

BSBI NEWS

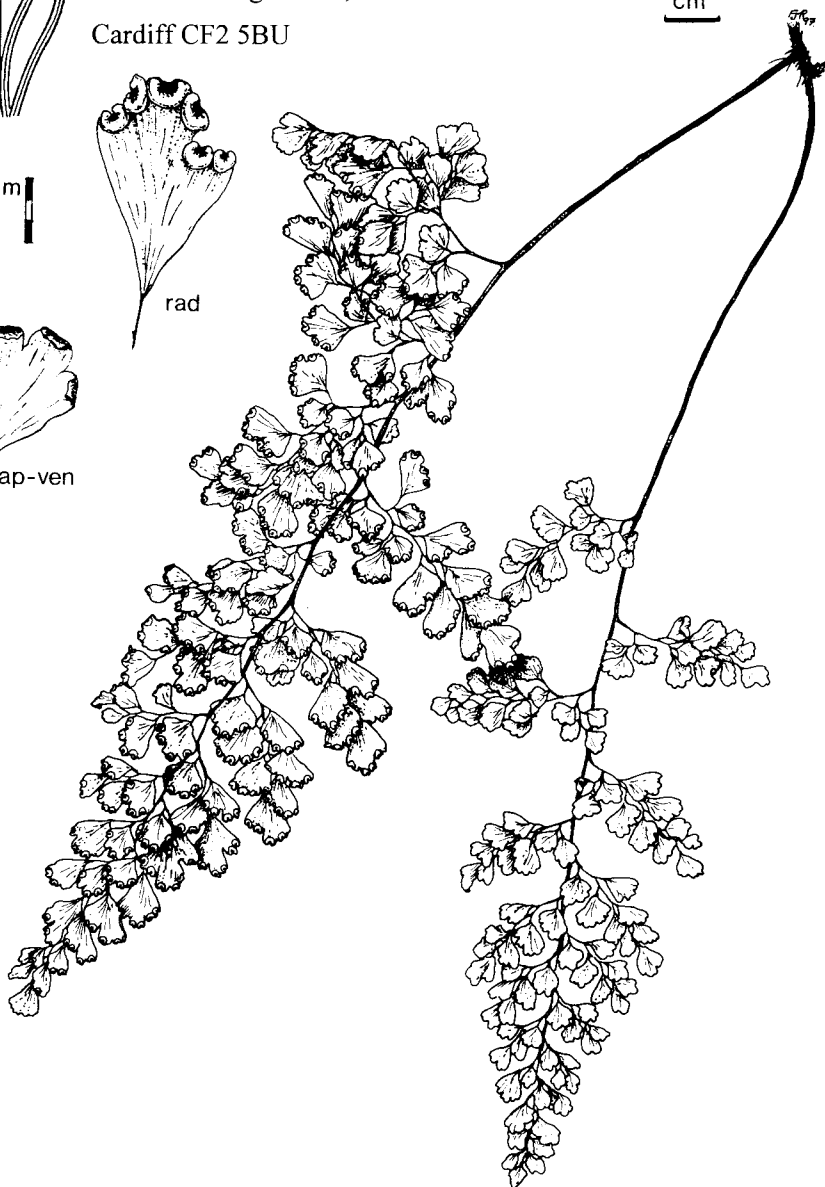
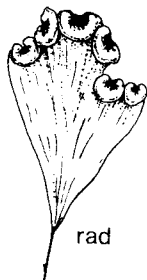
April 1998

Edited by R. Gwynn Ellis

No. 78

41 Marlborough Road, Roath

Cardiff CF2 5BU



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CONTRIBUTIONS INTENDED FOR

BSBI NEWS 79

should reach the Editor before

JULY 28 1998

IMPORTANT NOTICES

PRESIDENTS PRIZE

Mr D. McClintock and I are pleased to present this years prize to Ian and Paul Green, and Geraldine Crouch for their inspirational *Atlas Flora of Somerset*.

The award is really for the extraordinary depth of coverage, especially of aliens, casuals and hybrids: plants that most of us ignore and are shown by the authors to be often widespread.

The two closest contenders this year were the magnificent *Flora of Cumbria* by G. Halliday, and the *Aquatic Plants in Britain and Ireland*, by C.D. Preston and J.M. Croft.

DAVID PEARMAN, President

AN APOLOGY

We prepaid the Post Office for the bulk mailing of subscription notices in January. Unfortunately they omitted to frank a small number of the cards which resulted in some members having to pay excess postage. The matter has been taken up with the local sorting office and hopefully will not arise in future years. In the meantime I would apologise to the members concerned although as you will appreciate the matter was beyond our control. It might be appropriate to mention that payment by Direct Debit does avoid these problems and I would urge all members still paying by cheque to consider payment by direct debit in the future. I will be pleased to supply the necessary forms.

MIKE WALPOLE, Membership Secretary, 68 Outwoods Road, Loughborough, Leics. LE11 3L.Y

BSBI WALES QUADRENNIAL MEETING and 36th AGM, 1998

Notice is hereby given that a meeting of members of the Society, normally resident in Wales, will be held at Coleg Harlech, Harlech, Merioneth on Saturday August 22nd.

AGENDA

1. Election of Chairman and member to serve as Representative on BSBI Council
2. Election of Hon. Secretary, Hon. Treasurer and members of Committee for Wales
3. Any other business

Nominations of members for election as Chairman and Representative on Council must be in writing, signed by two members normally resident in Wales, and accompanied by written consent of the candidate to serve if elected. Such nominations, and nominations for members and officers of the Committee for Wales, should be sent to the Hon. Secretary of the Committee for Wales, Mr R.G. Ellis, Department of Botany, National Museum of Wales, Cathays Park, Cardiff CF1 3NP, to arrive not later than May 30th 1998.

GWYNN ELLIS, Hon. General Secretary

BARRA EXCURSION – CHANGE OF DATE

PLEASE NOTE that the dates of this excursion have changed, owing to unforeseeable changes in the new ferry timetable, which was not available at the time the excursion was planned. The excursion will take place one day later i.e., Thursday 30 July to Saturday 1 August inclusive, **not** Wednesday 29 to Friday 31 as advertised. Apologies for any inconvenience that this may cause.

RICHARD J. PANKHURST, Royal Botanic Garden, 20A Inverleith Row, Edinburgh EH3 5LR Tel: 0131-552-7171 ext. 432; Fax: 0131-552-0382 or 0481; e-mail: Richard@rbge.org.uk, Home page: www.rbge.org.uk and FTP at ftp.rbge.org.uk

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## GLENFINNAN EXCURSION – CHANGE OF VENUE – TO STRONTIAN

The meeting advertised as 'Friday 17th to Sunday 19th July, Glenfinnan, Westernness (v.c. 97)', will now be based in Strontian rather than Glenfinnan. This is to give easier access to less well-recorded areas in Ardgour, Sunart and Morvern. Apologies for any inconvenience that this may cause.

GORDON ROTHERO, Stronlanog, Glenmasson, by Dunoon, Argyll PA23 8RA

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IDENTIFICATION WORKSHOP, GLASGOW – NEW MEETING

This workshop, to be held at Glasgow Museum and Art Galleries, Kelvingrove, Glasgow, G3 has been moved from the Autumn to **Saturday 25th April**. Further details on p. 8

EDITOR

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## SCIENTIFIC AND RESEARCH COMMITTEE

Grant applications to the Research Fund (formerly the Bequest Fund) should now be made to the Acting Secretary, Scientific and Research Committee, Mr A.C. Jermy, Department of Botany, The Natural History Museum, Cromwell Road, London SW7 5BD, by the first of January and the first of July for consideration at the spring and autumn meetings of the Committee.

EDITOR

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DIARY

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**N.B.** These dates are supplementary to those in the 1998 Calendar in *BSBI Year Book* 1998.

### 1998

April

25

Atlas 2000 Identification Workshop, Glasgow (see p. 8)

July

24-26

National Festival of British Wildlife, Milton Keynes (see p. 93)



July 30 – Aug. 1      Changed dates for Barra Excursion (see p. 4)

EDITOR

## EDITORIAL & NOTES

**Congratulations:** to **Dr Oliver Rackam** on the award of O.B.E. for his contribution to conservation. Oliver writes modestly that the honour is 'really due to all those who have worked over the years towards establishing the study of historical ecology'. But through his books and his enthusiastic field demonstrations Oliver has enabled many of us to see landscape, and especially woodlands, in a new perspective.

to **Prof. Grenville Lucas** O.B.E. on his appointment to the Council of English Nature, where he will be able to put his wide knowledge of plants to good use for their practical conservation.

and to **Prof. John Dickson** on his election to a personal chair, as Professor of Archaeology and Plant Systematics at the University of Glasgow.

to **Dr D.M. Parker** who has been appointed Director of Conservation at the Countryside Council for Wales, Plas Penrhos, Ffordd Penrhos, Bangor, Gwynedd LL57 2LQ.

and to **Mary Briggs** FRPharmS, who in January completed fifty years as a Pharmacist and member of the Royal Pharmaceutical Society of Great Britain, and received an official acknowledgement from that society to prove it!

**Obituaries** With regret we report the following deaths:

**Nicholas Polunin** in December 1997. A member for more than 50 years, after joining BSBI in 1944 Nicholas with his interests in plant geography, the Arctic regions and more recently the environment world-wide, was editor of *Environmental Conservation* from 1975-1995. There will be an obituary in *Watsonia*. (MB)

**Lady Ricketts** (1919-1998). Lady Ricketts who died on 16th January aged 78, joined the BSBI in 1961. But long before that, in 1930, as Teresa Cripps (her father was Sir Stafford) she became a member of the Wild Flower Society and straightaway won first prizes. She travelled widely during the war, at first with her father who was Ambassador in Moscow, before marrying in 1945 Sir Robert Ricketts. As her children grew up her innate love of flowers came to the fore. Again she kept Diaries for the WFS, was a Branch Secretary, founder and active member of the Gloucestershire Trust, a keen gardener and photographer. For many years she was a leading light in the Citizens Advice Bureaux, for which she was awarded in 1983, the C.B.E. (D. McClintock) There are fuller details in the *Daily Telegraph* for 30th and *The Times* for 31st January, and there will be more in the Wild Flower Magazine No 442 in the Summer. D. McClintock

**Mr A.A. Slack** in early 1998. Alf Slack was a notable figure in Scottish Botany, a member since 1952 and Recorder for v.c. 97, Westernness since 1969. An obituary will appear in *Watsonia* 22(3), Spring 1999. (MB)

**BSBI Web Site.** If you have not yet visited our web site at 'http://members.aol.com/bsbihgs' why not give it a go, assuming of course that you have access to the Internet. Mark Atkinson (who has set it up) and I need feedback from members so that we can improve it. All comments, good and bad, would be much appreciated, as would ideas for extra pages. (GE)

**BSBA AGM Cardiff.** All those who have returned booking forms should have had a reply by now; if you haven't, let me know. Car parking in Cardiff around the National Museum and Gallery of Wales is reasonable if you get there early enough, but street parking does need vouchers and these must be bought in advance! The Museum's car park (£1) is open all day, but may fill up later. This is entered at the rear West corner of the Museum while the Reardon Smith Lecture Theatre is the bulge to the rear East corner. Apologies again to those who didn't get boat tickets to Flat Holm. The 40 seats were booked before the end of January! (GE)

**Llandovery Field Meeting** – Richard Pryce reminds us that there are still a few places left on this weekend meeting (12-15 June), see the *Year Book 1998* p. 32 for details. (GE)

**A satisfied customer** – The following note was received by Margaret Perring following an order sent to Dr Aimon Niklasson of Göteborg, Sweden. 'Thank you for Stace's fantastic book and the wonderful book about umbellifers. I want to have the new edition when it comes so I can present it to other botanists in Sweden. I would also like to order BSBI Handbooks nos 1, 4, 6 and 9' (Margaret Perring)

**Apologies** to Tim Rich for managing two errors in his bit of the AGM agenda. He is talking on the *Plant Crib 1998* and is a member of the 'Department of Biodiversity and Systematic Biology'! (GE)

**Rare Plants in Cultivation.** I would be grateful for information on any **Red Data Book** or **Scarce** species in cultivation in members gardens or elsewhere for a Register that is being set up.

**Tailpiece.** *Nature* – Bulletin of the Hellenic Society for the Protection of Nature published, in 1995, a note on the *Orobanches*. Reporting that 'thirty or so' of the 150 species occur in Greece, the author notes that their identification is often difficult – 'thus it suffices for the average amateur botanist to recognise the plants as Broomrapes (*Orobanches*)'. BSBI amateurs it would seem are not average? (MB)

**And finally,** a super-duper issue of *News*, the largest ever and three times the size when I took over, and I have still had to hold over more than 20 pages of interesting articles. At 96 pages, this is as large as we can go and possibly a bit too large, but I decided to 'clear the decks' and publish as much as possible in this issue. A good crop of inserts this time as well: *BSBI News*, *BSBI Annual Report 1997*, leaflets and booking forms for the Lille Conference, 1998 Recorders' Conference, pre-pub. offer for the *Plant Crib 1998*, our new *Code of Conduct* leaflet (if ready in time), two other book offers and possibly a leaflet on the Plant Finder CD-ROM (*News* goes to press before all inserts have been finalised). (GE)

GWYNN ELLIS (GE) & MARY BRIGGS (MB)

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## ATLAS 2000

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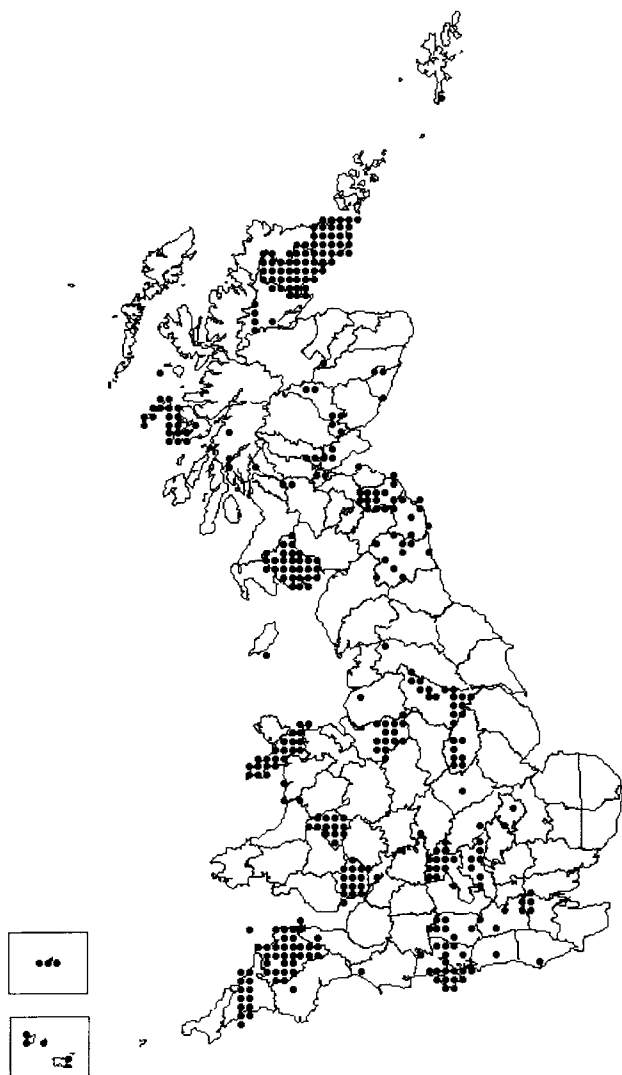
### PROGRESS REPORT

#### Current Progress

The flow of records into the project continues apace. The map below shows which hectads (10 km squares) I have currently received records for (early March) and it illustrates the considerable progress made since December (it also now shows the Vice-county boundaries for clarity!). To date, records have been submitted for 386 hectads from 57 Vice-county Recorders, representing some 14% of the total number of hectads in Britain. Half of these records are on computer disk. Obviously, we are some way short of the 50% promised this winter, but there are a few weeks left before the season starts in earnest so I hope the total will rise before then.

A more encouraging picture is obtained if you take the Monitoring Scheme squares into account. These are already in the database at Monks Wood and, although most need some extra recording (especially of alien taxa), the figure rises to 23% if these are included in the total.

The map does not include Ireland because we are not yet taking records from either Northern Ireland or the Republic. However, work is progressing very well in both cases. In Belfast, the Centre for Environmental Data and Recording (CEDaR) is undertaking a massive programme of data input (primarily by Fiona McKee), the results of which will be submitted towards the end of the project. In the Republic of Ireland mastercards are being compiled and sent to Declan Doouge (Atlas Co-ordinator) for computerisation – an encouraging 68 hectads have currently been submitted.



### Lancaster 1997 and 1998

As promised, a brief report of last year's Recorders Conference appears in this issue of *News* (see page 10). Since this meeting was so successful, especially in terms of getting recorders together to discuss Atlas 2000 issues, it is being repeated again this year. We will be returning to the excellent facilities at St. Martins College, Lancaster on the 11-13th September, and a flier is enclosed for you to book. Priority will be given to Vice-county Recorders, but all are welcome (many non-v.c recorders attended last

year and had a great time!). The itinerary will be similar to last year with a series of identification workshops and the chance to discuss Atlas 2000 problems, but we are also developing a series of 'determination sessions' in which material of critical and difficult taxa can be identified on-the-spot by a referee. The whole event should be as worthwhile and enjoyable as last year, so please attend if you can!

Two Identification Workshops are also being held. The first is in Glasgow on Saturday 25th April, and will be held at the Glasgow Museum and Art Galleries, Kelvingrove, at 10.00 am. This meeting is open to all recorders (Vice-county or not), and will include Dr Tom Cope (*Agrostis*), Richard Lansdown (*Callitriche* – including an update since Lancaster!) and Alan Silverside. Again, the determination of specimens will be as important as the workshops. If you want to attend, please contact Keith Watson (c/o Glasgow Museum and Art Galleries, Kelvingrove, Glasgow, G3 8AG). It should also be a great chance to tackle me about the Atlas 2000 (and hand over your mastercards!).

The second Workshop is at the New Herbarium of the Glasnevin Botanic Garden, Dublin, on Saturday 16th & Sunday 17th May. This weekend meeting will also comprise a series of workshops and identification sessions. If you are interested in attending, please contact either Declan Doouge (12 Glasilawn Road, Dublin 11, Eire) or myself for more details.

### Field Meetings

The field meeting season is almost upon us, but there is still time to book for the Atlas 2000 recording meetings. There are two I would particularly like to highlight. The first is the weekend meeting on the Isle of Wight (27th and 28th June), where we will be based at the Medina Valley Field Centre. In order to encourage you to make the crossing, we will be subsidising two cars loads of people, and there are still a couple of places left. This should be a great meeting with lots of good botanising on this beautiful island.

The second meeting is in West Donegal on the weekend of the 25th and 26th July (please see the 1998 *Year Book*). This meeting will be held around Ardara and Glenties, visiting Slievetooley Mountain and the Blue Stack Mountains. We will, however, subsidise two cars of people to make the crossing, and this group will then remain in West Donegal for the remaining week. We plan to move north to Dunglow and Gweedore, where we will botanise the area between (and including!) the coast and the Derryveagh Mountains. This promises to be a spectacular meeting and a great chance to visit Ireland for some great botany. If you wish to join us for this meeting from Britain, please book with Alan Hill (as in the *Yearbook*), but also contact me (Trevor Dines) as I will be arranging the crossing.

### Butterfly Atlas

Many recorders are keen naturalists and are interested in wide range of wildlife. The margins of field recording cards are regularly filled with comments on birds, butterflies and mammals seen while crossing plants off. For those of you interested in butterflies, you may be interested in a scheme very similar to the Atlas 2000. The *Butterflies for the New Millennium* project is based on a concern for butterflies and their habitats, and the need to provide up-to-date information as many species decline. This major project – launched in 1995 by Butterfly Conservation and the Biological Records Centre is the largest and most comprehensive survey of butterflies ever undertaken in Britain and Ireland, culminating in the production of an atlas for the year 2000. The intensive five year survey covers the period 1995–1999, and the resulting database will be a vital tool for the conservation of endangered butterflies.

The project is now starting its fourth season. If you are not already contributing butterfly records to the project but would like to, please write, sending a large (A4 - approx. 9" x 12") stamped addressed envelope (31p) to Butterfly Conservation (Head Office), P.O. Box 222, Dedham, Colchester, Essex CO7 6EY. You will be sent a free information pack which includes recording instructions, recording forms and details of your local co-ordinator from whom more forms can be obtained.

### Rare and Scarce on the N. Scotland Field Card (RP25)

While recording in Scotland last year, I was happily crossing off *Athyrium distentifolium* (Alpine Lady-fern) from the N. Scotland field card when it suddenly struck me that this was a scarce species

and shouldn't actually be on the back of the card. My anxiety rose as I continued to cross off *Carex saxatilis* (Russet Sedge) and even *Juncus biglumis* (Two-flowered Rush).

It is a policy that all rare and scarce species are omitted from the cards, as recorders are then forced to write such species on the front and this reminds them to provide more details (6 figure grid reference, habitat, estimation of population size, etc.). David Pearman has examined the N. Scotland card (RP25) and found that it lists **65 Scarce and 2 Red Data Book species!** This is a serious problem as it means that the extra data so essential to the recording of these species is probably not being collected. That this is taking place in the most under-recorded part of Britain is even more worrying. The species in question are (RDB in bold):

|            |                                   |             |                                 |      |                                 |
|------------|-----------------------------------|-------------|---------------------------------|------|---------------------------------|
| 45         | <i>Ajuga pyramidalis</i>          | 671         | <i>Elatine hexandra</i>         | 1587 | <i>Potentilla crantzii</i>      |
| 52         | <i>Alchemilla glomerulans</i>     | 718         | <i>Equisetum pratense</i>       | 1604 | <i>Primula scotica</i>          |
| 59         | <i>Alchemilla wicheruae</i>       | 723         | <i>Equisetum variegatum</i>     | 1630 | <i>Pyrola media</i>             |
| 80         | <i>Alopecurus borealis</i>        | 943         | <i>Goodyera repens</i>          | 5438 | <i>Pyrola rotundifolia</i>      |
| 332        | <i>Arabis petraea</i>             | 1043        | <i>Isoetes echinospora</i>      | 1693 | <i>Ribes alpinum</i>            |
| 156        | <i>Arctostaphylos alpinus</i>     | 1053        | <i>Juncus alpinoarticulatus</i> | 1768 | <i>Sagina saginoides</i>        |
| 210        | <i>Athyrium distentifolium</i>    | 1055        | <i>Juncus balticus</i>          | 1785 | <i>Salix arbuscula</i>          |
| 238        | <i>Betula nana</i>                | 1056        | <i>Juncus biglumis</i>          | 1796 | <i>Salix lapponum</i>           |
| 345        | <i>Carex atrata</i>               | 1061        | <i>Juncus castaneus</i>         | 1798 | <i>Salix myrsinites</i>         |
| 353        | <i>Carex capillaris</i>           | 1165        | <i>Linnaea borealis</i>         | 1803 | <i>Salix reticulata</i>         |
| 403        | <i>Carex magellanica</i>          | <b>1199</b> | <b><i>Luzula arcuata</i></b>    | 1836 | <i>Saxifraga nivalis</i>        |
| 389        | <i>Carex maritima</i>             | 1350        | <i>Lysimachia thyrsiflora</i>   | 1886 | <i>Sedum villosum</i>           |
| 415        | <i>Carex rupestris</i>            | 1257        | <i>Melampyrum sylvaticum</i>    | 1908 | <i>Sesleria caerulea</i>        |
| 417        | <i>Carex saxatilis</i>            | 1292        | <i>Mertensia maritima</i>       | 1913 | <i>Sibbaldia procumbens</i>     |
| 423        | <i>Carex vaginata</i>             | 1294        | <i>Meum athamanticum</i>        | 1974 | <i>Sorbus rupicola</i>          |
| 460        | <i>Cerastium alpinum</i>          | 501         | <i>Minuartia sedoides</i>       | 1996 | <i>Spiranthes romanzoffiana</i> |
| 465        | <i>Cerastium arcticum</i>         | 1357        | <i>Nuphar pumila</i>            | 1418 | <i>Vaccinium microcarpum</i>    |
| 464        | <i>Cerastium cerastoides</i>      | 1399        | <i>Orobancha alba</i>           | 2162 | <i>Veronica alpina</i>          |
| 545        | <i>Corallorhiza trifida</i>       | 1460        | <i>Phleum alpinum</i>           | 2238 | <i>Zostera angustifolia</i>     |
| <b>604</b> | <b><i>Cystopteris montana</i></b> | 1484        | <i>Pinus sylvestris</i>         | 2239 | <i>Zostera marina</i>           |
| 629        | <i>Deschampsia setacea</i>        | 1494        | <i>Poa alpina</i>               | 2240 | <i>Zostera noltii</i>           |
| 653        | <i>Draba norvegica</i>            | 1501        | <i>Poa glauca</i>               |      |                                 |
| 658        | <i>Dryas octopetala</i>           | 1566        | <i>Potamogeton filiformis</i>   |      |                                 |

If you use this card, please take note of these species and record them on the front of the card, with more details, if you find them. This is a good reminder for everyone that **extra information is required on all rare and scarce species** and that this should go on the front of your card, or preferably use one of the pink Individual Record Cards for the record. It is intended that the list of scarce species will be reviewed in the light of the Atlas 2000, and a revised list of taxa produced based on the 1987+ date class (see Pearman *et al.*, 1998).

