeds big usual bluebells, and that was this year at Brandreth Wood on the Castle Howard estate near York. It wasn't particularly tall, but scape and leaves were broad and massive and the flowers lacked the graceful slenderness of our native hyacinth. Like Michael O'Sullivan (*BSBI News* **70**, September, 1995), I was happy that there was no *H. hispanica* influence and I am impatient for next year, when I can see how it behaves. It is my experience that a large plant will have a large bulb and that, sooner or later, the bulb will divide: into two equal daughters, two unequal daughters or numerous small ramets. Third year undergraduate Rachel Coates is currently investigating population structure in bluebell. Perhaps I can persuade her to run this specimen through her genetical tests and see if it differs from the usual.

For fun, I've frequently counted bluebell flowers to see by how much I can beat the CTW maximum of 16. There are so many over 20 that it's not worth mentioning and I once found a 28 flowered specimen on Ilkley Moor. However, last year (1994) I turned up a 32-er (Pretty Wood, Castle Howard) and this year (1995), in Brandreth, another which we thought was the record until Rachel shouted over that she had found a 33 flowered specimen. Jokingly, I insisted on counting it for myself but had to agree that it indeed had 33 flowers. There our record stands unless someone else can beat it. The gauntlet is down!

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ANTHER COUNTS IN *POPULUS NIGRA*

I was interested to read recently that Augustine Henry was of the opinion that *Populus nigra* subsp. *nigra* and *Populus nigra* subsp. *betulifolia* (Black Poplars) had different numbers of anthers in their flowers; 20-30 and 12-15 respectively (Elwes, H.J. & Henry, A. 1906-13). As far as I am aware this difference is not mentioned in any of the other British literature on *P. nigra*. Perhaps this is not surprising as most diagnostic keys for *Populus* have relied on foliar characteristics.

I wonder whether anther number per flower might not be a character worth recording when trying to describe the taxonomic relationship between British populations of *P. nigra* and between British trees and those on the continent? In the past doubts have been raised about the distinctiveness of these two geographical races of *P. nigra* (Skan 1910) and one wonders whether some British trees may not have more subsp. *nigra* in them than others. A count of anthers from 47 flowers, from 6 trees of *P. nigra* in the Leeds area, produced counts of 11-33 anthers per flower. 5 out of the 6 trees averaged between 20 and 30 anthers per flower, more in keeping with Henry's figures for subsp. *nigra*. If anyone has a little time to spare at the beginning of April it would be interesting to see anther counts from different parts of the country.

Henry was also of the opinion that *P. nigra* in Europe has fewer burrs than the British tree. It is interesting to note that several of the Yorkshire trees I know of have few or no burrs. I understand that this lack of burrs is found also in certain Irish trees and some of the clones from Gloucestershire (I do not think Henry was aware of any trees in Yorkshire. Surprisingly he also seemed to have a rather limited knowledge of the Irish examples). Perhaps this is another feature worth noting when recording trees?

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CARLINE THISTLE

Carlina vulgaris (Carline Thistle) is a puzzle to me as no doubt it is to others. **When** does it disperse its seeds?

Although acid north Pembrokeshire, where I live, is not an ideal habitat for it, there is a golflinks outside St David's which is surrounded by remnants of the old 'Burrows'. Here, along with a few other lime-loving species, it thrives in the shell-rich sand.

The papery flowers are at their best in August, but of course being 'everlasting' they don't look appreciably different during the winter or spring following. However it is a biennial and after about a year the 'flowers' look grey and ghostly, after which they disappear.

Unlike other thistles, at no stage are the seeds released in the wind, not even in Pembrokeshire's Atlantic gales. For the seeds to leave the capitulum they need to be tugged out forcefully. I have tried doing this with my fingers, with tweezers and finally with pliers, whereupon tufts can occasionally be tugged out — that is if the whole plant doesn't leave the ground. As can be expected, even when a tuft **is** removed, likely as not the seeds have been destroyed by insect larvae.

A slender but powerful pair of tweezers, i.e. the beak of a goldfinch, would no doubt remove a few seeds at a time, or perhaps the beaks of tits or linnets would serve and naturally I have tried to observe

such, but so far without success. Indeed the shining circle of bracts might be said to invite the attention of passing seed-eating birds. Has anyone chanced upon its dispersal or alternatively seen a reference to it in the literature?

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OUT OF SEASON DEVELOPMENT OF *SORBUS AUCUPARIA*

Here in the grounds of Ratcliffe College, Leicestershire there are several trees of *Sorbus aucuparia* (Rowan), planted on chalky boulder clay, a soil not entirely suitable for this species. During the long summer drought of 1995 these trees shed most of their leaves, and the fruits were wizened and shrivelled. In November the fruits were still on the trees, presumably spurned by the birds as unappetising, but some of the trees had produced new green leaves and clusters of flowers, the latter being of normal appearance but in rather small corymbs. I have never noticed such a thing before, but have read in the national press that similar phenomena were observed in 1995 at the Westonbirt Arboretum. I therefore wonder whether this sort of thing may occur elsewhere in a mild moist autumn following a severe summer drought?

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SEX RATIOS

From time to time on countryside walks in the past I have sexed dioecious plants, to add interest, and the results were often surprising, particularly in certain sites. When perusing the following counts, however, please bear in mind that a) they were made incidental to some other exercise and b) I had to stop somewhere!

		Male	Female
Salix cinerea subsp. *oleifolia* (Rusty Willow)			
Goodwick Moor (SM 945375) Nr Fishguard, Pembs.		26	84
Afon Gwaun. The river that enters Fishguard.		11	14
Pointz Castle (SM 826233) Pembs.		0	22
Ufton Wood, Warwickshire		16	29
Bowshot Wood, Warwickshire.		10	16
	Total	63	165
Tamus communis (Black Bryony)			
Ridgeway, Warwickshire.		23	23
Ufton Hill Fields, Warks.		11	4
Oxhouse Farm, Warks.		44	12
	Total	78	39
Bryonia dioica (White Bryony)			
Ridgeway, Warwickshire.		5	7
Ufton Hill Fields, Warks.		40	17
Oxhouse Farm, Warks.		18	5
	Total	63	29

Mercurialis perennis (Dog's Mercury)			
Chesterton Wood, Warwickshire		116	8
Princethorpe Wood, Warks.		83	22
	Total	199	30

Silene dioica (Red Campion)
Actual counts at different sites in Warwickshire, Devon and West Wales too numerous to list, but final result was near enough 80% male to 20% female.

Taxus baccata (Yew)
Nevern Churchyard (SN 083401), Pembs. is famous for its 'bleeding' Yews, all of which are large and hundreds of years old, and all of them are male. I am intrigued by this fact and have asked around for an explanation as to how this was contrived, without obtaining a satisfactory answer. Perhaps there is some quite simple sylvicultural explanation that a member could offer.

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HABITAT OR SPECIES RECORDING

Elaine Bullard (*BSBI News* **70**, September 1995) raises a series (5 or 6 at the very minimum) of fascinating queries concerning rarity and performance, and it would be a rash person indeed who would offer any simplistic solutions. I almost feel that a whole conference could be devoted to the issues raised here. So, not so rashly, I want to take up just one of her points.

The overriding problem with recording habitats rather than species is that the latter can be described more or less precisely (e.g. as in Clive Stace's *Flora*), but in contrast habitats have no such sharply-circumscribed definitions. Is a 'habitat' a field unit defined by soil type, drainage, nutrient status, competition, etc. (it is these that determine whether or not a species survives), or is it a plant species assemblage (which reflects, and is a consequence of, those factors)? Even the latter concept is pretty daunting — in each site we must separate those species occurring by 'chance' from those which share broadly similar requirements with our Scarce Species, and these from species which have such similar requirements as to be useful as 'indicators' for the rarities. Generally we actually just don't know. Add to this our President's reference to English Nature having no botanist (amazing thought — can this really be true?)[see page 76] — and we see that Elaine Bullard has put not just a finger but her whole hand on a nest of hornets. I take my own hand away fast, and suggest that yes (emphatically), we should be conserving habitats, but no we can't define them so well — at least not with the precision of a taxonomic botanist.

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HONEYSUCKLE POLLINATION

Intermittently for years I have tried to observe pollination of *Lonicera periclymenum* (Honeysuckle) by the 'correct' insect visitors, i.e. moths, particularly large hawkmoths. L. Hugh Newman in his book, *British Moths and their Haunts*, mentions it being visited by elephant hawkmoths (*Deilephila elpenor*) in moonlight, a perfect flower/insect consummation, as the white, strongly scented, trumpet-shaped

flowers are presumed to be designed for moths. And I have no doubt that others, particularly those living in southern Britain or in Europe, have witnessed the flowers being visited by night-flying moths. I have had no such luck, but not for want of trying, and I would be interested to hear the experiences of others.

Although most people become aware of the flowers and their scent along footpaths and lanes during the July-August holiday season, the main flowering season is at midsummer, in June, when throughout many Warwickshire woods, for example, cascades of inflorescences appear to tumble from somewhere high up in the trees. At this season the individual flowers flick open from 7 p.m., which explains the obvious surge in scent at dusk. The anthers dehisce and the flowers remain white for about 48 hours, the trumpets slowly filling with nectar as they turn to gold on the third night and day. Shortly after opening a visiting insect would need to have a 'tongue' of 22 mm to reach the nectar, but from the third day onwards, when the nectar has risen about halfway along the tube, a shorter tongue would serve. So what have I actually seen!

Other than moths I have found that there is one totally reliable visitor, which is the long-tongued *Bombus hortorum* (both queens and workers) which visits the flowers during the day and at dusk, often collecting pollen as well. The only other *Bombus* able to compete for the nectar, and often only just, is the queen of *Bombus pascuorum*: for it is beyond the reach of all other *Bombus* species and of course *Apis* (the honeybee). However this does not mean that *Lonicera* is not visited or successfully pollinated, for the pollen is attractive in its own right to *Apis* and to *B. pratorum*, *B. lucorum*, *B. terrestris* (queens and workers), to sundry hover-flies (Syrphidae) and even to the blundering rose chafer (*Cetonia aurata*) which occasionally mauls the anthers. And as the style is 40 to 50 mm long, inevitably pollen is deposited upon the stigma (which is at about the same level as the anthers though not touching) by these visitors.

Although I am aware that the base of the flowers may be holed by *Bombus lucorum* and *B. terrestris*, leaving an opening for subsequent visitors to reach the nectar as well, so that the flowers will not get pollinated, I have not seen this very often in *Lonicera periclymenum*.

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DIALECT PLANT-NAMES

The following continues from *BSBI News* **70** a list of names collected since January 1992. I would be pleased to receive any further names or comments.

Cheese plant — *Malva sylvestris*, common mallow. West Somerset, 1914-39. [Breage, Cornwall, October 1993].

Cheeses — *Malva sylvestris*, common mallow, fruits. 'we used to eat the seed capsule of the mallow and we called them cheeses no doubt because they looked like flattened cheeses'. [Dorchester, Dorset, February 1992]. Widespread.

Chimney sweeps — *Plantago lanceolata*, ribwort plantain: 'from my family which originated from the village of Whitwick, near Coalville, in Leicestershire'. [Elm Park, Essex, August 1992].

Christmas — *Ilex aquifolium*, holly: 'holly was never called by name by my Norfolk grandfather, it was always called Christmas'. [Cwmbran, Gwent, March 1993].

Chucky cheese — *Crataegus* spp., hawthorn: 'I was born in 1914, as children we ate young leaves of hawthorn — chucky cheese'. [Plymouth, Devon, January 1993].

Claden — *Galium aparine*, goosegrass. [Pimperne, Dorset, January 1992].

Cleats — *Tussilago farfara*, coltsfoot. [Addingham Moorside, West Yorkshire, May 1994].

Cling rascal — *Galium aparine*, goosegrass. [Felmersham, Bedfordshire, April 1993].

Cly — *Galium aparine*, Goosegrass. West Somerset, 1914-1939. [Breage, Cornwall, October 1993].

Cockerel — *Silene latifolia*, white campion: corruption of cockle? [East Tuddenham, Norfolk, May 1994].

Cofleyblowse — *Tussilago farfara*, coltsfoot. Staffordshire, 1930s. [Ponsanooth, Cornwall, November 1993].

Cow pats — *Primula veris*, cowslip. [Plymstock, Devon, January 1993].

Crewell — *Primula veris*, cowslip. [Pimperne, Dorset, January 1992].

Thanks to Doris Aitkin, A.W. Andrews, W.J. Antell, Alec Bull, Rhoda Bulter, Beryl Holloway, K. Kevern, Jessie Kurak, K. Palmer, Kate Mason, F.W.P. Thorne and Sara Woods for their contributions.

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FLOWERS AND FLOWERLORE

A reference to the Rev. H. Friend's *Flowers and Flowerlore* (*BSBI News* **69**) reminded me that the Liverpool Botanical Society's library has been missing Volume 2 of this work for many years.

For various reasons, earlier catalogues and loan-registers of this library have suffered serious depredations in the past, — as also has the book-stock. However, the preparation of a new catalogue last year unearthed some interesting items.

For instance, the remaining copy of Vol. 1 of Friend's book contained a brief, undated letter stowed between pp. 98-99. It is written on notepaper of the Royal Botanic Garden at Kew and reads:

'Chris /

I found this [book] at home over Christmas. Could you return it to the L.B.S.

Dick'

Can anyone throw any light on this that might lead to the retrieval of Vol. 2? All L.B.S. library-stock was well identified with bookplates or rubber stamps — often both. And many volumes contain written dedications. Obviously, the Society would be delighted to have any of its missing books returned.

What offers?

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BOTANISTS AND BOTANY IN LITERATURE

There must be many references to botanists — fictional and otherwise — in English literature. It might be interesting to put together an anthology of such references. Here are a few for starters:

My own favourite thumbnail sketch comes from Anthony Trollope's *Barchester Towers*. In the account of Mrs Proudie's reception, early in the novel, we discover that one of the less important guests is 'a gaunt spinster, his (the Dean's) only child now living with him, a lady very learned in stones, ferns, plants, and vermin, and who had written a book about petals. A wonderful woman in her way was Mrs Trefoil.'

Edith Wharton (for I think we should also consider American writers) took a poor view of botanists, evidently; in any event, in her novel *The House of Mirth*, Mrs Trenor, member of New York's new

aristocracy, is most disappointed when she meets the English Lady Cressida Raith. 'Think of my taking such a lot of trouble about a Clergyman's wife, who wears Indian jewellery and botanises!'

Turning to botany itself, there are some more flattering references. Thus John Clare (mind, he was writing while he was incarcerated in a lunatic asylum) said in a letter to his son Charles in 1848: 'I would advise you to study Mathematics, Astronomy, Languages and Botany as the best amusements for instruction.'

And in his *The Charterhouse of Parma* (now extending into French literature) Stendhal has the Duchessa Sanseverina wondering how to converse with the melancholy Princess of Parma who 'because her husband had a mistress .... imagined herself to be the most unhappy person in the universe.' Stendhal tells us (Scott Moncrieff's translation) that 'the Duchessa could think of nothing better than to begin, and keep going, a long dissertation on botany.'

Other members may have their own favourite quotations, which they might perhaps let me have, then (Editor willing) I could incorporate them into some future issue — or issues — of *News*?

On a more flippant note: what about contributions for *The BSBI Book of Botanical Jokes*? Here are a couple to give you the (awful) idea:

Q. What might you ask an *Orobanche alba* plant?
A. Have you got the Thyme on you?

Q. What did the gooseberry say to the blackberry?
A. Why are you always so critical?

I hope this won't get me drummed out of the Society?
[I like them, but then I've got a warped sense of humour. Ed.]

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OENOTHERA IN BRITAIN: A GUIDE TO IDENTIFICATION

In my experience, except for non-hybridising *Oenothera stricta*, homogeneous colonies of these potentially true-breeding species and hybrids are rare and close observation is needed to be sure: mode of growth and characters of the plants (leaf shape and stance, indumentum (type, position and quantities), colouring, etc.) will match exactly. 'Pure' *O. biennis* are mostly confined to remnants in gardens, nurseries and the like; occasional 'pure' *O. glazioviana* colonies exist, but I have yet to find one of 'pure' *O. cambrica*. *O. fallax* is very rare; both parents should usually be nearby.

The great majority of British plants (perhaps 90%) are in hybrid swarms of two and sometimes three species. Within them, 'pure' *O. biennis*, *O. glazioviana* and *O. fallax* are very rare but *O. cambrica* is more persistent: up to 20% apparently 'pure' plants were found among hybrids with *O. biennis* in the South Wales-derived colony near Warwick. Triple hybrids are quite common.

Hybrid swarms are individual and vary according to age, relative strengths of progenitors, and so on, A selection of specimens is needed to assess them. Whole plants are best, but if the colony is small or the plant big, parts can be taken — flowers, buds, capsules (including the lowest which should be mature), various leaves (including the lowest), and, importantly, all with strips of stem-skin to give as complete a picture as possible of the indumentum as it varies down the stem. The presence or absence of red colour on the stem (punctulation) and top of rhachis should be noted: its development may be prevented by low light intensity. Petal dimensions (greatest length (from base to one of the lobes) and width) should be measured fresh; dimensions reduce after the main season. Side shoots can be atypical and are best avoided.

Identification of individual plants can be difficult and, as with all hybrids, the best estimate is never accurate all the time. Moreover, with overlapping characters, even apparently 'pure' plants cannot be guaranteed correctly named.

Because of *O. glazioviana*'s variety of distinctive characters, its hybrids with either *O. biennis* or *O. cambrica* are relatively easy to identify. *O. biennis* × *O. cambrica* hybrids can be difficult, but in even quite small swarms, there are occasional more obvious hybrids which can be picked out by their leaves or stems. When found, they prove both species are there and help estimate the doubtfuls.

Colonies can have small clusters of plants with only scanty visible traces of a progenitor, probably the result of one or two plants invading a large established colony. Unless distinctive characters like red sepals are present, these traces can be virtually unrecognisable.

All that being said, with good mature specimens, and once you get your eye in, adequate assessments can usually be made, certainly enough to establish the nature of a swarm. After all, there are only three species and no troublesome plasticity or introgression. It follows, therefore, that if a plant has taxonomic characters of more than one species, it is almost certain to be a hybrid, and, in practice, hybrids usually have more than one indicator of each progenitor.

My own practice is to note for each specimen details of the twenty or so significant characters — see list in *The Plant Crib* (it needs updating as to red punctulation (very marked in *O. cambrica*, present in *O. glazioviana* and *O. fallax*, absent in *O. biennis*)). It is a good way of not missing something. It also helps show up material factors and provides a permanent record.

Casual species of *Oenothera* appear from time to time. Rostanski (*Watsonia* 1982) names ten which have appeared in Britain and *Flora Europaea* has others. But America has many strains and new arrivals are seldom those which have come before. I can usually only identify the section of the subgenus according to Rostanski who, himself, can rarely help.

[This is a slightly amended copy of the handout distributed at this year's Recorders Conference at Lancaster. Ed.]

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OENOTHERA SUBGENUS *OENOTHERA* HYBRIDS IN GUERNSEY

On 15 September 1993 I found a small colony of *Oenothera* subgenus *Oenothera* (Evening-primroses) scattered among arable weeds on tipped and levelled soil c.20 × 75 m just outside a new clay pigeon shooting range close to the sea on the east side of Portinfer Bay in the Island of Guernsey. The soil was part of large quantities obtained from several nearby locations for the construction of the range. There were no rosettes and therefore no flowering plants in 1992.

The colony of 26 superficially similar plants had the appearance of *O. biennis* but each also had red colour signs of *O. glazioviana* (Large-flowered Evening-primrose). Five plants, all different, were examined in detail. All had rhachis coloured red towards the apex, moderate to sparse red bulbous-based hairs, and generally small flowers with green sepals and stigma robes spreading among the anthers. *O. biennis* was indicated by the shape and stance of the leaves and the sparse red bulbous-based hairs of two plants. Obvious features of *O. glazioviana* were reddish rhachis tips and some capsules, slightly reddish sepals of one plant, longer hypanthia of three and larger petals of one. There were also indications of *O. cambrica* (Small-flowered Evening-primrose) in the larger capsules of two plants.

The colony was obviously a hybrid swarm. *O. biennis* and *O. glazioviana* were both present in all 26 plants; *O. cambrica* was also present in at least two.

These species are rare in Guernsey (McClintock 1975) but seeds can remain viable for long periods (10% for *O. biennis* after 80 years (Darlington & Steinbaur 1961). Seeds also lack natural mobility, and

dormancy can occur abruptly: for example, a crowded group of c.800 plants at Emscote (v.c. 38) disappeared under competing vegetation in a season (Bowra 1992). It is quite possible, therefore, that the seeds for present colony were dormant. As all three progenitors were absent and the plants superficially similar, the original colony is likely to have had an active life of many years.

Old Guernsey *Oenothera* records are uncertain: in the past 'all Evening-primroses tended to be called *O. biennis*'. *O. stricta* (Fragrant Evening-primrose) from another subgenus is locally frequent but does not hybridise. *O. glazioviana* occurs occasionally but 'rarely seems to be in any quantity' (McClintock 1975): the only specimen held by La Société Guernesiaise is from Vaux de Monel, 1973. Their only other rather poor specimen from the subgenus is a probable *O. biennis* found in 1975 at Bordeaux Quarry, several miles from the present site.

David McClintock (1975) describes *O. biennis* as 'now very rare indeed, and may always have been so': there had been 'only two post-war records, both in 1967, both confirmed by Dr. K. Rostanski in Poland'. However, neither can recall the locations and Professor Rostanski did not include them among the *O. biennis* records in his 1982 *Watsonia* account of *Oenothera* in Britain. Instead, included in, the list for *O. cambrica* (which he had discovered in 1975) is a 1967 D. McClintock record from Port Soif, a small inlet adjacent to Portinfer Bay. This suggests that the two specimens were redetermined, but confirmation and the specimens are lacking. There are no other Guernsey records for *O. cambrica* but its occurrence near Portinfer Bay in 1967 supports the evidence of its involvement in the 1993 colony. The species is widespread in Jersey (from where Rostanski has identified specimens) with records dating back to 1867 (Le Sueur 1984).

There is one Guernsey record of *O.* × *albivelutina* Renner (*O. biennis* × *O. glazioviana*) and David McClintock (1975) gives an interesting account of the unusual circumstances of its discovery in 1941. It 'appeared from seed ... sent from Guernsey' by Ober-Leutnant Ernst Ewald, an Officer of the German Occupying Forces, and cultivated in Germany in 1942 by Professor O. Renner, the foremost European *Oenothera* authority (Renner 1942).

Reciprocal hybrids in *Oenothera* have different forms: the female parent is named first, indicating in this case that the sepals were green. But there were also what were called 'aberrant seedlings' with the red sepals of the reciprocal hybrid *O.* × *fallax* (now *O. fallax*). Dr P.H. Raven suggested that there had been 'an earlier history of hybridisation between these two species' (McClintock 1975) and I agree — the logical explanation is that capsules were taken from at least two plants of a hybrid swarm very similar to the present one.

In hybrids between *O. biennis* and *O. glazioviana*, green sepals are much less common than red or reddish ones (Bowra 1992 table 2: hybrids with green sepals were outnumbered by 123 to 8). It is at least possible, therefore, that the 1993 plants were descendants of the colony from which the wartime capsules were taken.

With one exception, the *List of Vascular Plants of the British Isles* (Kent 1992) makes no provision for reciprocal hybrids; and as parents of most British hybrids are themselves hybrids (some with only vestiges of one or more of their progenitors), that makes sense. The exception is the species/hybrid *O. fallax* which should at least be restricted to crosses between 'pure' female *O. glazioviana* and male *O. biennis* and their true-bred progeny. Such plants are rare in Britain and
very unlikely in hybrid swarms.

(A Short Note on this subject was submitted to *Watsonia* in March 1994. It was returned in July 1995: the principal reason given was 'that as the area is biogeographically part of France, a thorough review of the literature for that country should be included'. Alas, my French is no longer up to it.)

Acknowledgement

My thanks to Mrs Bridget Ozanne of Vale, Guernsey, for information about the site and Guernsey records and for sending me specimens.

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MORE FLOWERS FOUND IN A LEICESTERSHIRE QUARRY

Since the account in *BSBI News* **64**, many changes have taken place in this Groby quarry. Some of the willows have grown to a height of 5 m or more: others have been torn apart by a small herd of goats and their pretty kids which were brought by their owner to browse here on summer evenings – from a no-man's land nearby.

Wild rose hips were collected and named in August 1993 and Cotoneasters identified. *Stellaria pallida* was confirmed.

At the beginning of October 1995, bulldozers moved in and uprooted all the willows, roses and brambles which were then burnt. Hardcore sandstone blocks, concrete and tar macadam were pulverized and levelled. Soil has been pushed up to form two enormous mounds to provide screening. This will be capped with finer marl overburden to a depth of one metre. A mixture of grass seed will be sown followed by tree and shrub planting.

Many thanks to the following referees for their help in identifying many of the taxa: Rev. A.L. Primavesi, Mr A. Newton, Mr R.D. Meikle, Mrs J. Fryer, Mr P.M. Benoit, Dr I.K. Ferguson, Mr D. McClintock, Dr A.J. Richards. Also to the Quarry manager Mr M.J. Manning for permission to enter.

Additions to Groby Quarry list of plants, January 1995:

Aethusa cynapium, *Anthemis cotula*, *Anthriscus sylvestre*, *Arum maculatum*, *Carex acutiformis*, *C. acuta*, *Cotoneaster bullatus*, *C. horizontalis*, *C. salicifolius*, *C. simonsii*, *Epilobium* hybrid, *Erophila glabriuscula*, *Hieracium* ?*strumosum*, *Hypericum androsaemum*, *Hypochaeris radicata*, *Ilex aquifolium*, *Leontodon saxatilis*, *Linaria purpurea*, *L. vulgaris*, *Leontodon autumnalis*, *Lychnis chalcedonica*, *Mentha spicata*, *Mercurialis perennis*, *Muscari armeniacum*, *Persicaria maculosa*, *Prunus spinosa*, *Ranunculus bulbosus*, *Rosa caesia* subsp. *glauca* × *R. canina*, *R. caesia* subsp. *caesia*, *R. canina* Group *Dumales*, *R. canina* Group *Lutetianae*, *R. canina* Group *Transitore*, *R. canina* × *R. caesia*, *R. canina* × *R. arvensis*, *R. canina* × *R. obtusifolius*, *R. obtusifolius* × *R. canina*, *R. rubiginosa*, *Rubus bagnallianus*, *R. polyanthemus*, *R.* cf. *raduloides*, *Salix caprea* × *S. viminalis*, *S. cinerea* × *S. purpurea* (first v.c. record?), *Sorbus* sp., *Taraxacum lacistophyllum*, *T. oxoniense*, *Trifolium hybridum*, *Verbascum densiflorum*

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ALIENS

ALIEN RECORDS

No authority is given if the taxon is mentioned in Stace's *New Flora of the British Isles* or Clement & Foster's *Alien Plants of the British Isles*. Arrangement is alphabetical. I would be delighted to receive any alien records for inclusion in future issues. In general all taxa not included in Kent's *List of Vascular Plants of the British Isles* are eligible for inclusion but other more widespread aliens may be included at the discretion of the v.c. recorder and the editor. Please ensure that all records include all the details as given below, especially a map reference, even if only to a 10 km square and vice-county.

Carthamus tinctorius (Safflower). Dumped bird-cage refuse, Brinnington, Stockport, SJ/905.918, Cheshire (v.c. 58), 10/1995, E. Kearns.

Conyza blakei. Hop field, Barming, TQ/7.5, W. Kent (v.c. 16), 1966, J.R. Palmer. Det. J.E. Lousley.

Cotoneaster pannosus (Sea-green Cotoneaster). On top of old wall, sea-front, Gravesend, TQ/6.7, W. Kent (v.c. 16), 13/10/95, J.R. Palmer. Bird-sown from large planted specimen 300 yards away.

Crocus ancyrensis (Herbert) Maw. A quantity now well naturalised (although perhaps originally planted) in small copse by car-park, S. Darenth, TQ/5.6, W. Kent (v.c. 16), 12/2/95, J.R. Palmer. Very small form perhaps because of competition with tree-roots. (Not in Clement and Foster).

Eragrostis curvula (African Love-grass). Three to four clumps in the western section of Feltham Marshalling Yard, Feltham, TQ/1.7, Middlesex (v.c. 21), 22/7/95, E.J. Clement, confirmed by D.H. Kent & T.A. Cope, comm. D. Willment. The second British record.

Erodium manescavii (Manescav's Stork's-bill). Abundantly naturalised on sandy waste ground near Crockenhill, TQ/5.6, W. Kent (v.c. 16), 15/6/95, J.R. Palmer, conf. E.J. Clement. *Geranium endressii* (French Crane's-bill), *G. sanguineum* (Bloody Crane's-bill) and a quantity of *G. lucidum* (Shining Crane's-bill) (rare in Kent) can be found nearby.

Guizotia abyssinica (Niger). Dumped bird-cage refuse, Brinnington, Stockport, SJ/905.918, Cheshire (v.c. 58), 10/1995, E. Kearns, det. G.M. Kay. With *Camelina sativa* (Gold-of-pleasure), *Cannabis sativa* (Hemp) and *Linum usitatissimum* (Flax).

Hebe pinguifolia (Hook.f.) Ckn. & Allan. On overgrown rubble on set-aside ground (known to be established for some years), near Horton Kirby, TQ/5.6, W. Kent (v.c. 16), 18/5/95, J.R. Palmer. As cv. 'Pagei' (Not in Clement and Foster).

Helianthus petiolaris (Lesser Sunflower). Tipped rubbish outside tip, Ellesmere Port, SJ/419.754, Cheshire (v.c. 58), 1995, J.E. Hawksford.

Lamium maculatum (Spotted Dead-nettle). Naturalised under a Hawthorn hedge at Roos, TA/29.29, S.E. Yorks. (v.c. 61). July 1995 but known there for many years, P. J. Cook.

Lonicera syringantha (Lilac-scented Honeysuckle). Birdsown on densely vegetated waste ground at Crockenhill, TQ/5.6, W. Kent (v.c. 16), 22/9/95, J.R. Palmer. Flowers mauve, very fragrant, fruits plentiful, ovoid, orange-red (as var. *wolfii* — calyx teeth ciliate, connate at base).

Montia sibirica (Pink Purslane). On disturbed soil following an interment, churchyard, Burstwick, TA/22.27, S.E. Yorks. (v.c. 61), July 1995, P.J. Cook.

Myrtus communis L. (Common Myrtle). Abundant seedlings, Tregwainton, W. Cornwall (v.c. 1), 26/4/74, J.R. Palmer. Grown on ever since against a west wall in my garden. (Not in Clement and Foster).

Neoregelia carolinae (Beer) L.B.Smith var. *tricolor* (Blushing Bromeliad). Rubbish tip, Horton Kirby, TQ/5.6, W. Kent (v.c. 16), 23/11/86, J.R. Palmer. (Not in Clement and Foster).

Persicaria capitata (Pink-headed Knotweed). Foot of shop wall, Poynton, SJ/918.831, Cheshire (v.c. 58), 14/10/1995, J.H. Clarke, conf. G.M. Kay. Was growing in plant tubs here several years ago. First v.c. record.

Phacelia tanacetifolia (Phacelia). A large population on roadside verge and field headland along B3087, Burbage, near Savernake, SU/215 610, S. Wilts (v.c. 8), June 1995, B. Last. Originally planted by farmer with seed left over from a set-aside field. It has a powerful scent apparently attractive to insects, and how it could deter pests (one of its supposed uses) is unknown.

Prunus cerasifera (Cherry Plum). Presumed planted originally (ca. 1840) and has persisted and spread in a hedge at Roos, TA/29.29, S.E. Yorks. (v.c. 61), June 1995, P.J. Cook. Also in a hedge at Aldbrough, TA/2.3, July 1995, A. Johnson.

Rosa × *barbieriana* Rehd. In hedgerow of minor country road near S. Darenth, TQ/5.6, W. Kent (v.c. 16), 13/6/95, J.R. Palmer. Possibly a relic (Not in Clement and Foster under this name).

Scilla bifolia (Alpine Squill). Abundant in the churchyard at Roos, TA/29.29, S.E. Yorks. (v.c. 61), April 1995 but known there for many years, P.J. Cook. Well established and produces seed.

Spiraea gemmata Zab. Two bushes, one large, one small on scrubby natural roadside (but not far from houses), Upper Hockenden, TQ/5.6, W. Kent (v.c. 16), 30/5/95, J.R. Palmer. (There are other closely related species, especially *S. nipponica*). Umbels bracteate, bracts becoming progressively narrower nearer to the flower. (Not in Clement and Foster).

EDITOR

BELLFLOWERS GO WILD IN TOTTENHAM

Campanula is an important and popular genus in British horticulture, and by November 1995 I had recorded six members of it occurring as garden escapes in my home London borough. This article comprises a summary of them.

Campanula trachelium (Nettle-leaved Bellflower) has long been naturalised in my own garden and the occasional seedling pops up outside. *C. persicifolia* (Narrow-leaved Bellflower) has occurred as a pavement casual by gardens in nearby streets. More surprisingly, I detected a clump of *C. rapunculoides* (Creeping Bellflower) this year on land quite remote from any garden. It had secured an atypical niche for itself between the concrete flagstones of a shaded river wall on an overgrown site at Tottenham Hale known locally as the Paddock. Elsewhere in north London I am aware of invasive colonies of this species in several places, usually amidst old parkland shrubberies or beneath old churchyard trees. It is rather common around Hampstead where white-flowered plants also occur.

A flamboyant Yugoslavian double-act is known affectionately by me as 'Port n Posh' but respectfully by everyone else as *Campanula portenschlagiana* (Adria Bellflower) and *C. poscharskyana* (Trailing Bellflower). Together they cheerfully sprawl blue hues across Britain's stone walls from cottage to castle. Typical examples of each are rather distinct and our standard reference books present them adequately. In 1963 however, on the rockery of Regent's Park (central London) I was puzzled by a more enigmatic specimen labelled '*Campanula* 'Birch Hybrid' Exactly three decades later, Brickell (1993) names and illustrates a similar plant followed by Clement and Foster (1994) also drawing our attention to the likely existence of hybrids. Now I find specimens answerable to such parentage invading the concrete pavings of a garden on the next block from here. Each autumn their owner strives, either manfully or womanfully, to pull out every last vestige of root. Each summer they flower more vigorously than before. Elsewhere in the district I know naturalised colonies consisting of pure 'Posh'.

Finally I come to review the rarest and tallest of the genus found wild within a mile of where I live. It is *Campanula pyramidalis* (Chimney Bellflower), I first identified it from horticultural literature in 1990 and I have since found it described in Stace (1991) and catalogued by Clement and Foster (1994) by virtue of occasional escapees. I don't think it is anywhere a commonly cultivated ornamental; thus my original acquaintance, even within a garden, was stimulating. The during 1994, I found a specimen at least 100 m distant from the site of planting, circumstances which entirely justified a botanical record. This plant was robust, already at least two years old, bearing large basal leaves and heavy leafy shoots but no flowers. In the summer of 1995, its vegetative vigour was repeated and it became clear that its attempts to flower were being regularly thwarted by rough treatment from passers-by, for it was

bordering a much used public footpath by the River Lea. In October, however, it did produce a sizeable secondary inflorescence so I was eventually able to draw all the parts desired (see front cover). In addition to the diagnostic characters given in Stace (1991), it is appropriate to state that the leaves are thicker and glossier than our native species, that the inflorescence axis is stout with numerous ascending branches whose combined weight may cause overall leaning or arching, and that while the majority of corollas conform to the five-lobed pattern normal in Campanulaceae, there are, on this individual anyway, about 10% which produce only four. A number of self-sown plants, also now mature, are scattered in the garden from which this isolated example had clearly arisen; one of them is white-flowered. Their locality is the Ferry Lane Estate, Tottenham Hale (v.c. 21).

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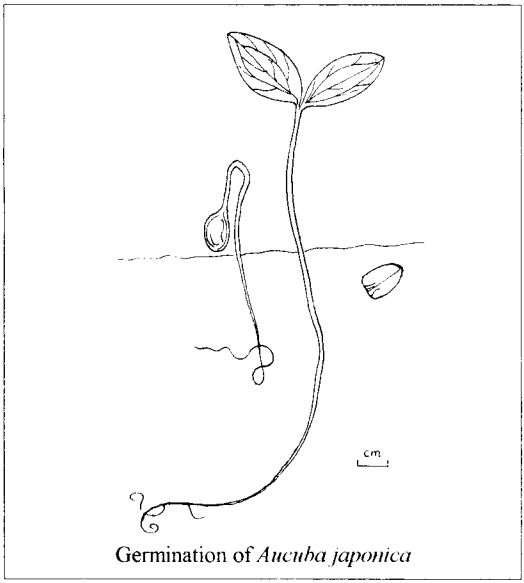
WELL SPOTTED

Unaided regeneration of *Aucuba japonica*, the Spotted Laurel, is reported from a few scattered sites mostly in west and north Britain (Stace 1991, Clement & Foster 1994). Curious to witness its birth, I collected some ripe scarlet drupes from mature examples of the shrub long ago planted around a Tottenham garden and straightaway buried them inside a pot of ordinary London soil. This was accomplished in January 1995. Germination commenced in September and by October the pot found itself bursting with vigorous, glossy, dark green cotyledons, rather reminiscent of Holly sprouts but considerably larger. A satisfying series of specimens was duly pressed and representatives are illustrated below.



Germination of *Aucuba japonica*

Aucuba japonica is a common amenity subject, usually blotched yellow, evidently well suited to the Victorian fetish for ponderous evergreens and generally regarded more dutiful than beautiful. It is dioecious, both sexes being required close by to ensure fruit set. But is spontaneous self-sowing almost restricted to the west and north? Clearly not so. For November revealed me once more exploring diligently beneath dense thickets bordering a municipal open space close to home (Springfield Park, Clapton, v.c. 21) and I soon detected several seedlings identical to my own. Such brave pioneers are unlikely to develop further on the compacted earth which prevails here, but we have now discovered what they are.

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EUPHORBIA OBLONGATA Griseb. IN S.E. HAMPSHIRE (v.c. 11)

In 1993 a local natural historian, Ralph Hollins, found a colony of a strange, robust, perennial *Euphorbia* growing on the grassy bank of Ports Creek, Hilsea at the north end of Portsmouth, GR. SU/658 045. No one was available at that time to check out his find and it was forgotten about. In March 1994 he told me that the plant was still there. On 28 March I visited the site and found several young shoots and one stem that had overwintered and had a flower head on it. With reference to Stace's *New Flora of the British Isles* I determined the plant as *Euphorbia dulcis* (Sweet Spurge), but with some reservations. Apart from seeing *Euphorbia hyberna* (Irish Spurge) previously in Ireland I have not had any experience of this particular group of closely related *Euphorbias*. To be sure of my identification I took a sample to Eric Clement and by reference to his herbarium we eventually determined the plant to be *Euphorbia oblongata*, a native of S.E. Europe and W. Turkey. This species is not mentioned by Stace.