### Into the Field!

The penultimate field season is practically upon us, and I'd just like to end by urging you out into the sun (?) once more with record cards in hand. We are now half way through the field recording for the Atlas, and there is still an awful lot to do. If you would like to help, please contact your local Vice-county Recorder and they will be able to point you in the right direction. There remain many areas that are painfully under-recorded, particularly in the north of Scotland, the Republic of Ireland, northern England and parts of Wales. *All* recording will be welcomed by your county recorder, and I cannot stress too much how easy it is for everyone to participate. It's also remarkably enjoyable, and at the same time you will be contributing to a landmark of British and Irish botany. It is, however, only with your help that it will be the success we are hoping for.

### Reference

Pearman, D.A., Preston, C.D., Roy, D.B. & Stewart, A. (1998). The use of B.S.B.I. Monitoring Scheme data to predict nationally scarce species in Britain. *Watsonia* **22**(1): 21-28.

TREVOR DINES (Atlas 2000 Organiser) Rhyd y Fwch, Bethel, Nr Caernarfon, Gwynedd LL55 3PS. Tel: 01248 670789; e-mail: TrevorDines@compuserve.com

## RECORDERS AND RECORDING

### AMENDMENT NO. 1 TO BSBI YEAR BOOK 1998

#### Panel of Referees

We rely heavily on the knowledge of our referees, and we are anxious about what will happen when their expertise is no longer available to us when they decide that they want to retire.

Records committee think that it might be a good idea to ask referees if they could nominate a suitable person who could be involved in learning about their specialist groups, helping with identifications and possibly taking over later. We wonder also if any members would be keen to have more active participation in identifying particular plant groups and would be willing to work with one of the existing referees on this basis.

Please contact me in the first instance if you feel that either situation applies to you.

#### Change of address:

Dr Ferguson, who referees *Salicornia*, has officially retired from Kew and in future would like specimens to be sent to him at his new address: 'Glencoe', Barrel Lane, Longhope, Glos. GL17 0LR

MARY CLARE SHEAHAN, 61 Westmoreland Road, Barnes, London SW13 9RZ; tel.: 01817484365;  
e-mail: m.sheahan@rbgkew.org.uk

#### V.c. Recorders

##### Changes.

V.c. 97 Westerness We very much regret to announce the death of Mr A.A. Slack, very much a pillar of the Society in Scotland, who has been our recorder here since 1969. He was also recorder for Easternness, v.c. 96 from 1955 to 1969.

V.c. 40 Salop Mrs S.J. Whild, 66 North Street, Castlefields, Shrewsbury, Shropshire SY1 2JL. She replaces Prof. I.C. Trueman, who has been our recorder since 1976, and in that time has co-produced the magnificent *Ecological Flora of the Shropshire Region* (and assisted with *The Flora of Montgomery* too). We thank him very much for all his efforts on our behalf.

##### Changes of address.

V.c. 5 S. Somerset: Mr P.R. Green, 77 High Street, Chard, Somerset TA20 1QT

V.c. 102 S. Ebudes: Dr R.L. Gulliver, Carraig Mhor, Imeravale, Port Ellen, Isle of Islay, PA42 7AL

V.c. 103 Mid Ebudes: Miss L. Farrell, c/o SNH, Kilmory Estate, Kilmory, Lochgilphead, Argyll, PA31 8RQ

DAVID PEARMAN, The Old Rectory, Frome St Quintin, Dorchester, Dorset DT2 0HF

### THE BSBI RECORDERS' CONFERENCE, LANCASTER, SEPT. 5-7th, 1997

Ninety five people attended the Recorders Conference at Lancaster, and nearly half of these were Vice-county Recorders. The meeting began at Friday lunch time, when participants were welcomed, allocated rooms and asked to decide which of 5 afternoon field meetings they wanted to attend. These meetings included tetrad bashing in the Forest of Boland (v.c. 64, Mid-W. Yorks, lead by Phyl Abbott), updating old records of *Juncus compressus* (Round-fruited Rush) on the W. Lancs (v.c. 60, lead by Eric Greenwood) coast, and searching for specialities (such as *Dryopteris submontana*

(Mountain Male-fern)) on the crags of Hutton Roof (v.c. 69, Westmoorland, lead by John Adams). Although, with so many people to organise, the afternoon was initially chaotic, (almost) everyone made the meeting they want to attend, and a great afternoon was had. This first day was rounded off by a lively and stimulating debate hosted by Tim Rich, who gave a report on the progress of the new Plant Crib. Ideas and suggestions for content and layout were plentiful from the audience.

Saturday morning saw an introduction by David Pearman followed by first of the Identification Workshops. These consisted of introductory talks (giving the salient identification features of the groups in question) followed by 'hands-on-sessions' where the words were put into action with actual plant material. Clive Stace kicked off the event with an account of alien and native species of *Festuca* in Britain, followed by an excellent and newly revised treatment of *Callitriche* by Richard Lansdown. Roger Maskew, who looked at *Rosa*, reserved his introductory talk until the hands-on-session. Participants were then split into three groups and rotated between 3 laboratories, one dealing with *Rosa*, one with *Callitriche* and one with *Festuca*. Here, we were able to grapple with live and herbarium material, pull them apart (*Festuca*), look for hairs under the microscope (*Callitriche*) and identify species, hybrids and aliens with a dichotomous key (*Rosa*). All the workshops were deemed both very successful and very entertaining.

After lunch an Atlas 2000 debate was held. Trevor Dines gave a report on the progress of the Atlas, and focused on potential and known problems facing the project. This stimulated a lively and wide-ranging debate, hosted by Trevor Dines, David Pearman and Chris Preston. A wide range of subjects was covered, ranging from taxonomic problems to the copying of mastercards, and discussion continued for some time. For those that needed advice on computers, a Computer Workshop was held in part of the afternoon session, hosted by Cameron Crook. Talks and demonstrations were given by Mike Thurner (BioBase), Stewart Ball (Recorder) and Aditsite (Trevor Dines – once I got my computer fixed – they always crash at the worst times). A short demonstration of AditKey (a new program to run, construct and distribute multi-access and dichotomous identification keys) was also given by Trevor. The whole day was rounded off with a very nice conference dinner and a pleasant evening in the college bar, with welcome time to chat to fellow recorders.

The next day saw the second identification workshop. Short talks were given by Geoffrey Kitchener (*Epilobium* hybrids), Anthony Piggott (*Dryopteris affinis* group), Chris Preston (*Myriophyllum*) and Tim Rich (*Luzula*). Again, participants were split into groups and rotated around the 3 laboratories. Masses of fresh *Epilobium* material was available for examination (much of it collected around Lancaster!), while Tim Rich provided herbarium specimens of *Luzula* and microscope demonstrations of differences in their seeds. Chris Preston produced watery trays of copious *Myriophyllum* species and their allies, while Anthony Piggott illustrated most *Dryopteris affinis* morphotypes with fresh and herbarium material. Again, the workshops proved to be both educational and entertaining, which brought the conference to a close after another enjoyable lunch.

Throughout the Conference, Margaret Perring hosted an extensive display of her botanical books, and we all (again) found the temptation too difficult to resist!

I have not given more details of the taxonomic material covered in the conference mainly because it will all be made available in the new *Plant Crib 1998* (due to be launched in May at the BSBI AGM). However, I do have copies of the handouts from the Conference for each group covered (*Rosa*, *Luzula*, *Epilobium* hybrids, *Festuca*, *Callitriche* and *Dryopteris affinis*). Please write to me if you want copies of these (enclosing a stamped addressed A5 envelope).

I would like to express my sincere thanks to all those that attended the Conference (both speakers and participants), to Cameron Crook for his help in organising it, to Margaret Perring, to the leaders of the field meetings, and to all the staff at the college that worked hard to made the event the success it was.

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BOTANICAL RECORDING AND CONSERVATION

A one-day seminar held at Merseyside Maritime Museum, Liverpool in conjunction with the National Federation for Biological Recording, 15th November 1997

Some 87 people, including at least 39 BSBI members, gathered at Liverpool for this one-day meeting organised by the NFBR jointly with the BSBI. This was the first time that the two organisations have come together in this way, and proved a useful forum for discussing how a national society's recording efforts link with the end uses of the information.

The day was split into two halves. The morning session looked at the way that BSBI activity in particular is focused, through the Atlas 2000 work in particular. In the afternoon, the subject turned to those bodies who make use of plant data, ranging from measures of national rarity, through to local authority action on the ground.

Eric Greenwood, just retiring from Liverpool Museum, opened the morning session with a brief address which reminded us of the important role of societies like the BSBI as 'archivists' of data: His work in museums had also showed what an important role these institutions have in this area, not least with the future safeguarding of not only plant vouchers to back up historical records, but also as archives for original field survey material.

Trevor Dines took us through the work towards the Atlas 2000 Project. First, though, he reflected on the basis for this recording effort, in the Watsonian Vice-county system, and then the development of the 'dot-map' system. The BSBI's own Monitoring Scheme in 1987 had shown the need for a national review. The aims of the Atlas 2000 Project, though, included a review not only of current distributions, but also of past data. The ability to utilise sophisticated computer manipulation of data was central to the present scheme, because it is reckoned that there will be at least 3 times the amount of data handled for the 1950s *Atlas*. The end product will also be looking not only just at presence and absence, but also at more fine-scale interpretation of these data. There remained problems, not least with the need to ensure evenness of coverage, and also with the extensive taxonomic changes since 1960, and questions of national status of species. He finished by looking to the future – with needs to upgrade the computer capabilities of Vice-county Recorders, provision of assistance for the increasing amount of work entailed, and then the need to refine the basis of establishing rarity, and links with national databases like that at Monks Wood.

Cameron Crook followed on seamlessly with a review of the way that data flowed from the Society's recording efforts to other users. He reckoned that there were some 6 million records with Recorders alone. ITE had 3.5 million records, of which most were now computerised. BSBI Recorders had professed that increasingly they were getting computerised, but there was still doubt about how much data was actually being accounted for by some. Computers also had drawbacks, such as potential problems with viruses, the cost of equipment, learning curves, and the time taken for data entry. There were still needs nationally to iron out problems, notably the question of data transfer standards, linkages with ITE, etc. Currently, the BSBI supported the use of a number of computer data packages: *Aditsite*, *Biobase* and *RECORDER*. The latter was rather cumbersome at present, but is being re-written.

The morning was rounded off soundly by Tim Rich, who waded into the debate about the scientific credibility of botanical survey by outlining what was wrong with much of existing methodology, and how a more considered application of field methods in particular could improve the real assessment of species distribution and rarity. He singled out Good's historic Dorset 'Flora', and his own work with others at Ashdown Forest as examples of where an attempt had been made to ensure evenness of coverage, and to minimise the effects of differences in recorder competence. Central to this was the recording of the amount of time actually spent in surveying a particular area. He asked whether it really mattered that much. For broad studies of phytogeography, etc., it probably did not, but with active conservation it certainly did, especially if we are trying to decide on conservation priorities. He illustrated the problems it could cause, such as the inherent bias in data shown in some of the maps in the Scarce Plants Atlas. As this had become a central tool for identifying conservation priority, it was an important consideration. How, then were we to improve the situation? Central was the quality of the botanists in the field, so this was the first priority. Second was the co-ordinated encouragement of

an even spread of activity. It was also important when recording to ensure that as many different plant habitats as possible were included in the survey, and that evenness of seasonal coverage was attempted.

In the afternoon, attention turned first to the review of Red Data Book species, outlined by Nick Hodgetts of JNCC. The contribution from Tim Rich in the morning was obviously central to the problems of deciding rarity. Nick outlined the legislative background, and JNCC's responsibilities. At present there were 107 higher plants, 53 bryophytes and 2 stoneworts on the Red Data list. Criteria for inclusion had changed since the Wildlife & Countryside Act 1981. Species must be native (or threatened in native range), established in the wild, an authentic taxon, and 'severely threatened in the UK'. A decision had to be made that the species would benefit from listing. In fact the listing was a 'blunt instrument' of conservation, and now attention had shifted towards the Biodiversity Action Plan approach. He acknowledged the major difficulty of gathering information. The generation of reliable information and its linkage from the local level to the national was vital. The National Biodiversity Network developments, where data could be managed locally and transferred electronically, was a potential way forward.

Joan Fairhurst from Cheshire County Council gave us a different view as to where plant information fitted in the work of a local authority. Planning for conservation needed to involve the community at large, so that her work in the Cheshire Local Agenda 21 activities were relevant here. It was important that data could be used proactively in directing action. The planning system was one use, involving both development control and forward planning. Increasingly, non-statutory plans were being seen as important, with clear targets for action, such as biodiversity audits and local BAPs. She highlighted the need for urban habitats to be identified, because here was often the greatest potential for biodiversity. She also highlighted the need for society at large to have reliable 'indicators' of the health of the natural environment. Local people should therefore be encouraged to 'get involved' with looking for these, even though their expertise was not as high as that of the committed botanist. She emphasised this point by highlighting the increasing lack of people who were at all competent, and suggested that it might be partly due to a certain academic snobbery in some quarters. She suggested therefore that four steps could be: the documentation of sites likely to be affected by developments, the identification of readily-identified indicators of habitat health or change, the sharing of expertise with others, and direct involvement with the biodiversity action plan process locally.

Finally Ruth Davis of Plantlife showed us the nitty-gritty of using plant information to try and retrieve species 'on the brink'. She explained some of the background to this work, and then looked at the ways species were assessed for inclusion. International threat, decline rates and localisation were important. It was important to be able to define abundance. The 'appeal' of species could also be important in engendering action. One thing which she stressed, reflecting back on Eric Greenwood's introduction, was the importance of detailed historical data. There were problems of inconsistency of data, and there were also problems from taxonomy, such as the exact status of the Plymouth Pear, for example. Understanding causes of decline was also important, and here, historical data could be invaluable. It also gave insights as to the potential for land-use changes to enable conservation. Finally, there was the question of monitoring, but here we had to be clear what we were trying to measure. How many plants of a species was 'enough'? We need not be slaves to past landscapes, and we needed to show that what mattered were the conservation of habitat processes and richness.

The questions of involvement in survey, and of survey bias and coverage, were central to the question and answer sessions. Although there tended to be two divergent views on the one hand seeing the importance of the science of botany and the need to resource proper surveys, and on the other the need to be inclusive if plant conservation was to be understood and promoted at large – the overall feeling of the meeting was that much had been learned about the need to bring these two areas closer together. The problem of a steady decline in available expertise was especially highlighted, and is something the BSBI could be concerned about improving.

PLANT STATUS AND RECORDING

Introduction

The concept of expressing the rarity of a plant within Great Britain in terms of its presence in 15 or fewer hectads arose thirty years ago, Perring (1970). It was not long before increased knowledge of the distribution of plants led to the discovery that some rare plants actually occurred in 16 or more hectads and that others shown in the *Atlas*, Perring and Walters, eds (1962), as occurring in more than 15 hectads had been reduced by modern farming practices to fewer than 15 hectads. This led the conservation bodies to sponsor study of the next category of rare plants, those in the 15-100 hectad category, the results being edited by Stewart, Pearman and Preston (1994).

The constant emphasis on conservation during the last thirty years, while destruction has continued at an ever-increasing pace, has ensured that the above categories for rare plants are now part of the general background knowledge of all students of British botany, particularly since their inclusion in Stace (1991). At the other end of the scale, the work of Scott, ed. (1975) on the common plants remains in relative obscurity. Produced as a booklet at ITE, copies are no longer available and are unlikely to be found in a library; but luckily, Chris Preston has included all fifty species in An index and bibliography to distribution maps published between 1962 and 1989 in Perring and Walters, eds (1990).

Distribution

The amount of data recorded about the distribution of British plants during the last 300 years is so great that it only provides useful information when summarised in some way. The *Atlas* is a summary of distribution which, if we provide a simple numerical equivalent, can be used on our computers to aid recording. By extending the rare categories to meet up with the common species, a table such as that shown below may be produced.

Ref	Status	No Hectads	% Hectads
VC	Very Common	3326-3500	95%-100%
C	Common	2626-3325	75%-95%
F	Frequent	1501-2625	50%-75%
W	Widespread	0701-1500	20%-50%
L	Local	0351-0700	10%-20%
S	Scarce	0101-0350	2.86%-10%
R	Rare (Scarce)	0016-0100	0.43%-2.86%
RR	Very Rare	0001-0015	<0.43%
RRR	Very Rare	0001-0015	<0.43%
B	Extinct	0	0%
I	Introduced		

Table 1. Status based on presence in hectads

There are 10 categories for native species, all of which could be applied to introduced species if sufficient data were available. At present, only the common and very common categories are of practical value for introduced plants.

The table assumes 3500 hectads as the total for the British Isles after Perring and Walters, eds (1962). I do not know the exact total but possibly the organisers of the present *Atlas* could provide the answer. The table has adopted the terminology of Stace (1991) for the categories of rare plants, and has redefined 'scarce' as 'rare'.

It is impossible at the moment to classify the species on the British List into the suggested categories due to lack of published data. The *Atlas* does not state the number of squares in which a species occurs, as in many local floras, probably because the punched card equipment in use in 1962 could not provide this information.

If we look at a smaller area such as a Watsonian Province, the amount of work required to input the necessary minimum of data would still take an individual three or four years to complete. This is illustrated by table 2 below of the Scottish Watsonian Provinces. The shared hectads are counted in

each Province: thus the total does not add up to the number of hectads in Scotland, which is 1102 including Scotland's share of hectads astride the border with England.

Ref	Status	W Low	E Low	E High	W High	N High	N Isles	% Hectads
VC	Very Common	159-167	86-90	297-313	250-263	178-187	159-166	95%-100%
C	Common	126-158	68-85	235-296	197-249	140-177	125-158	75%-95%
F	Frequent	84-125	46-67	157-234	132-196	94-139	83-124	50%-75%
W	Widespread	33-83	18-45	63-156	53-131	37-93	34-82	20%-50%
L	Local	17-32	10-17	31-62	26-52	19-36	17-33	10%-20%
S	Scarce	5-16	3-9	9-30	8-25	5-18	5-16	2.86%-10%
R	Rare (Scarce)	2-4	2	2-8	2-7	2-4	2-4	0.43%-2.86%
RR	Very Rare	1	1	1	1	1	1	<0.43%
RRR	Very Rare	1	1	1	1	1	1	<0.43%
E	Extinct	0	0	0	0	0	0	0%
I	Introduced							

Table 2. Hectads per Watsonian Province in Scotland

Recording

As individuals, therefore, we are reduced to a Vice-county or two, so that the data for the more rare categories becomes rather meaningless; but this is unimportant because when using plant status in conjunction with recording it is the common species which are of most interest.

Ref	Status	No. Hectads	% Hectads	No. Species
VC	Very Common	32 or 33	95%-100%	122
C	Common	25 to 31	75%-95%	119
F	Frequent	17 to 24	50%-75%	83
W	Widespread	7 to 16	20%-50%	151
L	Local	4 to 6	11%-20%	81
S	Scarce	2 or 3	2.86%-10%	105
R	Rare (Scarce)	1	0.43%-2.86%	76
RR	Very Rare	1	<0.43%	0
RRR	Very Rare	1	<0.43%	1
E	Extinct	0	0%	-

Total Species 738 (From data in Murray (1980))

Table 3. Species per Status Group in the Isle of Skye v.c. 104

Table 3 is a summary of the distribution status of plants on the Isle of Skye. As Pankhurst (1997) remarks, in the Hebrides there are not many species compared with a southern English county: and table 3 is based on 11419 records.

Looking at this in some detail, the local scarce, rare and very rare categories comprise 263 species, 33% of the species in the table: however, they contribute only 634 records, or 5.55%. Thus for general recording purposes the local scarce and rare plants can be ignored. If not encountered randomly they will have to be searched out as a separate exercise.

The plants that need the recorder's attention are the very common and common ones. There is a surprisingly large total of 122 very common plants compared to the 50 species picked out from the Atlas by Scott, ed (1975). It may be that NW Scotland has a more uniform than usual vegetation coverage and therefore more species are very common. Whatever the answer, it is reasonable to assume that about 250 species will be recorded as a minimum in a hectad.

The recording effort in v.c. 104 has during the last thirty years been rather splintered, with the NCC on Rum and J.C. Brownlee and J.G. Rogers recording on Figg, Muck and Canna, leaving the v.c. recorder with Skye and Raasay, Murray (1980).

In the nineties, regular visits to the Small Isles have been made and it is now possible to compare the species recorded in a tetrad with the common and very common species on Skye. Comparison of the 284 species in a well-recorded tetrad in the Small Isles with the very common species of Skye shows that 12 very common Skye species have still not been recorded in the Small Isles tetrad. Six species are unlikely to occur through lack of habitat, and six remain to be recorded. 35 common species are also missing, but surprisingly, 30 are unlikely to be recorded due to lack of habitat. The final total for the tetrad will probably be about 300 species.

Thus it is possible to list species overlooked, and with a little experience, predict when further effort is going to produce very few extra records. The lists of very common plants missed from tetrads usually contain many of the same species, which are either later-flowering species or are species regularly overlooked by the recorders. Two *Agrostis* species fall into both categories.