Flora Europaea **2**: pp. 214 + 218 separates *E. dulcis*, *E. oblongata* and *E. hyberna* based on stem scales and the shape of the tubercles on the capsule. The following key should help to distinguish the three species:

1	Tubercles on capsule ± hemispherical, capsule sparsely tuberculate; flowering bracts yellowish-green	*E. oblongata*
1	Some of the tubercles on capsule at least twice as long as wide, often filiform	2
2	Stems persistently scaly at base; flowering bracts green to purplish	*E. dulcis*
2	Stems not persistently scaly at base; flowering bracts bright yellow	*E. hyberna*

During the study of the samples it was noted that there were only 2(-4) greenish-yellow glands around each cyathium. Most *Euphorbias* have 4 glands (not 5 as one would, perhaps, expect). Having most cyathia with only 2 glands is probably a good diagnostic character for *E. oblongata*. Further observations on this character throughout the genus are desirable; an accurate count is much easier on fresh specimens. Terminal flowers are atypical in that they often have more than the normal number of glands.

The accompanying superb drawing by Delf Smith (see facing page) shows all the characters well and obviates the need for a written description.

A count of the colony in June 1994 revealed in excess of 68 flowering stems up to 90 cm tall, so it is obvious that the colony has been in existence for many years. As with all aliens its origins can only be guessed at. Its presence on and close to a spoil bank which had been planted with trees and shrubs and possibly grass seed point to its probable source. The colony was still present in 1995 and a voucher has now been deposited in **Herb RNG**.

Key to illustration on facing page

A–Plant × 1; B–Stem leaf × 1; C–Raylet leaf × 1; D–Ultimate raylet leaves × 1; E–Detail of stem leaf serration × 20; F–Cyathium × 5; f–Detail of opened cyathium tube × 5; G–Stamen (Male flower) × 10; H–Fruit capsule × 7.5; h–Detail of fruit capsule papillae × 20; J–Seed and appendage × 7.5

Euphorbia oblongata del. Delf Smith © 1995

Three earlier records can be found in Clement and Foster's *Alien Plants of the British Isles* and there have been at least 3 more since, viz.:

v.c. 5 (S. Somerset). Self-sown at end of alleyway, Taunton. 24 July 1993. Dr A.C. Leslie, I. & P. Green.

v.c. 17 (Surrey). Well established pavement weed, self-sown plants, Godalming. Aug 1992. J. Smith, J. Leslie and K. Page.

v.c. 19 (W. Kent). Fishers Green, 1994. London Natural History Society meeting. Comm. R.M. Burton. **Herb D.Bevan**. Det. E.J. Clement.

This plant appears to be virtually absent from gardening literature. It is mentioned in *The Plant Finder*, 1994/5 edition. It has obviously been sold and distributed under an incorrect name, probably as *E. dulcis* or even *E. corallioides*. C.G. Hanson says that it is also confused abroad; seed distributed by Coimbra (Portugal) Botanical Garden as *E. epithymoides* proved to be of this masquerading species. It will undoubtedly be found elsewhere in Britain and already fully deserves a place amongst our list of established plants.

My thanks to Delf Smith for his drawing and to Eric Clement for his technical assistance.

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ALIEN INVADER AT PILTDOWN POND — *HYDROCOTYLE RANUNCULOIDES* APPEARS IN E. SUSSEX

At the BSBI Annual Exhibition Meeting in 1992 an exhibit by M. Heywood, R.G. Payne and T. Pyner (*BSBI News* **63**: 50, April 1993) described the first British record of an alien Marsh Pennywort, *Hydrocotyle ranunculoides*, from the R. Chelmer in Essex and its discovery in several other sites in Essex. One of their comments was that '... it has all the hallmarks of a potential pest species'. This prediction is clearly supported by its discovery in a number of new sites in Essex and one in Buckinghamshire (R.G. Payne, personal communication) and by its appearance and subsequent behaviour in Piltdown Pond (GR. TQ/443.223) in E. Sussex (v.c. 14).

Piltdown Pond, which lies approximately midway between Uckfield and Newick, is roughly rectangular and the area of open water is about 200 m × 150 m. It is heavily used by fishermen. *H. ranunculoides* was first found at Piltdown in July 1993 when T.C.G. Rich found a small patch about 1 m long. It does not seem to have been noticed again until I saw it there during a visit in October 1994. By that time it was abundant along at least 60% of the pond margin. Although very obviously different from any native species when mature, the leaves of young plants look very similar to the floating leaves of aquatic *Ranunculus* species. This may explain why the *Hydrocotyle* was apparently not noticed when Piltdown Pond was visited during a BSBI field meeting in June 1994 (although it must be admitted that the purpose of the meeting was to study *Rubus*).

The plant is extremely invasive. By August 1995 it had spread around the whole of the pond margin with the exception of a short length at one side adjacent to a concrete wall where the water is at least 0.5 m deep and the mud is never exposed. It grows on the wet mud of the pond margin and out into the adjacent shallow water (to about 25 cm deep). It appears always to be rooted in the mud and has not as yet formed the floating mats described by Heywood et al. In a number of places the plants extend in a band more than 2 m wide out from the shore and is so luxuriant that some of the leaves rise 25 cm above the water level. Flowers and fruits are present, although they seem to be largely confined to the smaller plants. The stems root vigorously every few centimetres and so easily spread out over the bare mud of the pond bottom. In places where it is growing well no native species seem able to compete. The only species growing with it are *Myriophyllum aquaticum* (Parrot's-feathers) and, in a few places, *Crassula helmsii* (New Zealand Pigmyweed). Indeed, in several places where *C. helmsii* was present in abundance in 1992, it has been displaced by *H. ranunculoides*. The plant does not seem to be affected significantly by normal frosts. Observations following the 1994 autumn frosts showed some damage to the largest and most exposed stems but the main mass of plants seemed quite unaffected.

The presence of the aliens *H. ranunculoides*, *M. aquaticum* and *C. helmsii* at Piltdown is a great shame as the pond had a very interesting native flora, being one of the last places where *Pilularia globulifera* (Pillwort) was seen in Sussex (about 15 years ago). Also present are *Alopecurus aequalis* (Orange Foxtail), *Elatine hexandra* (Six-stamened Waterwort), and *Hypericum elodes* (Marsh St John's-wort). The last two species were seen in 1995 but the *Hydrocotyle* was spreading out onto the areas of mud where the *Elatine* grows.

It is clear from the behaviour of *H. ranunculoides* at Piltdown pond that it has all the attributes of a really troublesome pest as predicted by Heywood et al. If this behaviour is typical it would not surprise me at all if *H. ranunculoides* took over from *Crassula helmsii* as our number one aquatic invader.

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ALIENS IN WEST YORKSHIRE

West Yorkshire has traditionally been known as a productive area for wool aliens or 'shoddy' weeds since the last century, and F. Arnold Lees lists numerous examples of finds of these and of other seed aliens in *The Flora of West Yorkshire* (1888).

During the present century this interest was maintained by a number of well known botanists in the region, including Florence Houseman, Arthur Sledge, George Nelson and others, as well as those who visited the county, notably J.E. Lousley. The widespread occurrence of wool aliens resulted from the use of wool waste or 'shoddy' as manure by local farmers. This wool waste was obtained from local mills in the Batley and Dewsbury area which manufactured coarser cloth. It comprised a mixture of rags and wool fibres (combings from fleeces) originating from a wide area of Europe and beyond, which harboured many different kinds of seeds of exotic and alien species. The oil in the wool is considered to provide the active ingredient in the 'manure.' This botanical interest culminated in the production of Lousley's *Census List of Wool Aliens found in Britain 1946-1960* published by the BSBI in 1961.

Since that time, there has been a decline in the use of 'shoddy' as a dressing for arable crops in West Yorkshire, but some farmers still carry on this practice in the Rothwell, East Ardsley and Wakefield areas. The interest in these strange and exotic plants has not declined, however, and in the last fifteen years or so, John Martin has recorded a wealth of material from the Ardsley and Rothwell areas with the more difficult specimens being checked by Eric Clement, Eric Chicken or Bruno Ryves, all of whom have visited the shoddy fields from time to time. Details of these species are given in *The West Yorkshire Plant Atlas* (1994).

Reports of recent visits to the shoddy fields of West Yorkshire have been given in *BSBI News*, e.g., *BSBI News* **65**, January 1994), *BSBI News* **68** (January 1995). The abnormally dry summer of 1995 played havoc with the 'shoddy' weed production which we had come to expect in recent years. This resulted in virtually no growth of aliens until very late in the year (i.e., October) following the first appreciable rain for several months! This new flush of weed growth was immediately consumed by a sizeable rabbit population, and a projected trip to the normal 'shoddy' areas had to be called off.

Despite this disappointment, there have been some notable records made of alien and adventive species during 1995. A tip near Esholt Sewage Works has yielded a remarkable assemblage of species, including, among the legumes, various clovers — *Trifolium ornithopodioides* (Bird's-foot Clover), *T. subterraneum* (Subterranean Clover), *T. resupinatum* (Reversed Clover), *T. glomeratum* (Clustered Clover) and *T. cernuum* (Nodding Clover), and two melilots, *Melilotus indicus* (Small Melilot) and *M. albus* (White Melilot). Other species recorded included *Erodium moschatum* (Musk Stork's-bill), *E. botrys* (Mediterranean Stork's-bill), *Xanthium spinosum* (Spiny Cocklebur), *Ranunculus arvensis* (Corn Buttercup), *Cuscuta campestris* (Yellow Dodder), parasitic on *Artemisia vulgaris*, *Carthamus tinctorius* (Safflower) and members of the gourd family, including *Citrullus lanatus* (Water Melon). Typically, this tip site yielded abundant tomato plants (*Lycopersicon esculentum*) and another member

of the Solanaceae, *Physalis peruviana* (Cape-gooseberry) was recorded, as well as several seedling date palms (*Phoenix dactylifera*).

Elsewhere, various other notable introductions have been encountered during the year. While recording for the New Atlas 2000 Project in my home area of Keighley, I came across the unusual *Erigeron karvinskianus* (Mexican Fleabane) on walls and in pavement cracks in Oakworth, while *Campanula poscharskyana* (Trailing Bellflower) is well established on several walls in the Haworth area and a handsome clump of *Sasa palmata* (Broad-leaved Bamboo) thrives in a damp rough pasture in Oxenhope.

The disused railway sidings in Manningham, Bradford have been a happy hunting ground for some of us over the past ten years or so and this year *Verbascum pulverulentum* (Hoary Mullein) and *Cynosurus echinatus* (Rough Dog's-tail) were turned up there. Further south in the county, disturbed ground at Holywell Quarry near Glasshoughton became colonised by several specimens of *Salvia pratensis* (Meadow Clary). As a native species, this plant is very rare and local in calcareous grassland in southern England. Elsewhere, there have been records of more widespread disturbed ground species such as *Phalaris canariensis* (Canary-grass) and *Panicum miliaceum* (Common Millet), while *Helianthus annuus* (Sunflower) and *Cannabis sativa* (Hemp) have also been recorded occasionally.

An industrial and urbanised county like West Yorkshire provides much scope for recording these interesting and unusual plants and in addition to John Martin, several other people, including Phyl Abbott, Brian Tregale, Leslie Barnett and Brian Byrne are all active in this field at the present time.

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RUBUS SPECTABILIS IN THE BRITISH ISLES

I am currently researching the status and distribution of *Rubus spectabilis* (Salmonberry) in the British Isles. This ornamental shrub is already becoming a serious threat to lowland deciduous woodlands in parts of Northern Ireland and is spreading along hedgerows and field margins to other habitat types.

I would be pleased if BSBI members could provide me with any information that they may have on this species. The required information includes location(s) (grid ref.), area covered, habitats in which it is found and in your opinion the potential threats to these habitats.

JIM PATERSON, School of Applied Biological & Chemical Sciences, University of Ulster, Coleraine, Co. Londonderry, Northern Ireland BT52 1SA

BIRDSEED AND WOOL ALIENS IN 1995

Perhaps because of the very hot summer weather, this year has produced a bumper crop of aliens in all the usual places in addition to a few unexpected ones.

Wool aliens. Two visits to the Bedfordshire shoddy fields resulted in the sight of 49 different wool aliens which is the third highest score since the game started in 1970. In addition to the usual weeds

there were specimens of *Dactyloctenium radulans**, *Eleusine indica* subsp. *africana*†, *Panicum* cf. *laevifolium**, *Setaria verticillata* (Rough Bristle-grass)*, *Schkuhria pinnata* (Dwarf Marigold)†, *Hibiscus trionum* (Bladder Ketmia)‡, *Anoda* cf. *cristata* (Spurred Anoda) and 30 huge specimens of *Sorghum halepense* (Johnson-grass)* with a similar number of *Carthamus lanatus* (Downy Safflower).

Birdseed and food refuse aliens. Our local large refuse tips are still operational but are no longer happy botanical hunting grounds because of greater municipal tidiness. However, Rye Meads Sewage works (featured in a September edition of Simon King's TV series *Watch Out*) produced amongst others: *Carthamus tinctorius* (Safflower), *Cucurbita maxima/pepo* (Pumpkin) in abundance§, *Passiflora caerulea* (Blue Passion-flower)‡, *Sorghum halepense* of impressive stature, *Ipomoea hederacea* (Ivy-leaved Morning-glory)*, *Ambrosia artemisiifolia (Ragweed), Sesbania exaltata* (Colorado River-hemp)*, *Sida spinosa* (Prickly Mallow)‡, *Abutilon theophrasti* (Velvetleaf)* and *Setaria verticillata*‡.

* — only a single previous record since 1970
† — only two previous records since 1970
‡ — never observed here before
§ — After recent conversation with Mike Mullin and Eric Clement at the Natural History Museum's open day, it would appear that true *Cucurbita maxima* has never been seen in Britain. The pumpkins seen even in greengrocers' shops would appear to be a form of *Cucurbita pepo* as are ornamental gourds, courgettes and marrows.

A tiny area outside Tapp's Plant Centre at Baldock was brought to my attention by Bill Bishop, and a mid-October visit showed an amazingly varied collection of birdseed aliens from 'Swoop' cast down earlier in the summer. The 15 aliens observed (number of plants in parentheses) included: *Echinochloa crus-galli* (Cockspur) (15), *Sorghum halepense* (5), *Setaria pumila* (Yellow Bristle-grass) (10), *Digitaria sanguinalis* (Hairy Finger-grass) (10), *Setaria verticillata* (Rough Bristle-grass) (5) and *Amaranthus retroflexus* (Common Amaranth) (5).

My own garden at Ware threw up many long-forgotten species originally grown deliberately many years ago and not seen since. The prize specimens included an 8 ft tall *Sorghum halepense*, dozens of *Setaria verticillata*, ten *Chenopodium giganteum* (Tree Spinach) reaching 9 ft high, *Sigesbeckia serrata* (Western St Paul's-wort) and hundreds of *Chenopodium vulvaria* (Stinking Goosefoot).

One of the very large glasshouses at Bayfordbury (near Hertford) which originally belonged to the John Innes Group was demolished earlier this year and the long-established colony of *Solanum longipedicillatum* (not in Clement & Foster's *Alien Plants of the British Isles*) under the old staging exploded into life in the open air before being replaced by what is best described as thickets of *Setaria verticillata* and *Digitaria sanguinalis*. The soil's seed bank was clearly well stocked with these two species and the late summer rains produced another rarely seen sight in this country.

Seed of many of the above species plus other wool and birdseed aliens is available on receipt of a S.A.E.

C. GORDON HANSON, 1 Coltsfoot Road, Ware, Hertfordshire SG12 7NW

NOTICES (BSBI)

MEDITERRANEAN BOTANY

The Department of Botany, University of Reading, is planning to put on a one-day meeting concerning Mediterranean botany on Saturday 9th March 9.30 a.m. — 4.00 p.m. for BSBI members. The programme will examine the Mediterranean environment (climate, geology, topography, fire), the origins of the flora, vegetation types, plant adaptations, the past and present effects of man, problems of conservation, as well as profiles of some of the plants. Most lectures and talks will be given by Dr D. Michael Keith-Lucas, Dr Jim D. Ross and Dr Stephen L. Jury. A cost of £15 per person will include

lunches and cover the expenses incurred for the meeting. Please see the leaflet enclosed with this mailing. Booking will be on a first-come, first-served basis.

STEPHEN L. JURY, Department of Botany, Plant Science Laboratories, University of Reading, Whiteknights, PO Box 221, Reading RG6 2AS

NOTICES (NON BSBI)

UK SYSTEMATICS FORUM REVIEW 1994-95

The UK Systematics Forum, an initiative set up with the aim of promoting the co-ordination of UK systematics, published its 1994-95 Review on Friday 6th October 1995.

The UK has particular strengths in the field of systematics — the science of describing, naming and classifying all organisms — through the natural history collections housed in our many museums, botanical gardens and universities, and through the expertise associated with them. This science is fundamentally important to the understanding and conservation of biological diversity as well as underpinning areas of medicine, agriculture and industry.

The Forum was set up in February 1994 with funding from the Office of Science and Technology, and has since been involved in several projects, all with the aim of promoting communication and co-ordination within the systematics community. These activities include:

- setting up a database of UK systematics expertise and current research
- a national workshop to discuss criteria for priorities in systematic research and training
- a series of meetings aimed at co-ordinating the care of natural history collections nationally

As well as summarising these activities the report considers specific issues important to systematics and natural history collections.

Professor Stephen Blackmore, Chairman of the UK Systematics Forum said:

> 'This is an important document that helps to highlight the issues to a wider audience, explaining why the UK has a leading role to play in this field and how the Forum works to help realise this potential. It will also help bring the activities of the Forum to the attention of the wider systematic community.

Information on the UK Systematics Forum will shortly be available on the Internet, accessible from The Natural History Museum's Home Page (URL: http://www.nhm.ac.uk/index.html), or by contacting me at the address below.

EMMA WATSON, UK Systematics Forum, c/o The Natural History Museum, Cromwell Rd, London, SW7 5BD. E-mail: (Internet) ew@nhm.ac.uk.

EUROPEAN LOWLAND WET GRASSLANDS MANAGEMENT AND RESTORATION FOR BIODIVERSITY

International Conference
Czech Republic, 17-20 September 1996

The International Centre of Landscape Ecology at Loughborough University is organising an International Conference on *European lowland wet grasslands Management and Restoration for biodiversity* in Ceské Budejovicé, Czech Republic from the 17-20 September 1996.

For further information contact: Gill Giles at the address below or tel.: + 44 1509 223030, Fax: + 44 1509 260753; email G.Giles@lut.ac.uk.

GILL GILES, International Centre of Landscape Ecology, Department of Geography, Loughborough University, Loughborough, Leicestershire LE11 3TU

GENERIC SKILLS FOR ENVIRONMENTAL MANAGERS, CONSULTANTS AND ENVIRONMENTAL NGOs

The London Environment Centre is continuing to develop its suite of short courses for those who work in the environment sector, to increase their effectiveness in analysing environmental data and using and understanding up-to-date computer software. Following on from the first two courses in this series (Report Writing — 27 October, and Effective Presentation — 3 November) the second two (Data Analysis — 24 January 1996, and Geographic Information Systems (GIS) — 8 February 1996) will concentrate on data handling and analysis, and Geographic Information Systems. Further short courses will follow on IT skills, project management, aspects of finance, operational management and quality assurance.

For further details please contact:

GUY ROBERTSON, Projects Officer, London Environment Centre, London Guildhall University, Faculty of Human Sciences, Calcutta House, Old Castle Street, London E1 7NT Tel. 0171 320 1000, Fax 0171 320 1121

OFFERS

WEST DOWN SEED LIST, 1995

Small amounts of the following seeds are available FREE on receipt of small packets and an S.A.E. Some seeds from the 1994 list (*News* **68**, Jan. 1995) may also be available. I would like to thank all those who kindly sent me seeds last year: my desiderata include *Adonis annua* and *Ajuga chamaepitys*.