The computer technology required to carry out this process is very simple. The species numbers of the very common plants are extracted from the database and held in a separate table or file. The species numbers recorded from a given hectad or tetrad are extracted from the database and subtracted from the numbers held in the separate table or file, leaving the recorder with a list of the very common plants that have not been recorded.

Timed recording

Rich *et al.* (1996) put great stress on allocating a fixed amount of time to recording in each 1 km square. This approach does not commend itself in the Highlands and Islands where there is never enough time to finish recording. Clearly, the recorder needs to visit the maximum number of habitats in the limited time available.

Record cards

Rich (1997) has dealt with the design of cards in detail. One basic point needs mentioning again, however: cards should not start to disintegrate the moment they get wet!

The next edition of the recording cards should have space provided beside each species for recording the habitat and approximate number of plants seen. The habitats also need to be listed in a box, as illustrated in Rich (1997), with provision to mark them when they have been visited. I would suggest that the species numbers remain on the left margin because modern methods of inputting data should make typing numbers unnecessary. An image of the card can appear on the computer monitor and the species recorded can be selected for storage along with the usual details.

Conclusions

Application of the concept of plant status to recording in the Small Isles has been helpful in indicating species regularly overlooked by recorders and has confirmed when the species list for a tetrad is nearing completion. The area involved is too small to make any useful comment on hectad recording.

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MORE ON GRID REFERENCES

I would like to add to the notes in *BSBI News* 76 & 77 on Grid References.

To specify a **point** some people quote the nearest 6-fig. GR, which is incorrect. The GR should be regarded as specifying a square with sides of 100 m.

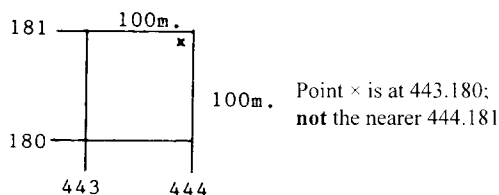
The margin of O.S. Landranger 1:50000 maps explains the method of estimating a six-figure reference which locates a point 'to the nearest 100 metres'. This is not really correct; what it does is to specify the intersection at the SW corner of a 100 m square. This means that a given point can be up to 141 m distant (i.e. the diagonal distance). It is best to view a GR as defining a square rather than a point, as follows:

a 2-fig. (eg. TQ/4.1) defines a 10 km square

a 4-fig. (eg. TQ/44.18) defines a 1 km square

a 6-fig. (eg. TQ/443.180) defines a 100 m square

To specify a point within a 100 m square the SW corner intersection should be quoted:



To give an actual example, take the Black Poplar by Isfield church. It is so near the SW corner intersection of TQ/444.181 that this could easily be given as the GR – but it would be wrong! The correct 6-fig. GR is TQ/443.180. An 8-fig. GR would be more precise but is unnecessary.

The 1:10000 map shows up the difference more clearly. Plastic 'romers' do not usually cover this scale.

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MORE ON GRID REFERENCES AND O.S. MAPS

What a splendid forum for communication *BSBI News* has turned out to be: within a few days of receiving issue 77 I have had two letters – thank-you John Swindells and Christopher Perraton – letting me know about the new series of 1:25,000 O.S. maps being prepared as requested in my own letter. I look forward to the new set of what should be more hard-wearing maps. (Mr Perraton warns collectors that they have but a short time to complete a set of the old 'Pathfinders').

Concerning the current recording for Atlas 2000: do we any longer have an excuse for recording only to six figure map reference accuracy? Current work at confirming old records will often be made difficult for lack of map references. Will future confirmation work be made unnecessarily difficult because we have been lazily content to describe our finds to the nearest 100 metres when we can quite easily get down to 10 or 20 metres – in all but the most featureless terrains. Eight figure references are now routine in locating the start of footpaths, for example, in planning notices: shouldn't we be similarly helpful to future recorders?

On the subject of recording cards: would it not be a good idea to get somebody to produce an electronic version in which as many sites as necessary could be held? Perhaps the greatest drawback to recording (for us amateurs at least) is all the clobber we have to carry around to be sure of our identifications – and not get lost, starved, or drowned at the same time! I suspect that recording cards, though they give comfortably concrete evidence of our efforts, may have had their day.

A future recording kit should have one notebook sized electronic unit which incorporates the full O.S. map database with tetrad and vice-county overlay options; GPS; 'Record card mode'; Stace and other digitised identification guides, and space for loading other local floral information – it could even hold Atlas 2000 itself.

I expect that some more wealthy members are already well on the way to this state of affairs and carry notebook computers around with them. A single dedicated unit might prove a cheaper and more robust option: but perhaps I am underestimating the pace of technology and we'll all be carrying cheap, disposable, clones of our home computers around with us in our pockets by the time Atlas 2000 is completed!

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## RECORDING CARDS: SOME MORE VIEWS

I was most interested to read the articles by Tim Rich and Richard Pankhurst in *BSBI News* 77, and would like to add one or two comments and endorsements. I am in the happy position of being one of those who tried out Richard Pankhurst's cards for the Outer Hebrides (v.c. 110), and I found them extremely useful for indicating what was important amongst the species identified (and hence should be annotated), and also as a motivator – it's really good to know instantly that you've found 30 species new to the hectad that you're looking in! The main point where I found them frustrating was in areas which had been botanised very little before. In these cases there are a lot of new species to write in, and it becomes tiresome scanning what you already have to check whether something is new, or even just pencilling the names in all the time. Perhaps this is a problem peculiar to remoter areas? Some of the squares I visited in 1997 had 1 or 3 previous records, in which case an ordinary BRC card could be used, but others had 30-40, but might have another 50 species to be added. I guess the message is that you need a certain level of recording before such cards become really useful.

Tim Rich's article contained a lot of useful points. In particular I would like to second the view that numbers should appear to the right of the species' names (see fig. 5 in Rich 1997). There is a whole field of cognitive questionnaire testing which is (in reputable places) regularly applied to questionnaire design, and there is every reason to use such techniques to improve the chances of getting correct data from our recording cards. Experience shows that, even if we assume all the identifications are spot on, if the recording card can be misinterpreted in any way (either during completion or computerisation), someone will do it somewhere (is there anyone who can confidently say they've never written the wrong tetrad letter by mistake?). It is these measurement errors which, if they get to the final data, are most difficult to deal with in statistical analyses (of almost any sort), so we should aim to reduce them as much as possible. One easy example would be to have the standard recording distribution statuses (Macpherson *et al.* 1996) on the card (both sides) for reference.

Tim also highlights indications of the quality of records, using a score for how thoroughly recording has been done. However this is another of those questions wide open to misinterpretation – I tend to be very slow, and might say I had done my recording very thoroughly if I did one nice hedgerow in two hours, whereas others might say the same thing if they had spent 5 minutes in each of 24 different habitats (and maybe, according to Rich & Smith 1996, they would be more right).

The comparison between the two articles, both effectively advocating different cards for small areas is illuminating, but it would also be extremely useful to have a general card which can be used by itinerant botanists – am I the only one who sometimes ends up using Welsh cards for Scottish records and then getting cheesed off when I have to write *Festuca vivipara* (viviparous fescue) in for the fortieth time? So there are many things to consider – we should acknowledge that we are in the data business, as well as the plant business, and we should use whatever techniques are available to help us. It would be profitable to have a more critical look at our data requirements and design our cards accordingly.

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## PHYTOGEOGRAPHY AND RECORDING

Phytogeography has developed considerably in recent years with the availability of computer programs which turn data into graphically analysable forms and which enable us to perform otherwise arduous statistical analyses with ease.

Many times it has been pointed out that recording coverage, which can never reach 100%, must be factored in any analysis of available data about one or more taxa. By reference to survey dates and species records it is often possible to deduce recording coverage for an area and time of year. Most importantly this suggests areas for which no survey has been undertaken, but it gives us no more than an inferred negative.

The structured collection of information about areas and routes covered, together with times of year and recording intensity would now seem possible. The expertise of the recorder will also suggest the likelihood of any given species' absence within an area covered. It is a common tautology that recording depends principally upon recorders. Possibly an arrangement already exists as a field in databases for regional or national records; certainly it seems to me that it could.

The difficulty of defining coverage appears to depend upon a number of things, for the individual and for the records collection centre.

Maps with lines and areas marked on them cannot easily be transferred to computer databases. Currently the task would be onerous and subject to a high probability of error. The DMap Digitizer (available from Alan Morton as an add-on to DMap) would perhaps be the best available method, though it has been designed with area definition in mind.

The use of a scanned map image to underlie (and act to confirm) any recording of both taxa and routes or areas would rely upon the agreement of the Ordnance Survey both to such uses and to the transfer of those images between users. This seems unlikely since the O.S. are no longer a societal resource and botany is not promising as a source of income. Therefore an agreement allowing restricted usage by members would perhaps be too great an aspiration, though as a scientific resource it might prove to be invaluable. The many problems found with incorrect, and at best tedious, entry of National Grid map references testify to this.

The inclusion on recording cards of information about 'recorder expertise', 'thoroughness of recording' and 'time spent recording' suggested by Tim Rich in his article 'Design of Record Cards' (*BSBI News* 77, Dec '97) addresses these issues. What have been, for many years, ill-defined variables are recognised as not just useful but also as available and recordable. Along with these considerations a description of the route taken is recommended.

In contradistinction to the arguably necessary concentration of attention by such references as the Stace Flora on verbal and numeric communication, data which uses maps is not best served by verbal accounts. 'Route taken' might become an extremely misleading category. Furthermore, at times, it can be remarkably vague. As an aid to local recording the usefulness of coverage data would be high. By reference to recording dates including times of year it would become clear which areas had potentially low recording frequencies, for instance of taxa for which the stage of development of a plant is critical to its correct determination, or just for those which are too early in the year. Yet there seems to be no recognised format for the exchange of data and no protocol developed to establish the habit.

Saying that one looked and did not find is an important piece of information and defining where it was that one looked must be part of the information for it to be useful. How we say this and its clarity of definition depends on maps.

I would be interested to hear from anyone who has any thoughts about this, or indeed anyone who can tell me if I am displaying thorough ignorance of an existing scheme!

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## NATIVE BLACK POPLAR RECORDING CARDS

As some of you are aware, I am endeavouring to update the national Black Poplar (*Populus nigra* subsp. *betulifolia*) records, in conjunction with Jane Croft at the Biological Records Centre. The Centre have very kindly produced a record card, especially designed for the species. If anybody would like a supply to record new finds, either Jane Croft or myself can provide them.

On a different note, but remaining with Black Poplar, I would very much appreciate any details of suspected relict populations, with a view to genetically fingerprinting them as part of my PhD project.

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## NOTES AND ARTICLES

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### NEWS FROM THE BSBI DATABASE

The BSBI Database at Leicester is now six years old and contains a lot of data that we hope will be of use and interest to members and others. This note is intended to inform members of what the Database contains and how members can get access to it.

The Database has been gradually built up by planning and carrying out a series of incremental but interactive finite projects, rather than by pursuing an all-embracing policy of gathering data of all sorts on a broad front at the same time. The projects adopted are all agreed and monitored by the Database Subcommittee of BSBI Council. BSBI pays for the hardware and software, and for the fees of an inputter, but all the organisation of individual projects, the gathering and checking of data, the supervising and checking of the inputting, and the preparation of output is carried out by volunteers. The aim is to build an unrivalled database on the taxonomy, distribution and bibliography of the flora of the British Isles, and to make this information as widely available as possible via publications, electronic and hard-copy output on demand, and, hopefully in the future, the internet.

The Database at present consists of four major interactive files (projects) and several smaller ones:

**1 – List of Vascular Plants of the British Isles**, compiled by D.H. Kent. This resulted in the publication with the same name in 1992, and is constantly kept up to date, supplements appearing roughly every three years and sheets of minor amendments roughly every year. In addition to the data in the printed list, the database contains the places of publication of every name (over 11400), the BRC number, and the English, Welsh, Irish and Gaelic names. It also contains all the taxa in Stace's *New Flora of the British Isles* that are not in the Kent *List*, and it is planned to add all the extra taxa in the two recent lists of aliens (Clement & Foster 1994; Ryves, Clement & Foster 1996). **We can provide output of all except the last in virtually any sequence and combination.**

**2 – BSBI Abstracts**, compiled by D.H. Kent. *Abstracts* 23 to 27 (1993-1997) were prepared via the BSBI Database, and this continues on an annual basis. We plan to input the data from *Abstracts* prior to Part 23, right back to Part 1 (1971) and then before that (earlier *Abstracts* appeared as part of



*Proceedings of the BSBI* and, earlier still, in *Watsonia* and *BEC Reports*). Until 1989 (Part 19) the articles, etc., in BSBI's own publications (*Watsonia*, etc.) were not abstracted for *BSBI Abstracts*, so these are being entered afresh separately. So far we have got back to *Abstracts* Part 6 (1976), so that we now have 22 years of bibliography available. **We can respond to searches of publications based on taxa, v.cc., authors and other people, dates, and any of the sections into which *BSBI Abstracts* is divided, in virtually any combination.**

**3 – Cytological Catalogue.** compiled by R.J. Gornall & J.P. Bailey. This contains (as far as we know) all the chromosome counts made on plants sampled in the wild in the British Isles, together with other data such as locality, and publication if not a new count. This file is being kept up-to-date. **We can provide data based on any of these parameters.**

**4 – Vice-comital Census Catalogue,** compiled by the VCCC working party. Further details of this are given in a separate note; completion is planned for about 2001 and until then data can only be released for 'research' purposes, not for publication or for use in analyses, to v.c. Recorders and the like.

Enquiries from members are warmly invited; please address general queries about the database to C.A.S. and requests for specific data to Dr Richard Gornall (same address). Information for the personal use of members is now given free, so long as its preparation does not take more than one hour. Some details of how to request data from the Database were given in *BSBI News* 74: 5-6, January 1997), but it is best to write informally first; ignore the charges mentioned there!

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THE VICE-COMITAL CENSUS CATALOGUE PROJECT

The idea of compiling a vice-comital census catalogue for Britain, the Isle of Man and the Channel Islands arose late in 1987 when it was realised that there were at least four people with similar but less detailed and to some extent overlapping schemes; agreement to co-operate was quickly forthcoming.

The first such catalogue was of course H.C. Watson's *Topographical Botany* (1873-74; 2nd ed. by J.G. Baker & W.W. Newbould, 1883), with Supplements in 1905 (by A. Bennett) and 1929-30 (by A. Bennett, C.E. Salmon & J.R. Matthews), which covered records up to the end of 1925 by listing the vice-counties in Britain and the Isle of Man in which each species had been recorded, together with a source for each record (often simply the name of a correspondent). In 1932 G.C. Druce produced *The Comital Flora of the British Isles*, which did cover the whole of the British Isles but which lacked sources and unfortunately does contain rather numerous errors, omissions and unconfirmed records, so that it cannot be used as the basis for a modern catalogue.

I shall not cover here the topic of vice-counties versus grid-squares, because it is to my mind a totally sterile argument: the two schemes fulfil quite separate purposes, neither scheme remotely able to cover both roles. Vice-counties have been with us for 150 years and will probably remain for at least as long again, with unchanged definitions, and the VCCC working party believe that an accurate, up-to-date list of plants occurring in them is badly needed. In this the BSBI has lagged far behind the British Bryological Society, whose exemplary Census Catalogue is kept fully up to date despite the equal prominence given in recent years to their hectad dot maps. Britain has also lagged behind Ireland, which has a reasonably up-to-date and complete Census Catalogue (Scannell & Synnott 1987).

The original working party consisted of Jim Bevan, Gwynn Ellis, Duggie Kent, David McCosh, Chris Preston, Alan Silverside and Clive Stace, who became a subcommittee of BSBI Council in 1988, and their work was adopted as one of the projects of the BSBI Database (Leicester) in 1992.

The task has been divided into three phases:

1 – Compilation by the above Subcommittee, mostly without any recourse to v.c. Recorders, of a draft list of all the taxa in Kent's *List of Vascular Plants of the British Isles* recorded in each of the 113 vice-counties, and the entry of all these data into the BSBI Database. A typical entry for one taxon/v.c. record is:

Poa annua 55 955055 1 5

These columns represent (1) taxon name; (2) v.c. number; (3) code number of source of record, in this case *Flora of Leicestershire* (1988); (4) status in the vice-county (1 = native, 2 = naturalized = established, 3 = casual, or if a tree planted); (5) timeframe (4 = only recorded pre-1970, or if post-1970 subsequently extinct, 5 = recorded 1970 or later and not known to be extinct). A draft printout was then produced for each v.c. and sent to the v.c. Recorder with a request for it to be checked and updated. This phase was completed during winter 1996-97 (having taken seven people eight years). The compilation was actually carried out by GE, DK, DM and CS from the original group, and by three recruits: Trevor James, Alan Outen and Geoffrey Wilmore. There are over 142,000 records in the Database.

2 – Checking and updating of the draft printouts by the v.c. Recorders in co-operation with one or other of the compilers; usually quite a lot of correspondence is involved. The compilers involved at this stage are GE, DM, CS, GW and another recruit, Graeme Kay. When the compiler and v.c. Recorder are satisfied with the emendations, the latter are added to the Database and a new printout is produced and sent to the v.c. Recorder. This phase is planned to extend over about two to three years. At the time of writing 36 v.c. have completed Phase 2, with another 36 or so close to completion. Of the rest, about 35 are in earlier stages of completion, and 6 v.c. Recorders have so far not responded to repeated enquiries. Sadly it is the case that at any one time a small proportion of v.c. Recorders are inactive. In such cases the compilers will do their best to fill the gap, but their efforts cannot match up to those of an active local worker.

3 – The revised draft printouts will be checked by compilers and v.c. Recorders, and the lists will be kept updated by additions as they come to light, especially during Atlas 2000 recording. This phase is planned to last until about 2001, and should be able to incorporate all the records made for Atlas 2000. It is then planned to publish a VCCC; all the information given for *Poa annua* above will be included EXCEPT for the source, which will be available on request from the BSBI Database.

Of the 11 people mentioned above, 5 are no longer actively involved, mainly due to pressure of other commitments. 5 are now managing Phase 2, and CP remains our 'BRC Link' and will be more fully involved in Phase 3.

When the project is complete not only will raw data such as v.c. lists or taxon lists be available, but a wide range of analyses will be possible. For example: what proportion of taxa have become extinct, or what proportion of species are aliens, in, say, Middlesex (heavily urbanised), Leicestershire (heavily agriculturalised) or Westmorland (relatively unscathed)? Vice-county lists can also be correlated with other data, e.g. climate, geology, topology, that are available for a range of vice-counties. In addition regional lists can be produced by pooling v.c. lists, e.g. East Anglia, Scotland or the SW peninsula. To judge from the number of enquiries so far received by the BSBI Database, many not yet able to be satisfied, lists such as these will be one of its most popular requests in the future.

Our experience so far in compiling the VCCC is that most v.c. Recorders have been generously helpful in providing or checking information, and that most have profited from the collaboration in that they have been provided both with useful v.c. checklists (in alphabetical or Kent order) and with records of species that had previously escaped their notice. It has become apparent that compilation of the VCCC and Atlas 2000 recording are mutually beneficial, rather than competitive. We are very grateful to all the v.c. Recorders who have so far assisted with the project, and urge the few who have not so far done so to get in touch with us. We welcome enquiries, which may be addressed to the undersigned.

DIALECT PLANT-NAMES

The following continues from *BSBI News* 76 a list of names collected since 1992.

Ironweed – *Atriplex patula*, common orache. Suffolk, pre-1939 [East Tuddenham, Norfolk, May 1994].

Jesus blanket – *Verbascum thapsus*, mullein [Capel, Kent, February 1996].

Johnny-jump-up – *Viola* cv., pansy: 'I have never been sure if this is true *V. tricolor* or some garden hybrid . . . this is an old country garden where it has grown for decades, springing up anywhere and everywhere' [Fleet, Hampshire, July 1995].

Joy – *Ranunculus arvensis*, corn buttercup. Suffolk, pre-1939 [East Tuddenham, Norfolk, May 1994].

Jumping Jesus – *Cardamine hirsuta*, hairy bitter-cress: 'When I lived in the New Forest the local name for hairy bitter-cress was Jumping Jesus' [Bucknell, Shropshire, March 1997].

'I phoned my friend in the New Forest, who told me the name Jumping Jesus some 15 years ago . . . she now says it was a name used by a mutual friend of ours who lived in the Petersfield area. Knowing that friend, I rather suspect it is her own invention' [ibid., November 1997]. Further records of this name would be much appreciated.

Ketlock – *Sinapsis arvensis*, charlock [Addington Moorside, West Yorkshire, April 1994].

Kisses – *Galium aparine*, goosegrass. Suffolk, pre-1939 [East Tuddenham, Norfolk, May 1994].

Kiss-me-quick – *Centranthus ruber*, red valerian. Portland, Dorset [Teddington, Middlesex, February 1997]; Somerset, pre-1939 [Newtown, Powys, April 1997].

Kittykins – *Corylus avellana*, hazel, catkins [Headcorn, Kent, January 1993].

Knitbone – *Symphytum officinale*, common comfrey: 'In parts of Lancashire and Cheshire comfrey is known as knitbone and is used as a poultice or plaster on the injured limb . . . When I broke an arm some years ago an old lady told me how to use it. A few days later she left a plant on the doorstep, which now grows in my garden': [Wilmslow, Cheshire, April 1993]. Widespread

Thanks to Alec Bull, Mary Chantler, Sheila Chase, Chris Hall, Kate Mason, Kathleen Simpson, Colin Small, Pat Smith, and others who have sent in comments or information.

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## NATURAL NURSEMAIDS AGAIN

I was interested to read Ray Gould's account (*BSBI News* 77: 40) of rare trees surviving in mature copses where grazing stock could not penetrate. I suggest that phenomena of this sort may be widespread, and locally important as Mr Gould has discovered in the context of *Sorbus devoniensis*.

My own observations concern species-rich grasslands. During several Phase II Surveys of this habitat in Cleveland, the occurrence of mid-site scrub seemed strongly associated with (1) particularly rich swards, and (2), in some cases, the distribution of specific herbs. These were usually of a low-growing and 'delicate' character: perhaps it would be more accurate to say that their *flowering unhindered* was related to proximity to scrub.

Be that as it may, my field - notes record such comments as :

'smaller scrub often acts as refuge for such on-site rarities as *Helianthemum nummularium* and *Galium verum* . . . '

and 'richer grassland often . . . 'tucked into' pockets between [flushed zone] and scrub'.

Such was the perceived importance of this relationship at one site that I used a symbol beside species names, to indicate those especially 'protected', so it seemed, by nearby scrub. Examples were *Potentilla sterilis* (Barren Strawberry), *Veronica chamaedrys* (Germander Speedwell) and *Viola riviniana* (Common Dog-violet).

The 'protection' is of course from farm-animals who presumably withdraw from grazing right up to hawthorn, blackthorn, bramble, rose and similar vegetation – providing that forage is generally easy

to come by elsewhere in the field. The precise conditions of this fostering of herb-richness immediately close to scrub probably warrant more investigation, but in my experience the phenomenon certainly exists.

Interestingly, a recent 'Site Integrity Monitoring' visit to one such pasture, first surveyed in 1991, found that the mid-site scrub had been removed at some stage since then. My *impression* was that the herb-content had suffered in consequence. However, November is hardly an ideal time to test the hypothesis! So proof of the correlation cannot be validly claimed.