Acanthus spinosus
Adonis aestivalis
Aethionema grandiflora
Agrostemma githago
Anagallis arvensis (blue)
Anchusa arvensis
Asphodeline lutea
Briza minor
Bupleurum rotundifolium
Camassia leichtlinii
Campanula trachelium (white)
Carex depauperata
Carex extensa
Catananche caerulea
Chelidonium majus
Chenopodium hybridum
Chenopodium vulvaria
Chrysanthemum coronarium
Chrysanthemum segetum
Clinopodium grandiflorum
Coreopsis tinctoria
Cosmos bipinnatus
Cynoglossum germanicum
Dierama pulcherrima
Digitalis lanata
Farsetia clypeolata
Felicia bergeriana
Galtonia candicans
Gaudinia fragilis
Geranium pratense
Gilia capitata
Glaucium corniculatum
Inula helenium
Kickxia elatine
Kickxia spuria
Lagurus ovatus
Lavandula vera
Lavatera trimestris
Linaria amethystea
Linaria genistifolia
Linaria repens
Lithospermum arvense
Lithospermum officinale
Lychnis chalcedonica
Lychnis coronaria
Lychnis flos-cuculi
Malva moschata
Marrubium vulgare
Melilotus alba
Misopates orontium
Nigella damascena
Orthocarpus pusillus
Papaver hybridum
Parahebe perfoliata
Petrorhagia prolifera
Phormium tenax
Ranunculus lingua
Reseda lutea
Rhamnus cathartica
Roemeria hybrida
Salvia sclarea
Salvia verbenaca
Salvia viridis
Salvia pratensis haematodes
Salvia patens
Scilla verna
Sedum caeruleum
Silene armeria
Silene rosea
Silene vulgaris
Silene coeli-rosa
Silene noctiflora
Silene italica
Smyrnium olusatrum
Stachys alpina

Dipsacus sylvestris
Dorycnium hirsutum
Eremurus spectabilis
Euphorbia platyphyllos
Agastache mexicana
Nepeta cataria
Nicandra physalodes
Nicotiana langsdorfii
Nicotiana sylvestris
Dipsacus pilosus
Stachys arvensis
Stachys germanica
Stylophorum diphyllum
Veronica peregrina

HUMPHRY BOWEN, West Down, West Street, Winterborne Kingston, Blandford, Dorset DT11 9AT

REQUESTS

BOTANICAL TRANSLATOR WANTED

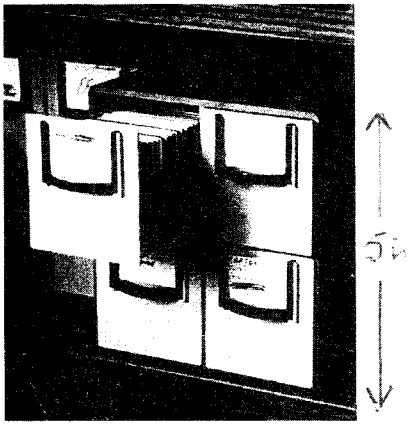
Freelance translator needs successor to do occasional translations from German to English for a pharmaceutical company in Germany. Mainly botanical descriptions. Must have good knowledge of botanical terms, both macroscopic and microscopic, in both languages. Good rate of pay. Apply to me at the address below.

DAVID WINSTANLEY, 63 Weald Road, Brentwood, Essex CM14 4TN. Tel. 01277 226809

BOOKS and SLIDE STORAGE BOXES WANTED

Faunula Grustensis by John Williams was an account of the natural history of a small North Wales parish published in 1830.
Vistas in Botany Vol. 4, Edited by W.B. Turrill. 1959.

I am also trying to find a source of storage boxes (small plastic cabinets with drawers, as per illustration) for colour transparancies. These are **NOT** the type with slots for individual slides.



I would be very pleased to hear from any member who knows where I might buy a copy of either of the books or the storage boxes.

GORONWY WYNNE, Gwylfa, Licswm, Holywell, Clwyd CH8 8NQ (tel. 01352 780689)

BOOK NOTES

My first duty as the new *Watsonia* Book Reviews editor must be to thank my predecessor, John Edmondson, for his wise advice when I took over and his subsequent help. At first the job of Book Reviews editor seems to be an ideal one: there is the excitement when a desirable book arrives in the post, often before publication date, and is it my imagination or are BSBI members now keener to buy me a drink in the bar than they were formerly? One sends out the book, and waits expectantly for the review, and waits, and waits... and then realises that the real work lies extracting material from some reviewers! Of course, not all reviewers are like this and I already have several to thank for producing entertaining and learned reviews to our deadline.

Most books accepted for review in *Watsonia* fall within the scope of the journal, as described in *Watsonia* **20**:1 (1994). I think that it is also appropriate for us to review some books covering the flora of other European countries (particularly those to which members travel on botanical holidays!) even if they are not strictly relevant to the British Isles. I appeal to members who are involved in the publication of books which fulfil these criteria to ensure that I am sent a copy for review. I'd also be interested to hear from members of recently published books that they would like to see reviewed: if you have a suggestion, please send the full details of the book (as given at the head of a review) plus, if possible, the address of the publisher. I will list all books sent for review in Book Notes, so that even if they do not receive a full review they will be brought to members' attention.

The following books will be reviewed in *Watsonia* **21** (1), due to appear in February or March 1996:

Flora of North America north of Mexico. Volume 2: *Pteridophytes and gymnosperms.* Edited by the Flora of North America Editorial Committee. Pp. xvi + 475. Oxford University Press, New York and Oxford. 1993. Price £55.00. ISBN 0-19-508242-7[v2].

Alien plants of the British Isles: a provisional catalogue of vascular plants (excluding grasses). E.J. Clement & M.C. Foster. Pp. xviii + 590. Botanical Society of the British Isles, London. 1994. Price £15.00. ISBN 0-901158-23-2.

Plants and their names. A concise dictionary. R. Hyam & R. Pankhurst. Pp. x + 545. Oxford University Press, Oxford. 1995. Price £14.99. ISBN 0-19-866189-4.

Atlas Florae Europaeae. Volume 10: *Cruciferae (*Sisymbrium *to* Aubrieta*).* Edited by J. Jalas & J. Suominen. Pp. 224, with 323 maps. Committee for Mapping the Flora of Europe and Societas Biologica Fennica Vanamo, Helsinki, Finland. 1994. Price £69.00. ISBN 951-9108-09-2.

England's National Nature Reserves. P. Marren. Pp. xxii + 272. T. & A.D Poyser for English Nature. London. 1994. Price £20.00. ISBN 0-85661-083-6.

Heimans, Heinsius en Thijsse's Geïllustreedre Flora van Nederland, België en Luxemburg en aangrenzend Duitsland en Frankrijk, 23rd ed. J. Mennema. Pp. viii + 1080. Uitgeverij Versluys, Baarn, The Netherlands. 1994. Price Dfl 77.50 [c. £29.00]. ISBN 90-249-1083-0.

Rare plants of Shropshire, a Red Data Book of vascular plants. A.J. Lockton & S.J. Whild. Pp. 40. Shrewsbury Museums Service, Shrewsbury. 1995. Price £4.50. ISBN 0-9500122-7-0.

British plant communities. Volume 4: *Aquatic communities, swamps and tall-herb fens.* Edited by J.S. Rodwell. Pp. xii + 283. Cambridge University Press, Cambridge. 1995. Price £60.00. ISBN 0-521-39168-7.

The habitats and vegetation of Sussex. F. Rose. Pp. 27. Booth Museum of Natural History, Brighton. Price £4.00. ISBN 0-948723-24-6.

Flora of Radnorshire. R.G. Woods. Pp. 292. National Museum of Wales in association with the Bentham-Moxon Trust, Cardiff. 1993. Price £20.00. ISBN 0-7200-0386-5.

The following publications have been received recently. Those which will not be reviewed in *Watsonia* are marked by an asterisk; the comments in square brackets are mine unless indicated otherwise. I hope to obtain reviews of all the rest.

Insects, plants and set-aside. BSBI Conference Report no. 23. Edited by A. Colston & F. Perring. Pp. 55. Botanical Society of the British Isles, London. 1995. Price £6.50. ISBN 0-901158-26-2.

**Wind and trees.* Edited by M.P. Coutts & J. Grace. Pp. xv + 485. Cambridge University Press, Cambridge. 1995. £65.00. ISBN 0-521-46037-9. [A selection of the papers given at a 1993 symposium on the effect of wind on trees.]

Vascular plants of Russia and adjacent states (the former USSR). S.K. Czerepanov. Pp. x + 516. Cambridge University Press, Cambridge. 1995. Price £60.00. ISBN 0-521-45006-3.

Kew. The history of the Royal Botanic Gardens. R. Desmond. Pp. xvi + 466. The Harvill Press, London. 1995. £25.00. ISBN 1-86046-076-3.

James Bolton of Halifax. J. Edmondson. Pp. 74. National Museums and Galleries on Merseyside, Liverpool. 1995. £12.95. ISBN 0-906367-80-8.

The flora of Northamptonshire and the Soke of Peterborough. G. Gent, R. Wilson *et al.* Pp. 335. Robert Wilson Designs, Rothwell. 1995. £30 (h/b), £23 (p/b). ISBN 0-907381-03-0 (hardback), 0-907381-08-1 (paperback).

The land use, ecology and conservation of Broadland. M. George. Pp. xviii + 558. Packard Publishing, Chichester. Paperback published in 1994. £23. ISBN 1-85341-047-0. Available from the author at Marsh House, Strumpshaw, Norwich, NR13 4HT at £28 incl. p. & p.

**Flora for fauna.* Edited by J. Hamilton & P. Hart. Pp. 16. Linnean Society of London, London. 1994. £2.00. No ISBN. Obtainable from the Linnean Society at Burlington House, Piccadilly, London W1V 0LQ for £2.50 incl. p. & p. [Designed to be hung up like a calendar, this publication lists the food of common animals and the animals that make use of common plants.]

A new key to wild flowers*, 2nd ed. J. Hayward. Pp. x + 278. Cambridge University Press, Cambridge. 1995. £12.95 (paperback). ISBN 0-521-48346-8. [A second edition of this identification guide, with the nomenclature brought into line with Stace's *New Flora*; no other changes are mentioned in the blurb. The first edition was favourably reviewed in *Watsonia* **17: 109 (1988).]

**The Manuleae. A tribe of Scrophulariaceae.* O.M. Hilliard. Pp. iv + 579. Edinburgh University Press, Edinburgh. 1994. £80.00. ISBN 0-7486-0489-8. [A detailed taxonomic revision of the 17 genera and 350 species of the African plant tribe Manuleae.]

Historical ecology of the British flora. M. Ingrouille. Pp. xi + 347. Chapman & Hall, London. £22.50. ISBN 0-412-56150-6.

Wild orchids of Hampshire and the Isle of Wight. M.N. Jenkinson. Pp. 198. Orchid Sundries, Gillingham. 1995. £19.95 (p/b). ISBN 1-873035-03-9 (paperback), 1-873035-04-7 (hardback).

**Flowering plants of The Gambia.* M. Jones. Pp. ix + 99, plus 32 pp. of colour photographs. A.A. Balkema, Rotterdam. 1994. Price £28.00. ISBN 90-5410-197-0. [A guide to the common and conspicuous species in The Gambia, with excellent colour photos of 160 species and a further 173 species referred to in the text.]

**Thin Ice.* Edited by D. Kitchen. Pp. 144. Oxford University Press, Oxford. 1991, reprinted 1995. Price £5.00. ISBN 0-19-833183-5. [I have no idea why this anthology of modern poetry was sent to the *Watsonia*, unless it was sent in mistake for Roy Vickery's recent *Dictionary of Plant-lore*, which both Roy and I have failed to get the same publisher to send for review!]

Orobanche. *The European broomrape species. A field guide. 1. Central and northern Europe.* C.A.J. Kreutz. Pp. 159. Price Hfl. 68. Stichting Natuurpublicaties Limburg. 1995. ISBN 90-74508-05-7.

**Forest resources in Europe 1950-1990.* K. Kuusela. Pp. xiv + 154. Cambridge University Press, Cambridge. 1994. £29.95. ISBN 0-521-48076-0. [Forestry statistics and explanatory text for the years 1950, 1960, 1970, 1980 and 1990. British readers will not be surprised to learn that 'Europe's recorded growing stock increased by 43% during the period' but I didn't know that it 'is now increasing faster than ever'.]

The new naturalists. P. Marren. Pp. 304. Harper Collins, London. 1995. Price £30 (h/b), £14.99 (p/b). ISBN 000-21998-X (hardback); 000-21997-1 (paperback). [Without wanting to pre-empt the review, I can say that this was the one book I received this year which I had to send away immediately as I kept reading it rather than getting on with my work!]

**Marine algae of Northern Ireland.* O. Morton. Pp. 123. Ulster Museum, Belfast. 1994. Price £6.95. ISBN 0-900761-28-8. Obtainable from Ulster Museum, Botanic Garden, Belfast, BT9 5AB for £7.60 incl. p. & p. [A most attractive paperback, which treats the marine algae in the same way that Paul Hackney's recent edition of *A Flora of the north-east of Ireland* treats the vascular plants. In addition to a rather lurid cover, there are 16 colour plates which capture the beauty of these plants and make me wish that I knew more about them]

**Ironwood: an ecological and cultural keystone of the Sonoran desert.* Conservation International Occasional Paper no. 1. Edited by G.P. Nabhan & J.L. Carr. Pp. 92. Conservation International, Washington DC. 1994. Price £8.75. ISBN 1-881173-07-0 [Papers about the effects of the ironwood tree *Olneya testota* (Leguminosae) on other plants and its use for producing handicrafts.]

**Plant allometry.* K.J. Niklas. Pp. xvi + 395. University of Chicago Press, Chicago. 1994. Price £47.95 (h/b), £19.95 (p/b). ISBN 0-226-58080-6 (hardback), 0-226-58081-4 (paperback).

**The wild flowers of Islay. A checklist.* M. Ogilvie. Pp. 60. Lochindaal Press, Bruichladdich. 1995. Price £4.80. No ISBN. Obtainable from M. Ogilvie, Glencairn, Bruichladdich, Isle of Islay, PA49 7UN for £5.20 incl. p. & p. [An alphabetical checklist of the Islay vascular plants, with a single line on their habitat and distribution, and a list of the 10-km squares from which they have been recorded. All records are included in the 10-km square lists, irrespective of date, but species only known from pre-1945 records are indicated, as are species which also occur on neighbouring Jura. A useful compilation which will be valuable for field recorders updating records for the *Atlas 2000* project.]

**Sandwell Valley flora.* M. Poulton. Pp. 42. Sandwell Valley Naturalists' Club (Special Series no. 1). 1994. ISBN 0-9511532-1-8. Obtainable from M. Poulton, 10 Vicarage Street, Oldbury, Warley, West Midlands, B68 8HQ for £3 incl. p. & p. Cheques to S.V.N.C. [A checklist covering a 5 · 4 km study area, the Sandwell Valley near West Bromwich, with illustrations and notes on the less common plants. The habitats are diverse and 488 species have been recorded.]

**Ethnobotany and the search for new drugs.* Ciba Foundation Symposium no. 185. Edited by G.T. Prance, D.J. Chadwick & J. Marsh. Pp. ix + 280. John Wiley & Sons, Chichester. 1994. Price not stated. ISBN 0-471-95024-6. [Papers from a symposium held in Brazil]

Pondweeds of Great Britain and Ireland. BSBI Handbook no. 8. C.D. Preston. Pp. 352. Botanical Society of the British Isles, London. 1995. Price £16.50. ISBN 0-901158-24-0.

Sand dune vegetation survey of Great Britain: a national inventory. Part 1: *England.* G.P. Radley. Pp. 126. £22.50. ISBN 1-873701-19-5. Part 2: *Scotland.* T.C.D. Dargie. Pp. 113. £16.00. ISBN 1-873701-20-9. Part 3: *Wales.* T.C.D. Dargie. Pp. 153. £26.00. ISBN 1-873701-21-7. All published by Joint Nature Conservation Committee. 1995. Special price for all 3 volumes £55.00. ISBN 1-873701-31-4 (set of three).

Terrestrial orchids: from seed to mycotrophic plant. H.N. Rasmussen. Pp. xii + 444. Cambridge University Press, Cambridge. 1995. Price £45.00. ISBN 0-521-45165-5.

Flores silvestres de Baleares. A.M. Romo. Pp. 412. Editorial Rueda, Madrid. 1994. Price Ptas 3500. ISBN 84-7207-073-5.

**The state of the environment atlas.* J. Seager. Pp. 128. Penguin Books, London. 1995. £10.00. ISBN 0-14-051333-7. [The core of the book consists of world maps of aspects of the human and natural environment such as poverty, water shortage, urban air pollution, nuclear power, over-exploited fish species and similar 'Greenpeace' issues. Probably a valuable teaching tool for those who can stomach its fearsome political correctness.]

An illustrated survey of orchid genera. T. & M. Sheehan. Pp. 421. Cambridge University Press, Cambridge. 1995. £60.00. ISBN 0-521-48028-0.

Bracken: an environmental issue. Edited by R.T. Smith & J.A. Taylor. Pp. 228. International Bracken Group Special Publication no. 2, Leeds. 1995. £29.95 incl. p. & p. ISBN 0-9525505-0-4. Obtainable from Working Papers Secretary, School of Geography, University of Leeds, Leeds LS2 9JT. Cheques to University of Leeds.

Managing habitats for conservation. Edited by W.J. Sutherland & D.A. Hill. Pp. 399. Cambridge University Press, Cambridge. 1995. £55.00 (h/b), £17.95 (p/b). ISBN 0-521-44260-5 (hardback), 0-521-44776-3 (paperback).

**Amino acids and their derivatives in higher plants*. Edited by R.M. Wallsgrove. Society for Experimental Biology Seminar Series no. 56. Pp. xiv + 280. Cambridge University Press, Cambridge. 1995. £40.00. ISBN 0-521-45453-0.

**Common Trees, Shrubs and Grasses of the Luangwa Valley*. P.P. Smith. Pp. 46; 14 colour plates. The Trendrine Press, Cornwall. 1995. Price £5 (incl. p.&p.) (ISBN 0-9512562-3- 8). [This guide is aimed at tourists visiting the South Luangwa National Park in Zambia, the home of most species of big game animals to be found in Africa. It describes and illustrates 47 common trees or shrubs and 14 common grasses of the area and includes those species most likely to be seen by tourists during the dry season either because they are very common or are very striking . The descriptions are quite comprehensive and for each plant there is a paragraph on its value to wildlife and another on its uses to man. The excellent illustrations by Quentin Allen include views of the whole plant as well as enlargements of leaves and/or flowers and fruit and an added bonus are the delightful thumbnail sketches of many of the birds and mammals of the valley. Copies are available from the author, Paul P. Smith, 21 Belvoir Road, Bristol BS6 5DQ R.G. Ellis]

Two members have asked me to mention books which we have not received for review. David Pearman, whose love of grasses is exceeded only by his love of sedges, recommends:

Manual of grasses. Edited by R. Darke & M. Griffiths. Derived from the New Horticultural Society Dictionary of Gardening. Pp. xlix + 169. Macmilian. 1994. Price £35.00. ISBN 0-333-61535-2.
David comments that this is 'a slim and expensive volume covering the principal members of the grasses, sedges, rushes, cat-tails and sweet flags (or Gramineae, Cyperaceae, Juncaceae, Typhaceae and Acoraceae) grown in the British Isles and North America. All species have proper taxonomic descriptions and cite authorities, synonyms and cultivars and there is an excellent glossary and quite a few line drawings. Very many of our native species are included. Well worth investigating even at that price.

Carol Hora has kindly sent me details of *Flowers of Mayo*, edited by E.C. Nelson and published by Eamonn de Burca in a limited edition of 150 copies, price I£450. The core of the book consists of a translation of the hitherto unpublished *Fasciculus Plantarum Hiberniae* of Dr Patrick Browne (1720-1790), with an editorial commentary. Other contents include a biographical essay on Browne by Charles Nelson, Browne's letters to Banks, Linnaeus and others, and 15 coloured illustrations. Carol comments that 'this book is a joy to behold... a work of great scholarship, of particular interest to the people of County Mayo and of lasting importance in the history of Irish botany'. I don't doubt the scholarship, but I wonder how many BSBI members will have access to it!