Scrub is an important resource in its own right, and often undervalued. Where species-rich grass-land is assisted by some woody cover, such as hawthorn or gorse, the retention of this habitat is doubly imperative.

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NEW O.S. MAPS

In *BSBI News* 77, December 1997, Steve Hawkins in his note 'Calculating Grid References' makes a plea for full national coverage with O.S. 1:25,000 (orange) Explorer maps. I agree about the excellence of this series but we don't need to lobby the Ordnance Survey because they already have plans to cover the whole of Great Britain in either the Explorer or Outdoor Leisure series by the end of 2002. Sheets for south-east Wales and most of England south of the Thames are now available.

Working northwards the rest of the country will be covered over the next five years. A leaflet shows the timetable for completion, north to Birmingham by the end of this year, north to Liverpool by the end of 1999, etc. Actual availability dates for any particular area can be obtained by telephoning the Ordnance Survey's Customer Information HelpLine on 0345 330011 (all calls charged at local rate).

The new maps will have geographically-based sheet lines wherever possible so 'some sheets will overlap to ensure relevant local geographical features at the edge of maps are included, rather than cutting them in two or missing them off altogether because rigid grid lines have been followed'.

Members may also be interested to know of the free *Mapping Index* published annually by the Ordnance Survey. This shows on one base map the sheet lines of all the maps in the Pathfinder, Outdoor Leisure, Explorer and Landranger maps series. The National Parks, National Trails and other long distance footpaths (over 100 km long) and many town names are also shown, together with the letters for the 100 km squares of the National Grid. The January 1998 edition has the ISBN 0-319-00928-9 (folded) or ISBN 0-319-00929-7 (flat). It should be available from Ordnance Survey headquarters, Romsey Road, Maybush, Southampton SO16 4GU. I obtained my copy from the National Map Centre, 22-24 Caxton Street, London SW1H 0QU. Other map stockists may well have copies to give away.

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### RECORDING TREES OF SARK FOR ATLAS 2000

#### Previous Records

There are few early records of any trees on Sark. It is possible that early visitors, including pirates and other sailors, cleared most vegetation for fuel or timber. Every tree now present on Sark may have been planted or originated from trees planted by the settlers from Jersey after 1565. Elie Brevint was minister of Sark 1612-1674. He recorded 'arbres diverses' (various trees) in 1662 (McClintock and LeSueur, 1979). These included Pear, Apple, Plum, Elm, Oak, Poplar, Willow, Osier and Ash. Of these LeSueur and McClintock (1963) record *Ulmus glabra* (Wych Elm), *U. procera* (English or Common Elm), *U. angustifolia* (Guernsey Elm), *U. carpinifolia* × *U. plotii* (A hybrid Elm), *Populus alba* (White Poplar), *P. × canadensis* (Italian Poplar), *Salix fragilis* (Crack Willow), *S. triandra* (Almond Willow), *S. viminalis* (Osier) and *Fraxinus excelsior* (Ash) as 'planted'. They record *Acer pseudoplatanus* (Sycamore), *Ilex aquifolium* (Holly), *Prunus domestica* (Wild Plum), *Mespilus*

*germanica* (Medlar), *Pyrus communis* (Wild Pear), *Malus sylvestris* (Wild Apple), *Quercus ilex* (Holm Oak), *Q. robur* (Oak), *Salix cinerea* subsp. *oleifolia* (Common Willow) and *S. × smithiana* (*S. viminalis* × *S. cinerea*) (a hybrid willow) but not as 'planted', so, by inference at least, as established. In addition, the following species are given as planted with a date of observation. It can be assumed that at that date the tree was mature and must have been planted some years previously:

|                                                     |                                                   |
|-----------------------------------------------------|---------------------------------------------------|
| <i>Pinus sylvestris</i> (Scots Pine) 1957           | <i>Pinus pinaster</i> (Maritime Pine) 1954        |
| <i>Pinus radiata</i> (Monterey Pine) 1957           | <i>Tilia × europaea</i> (Lime) 1956               |
| <i>Aesculus hippocastanum</i> (Horse-chestnut) 1956 | <i>Prunus avium</i> (Wild Cherry) 1957            |
| <i>Betula pendula</i> (Silver Birch) 1957           | <i>Betula pubescens</i> (Downy Birch) 1957        |
| <i>Alnus glutinosa</i> (Alder) 1957                 | <i>Corylus avellana</i> (Hazel) 1956              |
| <i>Fagus sylvatica</i> (Beech) 1954                 | <i>Castanea sativa</i> (Sweet Chestnut) (No date) |

McClintock (1975) gives *Cordyline australis* (Cabbage Palm) as planted. It is not listed in previous or subsequent check lists.

In the revised check list (McClintock and LeSueur, 1979), *Tilia × europaea* (Lime) and *Fraxinus excelsior* (Ash) are not listed as 'planted'. *Ulmus laevis* (European White-elm) 1975 has been added as planted. *Malus domestica* (Apple) replaces *M. sylvestris*.

McClintock (1987) adds *Rhus hirta* (*R. typhina*) (Stag's-horn Sumach) and *Salix × reichardtii* (*S. caprea* × *S. cinerea*) 1978. The author has stated (1997) that the latter was not confirmed and should be omitted.

In a new check list (Marsden, 1995) the following planted trees have been added:

|                                                                           |
|---------------------------------------------------------------------------|
| <i>Pinus nigra</i> subsp. <i>nigra</i> (Austrian Pine) 1988 (on Brecqhou) |
| <i>Pinus muricata</i> (Bishop Pine) 1983                                  |
| <i>Tilia cordata</i> (Small-leaved Lime) 1985.                            |

No longer listed as planted were *Quercus cerris* (Turkey Oak) and *Alnus glutinosa* (Alder). *Salix × rubens* (Hybrid Crack-willow) 1961 has been added, not as planted. *Rhus hirta* (*R. typhina*) and *Salix × reichardtii* are not included. It was noted that the only *Ulmus laevis* (European White-elm) tree was storm damaged in 1987 and was dead by 1990.

### Definition of 'Wild'

The check lists give no definition of 'wild'. This is not surprising, as it is even more difficult to define on Sark than in other parts of the British Isles. There is no legally defined right of way or other legal status of footpath, bridleway or other route. There is no legal right of access to fields, beaches, open spaces, wooded areas or anywhere else. Any right is established by custom, tradition or the consent of landowners. Most gardens are enclosed, usually by banks, low walls, or hedges; but some have no immediately obvious boundary; e.g., some hotel gardens and 'tea gardens'. In order to establish a basis for botanical recording it was decided to adhere to the following guidelines:- Plants growing everywhere to which the public have access, with the exception of gardens and the two cemeteries, should be recorded, including plants which have been deliberately planted. Plants which have not been planted or produced from them but which occur in places to which the public do not have access, in gardens and in the two cemeteries should also be recorded.

Difficult decisions still have to be made in some cases, such as plants growing on banks or tops of walls. If they have been planted on top of a boundary and not spread they are normally excluded. If they have then spread down to the face of the boundary outside of the enclosure, or if they have been planted on this face of the boundary, they are normally included, unless transient.

Any new or revised check list or new records based on these guidelines will, of course, be more inclusive than previous check lists. New species should include the reason for their addition, including the type of site and means of arrival.

### Recent Recording of Trees

It can be seen from the Previous Records that no records have been kept of the introduction of any species of tree to Sark. There has also been confusion or doubt whether some species only occur as planted trees or reproduce by seeds or vegetatively. Many species of trees that readily reproduce from seed elsewhere do so much less, if at all, in Sark. Two 'Men of the Trees' from Guernsey, Mr R.A. (Rob) Waterman and Carolyn Helyar, have been observing trees in Guernsey and Sark for many years.

They have been keeping their own records of which species of trees are present and watching their progress. They have recorded the growth of many individual trees by photographs and by measuring their height and trunk girth. They have been observing trees both inside and outside of gardens. It is hoped that, with their help, a better picture can be built up of the progress of the trees which form such an important feature of the island.

It is not intended to carry out any systematic survey. After all, it is usually unimportant to know who planted anything, or why, or the exact date. Any hint of officialdom, such as a questionnaire, a request for records, etc. is usually unwelcome, especially if initiated by an outsider. It should be quite sufficient to record personal observations of the first sighting of a species and the stage of development of that tree. Any evidence of reproduction should be recorded then or later. It is also important to record when an introduced species does not survive.

Rob Waterman and Carolyn Helyar, on a visit to Sark for a few days in May 1997, demonstrated the presence of the following species, all planted, unless stated, previously unrecorded:

|                                                                    |                                                                                 |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <i>Picea sitchensis</i> (Sitka Spruce)                             | <i>Pinus nigra</i> subsp. <i>laricio</i> (Corsican Pine)                        |
| <i>Pinus contorta</i> (Lodgepole Pine)                             | <i>Cupressus macrocarpa</i> (Monterey Cypress)                                  |
| × <i>Cupressocyparis leylandii</i> (Leyland Cypress)               | <i>Taxus baccata</i> (Yew)                                                      |
| <i>Nothofagus antarctica</i> (Antarctic Beech)                     | <i>Betula papyrifera</i> (Paper Birch)                                          |
| <i>Alnus cordata</i> (Italian Alder)                               | <i>Tilia platyphyllos</i> (Large-leaved Lime)                                   |
| <i>Tilia tomentosa</i> (Silver-lime)                               | <i>Populus</i> × <i>canescens</i> (Grey Poplar). Established from planted tree. |
| <i>Populus nigra</i> subsp. <i>betulifolia</i> (Black-poplar)      | <i>Populus</i> × <i>canadensis</i> (Hybrid Black-poplar) ‘Regenerata’           |
| <i>Populus</i> × <i>canadensis</i> (Hybrid Black-poplar) ‘Robusta’ | <i>Populus</i> × <i>generosa</i> (Generous Poplar)                              |
| <i>Populus</i> × <i>jackii</i> (Balm-of-Gilead)                    | <i>Prunus</i> × <i>fruticans</i> (Hybrid Blackthorn/Plum) Native                |
| <i>Sorbus intermedia</i> (Swedish Whitebeam)                       | <i>Crataegus</i> sp. (Hawthorn Cultivar)                                        |
| <i>Ilex</i> × <i>altaclerensis</i> (Highclere Holly)               | <i>Acer platanoides</i> (Norway Maple)                                          |
| <i>Acer campestre</i> (Field Maple)                                | <i>Rhus typhina</i> (Stag’s-horn Sumach). Established from planted tree.        |

Most of these had probably not been recorded previously because they were not regarded as being in a ‘wild’ situation. Some may not have been identified correctly, if at all. They think that many, perhaps all, of the previous records of *Populus alba* (White Poplar) may have been *P. × canescens* (Grey Poplar) and that *P. alba* may be a recent introduction. They noted that the only *Pinus muricata* (Bishop Pine) tree had died.

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## ***ARENARIA NORVEGICA* subsp. *ANGLICA* ALIVE AND WELL IN YORKSHIRE BUT WHAT ABOUT ITS SCOTTISH RELATIVE?**

Two subspecies of *Arenaria norvegica* occur in the British Isles, subsp. *anglica* Halliday (*Arenaria gothica* auct., non Fries) and subsp. *norvegica* (Halliday 1960a). The former is confined to a very small area of limestone pavement and flushes on Ingleborough in the Craven region of Mid-west Yorkshire (v.c. 64). A recent ecological study of this subspecies showed the population to be stable at around 2000-4000 plants, but highly susceptible to trampling and drought on its trackside localities (Walker 1995: Walker in prep.). Subsp. *norvegica* is confined to a number of montane sites in Scotland: Unst (v.c. 112), Argyll (v.c. 98 & 97), Assynt (v.c. 108 & 107), Rhum & Eigg (v.c. 104), where it occurs on base-rich screes, fell-fields, and river shingle. There is also a single record for the west of Ireland, where it is now presumed to be extinct (Webb & Scannell 1983). The population biology of subsp. *norvegica* has been the subject of a small number of studies in the British Isles, on Unst (Kay 1997) and Beinn Iadain, Argyll (D. Kennedy pers. comm.). In addition, Halliday (1960b), made many valuable ecological observations during the course of his doctorate. However, given the remoteness of these populations, its current status is uncertain, and much of its autecology is poorly understood. Over the next two years I intend to visit the majority of extant populations and carry out some detailed ecological analyses with a view to preparing a 'Biological Flora' for *Arenaria norvegica*. Therefore I would be keen to hear from any members who have any information on subsp. *norvegica* particularly concerning its history in Scotland, distribution or ecology.

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## **MORE ABOUT THE VASCULUM (AND OTHER PRACTICAL MATTERS)**

W. Whitman Bailey's '*The Botanical Collector's Handbook*', Naturalists' Handy Series No. 3, Salem, Mass., 1881, provides much useful information for the field botanist. He is all for the use of the vasculum, but does point out some of its drawbacks:

'At best, it is a terrible bugbear to the young explorer, who imagines, and justly, that the rural population regard him with suspicion. He may be taken for a tramp. He often is approached as a peddler of peanuts, and it is with profound disappointment that the public learns that he is a mere weed-hunter. Sometimes one is thought to be carrying a fire-extinguisher, and one botanist was approached as a dealer in corn plasters . . .'

And, right at the start of the book, there is important advice on 'The Collector's Outfit':

'First, one's costume demands attention. It is desirable on all accounts to wear, if not old clothes, at least such as may no longer excite nervousness . . .'

This puzzled me at first, until I realised that he meant nervousness with regard to possible damage to the clothing.

And don't forget the walking-stick:

'Another desirable, but not essential, portion of the outfit is a cane hooked at the end. This serves as an offensive and defensive weapon in a land of dogs . . .'

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## LONG DISTANCE IDENTIFICATION SKILLS?

In several places I have in the past noticed that the introduced tree *Quercus rubra* (Red Oak) is very distinctive in new leaf, when it is a bright lemon-yellow colour. When botanising with Arthur Chater and Glenda Orledge in 1996 in Aberdyfi, a plantation of this species was clearly distinguishable on the hills north of Aberystwyth, at least five miles across the valley. Also in the spring some poplars (*Populus* spp.) have distinct colours of the new foliage and a fixed sequence of coming into leaf which makes them distinct, and it can be instructive to sit with the aforementioned Arthur while he identifies single trees to cultivar 100 yards away at 40 miles an hour by the colour of the foliage . . . (sigh). Any more examples of plants which can be identified at unusual ranges? [See *BSBI News* 47: 12 for another Arthurian record! Ed.]

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## VARIABILITY IN THE COMMON ASH (*FRAXINUS EXCELSIOR*)

Some Ash seedlings from the Kennet Valley grow as fast as Elm or Gean suckers, 0.5-1 m or more per year from the second year, soon rapidly to overtake most trees other than some species and hybrids from the *Eucalyptus*, *Populus* and *Salix* genera. Others growing in the same ground struggle with the slowest growing species, not seeming to get much beyond 5-15 m. Table 1 shows that different authors do not agree on heights or leaflet numbers, and only 3 of the 11 mention the bewildering capacity for annually variable transsexualism. A local tree, male for years, now produces some or most branches laden with ash keys, but retains some male or hermaphrodite or mixed branches or inflorescences, erratically and inconstantly situated.

Mitchell (1996) makes much of the soil, situation, associated ground flora and disease to account for variability, but along and up from the valleys of the Rivers Kennet and Og in Wiltshire (Greensand and Chalk) there seem to be genetically different small populations and individuals, with few diseased to any extent, if at all.

Fig. 1 is from a Kennet Valley plantation whose owner was puzzled why her ash trees were 'so small and slow-growing'. After 15 years, all the trees are still only 4-5 m high with congested branches, dense dark foliage, leaflets often hooded and a bit leathery, numbering 1, 2, 3, 5 or 7, mostly 5.

Fig. 2 comes from one of several scattered trees south of Chiseldon, fitting the *F. excelsior* 'Diversifolia' ('Heterophylla' or 'Monophylla') taxon which is known to occur naturally (see Table). Some may have once been planted in or near the old Chiseldon First World War military camp, or seeded from such (?1914) trees. The Fig. 2 photocopy comes from a tree at least 28 years old, but still under 6 m high, with a girth of only 53 cm (at 1.5 m). The leaflets are large, coarse, dark-green, strongly incised-serrate and hooded, numbering 1, 2 or 3, mostly 1.

Fig. 3 shows the leaf of a (predominantly) 13-leafleted tree from chalk slopes 0.8 km south of the R. Kennet, the leaflets soft, pale green and regular, from loftier more open and graceful large trees.

Leaflet numbers can be affected to a small extent by season, age, shade, exposure, the year, weather, and disease, but are more or less constant per tree, 7, 9 and 11 being the most common counts locally. In this part of Wiltshire (NE), the tendency is that 9, 11 and 13 regular leaflets are found on the bigger, most open and graceful ash trees with light green foliage, not casting dense shade. Trees with 1, 2, 3 or 5 irregular, coarse, large, dark-green (and often hooded leathery and deeply serrated) leaflets are stunted, slow-growing, with small or closely set branches, dull-green massed foliage and casting a heavy shade (this is **not** reported to be the case in some specialist tree books and catalogues, where



cultivars with low leaflet numbers are claimed to become graceful trees of normal growth).

In and around the Ogbourne valley, there are interspersed a number of ash trees within the lower height ranges as shown on the Table, mostly with 7 leaflets; not markedly different from the 9, 11 and 13 leafleted trees, but undistinguished. If there are indeed genetic differences which account for the growth differentials, the puzzle is 'Why do the slow-growth low-growth trees persist in the wild?' The only hint is the devastation by herbivores of seedlings and young trees of the pale-green fast-growing varieties. Deer and hares chop them off at 20 cm; and rabbits eat every leaflet, also gnawing bark (and often ring-barking young trees). The duller, slower-growing varieties with more leathery darker leaflets are less often savaged, and also seem to be less susceptible to being burnt and blackened by late spring and early autumn frosts. The penalties for vigour may therefore include relative frost-tenderness and palatability. The reward for being stunted and unwholesome is to be left alone.

| Reference                  | Height                                       | Leaflets                      | Sexual types                                                                                                                 |
|----------------------------|----------------------------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Lawrence (1985)            | 'Large tree'                                 | 9, 11, 13 or 15               | m, f or h                                                                                                                    |
| CTM (1987)                 | 15-25 m                                      | 7,9,11 or 13                  | m, f or h                                                                                                                    |
| Phillips (1978)            | 30-42 m                                      | (1 or 3) but usually 9 or 11  | Polygamous                                                                                                                   |
| Edlin & Darter (1968)      | 'Tall tree'                                  | Commonly 7, 9, 11 or 13       | All m or all f or all h; or mixed per tree. Therefore monoecious dioecious, variably hermaphrodite, trioecious or polygamous |
| Gorer (1980)               | to 40 m                                      | 5, 7 or 9                     | As immediately above                                                                                                         |
| Beckett (1979)             | to 45 m but usually 25 m                     | 9, 11, 13 or 15               | As immediately above                                                                                                         |
| Nicholson & Clapham (1979) | 25 m or more                                 | (1 or 3), 7, 9, 11 or 13      | As immediately above                                                                                                         |
| Stace (1991)               | to 37 m                                      | (rare form with 1)            | As immediately above                                                                                                         |
| Mitchell (1974)            | to 45 m (Europe)<br>to 35m (Britain, Wilts.) | (1), 9, 11 or 13              | As immediately above, but also often changing sex per branch or per tree, per year                                           |
| Gibbons (1991)             | to 40 m                                      | 7, 9, 11 or 13                | As immediately above                                                                                                         |
| Bean (1992)                | 30-42 m                                      | (1 or 3), but usually 9 or 11 | As above, for several taxa in the <i>Fraxinus</i> genus                                                                      |

Table 1. Variability in the common ash. 9 is the only leaflet number common to (nearly) all the references.

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Fig. 1. Photocopy of leaves from a Slow-growth, Low-growth ash from one of two small Kennet Valley plantations. Leaflets rather irregular, mainly in fives.

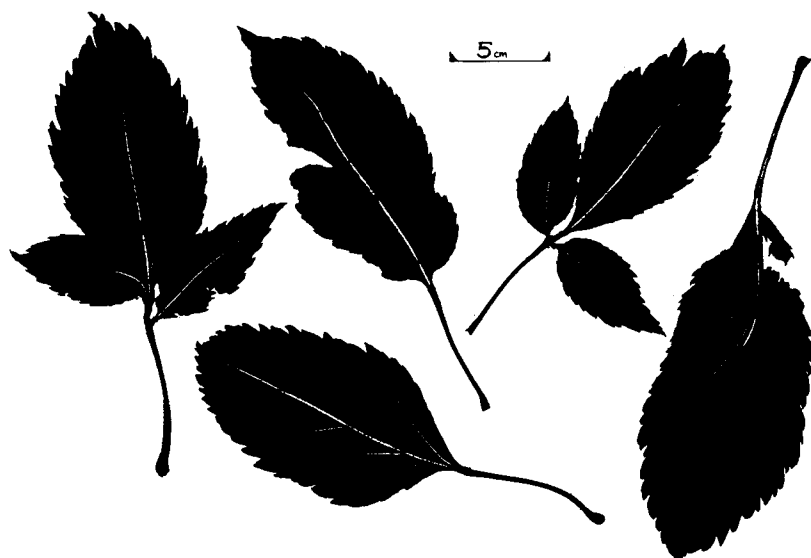


Fig. 2. Photocopy of leaves from *Fraxinus excelsior* 'Diversifolia' ('Heterophylla' or 'Monophylla'). Sporadic occurrences and possibly past plantings South of Chiseldon, Wilts.

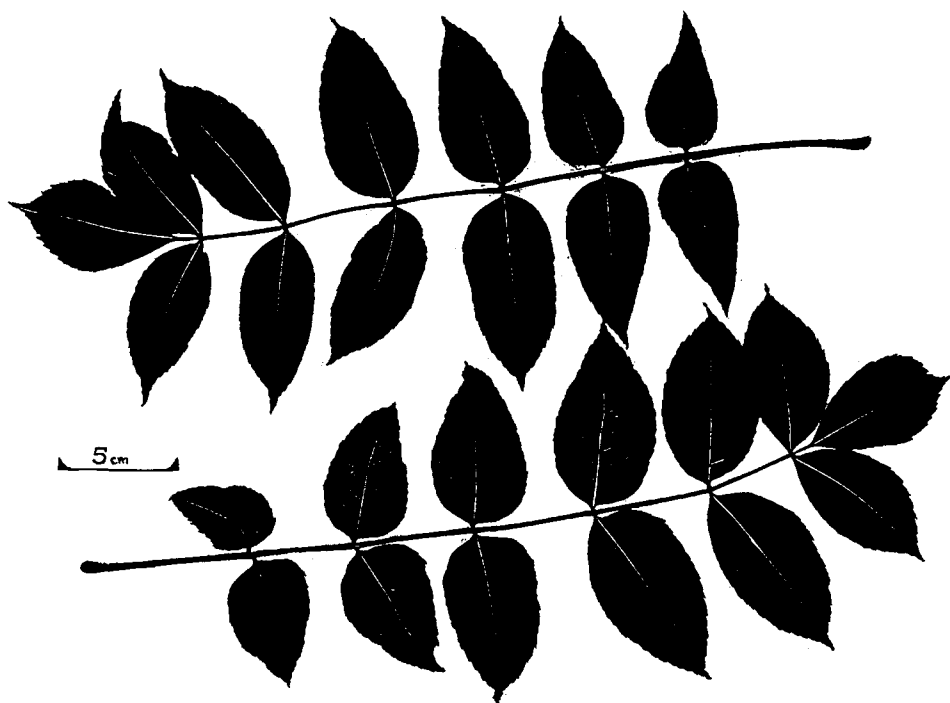


Fig. 3. Photocopy of leaves from Rapid-growth ash trees common in the Kennet Valley. Leaflets regular and light-green in (predominantly) 13, 11, 9 or 7 leafleted trees.

### DATABASE OF BM ORCHIDACEAE

A database of The Natural History Museum's holdings of non-European orchids has recently been completed, and it is found that the Museum holds 38,387 specimens (plus a few hundred which could not be entered as they are currently on loan). This number is considerably higher than that originally estimated, and suggests that previous estimates of the number of specimens which the Museum holds may be too low. For Flowering Plants, including Gymnosperms, the current estimate is 3.5 million specimens, of which approximately 33,500 are types.

The Museum is seeking ways to make the database available, and curators await with great interest to see what use will be made of it.

It is hoped to set up similar databases for other groups, but progress on these will have to depend on volunteers. Anyone interested in helping with this work is invited to contact me.

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## POSTSCRIPT ON *DIPSACUS* IN DUBLIN

The putative hybrid between two teasels, *Dipsacus fullonum* (Wild Teasel) and *D. sativus* (Fuller's Teasel), found on reclaimed land at Ringsend Dump at the edge of Dublin Bay in 1995 was described and illustrated in *Watsonia* 21: 285-289, 1997, and was included as a valid record for the hybrid in the second edition of *New Flora of the British Isles* (Stace, 1997). Seeds were collected from the hybrid at Ringsend Dump in the early autumn of 1995 and were planted into open ground in my garden on 14 November that year.

Four small teasel plants were recognisable in the garden in April 1996. Meanwhile, more seeds from the hybrid were started in pots inside on 5 April and planted out on 6 June. Later in the summer, the young leaves of both lots of plants had a few swollen-based prickles on their surface as well as some prickles on the underside of the midrib. The plants were compared with ones of the same age of *D. fullonum* and *D. sativus* growing nearby in the garden from seeds also collected at Ringsend Dump in 1995. By November 1996, the leaves of the basal rosettes of the hybrid were erect and nearly smooth and more like those of *D. sativus* than *D. fullonum*. Whereas *D. fullonum*  $\times$  *D. sativus* has prickles on the underside of the midrib, *D. sativus* usually lacks them. The leaves of *D. fullonum* are quite different; they are darker green, wrinkled, distinctly prickly above and on the midrib below, and are prostrate.

Teasels are biennials. The following year, in mid-June 1997, the tallest flowering stem on a hybrid plant was over 3 m with many immature inflorescences. On a shorter plant, the first flowers were opening. By early July, the hybrid plants were all flowering whereas neither *D. fullonum* nor *D. sativus* had started to flower. While bees were noted on the open flowers of the hybrid, the anthers did not appear to have developed properly. In August, all three taxa were flowering. The anthers of both *D. fullonum* (purple coloured) and *D. sativus* (yellow/pink coloured) were clearly dehiscent and releasing nearly colourless pollen grains. Most of the yellow/pink anthers of the hybrid had not dehisced, and the few that did produced colourless pollen.

By early October 1997, numerous seeds were falling out of the inflorescences of *D. fullonum*, fewer from the hybrid and none from *D. sativus*, where there seemed to be old flowers among the receptacular bracts as if fertilisation had not taken place. It was not possible to know which plants had pollinated which other plants. However, it should be noted that the second generation hybrid plants closely resembled the original hybrid found in 1995. To my surprise, when all the supposedly dead Teasel plants were being removed from the garden in early February 1998, I found a healthy rosette of leaves attached to the base of the dead-looking stem of one hybrid plant. Presumably it will produce a flowering stem again this year!

Two packets of 'Teasel' seeds were purchased in 1995 so that the seeds could be compared with those collected at Ringsend Dump (Reynolds, *Watsonia*, *op. cit.*). The Thompson & Morgan packet showed a picture of *D. sativus* and described (correctly) the cylindrical flowering heads evenly covered by hooked spines used for raising the nap on cloth, but then went on to call it a 'native' plant. The Suttons Seeds packet showed a picture of *D. fullonum*. The seeds in both packets were nearly identical, and were more like the seeds of *D. fullonum* collected at Ringsend Dump than those of *D. sativus* or the hybrid collected from the same place.

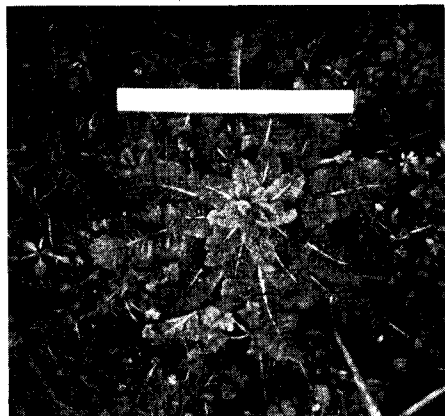
Out of curiosity to see what they would grow into, seeds from both packets were planted inside in pots on 6 May 1996. A month later, the resulting small plants, which were all very similar, were planted out into the garden. By mid-July 1996, the leaves of both lots were still similar. They were prostrate, had many swollen-based prickles on their surface and also many sharp prickles on the underside of the midrib, all features characteristic of *D. fullonum*. To cut a two year story short, despite the different pictures on the seed packets, all the plants produced the typical inflorescences of *D. fullonum* during the following summer of 1997.

The seed packets thus gave no obvious indication as to a possible source of the few *D. sativus* plants at Ringsend Dump, where *D. fullonum* had been known to grow abundantly for years. However, I subsequently learned that Conservation Volunteers were thought to have planted the *Cichorium intybus* (Chicory) which grew in the immediate vicinity, and so were possibly also responsible for *D. sativus* there. Have any other members bought seeds of 'Teasel', and if so, what species grew from

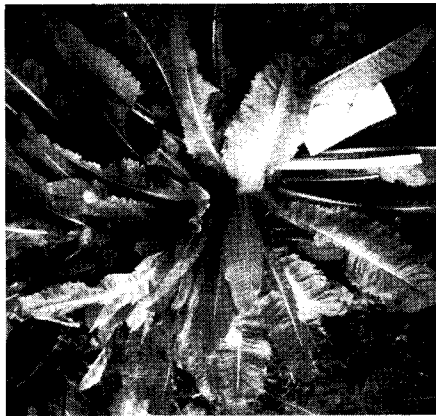
them?

SYLVIA REYNOLDS, 115 Weirview Drive, Stillorgan, Co. Dublin, Ireland.

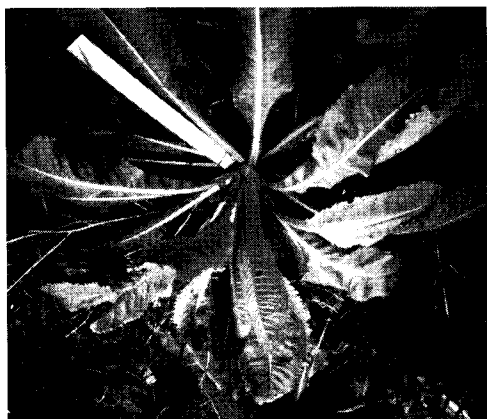
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a



b



c



d

Leaves of (a) *D. fullonum*, (b) *D. fullonum* \times *D. sativus* and (c) *D. sativus* on 29 January 1997. Seeds of (b) were planted outside on 14 November 1995, and of (a) and (c) started inside on 5 April 1996 and planted out on 6 June. (d) *D. fullonum* \times *D. sativus* on 4 July 1997. All photos © S. Reynolds.

FLOWERING OF *DIPSACUS FULLONUM*

I have been most encouraged to see the recent attention which has been paid to *Dipsacus fullonum* (Wild Teasel) in the pages of *BSBI News*, in terms of phytotelmata and patterns of flowering. I have recently carried out a study of insects associated with *D. fullonum* flower-heads, and soon hope to complete a Biological Flora of the British Isles description of the plant for the *Journal of Ecology*. Consequently, I would be most interested to learn of any experiences which BSBI members may have had with this striking (and apparently understudied) plant. Sadly, I am not confident that I can add a great deal to the particular areas of interest expressed by your previous correspondents.

With regard to the unusual pattern of flowering, with a band of florets around the 'equator' of the flower-head maturing first, followed by two rings of open flowers which develop towards the base and apex of the inflorescence over subsequent days, (C.J. Perraton, *BSBI News* 74: 41), it is reported that this is characteristic of the genus (I.K. Ferguson (1965) *J. Arnold Arboretum* 46: 218-231), but little further information appears to be available. I am unaware of any definite work on the functionality of teasel phytotelmata, although some interest has been shown in the insects which exploit this aquatic microhabitat (e.g. C.O. Masters (1967) *Carolina Tips* 30: 21-22; R.H.L. Disney & W.W. Wirth (1982) *Entomologist's Monthly Magazine* 118: 233-234). The water which gathers in these hollows has also been regarded, in tradition, as having curative properties when used to bathe skin or eye complaints – a rather unappealing prospect, given the detritus which invariably accompanies the water. I look forward to seeing further attention paid to these subjects in the months to come.

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## FLOWER COLOUR VARIATION WITHIN AND BETWEEN POPULATIONS OF WILD RADISH (*RAPHANUS RAPHANISTRUM*)

I have become interested in the proportions of colour morphs within populations. Most populations in Australia would appear to be dominated by yellow flowered forms, although anecdotal reports cite occasional populations that are mostly purple or white. The 'yellow' populations invariably include other colour forms at a low frequency. Most Floras from around the world simply refer to the range of colours and venation, and make no mention of the predominance of particular forms.

The colour of wild radish flowers is highly variable: accounts of the species refer to dark yellow, pale yellow or cream, brownish-yellow, white, pink, lilac and purple; other variants that I have seen include yellow petals with pink tinges towards the tips, and yellow petal tips with white bases. The veins on the petals may range from indistinct to very dark; Panetos & Baker (1967) refer to vein colours of yellow, green, brown and blue, although purple may be a more appropriate description of the darkest form. There can also be considerable variation in petal shape. Aik-Hock Cheam (personal communication) has recognised at least seventeen distinct flower types in Western Australia; however, yellow or white are most common there and pink is rare.

Kay (1976) studied insect pollination of four populations from South Wales and Central England, ranging in proportion of yellow flowers from around 61% to 1%; the remaining 39% to 99% were presumably white. It was suggested that pollinator preference for particular flower colours may have a role in determining the balance of flower colours within populations. Cheam (1984) reported that seeds collected from yellow, white and purple flowered plants differed in dormancy.

Last November while travelling through England I noticed pure white populations growing just south of York: Alastair Fitter (University of York) confirmed that this colour is typical of that region. To what extent, then, are there regional distributions of colour forms? There are many published comments on geographic distributions of flower colour in the UK, but they mostly appear to be derived from a single source, suffering some distortion as later authors have reworded the original (rather like 'Chinese whispers'). Unfortunately, I do not have ready access to a comprehensive set of British and European Floras and some of the following sequence may be incomplete (I would

appreciate comments from anyone who can add to the story or correct me). I have highlighted the phases on white flowered forms to make the differences between statements more obvious.

The earliest comment on regional differences that I have found is in my copy of Clapham, Tutin & Warburg's (1962) *Flora of the British Isles*. Second Edition, which states that 'the yellow-fl'd form is commoner in the northern and the white-fl'd in the southern part of the range'. This is repeated in the 3rd Edition by Clapham, Tutin & Moore: I have been unable to find a first edition. Stace, in his *New Flora of the British Isles* (1991) states more simply 'yellow petalled plants commonest in N & W'. Perring (1968) in the *Critical Supplement to the Atlas of the British Flora* gives more detail, commenting that there is a 'tendency for white forms to be rare in Scotland, whereas yellow forms occur almost anywhere within the range of the species. Pure yellow forms, without prominent veins, are more frequent in the north.' Perring also states that there 'appears to be no geographical distinction between veined and unveined forms.' Kay (1976) further elaborates and emphasises frequencies within populations, stating that wild radish 'shows both geographic clinal variation and local mosaic differentiation in flower-colour morph frequency. In Britain, the white morph predominates in polymorphic populations in southern and eastern England, but the yellow morph predominates or forms monomorphic populations in western and northern Britain.' No source of this information is given. Rich (1991) quotes Perring in stating that 'Yellow-flowered plants are widely distributed, white-flowered plants rare in the far north and west' and adds that 'purple-flowered plants occur mainly in England'. Cheam & Code (1995) also quote Perring, but emphasise the white colour form: 'White flowers are most common in the south and east, but are rare in the far north and west.' They also repeat Rich's comment that 'Purple flowered plants occur mainly in England', but without attribution. Neither Bentham, Hooker & Rendle (1954), nor my other various floras comment on geographic distribution of colour forms.

It is clear that these various sources consider that there are distinct regional differences in colour and, in particular Kay, that there are trends across the British Isles. But are these published comments all from personal experience? If not, what is the origin of the belief that these trends indeed exist? Is it just anecdotal, or are there data to support it? Has the distribution of colour forms ever been studied formally? Certainly, the maps of records of white and yellow forms published by Perring appear to show differences between regions: there are no white plant records from the Isle of Man or the Scottish islands, few white plants collected in Eire and few yellow plants in Yorkshire. The maps are, however, insufficient to show changes in flower colour proportions across the country and recording frequency varies considerably.

I have only found one account of regional variation elsewhere in the world. In Western Australia, Cheam (Cheam & Code, 1995) suggests that purple forms are more common in the northern wheat-belt of that state.

I would be interested in any anecdotes of regional variations in proportions of flower colours in any country. More importantly, if anyone is interested in collecting quantitative data, I can supply a recording protocol and descriptions of the various colour forms. I can be contacted by fax on (+61) (0)3 9471 0224, by e-mail on R.Cousens@latrobe.edu.au or by post at Department of Agricultural Sciences, La Trobe University, Bundoora, Victoria, 3083, Australia.

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## ABERRANT FLORA UPDATE

Whilst continuing to collect records of form and pigment aberrations as they affect our commoner native plants, it has become apparent that certain forms are cropping up with the regularity that corresponds to what the Victorians experienced. It is with some relief that I can report the reappearance of the besom plantain or plantain with spiky tufts, known to Gerard in the seventeenth century, to Maxwell T. Masters in the nineteenth century. I have had four recent records from Wiltshire (with some variation in the precise nature of the malformation) and one from Kent. Whilst both ribwort plantain (*Plantago lanceolata*) and greater plantain (*P. major*) seem to be continuing their range of historically reported forms, hoary plantain (*P. media*) has not obliged with anything at all, not even a variegation. Masters refers to 'the rose plantain of gardens, *P. media*' (p.243, *Vegetable Teratology*), suggesting that all the rose plantains he knew of were hoary plantains whereas nowadays all rose plantains are *P. major*. Unfortunately this can not be followed up because Masters' herbarium seems to have disappeared. It is no longer at Kew, although there were eight specimen in the Economic Section. The other area where it would be particularly interesting to hear of twentieth century examples, either from herbaria or from the wild is the passage of leaves from digitate to pinnate. Masters presented us with a fine example of this. (Op. Cit. p.438). His comments were:

'This change may be frequently seen in the horse-chestnut, particularly in the young shoots formed after the trees have been pruned or pollarded. In the adjoining cut the intermediate stages between a palmate or digitate leaf and a pinnate one may be seen. The specimens from which the drawing was made were taken from the same tree at the same time.'

He also commented that 'in the white clover, *Trifolium repens*, a similar transition may often be observed.' Just such a specimen was sent to me this year (1997) by Mr Alcock, of Shannel, Aboyne, Aberdeenshire which was discovered some eight years ago and which he had retained in cultivation. The winter foliage seems to have reverted entirely to trifoliate form.

Reports of aberrations on *Plantago media*, aberrant horse-chestnut leaves and Masters' teratological specimens would be particularly welcome.

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## OENANTHE PIMPINELLOIDES, A NEW PLANT FOR NORTHERN ENGLAND?

### Occurrence

During early July 1996, while conducting a survey of the plants of Hull (Middleton 1997), I found a single specimen of an unusual white flowered 'Umbellifer' growing in rough grass between a mown sports field and the River Hull (TA/089.331). Although superficially resembling *Pimpinella saxifraga*



(Burnet-saxifrage) the ridged stem and linear bracts precluded this species. Later that morning I encountered a small group of identical plants growing on disturbed land by a roadside within the same tetrad (TA/092.326). A voucher specimen from this latter colony was later identified by Dr Eva Crackles as *Oenanthe pimpinelloides* (Corky-fruited Water-dropwort). In view of the significance of the find it was considered that a series of voucher specimens of all growth stages should be submitted for formal verification. This set of material was collected during 1997 and has now been confirmed by Mervyn Southam as '... typical *O. pimpinelloides* ...'.

Careful examination of the area around the first discovered occurrence has revealed a much larger colony than had originally been observed. Approximately seventy plants were found in 1996 and a similar number again in 1997. The roadside colony again remained stable at about ten plants. The major colony is confined to a 50 metre section of the western edge of Ennerdale sports field and is perpendicularly bisected by a remnant of an old Hawthorn hedge. To the south of the hedge about twenty plants closely follow the line of a now dilapidated wire and post fence. A further fifty plants occur in a small triangular toft of rough grass, created where the now vanished fence had veered westwards, north of the hedge. The wire fence had originally been constructed to separate the mown grassland from a shrubbery, planted a few years ago when the sports field had been created from an area of old grassland bounded on all but the eastern side by a meander of the River Hull. The roadside colony is only about 500 m to the south of this site, separated by the ring road, but again on land which was until recently permanent grass.

The associated plants of these two colonies are quite different. The larger colony is associated with a sward of *Agrostis capillaris*, *Holcus lanatus* and *Dactylis glomerata* with *Lotus corniculatus*, *Prunella vulgaris*, *Plantago lanceolata*, *Trifolium pratense*, *Centaurea nigra*, *Rumex acetosa* and *Cirsium arvense*. The disturbed roadside site has a typical local association of *Conium maculatum*, *Reseda luteola*, *Picris echioides*, *Artemisia vulgare*, *Urtica dioica*, *Dipsacus fullonum*, *Lactuca serriola*, *Sonchus oleraceus*, *Calystegia silvatica*, *Cirsium vulgare* and *Elytrigia repens*.

## Discussion

There are three *Oenanthe* species which are easily confused: *O. silaifolia* (Narrow-leaved Water-dropwort), *O. lachenalii* (Parsley Water-dropwort) and *O. pimpinelloides*. Fortunately there is now adequate literature to help with their distinction (Walls 1995, Southam 1996). This has not always been the case and until relatively recently there was considerable confusion between the species. Early authors made no distinction between the three species, recording them all as *O. pimpinelloides*. Watson, writing in 1847, notes that there is so much confusion that all early records should be ignored.

The most recently published distribution maps for the species (Leach and Southam 1994) show *Oenanthe pimpinelloides* to be more widely distributed than older maps would suggest (Perring & Walters 1962). Even so the distribution is decidedly southern with no records north of Ipswich on the east coast, and extending only a little further north in western England. This record is clearly very much out of line with the present known distribution, although Godwin (1961) records seeds, which he assigns to this species, from an Anglo-Scandinavian context in archaeological excavations in Hungate, York.

Since this occurrence is so far outside the known range, it would be valuable to know whether the colonies are relics or introductions. Unfortunately, in this instance, there is no conclusive evidence in either direction. Part of the main colony exists as a fringe to an area which has been planted with a variety of native shrubs. It is conceivable that seeds were introduced on the root-balls of these plants although no specimens of *O. pimpinelloides* were found within the shrubbery. The smaller colony on Stockholm Road is not associated with any planting and a second introduction route would need to be formulated.

Evidence for the persistence of old and isolated colonies, although circumstantial, is more convincing. Both are found on what was once an extensive area of low-lying pasture land, the West Carr or Marsh, in the parish of Sutton. Although this would suggest a rather wet environment, the river meander here seems to have been controlled by an area of slightly higher land which appears in old documents as 'Feltholm' (the place name element 'holm' is very common in this region and usually

signifies a raised island in surrounding marshland). Most of the West Carr was open summer grazing which was only subdivided and allotted at the enclosure of the parish in the 1780s. In the later half of the 12th century two adjoining parcels of land adjacent to the River Hull, Southowscott and Hirncott, were granted to the monks of the recently founded Meaux Abbey (situated 6 km further up the Hull Valley). In Blashill's map (1896) of this region the main *Oenanthe* colony can be seen to occur on their shared boundary. This boundary took the form of a widely spaced double hedge, remnants of which still exist, defining a narrow strip of land called Crab Close, left to allow access to the river from the West Carr. The name Crab Close, in this context, almost certainly alludes to the presence of the Crab Apple (*Malus sylvestris*) (Field 1993) and provides evidence for dryer conditions than might be suggested by the proximity of the West Carr. The Stockholm Road colony is more difficult to place with certainty but does appear to be close to the south western boundary (a bank?) of Hirncott. Although Hirncott is described as a farm with associated grazing rights in the West Marsh (Blashill 1896), it seems unlikely that any cultivation has occurred since the enclosure award and the Land Utilisation Survey of Britain map (Stamp 1933), shows the area as permanent grassland.

Although no conclusions can be drawn concerning the origins of this occurrence, it clearly demonstrates that, under favourable conditions, the species may flourish in north eastern England. If the plants are a true relic population there might well be other overlooked colonies in northern England. On the other hand, if this occurrence really is a result of two separate introductions, it seems inconceivable that there are not other introduced plants in the region. It can only be hoped that future field observations will shed some more light on the origins of this remarkable outlier.

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## HYBRID SLOES

How common is true *Prunus spinosa* (Blackthorn)? In 1987 an exhibit by Alan Leslie (1988) showed specimens of *Prunus* stones, including the hybrid, *P. × fruticans* (*P. spinosa* × *P. domestica*), stating that in *P. spinosa* the stone shape is uniformly globose, hybrids showing considerable variation in stone shape. This year (1997), Joyce Smith, the Secretary and Vice-county Recorder, suggested that the Surrey Flora Committee should examine this. Early this season, at a Bookham Common Monthly Meeting of the London Natural History Society, *Prunus* shrubs were examined; many shrubs had no fruit and only one had stones which were approximately spherical.

We decided to check further fruits especially in the three hectads we surveyed for Atlas 2000. Examining plum stones, including edible plums, showed two halves fused with, in most cases, one end pointed. From the point, on one edge is a long V-shape which varies from two ridges to two slight indentations; in some, between the V was a further ridge or fin. For a given shrub we measured the three dimensions to 0.1 mm and noted asymmetry in the plane of fusion, presence of a point, and

presence of a ridge, for at least three stones. We checked stones from 59 shrubs. Clapham, Tutin and Moore (1987) states for *P. spinosa* 'stone nearly globose, 7.5-10×6-8 mm, little flattened, nearly smooth or slightly pitted'. Stones of 8 shrubs agreed with this description, the difference between the longest and shortest dimensions being 2.0 mm or less. This value was less than 2.0 mm for only two shrubs of the remaining 51.