CHRIS. D. PRESTON, ITE Monks Wood, Abbots Ripton, HUNTINGDON, Cambs., PE17 2LS.

FLOWERING PLANTS OF KIRKCUDBRIGHTSHIRE — AN ADDENDUM

A 1990-1995 Addendum has been produced for the *Flowering Plants of Kirkcudbrightshire* by Olga Stewart. Those who would like a copy please send a stamped addressed envelope (9" × 6½") to me at the address below.

OLGA STEWART, 30/5 Colinton Road, Edinburgh EH10 5DG

REPORTS OF FIELD MEETINGS — 1995

COMMON NAMES IN *BSBI NEWS*

At the 'request' of the membership I started including both Common and Latin names of plants in Field Meeting Reports two years ago. Despite this, nearly all reports are sent to me for editing without the Common names. Not only does this add to my workload but it makes a nightmare of marking up the reports for *News* particular if reports are single line spaced as many of them are. In future could authors of Field Meeting Reports please include Common names (from Stace) in parentheses after the Latin names.

BRIAN S. RUSHTON, Editor, Field Meeting Reports

Reports of Field Meetings are edited by, and should be sent to, Dr B.S. Rushton, School of Applied Biological and Chemical Sciences, University of Ulster, Coleraine, Co. Londonderry, N. Ireland, BT52 1SA.

EAST NORFOLK (v.c. 27). 2nd-4th JUNE

The weekend started on Friday evening in the Community Centre in Blickling village 'home' of the National Trust in the Eastern Region. The meeting was addressed by Mr Phil Scott Countryside Officer for the National Trust, who described the three estates we were to visit, and highlighting the 'good' areas on each estate, as revealed by the Trust's own vegetation surveys. He also very kindly provided us with maps of each estate with the more important sites highlighted in different colours for woodland and old pastures, to enable us to be sure of recording in the best sites. This proved to be of prime importance. The local membership gave us good support, but only two came from 'out of county'. It was a real pleasure the following day, with our numbers stretched to the limit to record all eight tetrads on the Blickling estate, to wander through riverside pastures which had had little fertiliser and no spray over the years. Here we discovered such plants as *Dactylorhiza incarnata* subsp. *incarnata* (Early Marsh-orchid) and *D. maculata* subsp. *ericetorum* (Heath Spotted-orchid) and *Triglochin palustre* (Marsh Arrowgrass). However, one highlighted marsh had apparently been 'abandoned' and become rather rank. Even this had a surprise, 1 km from the nearest house, and a long way from the road, we discovered a large clump of Rhubarb (*Rheum* × *hybridum*)!

Other parties visited the woodland where, as in many mid Norfolk woods, they found wild *Convallaria majalis* (Lily-of-the-valley), and a piece of heath being restored under the Countryside Stewardship scheme, where, in addition to *Calluna vulgaris* (Heather), a nice stand of *Sedum telephium* (Orpine) was found.

On Sunday, we left the delights of the Bure valley for the more arid uplands of the Cromer moraine on the estates at Felbrigg and Sheringham Park — another eight tetrads. Here, most of the returned sheets recorded the alien *Amsinckia micrantha* (Common Fiddleneck) which is often abundant on these north Norfolk field margins. There were notable discoveries too. A piece of very wet woodland known as Metton Carr was found to be literally full of *Paris quadrifolia* (Herb-Paris). A recently opened footpath from Sheringham Park to the edge of the estate on the cliff top below went through probably the only colony of *Astragalus glycyphyllos* (Wild Liquorice) in the county, whilst a pond on another part of the estate had *Fumaria muralis* subsp. *boraei* (Common Ramping-fumitory) nearby — a Norfolk rarity, and with large quantities of flowering *Ceratophyllum submersum* (Soft Hornwort) in the water.

Those of us who visited Sheringham Park were much impressed with the exotic trees and shrubs growing in riotous abandon in the woods, which seemed to consist mainly of every known species of Rhododendron and Magnolia occurring in Britain, plus a number of trees most of us could not name.

Though numbers were a bit thin for the project in hand, we had an excellent weekend, and would like to thank the National Trust, and especially Mr Scott for their help and hospitality.

A. BULL

ALDERNEY, CHANNEL ISLANDS (v.c. S). 9th-12th JUNE

Alderney is about 5.5 km long × 2.5 km at its widest and a considerable portion of the island was covered during the visit of the BSBI. Only a small part is now regularly cultivated. It was hoped to make a special study of the grasses, which have not been well recorded in the past. Nine members travelled from England arriving on either 8th or 9th and one member from Guernsey came for the day on Sunday 11th, to join my wife and I, the only two local members. Four of the group stayed until the afternoon of 13th. The weather was dry, sunny and warm throughout, with only the Saturday cool, with a strong SE wind and dull in the morning.

A printed checksheet containing the names of virtually the entire Channel Island's flora was given to each member on arrival. Between them exactly 500 species were recorded during the visit. The whole group saw most of the plants. The extant flora of Alderney is just over 800 species.

Highlights for most members, who each had several first sightings, were:

Hypericum linariifolium (Toadflax-leaved St John's-wort) in its one known station, first recorded in 1901, on a 45° sandstone ledge halfway down an 80 m cliff. Seven members made the difficult descent to the beach and then the somewhat hazardous climb up to the ledge. They were rewarded by the site of 56 plants in full flower, by far the largest number I have recorded since the 1987 hurricane almost eliminated the colony.

Ononis reclinata (Small Restharrow) in good flower, found in its usual single station and in addition some 50 plants about 1 km away, in the vicinity of a spot last recorded by C.C. Babington in 1838.

Limonium normannicum (Alderney Sea-lavender), an Alderney speciality, about 30 plants in its one site, one just coming into flower.

Ornithopus pinnatus (Orange Bird's-foot) and *O. perpusillus* (Bird's-foot) were found in several stations and in good quantity. They were often accompanied by several of the smaller *Trifolium* spp. *glomeratum* (Clustered Clover), *suffocatum* (Suffocated Clover), *ornithopodioides* (Bird's-foot Clover), *subterraneum* (Subterranean Clover), *striatum* (Knotted Clover) and *scabrum* (Rough Clover).

Bupleurum baldense (Small Hare's-ear) was found in its regular site and in considerable quantity on Longis Common about 2 km away, at a spot not previously recorded.

Thesium humifusum (Bastard-toadflax) in one of its usual sites, where it has spread in a narrow band over some 400 m about 2 m above the top of the beach, at two other known sites and also with the *Bupleurum baldense* on Longis Common, some way from its previously known sites in this area.

Romulea columnae (Sand Crocus) was much in evidence along the cliff paths, but only as seed heads, whilst *Tuberaria guttata* (Spotted Rock-rose) in flower, covered an area of cliff top about 250 m × 10 m in some considerable quantity in bare spots amongst the *Ulex gallii* (Western Gorse).

Isoetes histrix (Land Quillwort) was plentiful at one of its two known sites, at sea level. Two new stations in the same general area were noted during the visit. All three had *Parentucellia viscosa* (Yellow Bartsia) close by. It could not be found at the other site, which is some 2.5 km away on a cliff top.

Orobanche species, all in flower, caused great excitement. *O. rapum-genistae* (Greater Broomrape) was plentiful on the cliffs among *Cytisus scoparius* subsp. *maritimus* (Broom), *O. purpurea* (Yellow Broomrape) was frequent on the sandy N. coasts, *O. minor* (Common Broomrape) was seen in great quantity, whilst *O. hederae* (Ivy Broomrape) was seen in small quantity.

Centaurea aspera (Rough Star-thistle), *Cynodon dactylon* (Bermuda-grass), *Centaurium pulchellum* (Lesser Centaury), *Ceratochloa cathartica* (Rescue Brome), *Geranium submolle* (Alderney Crane's-bill) (another Alderney speciality), *Lotus angustissimus* (Slender Bird's-foot-trefoil), *Silene gallica* var. *quinquevulnera* (Small-flowered Catchfly) and *Trifolium occidentale* (Western Clover) were also new to several members. *Lotus subbiflorus* (Hairy Bird's-foot-trefoil) was so frequent and in such large quantity, as to provoke comment from several members, to whom it is rare.

Atriplex portulacoides (Sea-purslane) was plentiful in its one station about 30 m above the sea on a cliff face. *Cuscuta epithymum* (Dodder), rare on *Ulex* (Gorse), was common on *Thymus* (Thyme) on the commons. New species found during the visit, included a *Centaurea* (Knapweed), and a yellow flowered *Carpobrotus* (Hottentot-fig), which does not fit the characteristics of our three known species, both yet to be determined. *Polypogon viridis* (Water Bent), last recorded in 1901, was found in a cobbled gutter in the town.

Two new stations were noted, on old walls in town 0.7 km apart, for our very rare *Ceterach officinarum* (Rustyback), two plants and 18 plants, previously known at only one site (twelve plants) 1 km distant from the nearest of these.

Although no completely new grass species were recorded, several species not recorded for some years were seen. New stations were found for several of our rare plants and the visit was voted a great success by all participants.

B. BONNARD

PENYRERYD, GWBERT AND BANC Y MWLDAN, PENPARC, CARDIGANSHIRE (v.c. 46). 24th JUNE

Eighteen members met at the mouth of the Teifi estuary in hot sunny weather to explore the sand dunes and foreshore of the Penyreryd SSSI. Only 6 ha, densely beset with caravans, heavily rabbit-grazed, and being rapidly eroded by the sea on both sides, it is a site under considerable pressure but contains a remarkable number of species. Spectacular established aliens included *Oenothera stricta* (Fragrant Evening-primrose), *Eschscholzia californica* (Californian Poppy) and *Papaver somniferum* (Opium Poppy), including flore pleno plants. The richest site for natives was the seaward ridge of the dunes, now only about 20 m long, half the length that it was 12 years ago. Here we found, amongst the *Ammophila arenaria* (Marram), one plant of *Ophrys apifera* (Bee Orchid) and many plants of *Anacamptis pyramidalis* (Pyramidal Orchid), *Calystegia soldanella* (Sea Bindweed), *Phleum arenarium* (Sand Cat's-tail) and *Vulpia fasciculata* (Dune Fescue). Elsewhere in the dunes we found *Filago minima* (Small Cudweed), new for the site and only the second extant record. Spring ephemerals had disappeared, but after a lot of searching we found *Trifolium scabrum* (Rough Clover) and *Stellaria pallida* (Lesser Chickweed).

After lunch we went on to the Banc y Mwldan SSSI, near Penparc. Spring lines below calcareous sands produce a series of flushes extending for over 1 km in cattle-grazed pastures, and it is surprising to see so many calcicole species inland in this predominantly acidic vice-county. In one level area of fen we saw, among *Phragmites australis* (Common Reed) and *Equisetum palustre* (Marsh Horsetail), abundant *Epipactis palustris* (Marsh Helleborine), *Briza media* (Quaking-grass), *Carex viridula* subsp. *brachyrrhyncha* (Long-stalked Yellow-sedge), *Eleocharis quinqueflora* (Few-flowered Spike-rush), *Eriophorum latifolium* (Broad-leaved Cottongrass), *Galium uliginosum* (Fen Bedstraw) and *Euphrasia pseudokerneri* forma *elongata* (an Eyebright). This last is otherwise recorded only from the East Anglian fens, although the species itself, characteristic of dry calcareous grasslands, has been found nearby on the coast at Aberporth and in Flint, and is scattered in south and south-east England. Nearby were large stands of *Carex acutiformis* (Lesser Pond-sedge), *Juncus* · *diffusus* (*J. inflexus* · *J. effusus*) (the hybrid between Soft Rush and Hard Rush), and other flushes had *Gymnadenia conopsea* subsp. *densiflora* (Fragrant Orchid), not yet in flower, *Carex dioica* (Dioecious Sedge) and a bewildering range of Marsh-orchids (*Dactylorhiza* spp.). *Carex paniculata* (Greater Tussock-sedge) occurred both as big

tussocks and as scattered stems in some fens and flushes, and other sedges we saw included *C. hostiana* (Tawny Sedge), *C. pulicaris* (Flea Sedge) (surprisingly growing with *C. viridula* subsp. *brachyrrhyncha* and *Eriophorum latifolium*), *C. hirta* (Hairy Sedge) and *C. pallescens* (Pale Sedge) (growing with *Listera ovata* (Common Twayblade) on a drier slope).

We are grateful to Mr Leslie Lowe and several tolerant caravanners on the dunes for permission to botanise, and to Mr Idris James for helping with parking and allowing us to roam his marvellously rich pastures.

A.O. CHATER

LLANARMON DYFFRYN CEIRIOG, DENBIGHSHIRE (v.c. 50). 1st JULY

This was a recording meeting for ATLAS 2000. Five people met, and divided into two groups. One group explored waterfalls, river gorges and wetland at the head of the Afon Ceiriog Ddu. They added 43 species to the card, including *Carex paniculata* (Greater Tussock-sedge), *Phegopteris connectilis* (Beech Fern), *Drosera rotundifolia* (Round-leaved Sundew), *Epilobium brunnescens* (New Zealand Willowherb), *Cryptogramma crispa* (Parsley Fern) and *Cystopteris fragilis* (Brittle Bladder-fern).

The other group walked up to another wetland, mostly dominated by *Juncus* spp. (Rushes). However they found *Dryopteris carthusiana* (Narrow Buckler-fern), *Lychnis flos-cuculi* (Ragged- Robin) and *Listera cordata* (Lesser Twayblade). It was a rewarding day, and there are now 346 species recorded in this 10-km square.

JEAN A. GREEN

WELSH AGM MEETING, BUILTH WELLS, RADNORSHIRE (v.c. 43). 7th-10th JULY

For many years the Welsh AGM has shuttled between North and South Wales, taking advantage of comfortable and relatively low-priced student accommodation at a range of colleges. With no residential colleges in central Wales (with the exception of Gregynog, booked up years in advance) and with most of the larger hotels decidedly posh and expensive, a suitable venue in that area had previously eluded the Welsh Committee. At last, our Field Meetings Secretary, sent out on an apparent 'mission impossible', reported a possible venue at the Royal Welsh Showground at Llanelwedd. The one-time stockman's quarters had apparently flowered in Neuadd Henllan. A desperate committee will vote for anything.

It was with great relief that the field excursion leader met a contented, well-fed and watered group on the Friday night, docile enough to cope with anything, including a set of stiles designed to tax Olympic athletes. The venue was Cors y Llyn (the bog of the lake) NNR, 5 km north of Llanelwedd. Stout shoes were, surprisingly, the recommended footwear following over three weeks of extraordinarily hot and dry weather. This site is more than a bog since closeby is a tiny, but species-rich meadow. Saved from the agricultural improvers' hand in the early 1970s it is now managed by the Countryside Council for Wales (CCW) by agreement with the owners. Spring and autumn grazing with a late hay crop has favoured the spread of *Dactylorhiza maculata* (Heath Spotted-orchid) increasing from about 30 flower spikes in 1982 to over a thousand this year. *Genista tinctoria* (Dyer's Greenweed) and *Cirsium dissectum* (Meadow Thistle) had also shown magnificent increases in abundance. A field away, and hidden by birch and willow of its lagg woodland, lies the basin mire of Cors y Llyn. This internationally important 'Schwingmoor', with a floating lawn of bogmoss and heath, can now be visited easily and without damaging it, along a boardwalk. *Vaccinium oxycoccos* (Cranberry), *Eriophorum vaginatum* (Hare's-tail Cottongrass), *Osmunda regalis* (Royal Fern) and *Rhynchospora alba* (White Beak-sedge) were seen from the boardwalk. Scots Pines (*Pinus sylvestris*), which colonised part of the bog during this century, combine with the birch and heather to create the illusion that you have been transported out of mid-Wales to somewhere in the Scottish Highlands. The dreamers were brought back to earth or rather, bog, by a minor traffic congestion problem as BSBI met first year Cardiff

biology students travelling the other way on the narrow boardwalk. Hedgerow renovation work in the area was also examined and the potential for improving hedges for wild flowers was discussed.

On Saturday, the party swelled to 30 and we were particularly pleased to welcome our President and his wife from over Offa's Dyke to his first Welsh AGM weekend. Rhosgoch Common NNR was the venue, where we met the warden, Andrew Fergusson of CCW. This large raised mire has a particularly fine lagg woodland and an extensive area of seasonally flooded grassland. This latter area was examined first.

Now dry, the usually wet depressions were picked out by *Eleogiton fluitans* (Floating Club-rush) and *Apium inundatum* (Lesser Marshwort). Arthur Chater demonstrated the differences between semi-terrestrial forms of pondweeds *Potamogeton polygonifolius* (Bog Pondweed) and *P. natans* (Broad-leaved Pondweed), the latter with its enormously long stipules and noted here for the first time. A number of odd thistles were pronounced on by a committee as being *Cirsium* × *forsteri* (*C. dissectum* × *C. palustre*), the hybrid between the Meadow and Marsh Thistles and new to Radnorshire. A second new vice-county record quickly followed with the discovery by Quentin Kay of *Rorippa microphylla* (Narrow-fruited Water-cress).

Moving towards the end of the boardwalk, which provides a very relaxing access to the centre of an otherwise rather inaccessible site, *Pilularia globulifera* (Pillwort) was noted, complete with pills, growing in abundance amongst other rather rank vegetation. This set members wondering whether they had overlooked it in many of their sites. The boardwalk traversed areas of fen vegetation. The *Ranunculus lingua* (Greater Spearwort) and *Valeriana officinalis* (Common Valerian) and pools containing *Utricularia vulgaris* agg. (Bladderwort) and *Lemna trisulca* (Ivy-leaved Duckweed), through *Carex rostrata* (Bottle Sedge) lawns to the edge of the central raised mire where lunch was taken. Here the debate continued on the dynamics of vegetation change, sparked off by the sight of dying *Salix cinerea* subsp. *oleifolia* (Grey Willow) in a clear zone around the edge of the raised mire, possibly caused by the spread of acidic peat. After lunch a flushed area of peatland was examined with *Carex hostiana* (Tawny Sedge) and Marsh-orchids (*Dactylorhiza* spp.), on balance considered to be closer to *Dactylorhiza incarnata* (Early Marsh-orchid) than any other.

The party then split, with the more adventurous plunging into the lagg woodland in successful pursuit of *Osmunda regalis* (Royal Fern), *Paris quadrifolia* (Herb Paris) and *Listera ovata* (Common Twayblade). Mike Porter identified a number of bramble species including *Rubus silurum*, *R. pictorum* and *R. dasyphyllus*. The party then returned to Llanelwedd for the AGM followed by a talk given by the writer on the implications of the various agri-environment conservation schemes on wild plant conservation. After dinner, Mike Porter reported on 'the highlights of the first 25 years of recording for the *Flora of Brecknock*.' The results of this very detailed study are eagerly awaited.

In beautiful warm weather the party reassembled on Sunday morning at Abergwesyn to visit Vicarage Meadows, a reserve of the Brecknock Wildlife Trust and Nant Irfon NNR, owned and managed by CCW.

Vicarage Meadows, as the name implies, was once owned by the manse and provided grass and hay for the house cow and vicar's horses. Miraculously it escaped serious damage from modern agricultural improvement methods and still supports an immense range of plant species, notably *Pseudorchis albida* (Small-white Orchid) (which Mike Porter reminded us had been recorded (perhaps in this very field ?) by the Rev. O.M. Ridley in 1886), *Platanthera chlorantha* (Greater Butterfly-orchid) and *Gymnadenia conopsea* subsp. *borealis* (Fragrant Orchid) set amongst dozens of *Vicia orobus* (Wood Bitter-vetch) and *Genista tinctoria* (Dyer's Greenweed). Arthur Chater demonstrated the fine downy hairs on the upper surface of the leaf of *Carex montana* (Soft-leaved Sedge) which easily separated it from the superficially similar *Carex pilulifera* (Pill Sedge).