We found many hedgerows and groups of bushes without fruit. The recent *Flora of Cumbria* (1996) says 'many bushes, and lengths of hedgerow, probably represent incompatible clones and fruit is rare'. Stace (1975) states that on artificial cross-pollination 'the F1 is usually pentaploid and thus largely sterile', backcrosses 'varying between the tetraploid, pentaploid and hexaploid levels'.

Most floras ignore *P. × fruticans* with single records for v.c.c. 5, 11, 12 and 64, with two for v.c. 13. If the distribution of *P. spinosa* elsewhere is similar to our small sample, then most shrubs recorded as *P. spinosa* are *P. × fruticans*. Much further work is required but a simple examination of the stone will confirm *P. × fruticans* in most cases. Any comments would be appreciated.

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## GAGEA LUTEA IN MORAY (v.c. 95)

I was most interested to read the article entitled 'Japanese Knotweed – What's The problem?' by Oliver Gilbert in *BSBI News* **76**; here he mentions a variety of plants that are found growing amongst Japanese Knotweed (*Fallopia japonica*) in Britain, plus he mentions that *Gagea lutea* (Yellow Star-of-Bethlehem) is a member of this community in Germany; and now also in Scotland. In the only known site in Moray for *Gagea* as quoted in the *Flora of Moray, Nairn and East Inverness* by Mary McCallum Webster 1978, it was introduced about 1892 into Greshop Wood bordering the River Findhorn on the western side of the county and stated as being very rare by 1974 as part of this area was made into a caravan park. When I searched for it in 1996 I found it to be extremely abundant for a stretch of about 3 km along this river on either side, in woodland and to my amazement amongst extensive stands of Giant Hogweed (*Heracleum mantegazzianum*). For an introduced native species it has made a considerable recovery in twenty two years, could this be because of the Giant Hogweed stabilising the river banks and also given some protection from erosion.

Whilst recording for Atlas 2000 in Moray on the eastern side of the county along the banks of the River Spey, between Rothes and Fochabers, where I found Leopard's-bane (*Doronicum pardalianches*) and White Butterbur (*Petasites albus*) to be particularly common along this stretch of the river, with the odd patch of Japanese Knotweed, and to my surprise hundreds of plants of *Gagea* in a large barish sandy area with the Knotweed just breaking through the surface of the sand on the edge of a few trees. Here the *Gagea* was forming two large dense colonies 20 m × 9 m and 7 m × 3 m, both with an abundance of flowering specimens, with a little Alternate-leaved Golden Saxifrage (*Chrysosplenium alternifolium*) growing amongst it. The Knotweed must also help to stabilise this area of the river bank, plus also given protection from erosion. So are these two species as bad as one would think in our countryside, not in the case of *Gagea* in Moray anyway. I would be interested to hear if anyone else has had *Gagea* growing with Giant Hogweed or Japanese Knotweed in the British Isles.

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## BOTANISTS AND BOTANY IN LITERATURE – 8: ADDENDUM

Despite Samuel Butler's professed scorn for his father's botany and botanists in general (see my article on pp. 27–29 of *BSBI News* 76), he did in fact himself succumb to the Victorian craze for ferns while he was a boy at Shrewsbury School – and evidently wanted his father to know about it! The following extract from a letter written to his mother on 25 September 1851 (when Butler was nearly 16 and she was apparently away from home) shows that he possessed a Wardian case (invented a decade earlier) and was growing seven species (?) of ferns in it.

'please tell Papa when next you write that I found the "*Adiantum nigrum*" (by the way you can't translate *Adiantum* therefore don't lie awake to think about it) growing on Haughmond hill and as it is almost exclusively a seaside fern it is a rather curious thing to find there ; I possess seven ferns in my case which looks exceedingly pretty and thriving tho' it was some time before I could persuade the boys to believe in its existence without being watered ; and when they had vehemently spied to see that I didn't water it they became convinced but not half of them perceive the rationale of it' (Jones 1919, Vol. 1, p. 40).

Haughmond Hill is 5 km ENE of Shrewsbury. William Phillips (1877), in the earliest published account of Shropshire ferns, gives it as a locality for *Asplenium adiantum-nigrum* on the authority of the Revd Edward Williams (1762–1833), who left a manuscript list of Shropshire plants (Oswald in Sinker *et al.* 1985, 1991, p. 17), but he adds 'not now to be found', on his own authority. Sinker *et al.* (1985, 1991, p. 175) show that it is still widespread in Shropshire, but their distribution map does not include Haughmond Hill. Butler was, of course, mistaken in describing it as 'almost exclusively a seaside fern'; possibly he was confusing it with *Adiantum capillus-veneris*.

Twenty-seven years later, on 14 August 1878, Butler wrote to his father from Faido in the Swiss Alps, as follows.

'I send dried specimens of *Alternifolium* [*Asplenium* × *alternifolium* = *A. septentrionale* × *A. trichomanes* subsp. *trichomanes*] – as many, I imagine, as you are likely to want ; but have found a place now where it is abundant in every size from half an inch to about 4 or 5 inches. I bring you back living examples of different sizes and growths.

I put a little *Septentrionale* [*A. septentrionale*] in along with the *Alternifolium*, but gather that you want a live plant or two, which shall be brought. I have half-a-dozen plants of the *Woodsia Ilvensis* which I will bring. They are quite well and healthy ; but if you want dried specimens, please let me know at once.' (Jones 1919, Vol. 1, pp. 278–279).

These last were evidently the 'very fine *Woodsias* from Canton Ticino' which Thomas Butler insisted on growing 'in the hot bed with the other ferns', as described in Samuel Butler's note written in 1882, which I quoted in my last article (Jones 1919, Vol. 1, p. 279).

In 1886, when Samuel Butler, now aged 50, was back in Faido, he met two botanically-minded clerics at his lodgings.

'... there was a lady there who remembered me in New Zealand [1859–1864]; ...

They had friends coming to them, a certain canon and his sister, and there was a talk that the Bishop of Chichester might possibly come too. In course of time the canon and his sister came. At first the sister, who was put to sit next to me at dinner, was below zero and her brother opposite was hardly less freezing ; but as dinner wore on they thawed and, from regarding me as a monster which in the first instance they clearly did, began to see that I agreed with them in much more than they had thought possible. ... the canon let me take him where I chose. I took him to the place where the *Woodsias* grow and we found some splendid specimens. ... he said I had promised to show him some *Alternifolium*. I stopped him and said : "Here is some," for there happened to be a bit in the wall by the side of the path.

This quite finished the conquest, and before long I was given to understand that the bishop really would come and we were to take him pretty near the *Woodsias* and not

tell him, and he was to find them for himself. I have no doubt that the bishop had meant coming with the canon, but then the canon had heard from the New Zealand lady that I was there, and this would not do at all for the bishop. Anyhow the canon had better exploit me by going first and seeing how bad I was. So the canon came, said I was all right and in a couple of days or so the bishop and his daughters arrived. . . .

Next morning I saw him eating his breakfast and said "Good-morning" to him. . . . We discussed the *Woodsia ilvensis* and agreed that it was a mythical species. It was said in the botany books to grow near Guildford. We dismissed this assertion. But he remarked that it was extraordinary in what odd places we sometimes do find plants ; he knew a single plant of *Asplenium Trichomanes* which had no other within thirty miles of it ; it was growing on a tombstone which had come from a long distance and from a *Trichomanes* country. It almost seemed as if the seeds and germs were always going about in the air and grew wherever they found a suitable environment. I said it was the same with our thoughts ; the germs of all manner of thoughts and ideas are always floating about unperceived in our minds and it was astonishing sometimes in what strange places they found the soil which enabled them to root and grow into perceived thought and action. The bishop looked up from his egg and said: "That is a very striking remark," and then went on with his egg as though if I was going to talk like that he should not play any more. . . .

In the morning I had asked the waitress how she liked the bishop.

"Oh ! beaucoup, beaucoup," she exclaimed, "et je trouve son nez vraiment noble."

(In 'Material for a Projected Sequel to *Alps and Sanctuaries*': Jones 1912, pp. 271-272).

Butler's notes do not reveal whether the noble-nosed bishop ever saw the *Woodsias*.

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## BOTANY AND BOTANISTS IN LITERATURE - 9

Charles Nelson points out some references in the novels of Edna O'Brien.

'*A Pagan Place*' starts:

'Dan Egan is in Dresboro  
The Wattles at the gate  
Manny Parker's in the Avenue  
And the Nigger's walking straight.

Manny Parker was a botanist, out in all weathers . . .'

We don't learn much about Manny in the book, but at one point we are told:

'People mistook Manny Parker for a ghost because of the way he mooched around at all hours, in the dawn, gathering different specimens.'

And:

'He lived with his sister that ran the sweetshop, they ate meat Fridays, they were protestants. Your mother dealt with them, found them honest.'

A more sympathetic view of a botanist than that suggested in Edna O'Brien's 'The Country Girls':

'What is that bird?', I asked.

'A blackbird,' he replied.

'It's not a black bird. I can see it's a brown bird.'

'All right, smartie. It's a brown bird. I have work to do, I don't go around asking birds their names, ages, hobbies, taste in snails, and so forth. Like the eejits who come over to Burren to look at flowers. Flowers no less. I'm a working man. I carry the place on my shoulders.'

We discovered W.H. Auden finding a botanist 'sinister' in an earlier contribution to this series (*BSBI News* 72). Here he is, at it again (at least I *think* it's Auden, although the book was co-authored with Louis MacNeice). In '*Letters from Iceland*':

'What about your new girl-friend? I thought she sounded sweet but that may be just by contrast. With the last I mean: I warned you about her all along and what can one expect of someone who reads botany? You keep to the arts darling . . . .'

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## BOTANISTS IN LITERATURE – 10

Although he died in Trowbridge, Wiltshire, George Crabbe (1754 – 1832) was a Suffolk man to the core, setting much of his poetry in that county, particularly in Aldeburgh. His work was admired by many, including Charles James Fox, Samuel Johnson, Walter Scott and Edmund Burke. Lord Byron famously described him as 'Nature's sternest painter yet the best'. More recently, Crabbe's poetry also inspired another man of Suffolk, Benjamin Britten, whose opera *Peter Grimes* is based upon the 1810 volume, *The Borough*.

Less well known are Crabbe's capabilities as a botanist. In his 1909 book of essays and reminiscences, *Lighter Studies of a Country Rector*, John Vaughan, Rector of Droxford, Hampshire, devotes a chapter to this side of the poet's life. Crabbe's interest in plants seems to have started when he was apprenticed to a surgeon, at the age of twenty. As both surgeon and apothecary, he of course collected his own ingredients, or 'simples', thus adding to his botanical and local knowledge. Unable to achieve his ambition of becoming a doctor, Crabbe eventually joined the clergy, ending up as Rector of Trowbridge, in which post he spent the last eighteen years of his life.

Crabbe's interest in plants stayed with him all his life, in particular the study of grasses, sedges and cryptogams. He even has some claim to being the first discoverer in Britain of *Trifolium suffocatum* (fittingly enough, on the seashore at Aldeburgh). The identifier was no less a naturalist than Sir Joseph Banks, and the specimen is believed still to reside in the Banks Herbarium at the Natural History Museum.

This botanical knowledge is displayed in *The Preceptor Husband*, part of the 1819 collection, *Tales of the Hall*. In this, Crabbe introduces us to Charles Finch, a bookish, pedantic and abstracted young man. In order to settle family debts, and at the urging of his mother, Finch takes to wife the wealthy and beautiful Augusta Dallas. She is not the intellectual companion he had first hoped for but he soon comes to love her.

Knowing of how she disappoints him in her lack of academic learning, Augusta asks Finch to instruct her in one of the few things in which they share an interest, a love of flowers. Here, described in Crabbe's characteristic heroic couplets, is how the lessons went.

'Now o'er the grounds they rambled many a mile;  
 He show'd the flowers, the stamina, the style,  
 Calix and corol, pericarp and fruit,  
 and all the plant produces, branch and root;  
 Of these he treated, every varying shape,  
 Till poor Augusta panted to escape;  
 He show'd the various foliage plants produce,  
 Lunate and lyrate, runcinate, retuse;  
 Long were the learned words, and urged with force,  
 Panduriform, pinnatifid, premorse,  
 Latent and patent, papulous and plane,—  
 "Oh!" said the pupil, "it will turn my brain."  
 "Fear not," he answer'd, and again, intent  
 to fill that mind, o'er class and order went;  
 and stopping, "Now," said he, "my love attend,"  
 "I do," said she, "but when will be an end?"  
 "When we have made some progress, —now begin,  
 Which is the stigma, show me with the pin;  
 Come, I have told you, dearest, let me see,  
 Times very many, —tell it now to me."  
 "Stigma! I know, —the things with yellow heads,  
 That shed the dust, and grow upon the threads;  
 You call them wives and husbands, but you know  
 That is a joke—here, look, and I will show  
 All I remember." —Doleful was the look  
 of the preceptor, when he shut his book,  
 (The system brought to aid them in their view,)  
 And now with sighs return'd — "It will not do."

The poem continues with further expressions of the preceptor's (that is, instructor's) disappointment. He even casts doubt on her ability to look "for five succeeding minutes on a book". At this point, his wife reveals an early and deep familiarity with stories, poems and plays – including those of Shakespeare, Pope and Milton. This satisfies the prig and, domestic harmony restored, he vows to question her no further.

In an earlier poem, *Baptisms* (from *The Parish Register*, 1807), Crabbe tells of Peter Pratt, another like Finch (his prototype, perhaps):

'Who simpering loves to tell  
 How rise the stamens, as the Pistils swell;  
 How bend and curl the moist top to the spouse;  
 And give and take the vegetable vows;"

Referring to Peter and his kind, the poet asks,

"... names are good; for how, without their aid,  
 Is knowledge, gain'd by man, to man convey'd?  
 But from that source shall all our pleasures flow?  
 Shall all our knowledge be those names to know?  
 Then he, with memory bless'd, shall bear away  
 The palm from Grew, and Middleton, and Ray;"

Thus Crabbe weaves the names of real as well as imaginary botanists into his writings.

## BOTANY (PLANT PRODUCTS) IN LITERATURE – 11

In George Eliot's 1876 novel, *Daniel Deronda* (Penguin Classics, 1995), Deronda, in his quest to find Mirah's mother and brother, pays a second visit to the Cohen family on the pretext of redeeming a diamond ring. Because of the success of his first visit he is warmly welcomed by the family. Jacob, the 'small man', is busy catching a ball in a cup. When Deronda remarks on his clever hands, he asks the grandmother which side of the family he gets them from, but it is Jacob who replies (p. 520):

'My side. My wife's family are not in that line. But, bless your soul! ours is a sort of cleverness as good as gutta percha; you can twist it which way you like.'

### A note about gutta percha

Gutta percha (as spelled by Mary Ann (Marian) Evans (i.e. GE) and Mabberley (1987), or gutta-percha (*Chambers dictionary of science and technology* (1974), *Chambers English dictionary* (1988), Evans (1996), and Heywood (1978)), is the purified coagulated latex tapped principally from two trees, *Palaquium* (*Isonandra*) *gutta* (Hook.) Baill., and *Payena leerii* (Teijsm. & Binn.) Kurz, although it can also be obtained from *Madhuca* (*Bassia*) *pallida* and *Mimusops balata*. All are members of the family Sapotaceae, which is placed in the order Ebenales by Engler (Melchior, 1964) and Cronquist (1981) but in the Sapotales by Takhtajan (1987). The family numbers are 237, 148, and 136 respectively.

The species grow, both wild and cultivated, in tropical Asia in the area Hollis and Brummitt term Malesia, which includes Borneo, Malaya (including Singapore), Jawa, and Sumatera, otherwise known as Malaysia, and forming part of the East Indies.

Although rubbery, gutta percha is not the same as the latex from the rubber tree (*Hevea brasiliensis*; Euphorbiaceae), having fewer C-5 units, which makes vulcanisation difficult. Waterproof, it softens on heating, allowing shaping; when cool, shape is retained.

Developed in the 19th century, gutta percha was, before the advent of plastic, mainly used as an insulant for unsheathed submarine telephone cables and in golf balls. Today its only use is as temporary dental stoppings.

Gutta comes from the Malay word for gum, *getah*. Percha means a tree producing the gum. By comparison the family name Guttiferae is derived from the Latin *gutta*, meaning drop, thus the members of this family are drop-(oil)-bearing as opposed to gum-bearing.

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BOTANY IN LITERATURE – 12

I thought the following extracts might interest and amuse other readers of *BSBI News*; they are taken from the diaries of Violet Jacob and record some of her plant hunting experiences in India. Violet Jacob was the wife of a young officer serving in the 20th Hussars, and she joined him in India in 1895. While there she developed a passion for botany and for painting the many specimens that she collected; she was entirely self-taught as the following extracts illustrate:

24 March 1896

I have got a botany book, the only thing I could hear of, Roxburgh's *Flora Indica*, but it is so learned that I can't understand it. But it's better than nothing, for I can just puzzle out a very little and I am immersed in it over my head. It gives Latin names of plants and Hindustani ones, but no English; and as natives neither know nor care one farthing for such things and pronounce any name they happen to know, anyhow, it is awfully difficult to discover anything if you are devoid of Latin.

25th March 1898

I have been counting the days till Dr Moore's arrival, having heard of him as a first rate botanist. I haven't had one knowledgeable person to speak to about botany since I came to the country, and have spent two years grinding at Roxburgh's *Flora Indica* as best I can, knowing no Latin. I am looking forward to seeing Dr Moore with excitement and dread, as he will probably be very learned.

26th March 1898

Dr Moore is a really delightful man but I have had a cruel blow. I have been learning everything from an obsolete system; the Linnaean System is dead and superseded by system of Natural Orders and I must begin all over again. I shall have to readjust all my ideas that I have battered into my head with such difficulty!

Also in the Diaries is an amusing description of her attempts to retrieve a 'beautiful pale golden flower growing very high on a slim leafless tree':

4th February 1898

We went to the place where we had seen the yellow flower. There it was, quite safe and golden, like a star above the brown sea of undergrowth. We were out of the buggy in a minute and down over the edge of the road, slithering and sliding down the thorny and stone side of the *khud*. Our goal looked more desirable the nearer we got, especially as it was the only blossom on the tree. When we stood under it at last we found it was far beyond our reach on an outstanding bough. We were determined to have it so we climbed laboriously up again to the buggy, unbuckled the reins and started down once more. There was a smooth slab of rock just above our prey and we stood on this to get to work. Then we found a stone and weighting one end of the rein with it, flung it up round the branch we wanted, with the idea of bowing it down and making a leap for the flower. This done we took the end of our lasso and pulled stoutly together. We did not know that the main stem had a consistency like that of a tallow candle. It snapped half way up and I found myself seated on the flat rock. But M. fared worse for she flew backwards into a thorn bush and lay with her legs in the air like the letter Y, unable to move and held in a vice. When I was able to stop laughing we managed to get her free. The miracle was that the precious blossom arrived on the earth intact. Its name proved to be *Bombax gossypinum*.

These extracts are taken from:

Violet Jacob. *Diaries and letters from India. 1895 – 1900*. Canongate Publishing.

ASTRAGALUS DANICUS ON HIGH

Astragalus danicus (Purple Milk-vetch) is known from a number of Perthshire sites. To the best of my knowledge the highest of these was at 407 m.

In 1994 I was surprised to find this species in flower at 710 m at a site known previously only for *Astragalus alpinus* (Alpine Milk-vetch), which had not yet come into flower.

In 1995 I found *A. danicus* in pod and *A. alpinus* in flower but in 1996, probably more by luck than judgement, both species were found in flower at the same time.

This is perhaps the highest British site for *A. danicus* and almost certainly the only site having both species. If anyone knows of a higher British site, I would be delighted to hear from them. I would also be interested to know if the two species grow together overseas.

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## BIRD'S-FOOT-TREFOILS WINNING WAYS

I am not the only one to be attracted by this colourful, exuberant herb: Geoffrey Grigson, in the *Englishman's Flora* writes that it has (or had) more than 70 names. Also, in my case, there was my amazement that such an apparently humble herb could be so successful: for example it is conspicuous along the Pembrokeshire coast (where I now live), in the Burren, Co. Clare and along the Inch peninsula, Co. Kerry.

Outstanding amongst the 'Winning Ways' of *Lotus corniculatus* was its unexpectedly robust tap root, worthy of a much bigger plant, but necessary, of course, for a species that could exploit dune slacks and apparently sprout from bare rock like *Anthyllis vulneraria* (Kidney Vetch) and *Armeria maritima* (Thrift). Like the patter of a successful estate agent, one could almost be persuaded that sand, rocks and gravel are good sites to live in, whereas the reality is, of course, that the more desirable sites become rapidly occupied and overgrown by tall neighbours such as grasses.

Nonetheless there is an advantage in *L. corniculatus*' 'bungaloid' approach, particularly along the Pembrokeshire coast where strong Oceanic or cold Irish Sea winds can blacken and sometimes destroy taller species like *Urtica dioica* (Nettle), *Silene dioica* (Red Campion) or *Digitalis purpurea* (Foxglove) even during the height of summer, as in early July 1997.

One of its most intriguing (and usually winning) characteristics is the presence of cyanide compounds in its tissues which has predictable results. For example huge expanses of *L. corniculatus* covered the rabbit warrens of Inch and the grassland inside the Suffolk Water Company compound at Holbrook, Suffolk (TM/165.359), which was overrun with rabbits. But there were anomalies: the warden of Ramsey, off the Pembrokeshire coast (SM/700.235), commenting that during the summer of 1994, when the rabbit population was devastated by myxomatosis and the grass grew high for the first time in years, the *L. corniculatus* flowering season was outstanding too. Also in the Forêt de Braunhie, in the Lot department of southern France, both *L. corniculatus* and the abundant, related *Hippocrepis comosa* (Horseshoe Vetch), along with other Leguminosae, were grazed to ground level by cattle in the (rotating) fenced off compartments. Are these anomalies caused simply by abnormally high and possibly desperate populations of grazers?

Despite their cyanide-defence certain insect grazers have evolved immunity to the extent that *L. corniculatus* is one of their food plants. Along the drier sections of Pembrokeshire coast the larvae of the Six-spot Burnet (*Zysaena filipendulae*) could be found on it (and on *Anthyllis vulneraria*), while along the wetter sections the larvae of the Five-spot Burnet (*Zysaena trifolii*) fed on the related, damp-loving *Lotus uliginosus* (the Greater Bird's-foot-trefoil). *L. corniculatus* is also the food plant of the Common Blue Butterfly (*Polyommatus icarus*), according to books, although I have quite failed to find the larvae or their accompanying ants in Pembrokeshire.

In many different habitats in Britain the Bumble Bees (*Bombus*) most commonly observed working the flowers of *L. corniculatus* were the workers of *B. lapidarius*. Hive Bees (*Apis mellifera*) visited when their hive was not too far away and also Solitary Bees, for it is essentially a Bee-flower. But whatever the intention it was also visited by Common Blue Butterflies, Green-veined Whites and Burnets. Indeed the life-histories of the Blues and the Burnets are closely bound up with the plant. The situation at Inch posed a particular problem however and, as ever, I wish I had spent more time there. It is a dune-rich peninsula which pokes 5 km out from its base on the Dingle peninsula in Co. Kerry, and many of the best *L. corniculatus* colonies were near its far end, well beyond the foraging range of *Bombus* or *Apis*. Nor were the dunes suitable for *Bombus* nests, yet as *L. corniculatus* was producing adequate seed, presumably the local *Zygaena* species was the main visitor.

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MULTICOLOURED YARROWS

David McClintock in *BSBI News* 77: 59 asks if the two plants of *Achillea millefolium* he had seen which had pink flowers on the side shoots and the more usual whitish flowers on the central stem were unusual sports? I have twice seen plants with both pink and whitish flowers on the same plant in Swiss alpine hay meadows. Pink flowered *Achillea millefolium* is relatively common in Central European mountain meadows; at times in alpine hay meadows it is the pink of the Achillea flowers which is a major component of these famously colourful meadows. There is a theory that the pink colour occurrence could be linked to altitude? Hegi in *Illustrierte Flora von Mittel-Europa* ed. 1 (1929) gives for *Achillea millefolium* 4 subspecies, 3 formas and one variety, including forma *bicolor* of *A. millefolium* subsp. *millefolium*, describing the flowers as white, rose, crimson, pink – and rarely yellowish. In modern Floras these are considered as one species, but with plasticity in flower colour, especially in mountains.

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## A RICH OPINION

Nowadays *BSBI News* and *Watsonia* rarely come my way but recently I was lent a copy of each and I noticed that not much has changed. The hair-splitters, some getting quite heated, and the scrabblers after scraps of ephemeral immortality are still at it. It's all very well wishing to turn Botany into an exact science, but where will it end?

I don't expect many to follow the path I've taken since I realised I'd stopped seeing the flowers for the hairs. A very trying specimen of *Dactylorhiza* was my turning point. After spending hours trying to classify it, it went down as *Dactylorhiza* agg. Since then I've managed to put most flowers into one taxon – pretty.

If physicists, when they noticed the atom had thought, 'Hm, small' and left it at that, we would have been spared fifty years of nuclear anxiety. If biologists, seeing bacteria, had contented themselves with 'could be troublesome' the present crisis in the Middle East would not have come about. Already we have super-market tomatoes and engineered soya. If the hair-splitting botanists go the same way as the physicists and the biologists went, I wonder what Earth-threatening creation they will produce.

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SO YOU DON'T LIKE 'MINTS'

For more years than I care to remember when walking about the countryside I have noted which plants mammalian grazers (strictly I suppose browsers) avoided, particularly in the case of 'mints' (Lamiaceae or 'Lamiates'). The following accumulation of records refer to 'normal' situations where the grazer was not 'pushed' like those Hares found dead at the base of *Cytisus scoparius* (Broom) during the Arctic winter of 1962-63. Wherever possible the plants involved were given the 'Skomer test', the rabbit density on this Pembrokeshire offshore island being so high that any plant that can survive grazing there, is undoubtedly rabbit-proof.

Rabbits

So far as I could judge rabbits never grazed the following Lamiates:

Lamium album (White Dead-Nettle), *Lamiastrum galeobdolon* (Yellow Archangel), *Galeopsis tetrahit* (Common Hemp-nettle), *Prunella vulgaris* (Selfheal), *Thymus polytrichus* (Wild Thyme), *Origanum vulgare* (Marjoram), *Glechoma hederacea* (Ground-ivy), *Teucrium scorodonia* (Wood Sage.) and *Mentha aquatica* (Water Mint).

The aromatic oils of the Lamiates are so strongly antiseptic that they have to be isolated even from the plant's own tissues: and in all probability the remaining Lamiates (about which I have no information) are unpalatable to rabbits too. Some of the above, such as *Glechoma* and *Teucrium*, passed the 'Skomer test' with flying colours.

Some Fabaceae were shunned by rabbits, such as *Melilotus officinalis* (Common Melilot), *Ononis repens* (Common Restharrow) and *Lotus corniculatus* (Bird's-foot-trefoil), the latter being so rich in cyanogenic compounds that its brilliant yellow flowers sometimes carpeted rabbit warrens.

Also there were plants belonging to other families such as *Urtica dioica* (Nettle), *Verbascum thapsus* (Mullein), *Arctium* spp. (Burdocks), *Senecio jacobaea* (Ragwort), *Achillea millefolium* (Yarrow), all Thistles, *Mercurialis perennis* (Dog's Mercury), *Pteridium aquilinum* (Bracken), *Narcissus* spp. (Daffodils), *Echium vulgare* (Viper's-bugloss), *Hedera helix* (Ivy), when it grew along the ground, and, of course, *Helleborus viridis* (Green Hellebore) and *H. foetidus* (Stinking Hellebore), the latter being capable of flourishing, with *Sambucus nigra* (Elder), in the centre of otherwise barren warrens.

There was a further group of unpalatable plants whose flowers only were eaten, which is understandable though unfortunate from the plant's point of view: *Arum maculatum* (Lords-and-Ladies), *Silene dioica* (Red Campion), *Primula vulgaris* (Primrose) and *P. veris* (Cowslip).

In fact, rabbits inhabiting inferior woodland territories had a significant effect on the distribution of *P. veris* which began to colonise woods in Myxomatosis years, only to be checked once the rabbit population had recovered. Also the scapes of *Hyacinthoides non-scripta* (Bluebell) were chopped (vandalised) for no obvious reason, and *Digitalis purpurea* (Foxglove) leaves occasionally eaten, a plant so poisonous (with digitalin) to grazers that even sheep won't eat it.

In a few cases it was obvious why rabbits shunned certain species, e.g. nettles and thistles for example, but do they avoid Lamiates and others because they are unpalatable or because they are poisonous? Their dislike of Lamiates is quite extraordinary in view of our attitude.

Horses

Horses did not eat: *Urtica dioica*, thistles, *Rumex crispus* (Curled Dock), *Rumex acetosa* (Common Sorrel) and probably other Sorrels and Docks, *Silene dioica*, *Pteridium aquilinum*, *Senecio jacobaea*, *Ballota nigra* (Black Horehound – a Lamiate) and most yellow Composites.

Cattle

Cattle didn't eat the four Lamiates: *Lamium purpureum* (Red Dead-nettle), *Prunella vulgaris*, *Mentha aquatica* and *Stachys officinalis* (Betony). Also they avoided *Parentucellia viscosa* (Yellow Bartsia), *Pulicaria dysenterica* (Fleabane), all *Ranunculus* spp. (Buttercups), *Trifolium pratense* (Red Clover) and, surprisingly, *Filipendula ulmaria* (Meadowsweet).

On the other hand they ate the foliage of *Oenanthe crocata* (Hemlock Water-dropwort) with relish and sometimes browsed *Conium maculatum* (Hemlock), both highly poisonous herbs, but when they foolishly eat the roots of *Oenanthe*, which are frequently washed up from rivers during winter floods, the concentrated poisons are lethal.

Sheep

Even a brief perusal of British upland areas such as the Highlands of Scotland, the Lake District, the Pennines, Snowdonia, the Brecon Beacons, Dartmoor, Exmoor and others is sufficient to convince the observer that sheep eat almost everything, producing a kind of upland desert of little interest to botanists. And even the few plants left are so miniaturised as to be scarcely recognisable. Thus the few exceptions to this devastation stand out prominently. Nettles, all thistles and *Digitalis purpurea*. They even eat *Senecio jacobaea* – at least in their first-year rosette mode, and indeed farmers use sheep to exert some control over this most unpopular weed. Curiously sheep also ate the foliage of *Oenanthe* with apparent impunity.

Comment

I would truly welcome additions to, or criticisms of, the above list of 'uneatables', particularly with regard to sheep who are so catholic and thorough in their grazing that it is difficult to know what plants were there before, all clues having been removed.

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CONSERVATION NEWS & VIEWS

HAVE YOU SEEN FLOATING (OR SUBMERGED!) WATER-PLANTAIN?

Floating water-plantain (*Luronium natans*) is an unusual and little known plant. Most field guides depict it in a floating form with distinctive oval floating leaves and white flowers. In reality much of the British population exists in a relatively undistinctive submerged form, with grassy leaves, restricted to inaccessible lake and canal beds. As a result it is neglected and probably under-recorded. As part of the Biodiversity Action Plan for the species we are preparing a database of all known records and fully expect that more thorough searching will reveal it in new sites. This note sets out the background to the plant and proposals for a new identification crib-sheet.

Luronium, a European endemic, is scarce in Britain and largely confined to Wales and north-west England. Despite not being technically rare its apparent decline and rarity in Europe as a whole has resulted in full protection. It is on Appendix I of the Bern Convention, Annexes II and IV of the Habitats Directive and Schedule 8 of the Wildlife and Countryside Act 1981. Most recently it appears in the short list of species in the UK Biodiversity Action Plan.

Luronium was first recorded in Llyn Peris, Caernarvonshire in 1719. Such oligotrophic, upland lakes appear to be its favoured natural habitat. However since the late nineteenth century it has spread into the contrasting environment of eutrophic, lowland canals, where many of its main populations are now located. It has also been recorded from other mesotrophic freshwater habitats, including slow-flowing rivers and streams, ditches, ponds, small lowland lakes or reservoirs and open water pools associated with fens or lowland raised bogs. Most of the records are from Wales or bordering counties but there are outlying sites such as a swamp in County Durham, an isolated pond in Leicestershire, and parts of the Norfolk Broads. Some of these may be introductions.

This tolerance of waters with widely differing origins and trophic status seems to be linked to a lack of competitiveness. In upland oligotrophic lakes, nutrient impoverishment and wave-disturbance provide a stable, open-structured vegetation, which allows a poorly-competitive *Luronium* to exist as a permanent member of the flora. In more productive lowland waters, *Luronium* depends on human disturbance to arrest hydrosere succession and enable survival. It occurs prolifically as an early colonist in canals, drainage ditches and ponds, in the wake of dredging or other clearing operations. In many canals, where these operations are regular, the species appears to survive as a permanent feature. Where later stages of succession are allowed to occur it is outcompeted by more vigorous species and may occur only as a transient species.

Luronium has a heterophyllous growth form and, depending on the habitat and successional stage, it has a widely varying appearance. In shallow water it occurs as a floating-leaved plant – the classic fieldguide form – and is readily identifiable by small, ovate leaves carried on petioles arising from a submerged, basal rosette. By contrast, in fast-flowing water, or where light intensity is low (e.g. through depth in lakes or turbidity in canals) it occurs only as rosettes of submerged leaves which can be easily overlooked or mis-identified. Intermediate between the two conditions is a prostrate, amphibious form, with short-stalked expanded leaves (somewhat reminiscent of mudwort, *Limosella aquatica*), which can occur in shallow water or on damp mud along canal and ditch margins, and where plants are exposed to fluctuations in lake level.

This variation in appearance and the difficulty in seeing or sampling the totally submerged form may have led to under-recording. The localised distribution we associate with the plant may be misleading – there might be more out there somewhere! Recent new records of *Luronium* in Cumbria, Scotland and Ireland do suggest under-recording in the past. It seems likely that many people look for the floating form and are unaware of the subtleties and difficulties of detecting the submerged form.

One of the first tasks identified in the Species Action Plan for the plant is to document all historical, contemporary and new records. With this in mind, the SAP steering group (which includes British Waterways, Countryside Council for Wales, English Nature and the Universities of Loughborough, Liverpool and Glasgow) are hoping to encourage more recording. British Waterways is currently compiling a database of known localities and a new identification crib-sheet is planned for the summer. This will augment similar information being prepared for the new *Plant Crib 1998* (due in May) and for British Wildlife (probably the June issue). The identification crib-sheet should be available by June and anyone wishing to receive a copy should write to us at British Waterways. Any comments or records are also welcome.

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TOOTHWORT MANAGEMENT

In reply to J.K. Cross (*BSBI News* 77), the following observations may be of interest.

In Castor Hanglands NNR, Northants (v.c. 32), Toothwort (*Lathraea squamaria*) grows under hazel at the foot of several fence posts by the entrance track. When it was first shown to me, I thought what bad luck or carelessness it was to have hit a toothwort clump with so many of the fence posts. Only after a couple of years did it dawn on me that the toothwort may be growing preferentially where the posts have been driven in. Perhaps some damage to hazel roots aids colonisation by toothwort, or perhaps toothwort simply needs soil disturbance for its seeds to reach the hazel roots. This would also explain the preference of toothwort for the path edge in Ozleworth Bottom, W. Gloucs. (v.c. 34). Trampling has exposed and undoubtedly damaged the roots of hazels there. In the middle of the path, toothwort would be trampled to death; and away from the path, the hazel roots may be inaccessible.

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THE SUCCESSFUL INTRODUCTION OF *ARTEMISIA CAMPESTRIS* (FIELD WORMWOOD) TO HIGH LODGE PIT, MILDENHALL, SUFFOLK

Justification for the introduction

In 1990, at the time of the introduction, the British *Artemisia campestris* population included five 'natural populations' (i.e. not the result of translocations) (containing 1, 1, 40, 93, and 330 plants); three populations resulting from planned translocations (containing 3, 10, and 25 plants); and one population of 6 plants in Wales, assumed to be the result of an accidental translocation. Most of these

populations were in decline because of habitat loss through changes in land management and, in the case of the translocated populations, the choice of an inappropriate habitat for the translocation. Seedlings were included in just 2 of these populations. Given this small and declining population the Nature Conservancy Council decided to establish a new population of this species as part of a recovery program.

Habitat requirements of *Artemisia campestris*

A. campestris has a 'continental distribution' and in Britain it is naturally restricted to the Breckland of Norfolk and Suffolk which has the most continental climate in the country. It requires, open, somewhat disturbed, xeric grassland on deep, acid to alkaline, droughty, sandy soils. Some disturbance is important because regeneration occurs only on areas of exposed soil. It is susceptible to grazing by rabbits and although it is not killed by this, its fecundity is greatly reduced where rabbits are abundant. Inventories of plant species associated with *A. campestris* populations were obtained for 14 'natural' British populations (some surveyed for this study and some previously surveyed by other botanists and the data presented in Crompton (1974-86)). Plants associated with 6 or more of these populations included: *Achillea millefolium*, *Agrostis capillaris/canina*, *Crepis capillaris*, *Dactylis glomerata*, *Erodium cicutarium*, *Festuca rubra*, *Galium verum*, *Holcus lanatus*, *Koeleria macrantha*, *Plantago lanceolata*, *Sedum acre*, *Senecio jacobea*, and *Trifolium arvense*.

The introduction site

Ideally, in plant translocations the translocation site should: a) satisfy the habitat requirements of the species being translocated; b) have a cooperative owner and sympathetic long-term management; and c) lie within the species' natural range. Several potential translocation sites were considered, but only one satisfied all three criteria, the northern slope of the pit at High Lodge, Mildenhall, Suffolk (G.R. 52/738.754) (Birkinshaw 1990).

The northern slope of the pit is steep, sunny, with sandy soil and supports a xeric grassland. The grassland is disturbed as by slippage which occurs naturally, because of the steepness of the incline, but is further encouraged by people clambering on the slope. At the time of the translocation rabbits were present at the site but did not appear to have a high grazing impact on the vegetation. Of the plants listed as frequently associated with populations of *A. campestris* only *Erodium cicutarium* and *Trifolium arvense* were not recorded at this site.

The pit is owned by the Forestry Commission and managed by the Suffolk Wildlife Trust. Both organisations were sympathetic to this translocation.

High Lodge pit occurs within the natural range of *A. campestris* and previously populations of this species have been recorded c. 2 km to the south-west (close to the roundabout at Barton Mills) and c. 34 km to the north-west (between Mildenhall and Beck Row/Holywell Row) (Crompton, 1974-86). However, following the guidelines for the translocation of rare vascular plants produced by the Conservation Committee of the BSBI in 1990, this translocation would be classified as an introduction (rather than a re-establishment) because High Lodge pit is more than 1 km from the sites of these records.

Origin of translocated material

During the 20th century the largest British population of *A. campestris* has been on waste ground around Mile End, London Road, Brandon. However, during the last 3 decades this population has declined as this land has been developed for housing and industry. In January 1988 a significant proportion of the remaining population was destroyed by further development. However, prior to this development some of the doomed plants were collected and grown at the University Botanic Garden, Cambridge. Material originating from these plants was used in the translocation.

Method

On 18 October 1988, the suitability of the northern slope to the pit for *A. campestris* was tested by planting 16 plants (4 seedlings, 8 immature plants, and 4 mature plants) in a 1 m² quadrat. To aid their establishment the plants had been grown for some months prior to the translocation, in soil originating from the site. In addition, after planting the plants were watered well. In 1990 all these plants were alive and healthy (albeit grazed by rabbits) and two were fertile. Therefore, it was decided to introduce

more material to the site and on 24 November 1990, 10 g of seed were sown over about 100 m² of the slope.

Current status

On 7 June 1997 the introduced population of *A. campestris* covered about 80 m² and included 41 mature and 8 immature plants. This represents a larger population than that which was originally introduced because the mature plants would be expected to produce more than 109 of seed. However, plants were not found beyond the original introduction site, suggesting that this species has limited powers of dispersal.

Since the date of the introduction this population has received no management.

Discussion

A translocation can be considered successful at a point in time if: a) the population is stable or expanding; b) there is natural regeneration and c) the population does not rely on intensive management for its survival. On the basis of these criteria this introduction is currently a success. This can be attributed partly to an understanding of the species' habitat requirements and the availability of a site which apparently matched these requirements. However, it can also be partly attributed to good luck because it is impossible to completely understand a species' habitat requirements or the habitat characteristics of the potential translocation site. In particular, in the design of translocations it is very difficult to take into account the occurrence of rare environmental changes (e.g. droughts, rabbit population explosions) and how these will effect the species.

Further details of this translocations and the associated ecological research can be found in Birkinshaw (1990). The translocation was conducted as part of a contract with the Nature Conservancy Council, now English Nature. I would like to thank: the Suffolk Wildlife Trust and the Forestry Commission for their support, Dr C.D. Pigott and L. Farrell for their supervision, G. Crompton and Dr D.E. Coombe for information, and Dr K.L. Birkinshaw for assistance with fieldwork.

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SOWING THE RIGHT SEEDS

I found many useful points in Nick Bertrand's article (*BSBI News* 77: 46-48) but fuller scrutiny seems to show that his arguments in some parts are unfairly weighted against '**Flora locale**'. The latter's impressive pedigree of contributors, coupled with its list of objectives (*BSBI News* 76: 42), merits respectful attention.

Nonetheless, I applaud Nick Bertrand's recognition of the wealth and value of some urban wastelands. True, natural regeneration may be rapid and effective; the distinction between thoroughly alien and merely opportunistic invasion is very blurred; and the floristic end-products are often both scientifically of interest and aesthetically pleasing. Teesside has many examples, chiefly developed on derelict, ex-industrial sites (see Ian Lawrence's 'Changes in the Flora of Industrial Teesside', *BSBI News* 72:31). When I came to this area, it was a surprise to find the ostensibly chalk-loving yellow-wort (*Blackstonia perfoliata*) and kidney vetch (*Anthyllis vulneraria*) prolific members – indicator species, almost – of these self-established communities. I fully agree, too, that putting forward such 'brownfield' sites as potential options for development is a gross misunderstanding of their character.

However, we must face current realities. Not all 'urban countryside' is of this calibre, and many agencies not directly within the conservation movement **do** undertake 'improvement' schemes, in which new planting is an integral part. We have to acknowledge that foreign-sourced material **is** readily available to them, and provide counter-balancing facts, advice and encouragement.

To this end, '**Flora locale**' surely gives a welcome boost; its timely intervention should add ecological rigour to the evident, and often laudable, enthusiasm for 'habitat creation', offsetting the more detrimental aspects of naive, possibly commercially-led, conservation effort.

One importance which Mr Bertrand's comments underplay is the enormous appeal which habitat creation has, and its capacity to generate interest and insight. Which is more likely to sow the right seeds in hearts and minds, particularly of the young: positive, hands-on 'doing' in their neighbourhood, or simply passive 'watching' as Nature unfolds? Of course, both must have their place, and undoubtedly more of the aptitude for patient observing (not easily inculcated in this day and age), rather than an instant sleeves-up and spades-out approach, would be a huge asset to conservation.

Whilst, though, the vogue for, and need for, creativity and aftercare is with us, there must be mechanisms for ensuring that the right seeds, literally speaking, **are** sown. This sort of judicious quality-control is to my mind enshrined in 'Flora locale', and not least of the points raised in its second Technical Guidance Note is the imperative to ask the fundamental question: *is introduction necessary, or should Nature be left to its own devices?* It is strange, bearing in mind one of Nick Bertrand's own 'guide-lines' on this very question, that he seemingly finds little common ground with '**Flora locale**'. His purist principles and refreshingly re-thought ideals are not to be dismissed out-of-hand; they will aptly apply in certain cases. Equally, the restraints and refinements advocated by '**Flora locale**' are nowadays very necessary, and should be widely supported.

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### **FLORA LOCALE BITES BACK**

Nick Bertrand made some very important points in his note 'putting the wild back into wildflowers' (*BSBI News* 77).

Through the 'Flora locale' project draft technical guidance notes produced to date will be substantially revised during the spring. The revision of 'what to plant and where to plant it' will include a tiered approach assessing the need for planting as opposed to natural regeneration and other conservation management measures. The latter options are not always pragmatic in many situations and it will take a long time for us to convince the landscape profession otherwise (but we will be trying!). And one of the biggest problems (mentioned by Nick) we currently have is the acute ignorance about native plants and plant communities by the people who specify for schemes. Thus, recently, a north-west Council specified Oxlip (and apparently found 'local provenance' material) for a location 'somewhere near Manchester' and one supplier offered spiked speedwell for a habitat creation scheme in the Brecks. Hopefully, such schemes, being so badly thought out to begin with will be equally badly managed once established – and the plants 'put in the wrong place' will not survive.

The project will be attacking this issue on both the policy and practice fronts and we have already been invited to draft new targets for the Biodiversity Action Plans on the subject. I would welcome more feedback from BSBI members with their views, anecdotes and knowledge on the subject.

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UNCROPPED WILDLIFE STRIPS FOR ARABLE WILD FLOWERS

I read with interest the article by Jo Dunn entitled 'Conservation Headlands for Arable Wild Flowers' (*BSBI News* 77: 45-46). Firstly, it is useful to clarify some terminology. 'Conservation Headlands' is the term coined for cropped, cereal field headlands subjected to reduced chemical inputs, as extensively researched and reported on by the Game Conservancy Trust (Sotherton, 1991). The type of field margin management described in the article, which refers to uncropped, unsown, cultivated field

boundary strips, has become known as 'Uncropped Wildlife Strips' or 'Wildlife Strips'. Although this may appear to some as unnecessary jargon, it is a useful way of identifying particular types of management. Since the terminology is now generally accepted, and has found its way into various publications including the Biodiversity Action Plan, we may be best advised to stick with it.

In the Breckland Environmentally Sensitive Area (ESA), Uncropped Wildlife Strips have been in existence at some farms since 1989. They can be very successful for the conservation of arable plant communities, with a wide range of species having been recorded in them during the ESA monitoring programme (ADAS, 1997). The best sites tend to be found on the lighter soils (Critchley, 1996a) and at sites with certain field boundary characteristics such as few broadleaved or overhanging trees (Critchley, 1994). In some cases, however, there has been a tendency for a single species to become dominant in the community, which may be at the expense of overall species diversity. Where this occurs, it is usually after the first few years following establishment, and where the same management (in terms of cultivation timing and depth) is carried out every year (Critchley, 1996b).