In the afternoon the party, now joined by Andrew Fergusson, the CCW warden, moved on to Nant Irfon NNR where a number of upland management issues were discussed. The reserve supports fine examples of upland sessile oakwood, herb-rich grassland and flushes set amongst seas of *Molinia caerulea* (Purple Moor-grass) and *Pteridium aquilinum* (Bracken). Management techniques involving cutting, weed-wiping and controlled grazing to favour a diverse herb flora at the expense of Purple Moor-grass, were explained. A minor success in encouraging the spread of *Trollius europaeus*

(Globeflower) was noted and a new species, *Listera ovata* (Common Twayblade), was added to the reserve record. Other additions included Soft-leaved Sedge (in two places) and *Eriophorum latifolium* (Broad-leaved Cottongrass), the latter associated with a wide range of species, including *Carum verticillatum* (Whorled Caraway) in a base-rich flush beside the Afon Irfon.

So ended the 1995 Welsh AGM in what was considered by Welsh standards to be fairly hot weather. Little did we know that it was but a rather feeble foretaste of one of the hottest summers this century. My thanks to all who participated particularly to David Humphreys, Mike Porter and Andrew Fergusson for their help and support.

R.G. WOODS

HILBRE ISLAND, CHESHIRE (v.c. 58). 8th JULY

Ten members assembled at low tide for the walk across the sands, calling first at Little Eye, a small sandstone outcrop which storms of a few years ago swept clean, but which now holds good colonies of *Spergularia rupicola* (Rock Sea-spurrey) which is such a feature of the island group. *S. marina* (Lesser Sea-spurrey) was new and *Sisymbrium officinale* (Hedge Mustard) was the first record since 1942. *Rumex crispus* subsp. *littoreus* (Curled Dock) was compared with subsp. *crispus*.

Next, we proceeded to Middle Eye, a higher island mainly covered in *Festuca rubra* (Red Fescue), where we were met by the warden Vicky Seager who gave us an interesting summary of the history and geology of the islands. *Senecio sylvaticus* (Heath Groundsel) was common, while *Juncus maritimus* (Sea Rush) was a hazard to people in shorts.

The main island of Hilbre used to accommodate errant monks, but now houses the warden, a few weekend cottages and a bird observatory. Steep, fragile sandstone cliffs surround a grassy plateau with a small pool which supports *Samolus valerandi* (Brookweed), *Juncus gerardii* (Saltmarsh Rush) and *Ranunculus aquatilis* (Common Water-crowfoot), not *R. baudotii* (Brackish Water-crowfoot) as might be expected. *Danthonia decumbens* (Heath Grass) was new to the islands from here. The *Limonium britannicum* subsp. *celticum* (Rock Sea-lavender) was flowering well on the western cliff-top and provided a pleasant ambience for lunch, with grey seals 'singing' in the distance. Much discussion surrounded a plant previously determined as *Lotus glaber* (Narrow-leaved Bird's-foot-trefoil), but which proved to be *Medicago sativa* subsp. *falcata* (Sickle Medick). *Sisymbrium orientale* (Eastern Rocket) was new. A low mound which is covered with ephemerals in spring, was by now totally desiccated — even *Cerastium arvense* (Field Mouse-ear) was reduced to a few leaves.

The eastern cliffs were examined from sea-level and hosted a fine colony of *Asplenium marinum* (Sea Spleenwort). *Calamagrostis epigejos* (Wood Small-reed) graced the cliff-top along with *Erysimum cheiri* (Wallflower), *Jasione montana* (Sheep's-bit) and *Parietaria judaica* (Pellitory-of-the-wall).

Having some spare time, we explored the adjacent coast where *Allium vineale* (Wild Onion) was abundant on the dunes, *Eryngium maritimum* (Sea-holly) was doing well and *Juncus ambiguus* (Frog Rush) was unambiguously determined. *Carex extensa* (Long-bracted Sedge) seems to be increasing greatly in the saltmarsh along with *Trifolium fragiferum* (Strawberry Clover) and several recent arrivals were still hanging on: *Raphanus raphanistrum* subsp. *maritimus* (Sea Radish), *Euphorbia paralias* (Sea Spurge), *Salvia verbenaca* (Wild Clary) in a new site, and *Trifolium striatum* (Knotted Clover).

The sun was still blazing down as we said our farewells and headed for home, perhaps feeling that Cheshire is not too bad after all!

G. M. KAY

TONGUE, WEST SUTHERLAND (v.c. 108). 8th-10th JULY

The object of this field meeting was to record for the 'new atlas' and it was attended by 15 members in addition to the leaders, Pat and Ian Evans. With such a well-supported meeting, we were able to divide

into three or four parties on each day and therefore cover a really good range of habitats in the 10-km squares we were working. We were most appreciative of the co-operation of the owners of estates to which we were given access and their staff.

On Saturday, in the sunshine, we split into four groups and concentrated on NC/5.5. In spite of only covering a relatively short distance, the party which recorded in Tongue and its immediate environs predictably turned up an impressive total of species. They had a wide range of habitats to examine, from the sea wall to farmyards, woodland and rocky grassland. *Botrychium lunaria* (Moonwort) was found in three places (one site had more than 40 spikes), *Cerastium semidecandrum* (Little Mouse-ear) and *Carex remota* (Remote Sedge), both very uncommon so far north, were noted. *Symphytum* × *uplandicum* (*S. officinale* × *S. asperum*) (Russian Comfrey) is an example of the extensive list of casuals and was a new vice-county record.

Another group visited a Loch h-Airigh Bige and its associated burns, recording *Osmunda regalis* (Royal Fern) and a good list of aquatics. Kinloch River and the Kinloch House woodlands, examined by the third party, had a good selection of *Carex* and *Juncus* spp. and a little *Galium odoratum* (Woodruff) on a wooded river bank.

The hill party that day went up Meallan Liath, where their orchid finds were *Coeloglossum viride* (Frog Orchid), *Listera cordata* (Lesser Twayblade) and *Pseudorchis albida* (Small-white Orchid). A welcome and unexpected find was *Pyrola rotundifolia* (Round-leaved Wintergreen) a new 10-km square record.

A total of 358 taxa was recorded for NC/5.5.

On Sunday, surprisingly with the sun still shining, two additional members arrived for an assault on NC/6.4 which lies between Loch Loyal and Strathnaver. This is an unrewarding-looking square with a few likely sites embedded in large areas of probably species-poor moorland. A group walked along a good track to Loch Syre, where *Potamogeton praelongus* (Long-stalked Pondweed) (perhaps rather surprisingly) was noted and *Sparganium natans* (Least Bur-reed) was found in a sheltered inlet; *Carex lasiocarpa* (Slender Sedge) and *C. limosa* (Bog-sedge) were also recorded.

A short stretch of the River Naver, woodland near Dalvina Lodge and the lower reaches of the Langdale Burn, occupied another party, who recorded a good if unexciting list including *Anemone nemorosa* (Wood Anemone) and *Prunus padus* (Bird Cherry). Deer fences, a slippery boulder-strewn river and steep banks made their afternoon something of an assault course.

Beinn Stumanadh, a lesser known hill of a modest 527 m, delighted the party who climbed it by producing *Betula nana* (Dwarf Birch) 'constant over a large area, 300 m × 400 m'. A supporting cast including *Arctostaphylos alpinus* (Mountain Bearberry), *Cornus suecica* (Dwarf Cornel), *Loiseleuria procumbens* (Trailing Azalea) and *Saxifraga oppositifolia* (Purple Saxifrage) to name but some, made this a rewarding excursion.

251 taxa were recorded in NC/6.4.

Although this was really a day for NC/6.4, a small party tackled Sron Ruadh lying at the north-western foot of Beinn Stumanadh and adjacent moorland, in NC/6.5. They were pleasantly surprised to find rocks which supported a calcicole flora including *Carex capillaris* (Hair Sedge), *Draba incana* (Hoary Whitlowgrass) and *Asplenium trichomanes-ramosum* (Green Spleenwort).
The total for NC/6.5 was 194 taxa.

On the third consecutive sunny day (unbelievable!) NC/4.5, the Loch Eriboll area, was the target. One group searched unsuccessfully for *Carex vesicaria* (Bladder-sedge), for which there was a record from the mouth of the Strathmore River. They did, however, find *Drosera* × *obovata* (*D. longifolia* × *D. rotundifolia*) (a hybrid sundew) and then went on to Creag Merkan, where the wooded crags produced an ancient *Prunus padus* (Bird Cherry) and some *Elymus caninus* (Bearded Couch).

Another party headed for the limestone ground on the east side of Loch Eriboll. The promising-looking peninsula of Ard Neackie, with its old lime kilns and quarry was very closely grazed and recording was hard work. Some light relief was provided in the afternoon by wooded crags and a waterfall off the limestone. There, *Hymenophyllum wilsonii* (Wilson's Filmy-fern) and *Polystichum aculeatum* (Hard Shield-fern) were found, along with a low-level site for *Oxyria digyna* (Mountain Sorrel) on the wet rocks.

A hill party climbed Ben Loyal that day and, in spite of strong winds, they recorded *Cerastium alpinum* (Alpine Mouse-ear), *Saxifraga hypnoides* (Mossy Saxifrage), *S. stellaris* (Starry Saxifrage) and *S. oppositifolia* (Purple Saxifrage).

The number of taxa recorded in NC/4.5 was 249.

A new vice-county record was made from NC/5.6 by one member of the party, going back to base after a day's recording. The car in which he was travelling screeched to a halt and disgorged its four botanists who confirmed (not too difficult) that this was indeed a well-established stand of *Typha latifolia* (Bulrush) growing in a small, water-filled, roadside quarry. Improbable as it may seem to southern botanists, the north of Scotland is almost entirely devoid of Bulrush!

Apart from the very satisfactory amount of information gathered on the planned field trips, a bonus was the number of recording cards filled in by members who either arrived a day or two early or stayed on a little after the weekend was over. They were most welcome and added substantially to our rather meagre set of post-1987 records.

PAT EVANS

FAIRBURN INGS AND FRYSTON PARK, WEST YORKSHIRE (v cc. 63 & 64). 16th JULY

A small party of ten participants assembled at 10.30 a.m. on a fine morning at the western car park of Fairburn Ings Local Nature Reserve, north-east of Castleford, West Yorkshire. Fairburn Ings is also a regionally important RSPB Reserve with in excess of 250 species of birds being recorded over the years.

The morning was spent examining the wetland flora of the Ings. A wide range of typical aquatic and marshland species was seen, including *Typha latifolia* (Bulrush), *Sparganium erectum* (Branched Bur-reed), *Schoenoplectus tabernaemontani* (Grey Club-rush), *Pulicaria dysenterica* (Common Fleabane), *Senecio aquaticus* (Marsh Ragwort), *Myriophyllum spicatum* (Spiked Water-milfoil), *Carex riparia* (Greater Pond-sedge), several species of *Juncus* (Rushes) and *Ranunculus peltatus* (Pond Water-crowfoot). In addition several regionally scarce species were encountered, notably, *Rumex palustris* (Marsh Dock), *R. maritimus* (Golden Dock), *Cotula coronopifolia* (Buttonweed), *Veronica catenata* (Pink Water-speedwell) and *Ceratophyllum demersum* (Rigid Hornwort). The hedgerow flora also contained abundant *Humulus lupulus* (Hop), *Bryonia dioica* (White Bryony), *Rubus caesius* (Dewberry) and *Acer campestre* (Field Maple), indicating the calcareous nature of the soil, where this site falls at the juxtaposition of Magnesian Limestone and Coal Measure substrates.

In the afternoon, the party moved to Fryston Park, near Glasshoughton, where it was hoped to locate the rare *Epipactis phyllanthes* (Green-flowered Helleborine) in one of only two West Yorkshire stations. Despite a prolonged search, however, this elusive orchid was, regrettably, not seen at the site where several flowering spikes have been reliably recorded in recent years. Despite this, a good range of calcicole plants was seen, including the scarce *Hypericum montanum* (Pale St John's-wort) and other typical limestone species such as *Origanum vulgare* (Wild Marjoram), *Clinopodium vulgare* (Wild Basil), *Galium mollugo* (Hedge Bedstraw), *Blackstonia perfoliata* (Yellow-wort), *Inula conyzae* (Ploughman's-spikenard), *Thalictrum minus* (Lesser Meadow-rue), *Galium verum* (Lady's Bedstraw), *Bromopsis erecta* (Upright Brome), *Brachypodium pinnatum* (Tor-grass), *Primula veris* (Cowslip), *Anthyllis vulneraria* (Kidney Vetch) and, in the hedgerows, *Rhamnus cathartica* (Buckthorn).

The day ended when the party was taken to the Hook Moor site of the national rarity and Yorkshire speciality, *Orobanche reticulata* (Thistle Broomrape), several spikes of which were still nicely in flower and yielded good photographs.

G. WILMORE

EAST DEVON AND WEST DORSET (v.cc. 3 & 9). 21st-23rd JULY

After an introductory get-together on the first evening, where tea and biscuits were welcomed refreshments, the company of nine, mainly veteran batologists, assembled on the 22nd at Gittisham Hill to begin the serious business. For the novice the wise strategy was to keep the mouth shut and the ears and eyes wide open. Here, as all the sites we visited, the freedom to wander at will was pleasing.

To start with a conclusion; it makes sense to expect brambles common to the area, brambles common in adjacent regions and brambles common and widespread. This is what was realised.

The common brambles at Gittisham were *Rubus albionis* and *R. scabripes*, which were later seen at almost all stops, and *R. purbeckensis* and *R. bloxamii*. These latter two were not seen on the second day although we had moved east indicating a gap in distribution. The first hint that Wales was not too far to the north came in the form of *R. lanaticaulis*.

On the East Hill Strips, our second stop, Len Margetts pointed out the fantastic view. We stood on the Mesozoic hilltops looking across the wide Exe valley towards the Palaeozoic outcrops of central and west Devon. The western influence was reflected in *R. dentatifolius*, common hereabouts and on those Dartmoor hills we could see. Here also Alan Newton determined pink-flowered *R. plicatus*.

Harpford Wood on the southern slope of the East Hill Strips again reflected the western influence with *R. prolongatus*, which is rather common in this border district, and *R. plymensis*, though only a few canes of this, on its eastern extremity. The common bramble of the wood was, however, that nicknamed 'The shiny-leaved radulan' which is common in east Devon.

During our picnic lunch a flurry of excitement was induced by the discovery of the newly-named Welsh bramble *R. ariconiensis* nearby. To the munching of sandwiches, the noise of pruning snippers was added. This was the second record for v.c. 3.

To our next site was quite a long drive and quite a long walk. By the time we reached the gate to Offwell Woodland Reserve, which incidentally had a pleasant notice welcoming visitors, an air of fatigue seemed evident especially as the brambles in the first field looked 'hybridy' and the common brambles of the lane were *R. micans* and *R. scabripes*, not new by this time. Then from the middle of a brake came the cry 'Fissus!' To our great delight there were several fine canes of *R. fissus*, a bramble that Alan Newton described as becoming rarer in England and when found was only in a scrappy condition. Also in this wood was *R. nessensis*, another suberect type. Consequent on this we were all clearly satisfied and contented as we walked wearily back to the cars at the end of our first day.

To beat the excitements of the first day seemed impossible but at Lamberts Castle, our first stop on the 23rd, this was soon proved false. Len Margetts described his site choices as instinctive — I would add inspired. The upper green sand heath was a Welsh outpost with *R. incurvatus* common and flourishing closely interwoven with a bramble that may prove to be *R. riparius*. (Somebody suggested that maybe the same bird was responsible!) As we turned to the main heath away from the wood the common bramble was declared to be *R. arrheniiformis*, a beauty, and this site is one of the few where it is abundant; this was a discovery.

In Champerhayes Forest at Wootton Hill a varied assortment that we had already noted was present but dominating large areas was the Cornish bramble *R. rilstonei*. *R. vestitus*, nationally a common bramble, was seen for the only time for the weekend and then only a single primocane.

Our last stop was at Stonebarrow Hill on top of the coastal cliffs at Charmouth. The view was spectacular and the heathland full of brambles but caution was necessary as the sexual *R. ulmifolius* was common. Nevertheless all the influences mentioned earlier were visible — the western by *R. lamburnensis* and the Welsh by *R. longus* and *R. rossensis*. A discussion took place on the local plant that looked like *R. drejeri*. Here *R. melanodermis* and *R. mucronatiformis* had become common as they certainly are even further east.

The total count of microspecies for the meeting was 44 plus a few un-named but common species — a very respectable total, for which thanks are due to the two leaders: Len Margetts who provided an excellent programme and Alan Newton whose wry humour lightened the authority of his field determinations. The weather was also perfect!

R.W. GOULD

TITTERSTONE CLEE HILL, SALOP (v.c. 40). 22nd JULY

We were favoured with a beautiful day for this joint field meeting of the BSBI and the Wild Flower Society — cool at first, but warming to a very pleasant temperature without the intense humidity that had prevailed in recent weeks. The meeting was well-attended: there were 20 of us altogether, including Dr Ian Trueman, the recorder for Shropshire, who kindly gave of his valuable time to be present, and was a great asset with his knowledge both of the sites visited and the plants to be found there.

After welcoming everybody to the meeting, the leader gave a brief introduction to the site, the second-highest hill in Shropshire (c. 500 m), basically of Old Red Sandstone, passing through coal-measures and capped with a sill of dolerite that had been extensively quarried. She explained that there were three main areas of interest: stable block scree (the result of arctic conditions during the ice-age), where we would look for interesting ferns; several areas of wet flushes, pools, and small streams of differing chemical properties — from very acid to base-rich, where several species of the sedge, rush, and grass families would be seen, as well as other uncommon wetland species; and drier areas on the slopes of the old quarries, where species such as *Plantago coronopus* (Buck's-horn Plantain), *Spergularia rubra* (Sand Spurrey) and *Filago minima* (Small Cudweed) could be found.

Our purpose was not just to see rare plants, but to appreciate some interesting habitats and the plant-communities within them — though it was hoped that some species not recorded for some time might be rediscovered, e.g. *Narthecium ossifragum* (Bog Asphodel) , *Drosera rotundifolia* (Round-leaved Sundew), *Huperzia selago* (Fir Clubmoss) and *Dryopteris oreades* (Mountain Male-fern).

We started by searching a wet ditch at the roadside, where we found:
Carex echinata (Star Sedge); *Carex viridula* subsp. *oedocarpa* (Yellow-sedge); *Isolepis setacea* (Bristle Club-rush); *Scutellaria minor* (Lesser Skullcap); *Triglochin palustre* (Marsh Arrowgrass); *Veronica scutellata* (Marsh Speedwell); *Epilobium brunnescens* (New Zealand Willowherb); and *Epilobium palustre* (Marsh Willowherb). Abundant in the wet grassland on the other side of the ditch was the delightful pale blue flower of *Wahlenbergia hederacea* (Ivy-leaved Bellflower), a very rare plant in Shropshire.

The wet grassland also contained a lot of *Nardus stricta* (Mat-grass), along with several sedges; *Carex flacca* (Glaucous Sedge), *C. ovalis* (Oval Sedge), *C. panicea* (Carnation Sedge), *C. pulicaris* (Flea Sedge) (in great quantity), and also *Eleocharis palustris* (Common Spike-rush) and *E. quinqueflora* (Few-flowered Spike-rush). Further searching revealed *Drosera rotundifolia* (Round-leaved Sundew) and *Narthecium ossifragum* (Bog Asphodel) in amongst *Sphagnum* mosses; and in another wet area *Apium inundatum* (Lesser Marshwort), *Ranunculus hederaceus* (Ivy-leaved Crowfoot), *Viola palustris* (Marsh Violet) and *Lythrum portula* (Water-purslane) were found.

A scramble out on to the block scree proved to be well-worth-while in that it produced most of the special ferns that had been recorded from that area at various times, including: *Gymnocarpium dryopteris* (Oak fern); *Phegopteris connectilis* (Beech Fern); *Blechnum spicant* (Hard Fern); *Dryopteris affinis* subsp. *borreri* (Borrer's Male-fern); and — to Ian's delight! — two clumps of *Cryptogramma crispa* (Parsley Fern), which he had not seen for some years. Down in a hollow between the rocks was *Huperzia selago* (Fir Clubmoss), a decreasing and endangered plant in Shropshire. Ian and one or two others had a further scramble up some rocks in one of the quarries and brought down an assortment of other ferns for identification, including what was thought to be *Dryopteris oreades* (Mountain Male-fern). On the floor of the same quarry, just as we were about to leave, *Botrychium lunaria* (Moonwort) was found — thus completing our entire list of ferns for that area.

After lunch, the party moved a few kms eastward to Cramer Gutter, the nearest habitat to valley mire in these regions. After walking across heather moorland (dotted with *Ulex gallii* (Western Gorse)) for a while, the ground suddenly became wet as we entered a flushed area, and here, among an abundance of *Drosera* spp. (Sundews) and *Narthecium ossifragum* (Bog Asphodel), was a third spike-rush — *Eleocharis multicaulis* (Many-stalked Spike-rush) (with *E. quinqueflora* (Few-flowered Spike-rush) alongside for comparison), *Eleogiton fluitans* (Floating Club-rush), *Carex dioica* (Dioecious Sedge), *Anagallis tenella* (Bog Pimpernel), *Pinguicula vulgaris* (Common Butterwort), *Menyanthes trifoliata*

(Bogbean) and *Galium uliginosum* (Fen Bedstraw). The lovely powder-blue dragonfly, *Orthetrum coerulescens* (Keeled Skimmer), was a great attraction here also.

The walk back along a lane to the cars enabled us to complete a very satisfactory day's botanising with *Poa compressa* (Flattened Meadow-grass), seen growing on a wall. Over 140 plants were seen in all.

ANNE P. DALY

BLAIR ATHOLL, EAST PERTH (v.c. 89). 29th-30th JULY

Two of the party of 14 opted to spend the day on the lower ground in Glen Tilt and so it was a round dozen who set off in brightening weather up the track and path into Glen Mhairc in the rather neglected hills north of the Tilt. The moraines in the valley bottom are quite basic and the species-rich grassland on the approach is a delightful habitat with stands of *Helianthemum nummularia* (Common Rock-rose), *Galium verum* (Lady's-bedstraw), *Gentianella campestris* (Field Gentian), *Persicaria vivipara* (Alpine Bistort), *Briza media* (Quaking-grass) and *Lathyrus linifolius* (Bitter-vetch). A ravine at the bottom end of Glen Mhairc provided an interesting start to recording with tall herb communities on some ledges and occurrences of species like *Cystopteris fragilis* (Brittle Bladder-fern), *Arctostaphylos uva-ursi* (Bearberry), *Galium boreale* (Northern Bedstraw), *Helictotrichon pratense* (Meadow Oat-grass), *Melica nutans* (Mountain Melick) and *Populus tremula* (Aspen). Flushes on the way up the glen had frequent *Thalictrum alpinum* (Alpine Meadow-rue) and higher up *Epilobium anagallidifolium* (Alpine Willowherb) and *Juncus triglumis* (Three-flowered Rush) were found.

The main objective of the day was the craggy ground at the head of the glen and after a steep haul, punctuated by lunch, this area was reached. The rocks are moderately base-rich and plants like *Salix lapponum* (Downy Willow) were evident from a distance. Other plants of interest seen here include *Polystichum lonchitis* (Holly-fern), *Vicia sylvatica* (Wood Vetch), *Salix phylicifolia* (Tea-leaved Willow), *Potentilla crantzii* (Alpine Cinquefoil), *Coeloglossum viride* (Frog Orchid), *Carex vaginata* (Sheathed Sedge), *Galium sterneri* (Limestone Bedstraw) and flowering (and much photographed) *Saussurea alpina* (Alpine Saw-wort). As time was short, we decided to press on over the summit of Beinn Mheadhonach (901 m) and follow its ridge down to the lower glen again. Some flushes on the way up were interesting with small populations of *Tofieldia pusilla* (Scottish Asphodel) and *Carex capillaris* (Hair Sedge). Block scree near the ridge produced *Athyrium distentifolium* (Alpine Lady-fern), *Cornus suecica* (Dwarf Cornel) occurred in the rocky grassland, and open ground above this had *Gnaphalium supinum* (Dwarf Cudweed) while the wind-blasted summit ridge had abundant *Juncus trifidus* (Three-leaved Rush). The magnificent views north towards the Cairngorms from this unusual vantage point produced a degree of disorientation but the peaks were eventually named, and probably mostly correctly! A final treat for the day was provided by Neale Taylor in the form of a fine stand of *Melampyrum sylvaticum* (Small Cow-wheat) in woodland close to the Glen Tilt track.

The Sunday in the Dalnamein forest had been billed as dour but necessary 'square-bashing' as there were few records from the area and the geology and terrain on the map did not look promising but in the event much interesting ground was found, good plants seen and valuable records made for the Perthshire Flora. We split into two groups, one to cover the Allt a'Chireachan quadrant and the other to power on to the summit of Sron a'Chleirich via the Allt Dearg and the Allt a'Mhuilinn. On the track-sides leading into the area, the calcareous nature of the glacial till was revealed again in stands of *Gentianella campestris* (Field Gentian), *Botrychium lunaria* (Moonwort), *Sagina nodosa* (Knotted Pearl-wort) and *Briza media* (Quaking-grass) and some flushes had *Tofieldia pusilla* (Scottish Asphodel). Both teams found ravines with a good flora including *Orthilia secunda* (Serrated Wintergreen), *Polystichum lonchitis* (Holly-fern), *Melica nutans* (Mountain Melick), *Asplenium trichomanes-ramosum* (Green Spleenwort), *Rubus saxatilis* (Stone Bramble), *Saxifraga oppositifolia* (Purple Saxifrage) and *Vicia sylvatica* (Wood Vetch). The summit party found a nice bouldery gully, just north west of the summit of Sron a'Chleirich, which obviously holds snow into the spring. This had good populations of

Sibbaldia procumbens (Sibbaldia), *Gnaphalium supinum* (Dwarf Cudweed), *Juncus triglumis* (Three-flowered Rush), *Epilobium alsinifolium* (Chickweed Willowherb) and plants of *Sagina saginoides* (Alpine Pearlwort) and *Alchemilla wichurae* (Lady's-mantle) were also seen.

The weather was glorious on both days, so much so that lunch for one team on Sunday was timed to coincide with a good swimming hole which was put to good use — and there are photographs to prove it! Thanks are due to Atholl Estates for arranging access (and particularly to their Ranger, Susan Dean, who joined us on the Saturday) and to Ros Smith who suggested the localities.

G. ROTHERO

SHETLAND (v.c. 112). 1st-7th AUGUST

The participants met at noon outside the P&O ferry in Lerwick on Tuesday, 1st August, after some adventurous journeys and near squeaks, to be greeted by ideal weather (how often can you say that!), and a package of recording cards delivered by Walter Scott.

The first afternoon was spent travelling to Unst, the most northerly inhabited island, which was our base for the next two days. Everyone met at the Balta Sound Hotel for detailed discussion of the itinerary and provision of maps and further information. Some people were so keen that they had already visited a few sites near their accommodation en route north.

Wednesday started at one of Shetland's special places — the Keen of Hamar NNR, where Scottish Natural Heritage staff and the voluntary warden explained the research and management on the site, and we saw *Arenaria norvegica* subsp. *norvegica* (Arctic Sandwort), *Cerastium nigrescens* (Shetland Mouse-ear), tiny specimens of *Coeloglossum viride* (Frog Orchid), masses of *Botrychium lunaria* (Moonwort), and found a new patch of *Gymnadenia conopsea* (Fragrant Orchid) at its only Shetland locality. Alan Silverside patiently explained various *Euphrasia* (Eyebright) characteristics, and *E. micrantha* and *E. ostenfeldii* were photographed for future reference.

After a quick visit to the local post office and shop for the purposes of obtaining lunch and post-cards, a brief saunter on the nearby saltmarsh yielded *Spergularia media* (Greater Sea-spurrey), *Salicornia* spp. (Glassworts), *Suaeda maritima* (Annual Sea-blite), *Glaux maritima* (Sea Milkwort) and both *Triglochin* species (*T. palustre* and *T. maritimum* (Marsh and Sea Arrowgrass) growing next to each other — a fairly common situation in Shetland. Then on to our second NNR of the day — a visit to Hermaness to meet the seasonal warden, Claudia, view the new Visitor Centre and record in all the four squares of the area. The botanical finds were not overwhelming, but the magnificent cliff scenery and seabird colonies more than compensated, especially the puffins sitting at one's feet, often too close to be photographed. Several *Hieracia* (Hawkweeds) were located on the small outcrops by the Loch of Cliff including *H. sparsifolium* and *H. australis*.

The second full day began at Norwick Dunes, where the recently relocated patch of *Lathyrus japonicus* (Sea Pea) was seen, and then we walked along the stream displaying a good stand of *Hippuris vulgaris* (Mare's-tail) with *Mimulus* × *robertsii* (*M. guttatus* × *M. luteus*) (Hybrid Monkeyflower), on to the wet fen meadows themselves, a restricted habitat in Shetland, where *Carex limosa* (Bog-sedge) was found in a new field and in good quantity. Several species of *Myosotis* grew there and with the help of 'Stace', it was eventually decided they were *M. laxa* (Tufted Forget-me-not), *M. secunda* (Creeping Forget-me-not) and *M. scorpioides* (Water Forget-me-not).

We drove on for lunch by the Standing Stone at Lund, where a new site for *Ophioglossum azoricum* (Small Adder's-tongue) was found by someone's feet! The heathland and two lochans were surveyed, one being very stony and surrounded by base-rich, sedgy flushes, and the other with good representation of emergent and aquatic vegetation. There was then a quick dash to Sandwick dunes to see and count *Gentianella amarella* subsp. *septentrionalis* (Autumn Gentian) before catching the inter-island ferry to Yell and on to north Mainland for our next stop.

Day three in the field and the sun was still shining — no midges, no rain, but some 'haa' so we set off from Collafirth camp, a former NATO base, for the summit of Ronas Hill, at 450 m the highest point on the islands. Because of its position and height, it is the most exposed part of the British Isles

where extremes of weather conditions can be experienced hence arctic-alpines grow at low altitudes and *Loiseleuria procumbens* (Trailing Azalea), *Alchemilla alpina* (Alpine Lady's-mantle), *Juncus trifidus* (Three-leaved Rush) and *Luzula spicata* (Spiked Wood-rush) were soon spotted, often growing on the fascinating patterned ground of the periglacial features. Distant views of Foula and Fair Isle were revealed, whilst Unst, Yell and Fetlar were partially swathed in the mist.

Down from the summit of Mid Field, the lower part of Ronas, we descended to meet the Eshaness coastal heathland splinter group for lunch on the shingle bar at Urafirth, where we ate lunch before counting 21 plants of *Mertensia maritima* (Oysterplant)! We then drove over to the east coast visiting the small area of saltmarsh at Gluss, and rediscovered *M. maritima* there after an absence of two years, although only four plants were found. A showy alien, in the form of *Senecio smithii*, the Magellan Ragwort, brightened up the roadside ditch with *Mimulus guttatus* (Monkeyflower).

The final site on the programme was East Burn, the lower part of which was intensively grazed by sheep and cattle, with the upper part, under different ownership, ungrazed for most of the year. This was a small, secluded, steep-sided burn with flushes and a very rich flora — 106 species were recorded in under one hour. This may have been the final botanical site of the day, but it certainly was not the final fling! Most of the group drove into Lerwick to hear Shetland's Young Heritage and the Calgary Fiddlers perform at the Clickimin Centre until the small hours of the next day — the young Canadians, all under 16, took the place by storm. Their next visit has already been planned -- for those of you who missed this one!

Saturday offered another cultural opportunity with the Voe Show — the first of the general agricultural/craft shows that take place in August and September. One of the best exhibits in the flower section was the arrangement of typical Shetland wildflowers in a hand-woven basket. Others set their sights further afield and visited the species-rich meadows of Muckle Roe where six *Hieracia* (Hawkweeds) grow both on the rocky knolls and in the nearby grassland, which is cut annually for hay.

After lunch the party divided again with Walter Scott taking the majority on a *Hieracia* tour, and my group first doing a little 'twitching' of the pilot whale then recording a fairly boring square on the long peninsula of Lunna Ness famed for its otter colonies. No otters were seen and no notable plants either. The *Hieracia* group fared better.

People had now adjusted to Shetland conditions — they had learnt that it didn't take long to drive around the islands, that it didn't go dark until at least midnight, and that the locals were essentially friendly and interested in natural history. Small groups set off to explore various parts of Mainland on Sunday, whilst half the party stepped aboard the SNH Zodiac to visit and record the island reserve of Ness, and count *Ophioglossum azoricum* (Small Adder's-tongue) deeply buried in the lush maritime turf, whilst avoiding being bombed by bonzies and aalies, (Greater and Arctic Skuas). Folk had also discovered the culinary delights of Busta House near Brae village, having done some of their own local research (I don't share all the best Shetland secrets immediately! Besides, our foursome at South Stromfirth had a quickly prepared, but nearly gourmet standard evening meal in my temporary, typical, old farmhouse).

And now it was the last day of the official meeting, so off we all sailed to the isle of Mousa with the best example of a broch (defensive tower) to be seen in Scotland. The party divided so as to cover the whole island in the four hours available and saw *Asplenium marinum* (Sea Spleenwort) on the cliffs, *Carex maritima* (Curved Sedge) in the shell sand by the seal loch and *Cochlearia danica* (Danish Scurvey-grass) on the broch itself. One seedling of *Mertensia maritima* (Oysterplant) was refound by a member of the group in exactly the same place she had found it three years previously.

The last venue was disappointing — the dunes at Quendale have been overgrazed for many years now and, because of the extra dry conditions this summer, it was difficult to recognise many species except by crawling around on hands and knees. However, *Carex maritima* (Curved Sedge), *Gentianella amarella* subsp. *septentrionalis* (Autumn Gentian) and *Ranunculus trichophyllus* (Thread-leaved Water-crowfoot) were eventually found.

The whole group, plus a few 'extras', assembled at the Lerwick Hotel for an excellent evening meal, which lasted almost until the twilight descended. The weather had been kind (only I got stranded

by the fog and rain four days later); the local hospitality was as good as ever, and many of the typical and special habitats and plants of Shetland were enjoyed by all.

LYNNE FARRELL

DEVIL'S BRIDGE, CARDIGANSHIRE (v.c. 46). 5th AUGUST

Eleven members and friends met at The Arch picnic site (SN/765.756) and split into five groups to record tetrads in the deep valleys to the north. Most of the area is Forestry Commission conifer plantation, and we were kindly given the freedom of the extensive forestry road system by Forest Enterprise, who are currently felling large areas and redesigning the whole forest. The more interesting areas were chiefly hillsides and ravines too steep and inaccessible to have been worth planting, but even these were very poor in species, and the energy expended brought a very poor return in records. Six tetrads were visited altogether, the most productive being the head of the Rhuddnant gorge and the meandering stream above on the site of the drained Llyn Rhuddnant (SN/807.787) where 127 taxa were recorded, including *Salix* × *capreola* (*S. caprea* × *S. aurita*) (a hybrid willow), *Lycopodium clavatum* (Stag's-horn Clubmoss), *Diphasiastrum alpinum* (Alpine Clubmoss) and *Phegopteris connectilis* (Beech Fern). The latter was also found in two other ravines. The other tetrads or part-tetrads visited yielded between 30 and 80 taxa. Of special interest was a colony of what appeared to be *Empetrum nigrum* subsp. *nigrum* (Crowberry) on vegetative characters, but with hermaphrodite flowers. Several Hawkweeds were found which await expert identification.

At the end of the day the groups assembled at Mynach Vale leadmine (SN/772.775) to hand in cards to the leader, and to inspect this long-abandoned mine in the middle of conifers, whose botanical interest had been recognised only two years before by the Dyfed Wildlife Trust's metal-mine survey. There were five colonies of *Gymnocarpium robertianum* (Limestone Fern), otherwise unknown in the vice-county, a colony of *Polystichum aculeatum* (Hard Shield-fern) on a ruined wall, and several plants of *Hieracium sparsifolium* (a Hawkweed) with elegantly blotched leaves, here in its only mid-Wales site. The mortar-rich, and doubtless mineral-rich, soil here has a pH of around 8.1, contrasting with the highly acidic soils of most of the rest of the area. This little botanical oasis is being sensitively looked after by Forest Enterprise, and it will be interesting to see if the riparian zones and other features being introduced by them into this forest as part of the restructuring process will increase diversity in the future.

Even though comparatively few records were made, much difficult ground was covered, and the v.c. recorder was saved a lot of exhausting work in future. The meeting also showed how fallible even the best recorders can be. Two of the groups, although they had spent most of the day struggling through plantations of *Picea sitchensis* (Sitka Spruce), *Pinus contorta* (Lodgepole Pine), etc., failed to tick off any conifers on their cards.

A.O. CHATER

BEACON HILL, RADNORSHIRE (v.c. 43). 12th AUGUST

Beacon Hill, built of Silurian Shale rocks, rises to almost 550 m close to the English border in North-east Radnor. Botanists, heather moors and the 'glorious twelfth' are perhaps not an ideal combination, but the 15 intrepid members who met near the former shooting lodge on Beacon Hill in Radnorshire saw neither shooters nor grouse, providing the organisers with a more relaxed day than had been feared.

The east moors of Radnor, normally much drier than the Cambrian Mountains to the west, had been shrivelled by over a month of hot weather. It was in the pools, flushes and on stream banks that the party concentrated, on what was essentially a recording meeting to assist the Radnorshire Wildlife Trust, who had recently acquired a 'conservation lease' of the common from the Crown Estate Commissioners.

Beacon Lodge Pool was examined first. This fairly recently repaired mud-bottomed pool supported both *Potamogeton natans* (Broad-leaved Pondweed) and *P. polygonifolius* (Bog Pondweed). Arthur Chater was able to demonstrate the paler veins and longer stipules of the former species, useful characters in addition to the somewhat obscure 'flexible joint' at the leaf base. *Ranunculus omiophyllus* (Round-leaved Crowfoot) was ubiquitous on mud and in pools throughout the site, as were *Callitriche* spp. (Water-starworts). Whilst a small quantity of *C. stagnalis* (Common Water-starwort) was found in fruit and had its identity confirmed, the majority of the material looked different and, despite diligent searches, was found regularly in flower but nowhere in fruit, a problem noted elsewhere in Wales this year.

The regular sheep cropping of spring heads and flushes which feed the pools and streams of these hills creates a species-rich turf with an abundance of brown and gold-coloured mosses, and an identification problem for the higher plant botanist. Nevertheless, *Triglochin palustre* (Marsh Arrowgrass) was detected, though a tiny *Eleocharis* (Spike-rush) requires further study. *Pinguicula vulgaris* (Common Butterwort) and *Drosera rotundifolia* (Round-leaved Sundew) escaped the worst effects of grazing compared to the poached and rather shrivelled Pillwort (*Pilularia globulifera*) of dried up flushes on Pool Hill.

The bone-dry rocky ravine of Trawsgwm added a few herbs on the crags, out of the reach of sheep, such as *Teucrium scorodonia* (Wood Sage) and *Fragaria vesca* (Wild Strawberry). A fragment of scrub woodland supported a few *Rosa* plants, which proved to be *Rosa canina* sensu stricto (Dog-rose) and more interestingly a shorter, upright rose with straight spines, downy leaves and finally erect stipules which appeared to be close to *R. mollis* (Soft Downy-rose). (Subsequent examination by Tony Primavesi leant to the opinion of an odd form of *R. sherardii* (Sherard's Downy-rose).

Finally, ascending Cwmdwliwn along the banks of its stream, set amongst glorious heather in full bloom, the differences between those streams of undrained moorland and similar streams in intensively farmed areas were noted. Here the water levels seemed to keep fairly constant, with no damaging floods to scour out vegetation. *Ranunculus peltatus* (Pond Water-crowfoot) formed colonies in the pools, *Mentha* spp. (Mints) and *Agrostis* spp. (Bents) almost completely colonised the riffles and the whole was still fed by water from a fine series of stony and peaty flushes, with both *Bellis perennis* (Daisy) and *Tussilago farfara* (Colt's-foot) in what must be their natural habitat. No great surprises and no great rarities, but a satisfying day in good company and in superbly beautiful countryside.

R.G. WOODS

LOUGH CORR, Co. TYRONE (v.c. H36) 19th AUGUST

This was a joint outing with the Belfast Naturalists' Field Club. Seventeen people met at Drumquin on what proved to be a glorious day of unbroken sunshine, with temperatures around 26°C.

Our morning venue was Lough Corr, H/290.769, which, although an upland lake surrounded by much bleak boggy country, nevertheless rests on a substratum of Carboniferous Sandstones leading to quite base-rich water. Approaching the lake we noted *Coeloglossum viride* (Frog Orchid) by the roadside. Where we parked our cars, we observed an unusual combination of *Cotoneaster simonsii* (Himalayan Cotoneaster) (bird-sown?) and *Selaginella selaginoides* (Lesser Clubmoss) on the roadside bank. Along the lane to the lake we found *Rorippa islandica* (Northern Yellow-cress) in only its second Tyrone site.

The flora in the lake itself included *Nymphaea alba* (White Water-lily), much *Utricularia vulgaris* sensu lato (Greater Bladderwort), abundant *Littorella uniflora* (Shoreweed) and *Juncus bulbosus* var. *fluitans* (Bulbous Rush), and also *Sparganium angustifolium* (Floating Bur-reed), *Potamogeton alpinus* (Red Pondweed) and *P. berchtoldii* (Small Pondweed). Marshy ground yielded *Glyceria declinata* (Small Sweet-grass). On the S.W. side of the lake there was botanically excellent fenland, with much *Cirsium dissectum* (Meadow Thistle), *Utricularia intermedia* (Intermediate Bladderwort) (very rare in Tyrone), *Sparganium natans* (Least Bur-reed), *Cladium mariscus* (Great Fen-sedge) and *Carex*

lasiocarpa (Slender Sedge). Further back from the lake, flushed sites gave *Selaginella selaginoides* (Lesser Clubmoss) again, with *Pinguicula vulgaris* (Common Butterwort), *P. lusitanica* (Pale Butterwort) and *Carex dioica* (Dioecious Sedge).

We then drove to Sloughan Glen, H/277.742, and after a lunch break, plunged into the welcome shade of the wooded glen for our afternoon venue. Scenically, Sloughan Glen was the highlight of the day, and all enjoyed the fine waterfalls (almost waterless, unfortunately!) and well-made paths. We noted *Equisetum hyemale* (Rough Horsetail), *Dryopteris aemula* (Hay-scented Buckler-fern), *Melampyrum pratense* (Common Cow-wheat), *Rubus saxatilis* (Stone Bramble), *Carex pendula* (Pendulous Sedge) and *Festuca altissima* (Wood Fescue), but did not expect any real botanical excitement. Imagine our delight, then, when Robert Northridge found *Phegopteris connectilis* on a rock-wall — only the second record of Beech Fern in Tyrone since the original sighting in 1887. We explored the stream-banks above the glen, and were rewarded with another site for *Rorippa islandica*, on animal-tramped ground near to a sheep-dipping enclosure.

Apart from plants, it was a day which satisfied many other naturalist interests. Around Lough Corr, we admired the damselflies, and commented on the abundance of Small Tortoiseshell butterflies. John Faulkner drew our attention to an abundant growth of a tall, columnar freshwater sponge. Later, on the mountain slopes above Sloughan Glen, we saw Peacock and Painted Lady butterflies (never frequent in Tyrone), and a large dragonfly was identified as *Aeshna juncea*.

Our thanks to the Belfast Naturalists' Field Club for augmenting our numbers, and for bringing their expertise to make the day a wonderful 'natural history' experience.

I. McNEILL & P. HACKNEY

LOSTWITHIEL, EAST CORNWALL (v.c. 2). 1st-3rd SEPTEMBER

This meeting had several aims in view: a revisit to sites for *Carex punctata* (Dotted Sedge) and *Rumex rupestris* (Shore Dock) at the foot of some south-facing Cornish cliffs, a re-survey of the *Adiantum capillus-veneris* (Maidenhair Fern) growing down a cliff-flush site near Lantic Beach, a search for *Polygonum maritimum* (Sea Knotgrass) on the same beach, the creation of plant lists for these coastal habitats and a targeting of species in the nearby 10-km square, SW/9.4.

Several of the group (a total of 25 members and friends) were able to meet in the Community Centre at Lostwithiel on the Friday evening. Over tea and coffee there was a discussion of the rarer plants we hoped to see.

On the Saturday, thankfully after morning rain had ceased, we drove to the National Trust car park by Frogmore Farm and after a delightful cliff walk, made the difficult descent to the raised beach at Watch House Cove, east of Pencarrow Head. Several plants of *Rumex rupestris* were seen. *Carex punctata* was also located, low down on the cliff face, growing out from a flush site: 15 plants in just the one colony. It was interesting to see *Carex distans* (Distant Sedge) growing with *C. punctata*. R.W. David considered that these two species required slightly different habitats so it was not surprising to see that most of the former were growing along the raised beach rather than on the cliff. Other plants present included *Carex extensa* (Long-bracted Sedge), *Juncus gerardii* (Saltmarsh Rush), *J. maritimus* (Sea Rush) and *Rumex crispus* subsp. *littoreus* (Curled Dock) as well as the more usual plants of shoreline rock outcrops above high-tide mark.

Lunch was had in brilliant sunshine in front of the old Watch House, halfway up the cliff. This was so relaxing that we were rather loathe to continue, but after the occasion was recorded on film, we completed the ascent and made the long walk to Lantic Bay, noting *Festuca rubra* subsp. *juncea* (Red Fescue) at Pencarrow Head and more *Rumex crispus* subsp. *littoreus*.

Lantic Beach, much used by holiday makers, was very disappointing. Not even one plant of *Polygonum maritimum* was seen, yet in one previous year there had been more than 50. *Polygonum oxyspermum* subsp. raii (Ray's Knotgrass) was still reasonably plentiful, but such plants as *Euphorbia paralias* (Sea Spurge) and *Crambe maritima* (Sea-kale) were much reduced in number and the garden-escape, *Rosa rugosa* (Japanese Rose), had established itself amongst the natural beach vegetation.

As the tide receded we made our way into a less frequented cove and here *Adiantum capillus-veneris* grew in great abundance, all down the cliff flush-site at the back of the storm-beach. It was a delight to see that it was not only flourishing but had extended over a far larger area of cliff. An additional bonus was the discovery of an excellent colony of *Carex punctata* (30+ plants) growing through the *Adiantum* and *Agrostis stolonifera* (Creeping Bent).

Sunday brought more rain, but by the time we reached Camels Cove, near Portloe, this had ceased and we made, what proved to be, an easy descent to the raised beach called The Straythe. *Rumex rupestris* was searched for without success, but *Carex punctata* was re-located, again on a cliff flush-site, by the original finder. *Osmunda regalis* (Royal Fern) grew in the same flush, *Festuca rubra* subsp. *juncea* was recorded in rock crevices and some interesting *Carex extensa* was seen, this attracting much discussion as it was thought that it might be a hybrid. Two members of the group observed *Crambe maritima* at a new site on a boulder-strewn beach beyond Parc Caragloose Cove.

After lunch some of the group had to disperse, but a number chose to stay on and visit the China-Clay areas with their *Epilobium brunnescens* (New Zealand Willowherb), *Filago minima* (Small Cudweed) and *Lotus corniculatus* var. *sativus* (Common Bird's-foot-trefoil) and such brambles as *Rubus cornubiensis*. During the day, areas in SW/9 4. were searched for targeted species by three who much enjoyed this kind of work. Thanks to their efforts many plants were re-recorded and 20 new species were added to the list. By late afternoon the expected rain had arrived in no uncertain manner and the meeting concluded with a Cornish cream tea in the shelter of the Wheal Martyn China-Clay Museum; that is for most of us. Three chose to end the day recording in what was now torrential rain, by a frantically busy A30, searching for and finding *Pilularia globulifera* (Pillwort)!

ROSE J. MURPHY

THE NORTH BULL ISLAND, Co. DUBLIN (v.c. H21). 8th OCTOBER

This meeting, which was not listed in the *Year Book*, was an addendum to the Ireland Region Annual General Meeting which was held in University College, Dublin. At the AGM there was much discussion about ASIs, ASSIs, NHAs, etc., so it was appropriate to visit a site which could be described using one of the above terms and is additionally listed as an UNESCO Biosphere Reserve. The North Bull Island, which appeared and grew as a consequence of walls built to protect and develop Dublin Port, was first reported in Captain Bligh's Survey of 1797. So, with a little extrapolation, 1995 can be considered to be the island's bicentenary! The 'owner', Dublin Corporation, has recently adopted a Special Amenity Order for the island. It is however hoped that the Corporation is not seriously promoting the concept of a third golf course on the island as part of its plans.

The meeting was attended by eleven members ranging in age from 9 to (9x+y) years. Because of the time of year, and also because of the summer and autumn drought, identification of plants required the use of plant characters and botanical skills often not required for the species found. Olfactory glands were called into action and sometimes posed unanswered questions. Two different odours emanated from two separate specimens of *Pimpinella saxifraga* (Burnet-saxifrage), and it was reassuring/confusing to note that one of them reminded us of another umbellifer, namely *Daucus carota* (Wild Carrot).

The outing gave several members the first opportunity to use the newly printed Atlas 2000 Survey cards for Ireland. There were varied reactions. Members of more mature years, who had never been convinced of the need to follow trends in botanical nomenclature, were delighted *Catapodium rigidum* (Fern-grass) was back in fashion. Wild Pansy (*Viola tricolor*) was one of the relatively few species in bloom. This taxon gave rise to some discussion. Two subspecies are listed on the card. Was the monochromatic entity *Viola tri tri* and the trichromatic species *V. tri curt*? If so then the dichromatic subspecies must be ... ? Saner counsel prevailed and it was ruled that in this sand dune habitat *V. tri curt* only would be recorded. *Poa *prat* / *P. prat* again raised some questions. If *P. pratensis* subsp. *caerulea* has become *P. humilis* then what is the aggregate *P. *prat*? Suspicion that the card editor had built in some cross-checks grew when it was noted that only one Bluebell, *Hyaci his*, was listed. Had Stace and Kent at last been found guilty of the crime of 'lumping'? But on the other hand *Lonic nit*, a Chinese

immigrant from earlier in the century, now appeared alongside its native relative. Burnt Red Bartsia, *Odont *ver* found us ill-equipped, without protractor, for the measurement of axillary angles. One member was heard to say that she would most certainly insist that her institution's library take the *New Flora of the British Isles* off the protected list and allow it to be borrowed.

On route to the alder-marsh further excitement was raised by the discovery of an unusual looking Chenopod. Had the Dublin Port aliens commenced colonial occupation of the island? Eventually, by majority decision, it was decided that the dwarf dense-flowered species, on the rabbit disturbed patch, was *Mercurialis annua* (Annual Mercury). Plants in flower in the alder marsh included *Gentianella amarella* (Autumn Gentian), *Succisa pratensis* (Devil's-bit Scabious), *Sagina nodosa* (Knotted Pearlwort), *Euphrasia* spp. (Eyebrights), *Blackstonia perfoliata* (Yellow-wort) and *Centaurium erythraea* (Common Centaury). Careful search yielded a substantial number of spikes of *Spiranthes spiralis* (Autumn Lady's-tresses) (*Spir* *?).

After lunch *Ophioglossum vulgatum* (Adder's-tongue) was found to be plentiful in two areas of the marsh with *Alnus glutinosa* (Alder) and *Salix* species (Willows) nearby. The tide having meanwhile ebbed we proceeded to the saltmarsh. The weather was balmy and some of the party wore sandals and one person announced triumphantly that her waterproof boots were again leaking so a second free replacement pair was in the offing! At the top of the saltmarsh the 'remains' of *Centaurium pulchellum* (Lesser Centaury) was confirmed and Micheline Sheehy Skeffington's expertise in North Bull Island saltmarsh relevées was invaluable in vegetative identification. A considerable amount of time was spent in the examination of *Salicornia* using the Stace key and the very useful illustrations in the text. *S. pusilla* (One-flowered Glasswort) and *S. dolichostachya* (Long-spiked Glasswort) were with confidence confirmed and more tentatively *S. europaea* (Common Glasswort) and *S. ramosissima* (Purple Glasswort) with *S. europaea* agg. finding several supporters. *Spartina*, which was once considered a major threat (to what?), did not seem to be a major coloniser any longer. Had the landowners been using 'Roundup'? The specimens examined, having no pollen and invariably showing intermediate characteristics, steadfastly refused to be definitively classified as either *S. anglica* (Common Cord-grass) or *S.* × *townsendii* (*S. maritimus* × *S. alterniflora*) (Townsend's Cord-grass). It was noted that *Halimione portulacoides* (Sea-purslane) (which has reverted to the genus *Atriplex*) was quite widespread particularly along the runnels.

Almost 30 years after the construction of the Causeway which created a second access point to the island, Dublin Corporation has commissioned a study to investigate the possibility of breaching the Causeway and restoring island status to the Bull. Is 'restoration' at this time any longer appropriate or worthwhile? Would it not perhaps be more worthwhile to mark European Nature Conservation Year by a more useful project such as the liberation of a golflinks or the purchase and protection of a threatened site?!

D.W. NASH

STOP PRESS

BOTANY IN ENGLISH NATURE

Some concern was expressed in *BSBI News* **71** regarding the state of botanical expertise within English Nature. EN is fully aware of the importance of botanical conservation, indeed most of our rarest plants occur on land protected as a Site of Special Scientific Interest or National Nature Reserve. Ensuring that these areas are managed to maintain and enhance their botanical interest is one of EN's top strategic goals. In addition our Species Recovery Programme, which directs conservation resources to our most endangered plants and animals is pulling a number of species back from the brink of extinction. Eighteen species of plant are currently involved ranging from the Lady's-slipper (*Cypripedium calceolus*) to three species of Breckland lichen. Action plans to conserve further species are currently being prepared as part of the UK Biodiversity Action Plan programme.

We have also established a Botanical Network comprising those members of EN's staff with botanical expertise of both higher and lower plant groups. The Network includes a core of National Advisors who are able to provide a national botanical perspective. Botanical contacts have also been identified in Local Teams who are able to advise colleagues at a local level and, in some cases assist with Species Recovery Projects. The Network should therefore enable EN to obtain the best use of the wide range of botanical expertise held by many of its staff. However given the low priority afforded to the teaching of plant taxonomy by British Universities, it is becoming increasingly difficult to recruit trained taxonomic botanists. The botanical skills available within the voluntary sector and the BSBI in particular are therefore becoming increasingly important. BSBI members already provide valuable assistance in many areas of our work including with the Species Recovery Programme. We aim, through the Botanical Network to maintain and develop our existing close links with the Society. To this end Ian Taylor of our Peak District & Derbyshire Local Team has been nominated as EN's representative on the BSBI Conservation Committee. Discussions are also underway with BSBI Co-ordinator Cameron Crook on ways of co-operating on the recording and monitoring of rare plant populations. Botany is clearly central to much of EN's work and will continue to be so in the future.

Further details of the Species Recovery Programme and the Botanical Network can be obtained from Roger Mitchell and Philip Horton respectively. Both are based at Peterborough.

PHILIP HORTON, English Nature, Northminster House, PETERBOROUGH, PE1 1UA.

SAND LEEK (*ALLIUM SCORODOPRASUM*) IN V.C. 58 (CHESHIRE)

Following directions kindly given by G.M. Kay, I have recently visited a large population (200+ fertile spikes) of this *Allium* growing on a ditchbank at Norton Marsh, Cheshire.

This district has an interesting history. De Tabley (*The Flora of Cheshire*,1899, p. 308) mentions three closely contiguous colonies of the plant along the Mersey flood plain west of Warrington, the second of which is said to be 'Richmond Marsh at the outflow of the Kekewick Brook.'

Since Lord de Tabley penned his MS around 1870 the lower Mersey valley has suffered constant upheaval and disturbance. In the 1890s the Manchester Ship Canal, a major deep waterway enabling ocean-going ships to be handled in Docks at Manchester was excavated; along the north bank a railway was constructed, mainly for maintenance purposes but which was also used for transporting industrial wastes. Associated with the canal-building came the reconstruction of the main West Coast & Chester railway lines, requiring huge new viaducts, and the closure and drainage of the pre-existing Mersey & Irwell canal. Since 1900 there have been sporadic extractions of sand and gravel close to the MSC railway leaving expanses of pits (one now a nature reserve) and waste ground, but on the reclaimed grazing marshes of the river there are still a few large prosperous farms chiefly in arable production, while the old Richmond marsh, close to Warrington on the south bank is now the site of a vast spoil-bank which is massaged by a fleet of earth-movers.

Reference to the 1841 O.S. map shows that the 'ditch' now supporting the *Allium* population was formerly the course of the 'Kekewick' Brook, severed by the Ship Canal from its headwaters and now indistinguishable except by height from others in the area – but none the less clearly originally the boundary of the reclaimed Norton Marsh, topped by an accommodation track. The steepness of the bank has doubtless ensured minimal disturbance to the neutral grassland of *Arrhenatherum elatius*, *Holcus lanatus*, etc., in which the only other noteworthy plant is a good stand of *Hieracium vagum*, often an indicator in Cheshire of relatively stable and ancient habitats.

Unfortunately, *Allium scorodoprasum* finds no mention in my *Flora of Cheshire* (1971). When recording for this work I overlooked the possibility that a truncated portion of the 'Kekewick' Brook might still survive, assuming that it was destroyed by the Ship Canal operation. Having survived at least 125 years in the same site, this *Allium* population, the only known Cheshire occurrence and the most

southerly on the West Coast estuaries, is a remarkable example of the tenacity on the part of the plant and the need for the Flora writer to consult old maps, and leave no stone unturned thereafter.

ALAN NEWTON, 10 The Fairways, Leamington Spa, Warwickshire, CV32 6PR

UNSEASONAL BEHAVIOUR

The unseasonal flowering of many of the common species of native plants is perhaps so common as not to be worth recording. However this year, for the first time, I have noticed trees **coming** into leaf in September. The first occurrence was in specimens of European Larch (*Larix decidua*) naturalized on the local railway sidings, and in the cultivar *L. decidua* 'Pendula' growing in a Minety garden. The most complete releafing was observed in a specimen of lime (*Tilia* × *vulgaris*?) in an avenue of 25 at Sheldon Manor, near Chippenham, Wiltshire. All terminal buds had opened into leaf by 30th October. Two other trees there had some new leaves on the lower branches. A specimen of Rowan (*Sorbus aucuparia*) at Nettleton had also releafed and had obvious flower buds (though second flowering of local, planted rowans had been noted in previous years).

Returning from the Annual Exhibition Meeting at Leicester I examined a length of recently planted hawthorn hedgerow, on the A429 south of Warwick (a few hundred metres north of Horticulture Research International at Wellesbourne). This boasted ten plants in full flower and fruit at the same time. There was also abundant new foliage. I suppose this is different from the Glastonbury thorn theme in which no releafing occurs, but another plant in a recently planted hedgerow near Chinnor, Oxfordshire was noted in flower on Boxing Day last year grimly holding on to its old leaves. The nurseryman Mr G. Locke has also informed me of releafing of beech (*Fagus sylvatica*) this year after summer defoliation. I would be pleased to hear of other examples of autumn releafing.

MARTIN CRAGG-BARBER, 1 Station Cottages, Hullavington, near Chippenham, Wilts SN14 6ET.

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