Examples of species responding in this way have included *Anisantha sterilis* (Sterile Brome) and *Amsinckia micrantha* (Common Fiddleneck). Suffolk Wildlife Trust have also had similar problems with *Claytonia perfoliata* (Springbeauty) at Tuddenham Gallops.

In response to these potential problems, MAFF are funding an experiment which is being carried out by ADAS, to assess the effect of a range of cultivation regimes on the plant communities in Uncropped Wildlife Strips. Three experimental sites were established in 1997, which are in North Yorkshire on sandy loam, in Breckland on calcareous sand, and in Hampshire on chalky soil. It is early days, but in due course the results will be used to refine recommendations for this type of management in environmental schemes such as the recently launched Arable Stewardship (in which Uncropped Wildlife Strips are an option). They will also be available to land managers and others who are interested. Meanwhile, it will be interesting to hear of progress at Jo Dunn's site.

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LIPARIS LOESELII- VISITING ARRANGEMENTS

English Nature and the Norfolk Wildlife Trust are again requesting photographers not to visit the last sites for Fen Orchid (*Liparis loeselii*.) in Norfolk during the summer.

In 1997 photographers took heed and only a few problems were encountered. It is hoped that as the population of Fen Orchids increases (as a result of English Nature's Species Recovery Programme) facilities can be developed that enable photographers to visit Norfolk sites.

At **Kenfig** in South Wales, the Fen Orchid population is much stronger, and access is permitted throughout the 500 ha National Nature Reserve which is run by Bridgend County Borough Council. The Fen Orchids are not always easy to find, however, and anyone wishing to see them this year is recommended to join one of the orchid walks led by the reserve staff.

Orchid Walks will be held at Kenfig on the following dates in 1998:

Sundays at 10.00 a.m.: 7, 21 June and 5, 19 July (duration 2 hrs)

Tuesdays at 6.45 p.m.: 16, 30 June and 14 July (duration 1 hr 45 mins)

The usual flowering period for the Fen Orchid is late June and early July, but seasons do vary. To establish the best date to see it in bloom, or to make other arrangements, telephone the Reserve Centre (01656 743386). The reserve staff will arrange for individual visitors to be shown the orchid if possible, but it must be recognised that other demands on their time may sometimes make this difficult.

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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*, Clement & Foster's *Alien Plants of the British Isles* or Ryves, Clement & Foster's *Alien Grasses of the British Isles*. Arrangement is alphabetical; an * following the Latin name indicates a taxon new to Clement & Foster or Ryves, Clement & Foster. 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* (1992) are eligible for inclusion but other more widespread aliens listed in that work may be included at the discretion of the v.c. recorder and the editor. Please ensure that all records include the details as set out below, especially a map reference, even if only to a hectad (10 km square). NCR following the record indicates a New Record for that vice-county.

My thanks to E.J. Clement, R.A. Eades, J.R. Palmer, A.J. Underhill, G.T.D. Wilmore, P.F. Whitehead, W.A. Thompson, for supplying the records, and my apologies to them for the many excluded because they appear in Kent's *List*. Members are reminded that 1st records of all taxa included in Kent's *List* are eligible for publication in Plant Records in *Watsonia*.

Acacia dealbata Link* (Silver wattle). Established in open areas in woodland above gardens on Tresco, SV/89.14, Scilly (v.c. 1b), Oct. 1995, April & Oct. 1996, A.J. Underhill, det. E.J. Clement.

Acacia longifolia (Andrews) Willd.* Established in open areas in woodland above gardens on Tresco, SV/89.14, Scilly (v.c. 1b), Oct. 1995, April & Oct. 1996, A.J. Underhill, det. E.J. Clement.

Acacia verticillata (L'Hérit.) Willd.* (Prickly Moses). Established in open areas in woodland above gardens on Tresco, SV/89.14, Scilly (v.c. 1b), Oct. 1995, April & Oct. 1996, A.J. Underhill, det. E.J. Clement.

Acaena buchananii Hook.f.* Established in grassy area below Powis castle, near Welshpool, SJ/21.06, Monts (v.c. 47), Sept 1996, A.J. Underhill. Originally determined as *A. caesiiglaucia* but now det. E.J. Clement as this species.

Acer platanoides var. *laciniatum* (Eagle's-claw Maple). 30 cm high on country roadside, Hartley, TQ/61.67, W. Kent (v.c. 16), 8/7/1997, J.R. Palmer. A curiosity, with very lacinate, yellow-blotched leaves, with strongly ribbed veins. **Hb. JRP.**

Achillea chryseolata × *A. filipendulina* (a hybrid yarrow). Dump at Green Street Green Common, TQ/5.7, W. Kent (v.c. 16), 1977, J.R. Palmer, det. E.J. Clement.

Achillea filipendulina (Fern-leaf Yarrow). Abundant in cracks of brick-paved walkways, near Hall Place, Bexley, TQ/5.7, W Kent (v.c. 16), 24/6/97, J.R. Palmer.

Allium nigrum (Broad-leaved Leek). Small patch established for at least 15 years on a laneside bank at Churchill, SO/89.79, Wores. (v.c. 37), May 1994, B. Westwood. NCR.

- Amaranthus thunbergii* (Thunberg's Pigweed). Albert Dock, Hull, TA/09.27, S.E. Yorks. (v.c. 61), and Goole Docks, SE/74.22, S.W. Yorks. (v.c. 63), both G.T.D. Wilmore & J. Martin, 12/10/97.
- Ammi visnaga* (Toothpick-plant). Appeared in newly cleared ground with *Iva xanthifolia* and many other aliens, in Sandwell valley reserve by the R.S.P.B. centre, SP/03.92, Staffs. (v.c. 39), originally found by M. Poulton & A.J. Underhill, Sept./Oct. 1996, det. E.J. Clement.
- Anemone × fulgens*. Established in Curry rivel churchyard, ST/39.25, and Butleigh churchyard, ST/52.33, both S. Somerset (v.c. 5). March 1996, A.J. Underhill, det. E.J. Clement.
- Angophora hispida* (Sm.) Blaxell* (Dwarf-apple). Established in open areas in woodland above gardens on Tresco, SV/89.14, Scilly (v.c. 1b), Oct. 1995, April & Oct. 1996, A.J. Underhill, det. E.J. Clement.
- Antholyza ringens*. Established in open areas in woodland above gardens on Tresco, SV/89.14, Scilly (v.c. 1b), Oct. 1995, April & Oct. 1996, A.J. Underhill, det. E.J. Clement.
- Artemisia annua* (Annual Mugwort). Ten plants in a chicken-run at Defford, SO/92.43, Worcs. (v.c. 37), Sept. 1992, N. Waddingham. NCR.
- Bidens frondosa* (var. *frondosa*) forma *anomola** (Beggarticks). Few plants found on the bank of the River Severn south of Stourport on Severn by a factory estate, (the fruit bristles have forward directed barbs), SO/82.69, Worcs. (v.c. 37), Sept. 1995, refound Oct. 1997, A.J. Underhill & M. Poulton, det. E.J. Clement.
- Carthamus tinctorius* (Safflower). Esholt Sewage Works tip, SE/17.39, Mid-W. Yorks. (v.c. 64), P.P. Abbott, 31/8/97.
- Cenchrus longispinus* (Long-spined Sandbur). Albert Dock, Hull, TA/09.27, S.E. Yorks. (v.c. 61), S.W. Yorks. (v.c. 63), G.T.D. Wilmore, 12/10/97.
- Cistus salvifolius* (Sage-leaved Rock-rose). Seeding freely around upper gardens, Tresco, SV/89.14, Scilly (v.c. 1b), Oct. 1995, April & Oct. 1996, A.J. Underhill, det. E.J. Clement. A watch should be kept for this plant appearing outside the gardens.
- Citrullus lanatus* (Water Melon). Esholt Sewage Works tip, SE/17.39, Mid-W. Yorks. (v.c. 64), P.P. Abbott, 13/8/97.
- Cleretum bellidiforme* (Livingstone-daisy). Growing in garden tip area in dunes, Tresco, SV/89.14, Scilly (v.c. 1b), April 1996, A.J. Underhill & Dr C.I. Pogson, det. E.J. Clement. Also *Narcissus papyraceus* close by.
- Cucurbita pepo* (Marrow). Esholt Sewage Works tip, SE/17.39, Mid-W. Yorks. (v.c. 64), B.A. Tregale, 12/10/96, P.P. Abbott, 31/8/97.
- Datura ferox* (Angels'-trumpets). Uninvited in a garden planter, Withernsea, TA/3.2, S.E. Yorks. (v.c. 61), P.J. Cook, 1995.
- Eccremocarpus scaber* (Chilean Glory-flower). Canal towpath at Alvechurch, SP/01.72, Worcs. (v.c. 37), July 1994, R. Maskew & W.A. Thompson. NCR.
- Elaeagnus × reflexa* Morr. & Decne.* (Climbing Oleaster). Scandent and rooting in a hedge near Durgan, SW/7.2, W. Cornwall (v.c. 1), 8/7/1981, J.R. Palmer. (I have grown a small piece from there for 16 years. An aggressive, rapidly growing shrub which arches to over 3 m and will climb higher in other shrubs and trees. All its energy goes into growth; I have never seen flowers or fruit. Thorns few). Nearby at Durgan was a 4 cm seedling of *Pittosporum tobira* (Kohuhu) with no parent in the vicinity.
- Eragrostis cilianensis* (Stink-grass). Albert Dock, Hull, TA/09.27, S.E. Yorks. (v.c. 61); and Goole Docks, SE/74.22, S.W. Yorks. (v.c. 63), both G.T.D. Wilmore, 12/10/97.
- Erodium cicutarium* (Eastern Stork's-bill). Rothwell Haigh, SE/334.285, and Castlehead Lane, Lingwellgate, SE/324258, both S.W. Yorks. (v.c. 63), J. Martin. 1997; Esholt Sewage Works tip, SE/17.39, Mid-W. Yorks. (v.c. 64), P.P. Abbott, 31/8/97.
- Escallonia rubra* (Ruiz & Pav.) Pers. var. *rubra**. Seeding in Happy Valley gardens, Great Orme, SH/78.83, Caerns. (v.c. 49), Aug. 1997, A.J. Underhill, det. E.J. Clement. Likely to spread outside.
- Euphorbia × pseudolucida**. Three flowering spikes in an unkempt horse pasture by the River Stour at Lye, SO/92.84, Worcs. (v.c. 37), W.A. Thompson, det. A.R. Radcliffe-Smith. NCR.

- Euphorbia waldsteinii* (Waldstein's Spurge). Well established by a bridle-track at Lea Castle near Kidderminster, SO/83.79, Worcs. (v.c. 37), May 1993, W.A. Thompson & B. Westwood, det. A.R. Radcliffe-Smith. NCR.
- Guizotia abyssinica* (Niger). Appeared in newly cleared ground with *Iva xanthifolia* and many other aliens, in Sandwell valley reserve by the R.S.P.B. centre, SP/03.92, Staffs. (v.c. 39), originally found by M. Poulton & A.J. Underhill, Sept./Oct. 1996, det. E.J. Clement.
- Helichrysum felinum* Less.* Seeding freely in upper gardens, Tresco, SV/89.14, Scilly (v.c. 1b), Oct. 1995, April & Oct. 1996, A.J. Underhill, det. E.J. Clement. A watch should be kept for this plant appearing outside the gardens.
- Hoheria populnea* (New Zealand Mallow). One seedling under planted trees in Penlee park, Penzance, SW/46.30, W Cornwall (v.c. 1), Oct. 1996, A.J. Underhill, det. E.J. Clement.
- Impatiens walleriana* Hook.F.* (Busy-lizzie). Seeding around Birmingham Children's Hospital, Birmingham, SP/05.86, Warks. (v.c. 38), August 1997, M. Poulton & A.J. Underhill.
- Jasminum polyanthum* Franck.* Spreading in upper gardens, Tresco, SV/89.14, Scilly (v.c. 1b), Oct. 1995, April & Oct. 1996, A.J. Underhill, det. E.J. Clement. A watch should be kept for this plant appearing outside the gardens.
- Lavatera olbia* var. *roasea* (Hyeres Tree-mallow). Good-sized patch by footpath near Hartley, TQ/60.67, W. Kent (v.c. 16), 8/8/1997, J.R. Palmer.
- Lavatera trimestris* (Royal Mallow). Canal bank, Middlewich, SJ/72.63, Cheshire (v.c. 58), J.H. Clarke, 1997.
- Linum grandiflorum* 'Rubrum' (Crimson Flax). Seeding around Birmingham Children's Hospital, Birmingham, SP/05.86, Warks. (v.c. 38), August 1997, M. Poulton & A.J. Underhill, det. E.J. Clement.
- Liriope muscari* (Decne.) L.H. Bailey*. Seemingly spreading through scrub from small planted patch by roadside, NW of Coombe Martin, SS/25.39, N Devon (v.c. 4). Oct. 1997, A.J. Underhill, det. E.J. Clement.
- Lonicera maackii* (Rupr.) Maxim.* A large tree or shrub, in small copse SW of railway bridge, Langport, ST/42.27, S. Somerset (v.c. 5), March & May 1997, M. Poulton & A.J. Underhill, det. E.J. Clement.
- Metrosideros excelsa* Sol. ex Gaertn.* (Common Pohutaka). Established in open areas in woodland above gardens on Tresco, SV/89.14, Scilly (v.c. 1b), Oct. 1995, April & Oct. 1996, A.J. Underhill, det. E.J. Clement.
- Myosotis sylvatica* 'Victoria Rose' (Wood Forget-me-not). Well established on steps by the main lawn, Westbourne gardens, Edgbaston, Birmingham, SP/05.83, Warks. (v.c. 38), April 1997, M. Poulton & A.J. Underhill, det. E.J. Clement.
- Nonea lutea* (Yellow Nonea). Known for three years by toilets in Sudbury, TL/87.41, W. Suffolk (v.c. 26), March 1997, A.J. Underhill, det. E.J. Clement. Originally found by T. Butcher.
- Olearia* × *haastii* (Daisy-bush). Found in derelict churchyard in Wednesbury, SO/98.94, Staffs. (v.c. 39), June 1997, A.J. Underhill, det. E.J. Clement. With other alien shrubs in this completely overgrown churchyard.
- Olearia ramulosa* (Labill.) Benth.* Established in open areas in woodland above gardens on Tresco, SV/89.14, Scilly (v.c. 1b), Oct. 1995, April & Oct. 1996, A.J. Underhill, det. E.J. Clement.
- Olearia rani* (A.Cunn.) Druce*. Established in open areas in woodland above gardens on Tresco, SV/89.14, Scilly (v.c. 1b), Oct. 1995, April & Oct. 1996, A.J. Underhill, det. E.J. Clement.
- Panicum capillare* (Witch-grass). Goole Docks, SE/74.22, S.W. Yorks. (v.c. 63), G.T.D. Wilmore, 12/10/97.
- Panicum capillare* (Witch-grass). Appeared in newly cleared ground with *Iva xanthifolia* and many other aliens, in Sandwell valley reserve by the R.S.P.B. centre, SP/03.92, Staffs. (v.c. 39), originally found by M. Poulton & A.J. Underhill, Sept./Oct. 1996, det. E.J. Clement.
- Panicum miliaceum* (Common Millet). Albert Dock, Hull, TA/09.27, S.E. Yorks. (v.c. 61); and Goole Docks, SE/74.22, S.W. Yorks. (v.c. 63), both G.T.D. Wilmore, 12/10/97; Esholt Sewage Works tip, SE/17.39, Mid-W. Yorks. (v.c. 64), P.P. Abbott, 31/8/97.

- Papaver rhoeas* var. *strigosum* (hirsute form). Largish patch on roadside verge at Burrowhill, SU/97.63, Surrey (v.c. 17), May 1997, A.J. Underhill, det. E.J. Clement.
- Persicaria (Tovara) virginiana*. P.F. Whitehead, September 1997. I take this to be the identity of a very distinctive foliage (small green leaf traversed by brown band) plant found in urban contexts (pavement cracks) in Monmouth (v.c. 35) and Pershore (v.c. 37), and gravel driveway, Little Comberton, SO/9.4, Worcs. (v.c. 37), 16/11/97, but I can find few or no references to it in UK.
- Persicaria capitata* (Pink-headed Knotweed). Some 60 plants (seeded from the previous year's hanging baskets) at the foot of walls, etc., Worcester Street, Stourbridge, SO/90.84, Worcs. (v.c. 37), Oct. 1995, B. Westwood. NCR. Pavement, Altrincham, SJ/7687, Cheshire (v.c. 58), A.R. Franks, 1997.
- Petunia* 'Surfinia series'*. Seeding around Birmingham Children's Hospital, Birmingham, SP/05.86, Warks. (v.c. 38), August 1997, M. Poulton & A.J. Underhill.
- Petunia* \times *hybrida* (Petunia). Seeding around Birmingham Children's Hospital, Birmingham, SP/05.86, Warks. (v.c. 38), August 1997, M. Poulton & A.J. Underhill.
- Philadelphus* \times *lemoinei* Lemoine*. Found in derelict churchyard in Wednesbury, SO/98.94, Staffs. (v.c. 39), June 1997, A.J. Underhill, det. E.J. Clement. With other alien shrubs in this completely overgrown churchyard.
- Physalis peruviana* (Cape-gooseberry). Esholt Sewage Works tip, SE/17.39, Mid-W. Yorks. (v.c. 64), P.P. Abbott, 23/6/97.
- Physostegia virginiana* (Obedient-plant). Found in waste area in skip yard with many other aliens, Washwood heath, Birmingham, SP/10.88, Warks. (v.c. 38), M. Poulton & A.J. Underhill, det. E.J. Clement.
- Plectostachys serpyllifolia* (A.Berger) Hilliard & B.L.Burt* (sometimes doubly misspelt as *Plectostachys serpyllifolia*). Originally planted in Newman battery, St Mary's, but now spreading over a largish area, SV/89.10, Scilly (v.c. 1b), Oct. 1995 & 1996, A.J. Underhill, det. E.J. Clement.
- Potentilla supina*. Little Comberton, SO/9.4, Worcs. (v.c. 37) P.F. Whitehead, 1997. Persistent on cultivated ground for 17 years since seed introduced from Lena river-valley, East Siberia.
- Psoralea pinnata* L.*. Established in open areas in woodland above gardens on Tresco, SV/89.14, Scilly (v.c. 1b), Oct. 1995, April & Oct. 1996, A.J. Underhill, det. E.J. Clement.
- Rosa*. In July 1997 a number of roses were investigated, relics for more than 30 years, in chalk scrub near Darenth Wood, TQ/5.7, W. Kent (v.c. 16), and the more interesting ones were: *Rosa* \times *noisetiana* (Noisette Rose), *R. banksiae* R.Br. in Ait.f.* (Banksian Rose), *R. chinensis* (China Rose).
- Sedum ewersii* Ledeb.* Established on the churchyard wall in Fairfield, Buxton, with *Saxifraga cuneifolia* (Lesser Londonpride), SK/06.74, Derbys. (v.c. 57), Sept. 1996, A.J. Underhill, det. E.J. Clement.
- Senecio petasitis* (Sims) DC.* Established in open areas in woodland above gardens on Tresco, SV/89.14, Scilly (v.c. 1b), Oct. 1995, April & Oct. 1996, A.J. Underhill, det. E.J. Clement.
- Setaria italica* (Foxtail Bristle-grass). Appeared in newly cleared ground with *Iva xanthifolia* and many other aliens, in Sandwell valley reserve by the R.S.P.B. centre, SP/03.92, Staffs. (v.c. 39), originally found by M. Poulton & A.J. Underhill, Sept./Oct. 1996, det. E.J. Clement.
- Setaria pumila* (Yellow Bristle-grass). Appeared in newly cleared ground with *Iva xanthifolia* and many other aliens, in Sandwell valley reserve by the R.S.P.B. centre, SP/03.92, Staffs. (v.c. 39), originally found by M. Poulton & A.J. Underhill, Sept./Oct. 1996, det. E.J. Clement. Albert Dock, Hull, TA/09.27, S.E. Yorks. (v.c. 61); and Goole Docks, SE/74.22, S.W. Yorks. (v.c. 63), both G.T.D. Wilmore, 12/10/97; Esholt Sewage Works tip, SE/17.39, Mid-W. Yorks. (v.c. 64), P.P. Abbott, 31/8/97.
- Smilacina stellata* (Star-flowered Lily-of-the-valley). Established over 18 m of stream bank in Westbourne gardens, Edgbaston, Birmingham, SP/05.83, Warks. (v.c. 38), April 1997, M. Poulton & A.J. Underhill, det. E.J. Clement.
- Sparrmannia africana* L.f.* (African hemp). Established in open areas in woodland above gardens on Tresco, SV/89.14, Scilly (v.c. 1b), Oct. 1995, April & Oct. 1996, A.J. Underhill, det. E.J. Clement.

Spiraea nipponica Maxim. 'Rotundifolia'*. Still adjacent to path up from toilets, Sand point, ST/33.66, (N. Somerset (v.c. 6), May 1994 & April 1997, A.J. Underhill, det. E.J. Clement. Known here for some years.

Sutera 'Snowflake'*. Seeded onto tarmac car park from last year's window box planting at the Birmingham Children's Hospital, Birmingham, SP/05.86, Warks. (v.c. 38), August 1997, M. Poulton & A.J. Underhill, det. E.J. Clement. Apparently a selection from *S. cordata* (Thunb.) Kuntze, but usually sold (wrongly) as *Bacopa* 'Snowflake'.

Tetragonia tetragonioides (New Zealand Spinach). Garden weed, Withernsea, TA/3.2, S.E. Yorks. (v.c. 61), P.J. Cook, 1996.

Trachyspermum ammi (Ajowan). Three plants at the foot of a wall in the centre of Oldbury, SO/99.89, Worcs. (v.c. 37), July 1993, R. Maskew & W.A. Thompson. NCR

Trifolium angustifolium (Narrow Clover). Scattered throughout an extensive area of sandy set-aside at Lea Castle near Kidderminster, SO/85.78, Worcs. (v.c. 37), June 1992, B. Westwood.

Trifolium hirtum (Rose Clover). Single plant in sandy set-aside at Lea Castle near Kidderminster, SO/85.78, Worcs. (v.c. 37), June 1993, B. Westwood. NCR.

Ugni molinae (Chilean Guava). Established in open areas in woodland above gardens on Tresco, SV/89.14, Scilly (v.c. 1b), Oct. 1995, April & Oct. 1996, A.J. Underhill, det. E.J. Clement.

Verbascum phoeniceum (Purple Mullein). Several plants in the Tank Quarry at Malvern, SO/76.47, Worcs. (v.c. 37), Sept. 1995, K. Barnett. NCR.

LAVATERA OLBIA × L. THURINGIACA DOES OCCUR IN BRITAIN

Stace's *New Flora of the British Isles*, ed. 2: 214 vaguely suggests that the hybrid between *Lavatera olbia* L. and *L. thuringiaca* L. 'might' occur wild in Britain.

Unfortunately the two species are very similar morphologically and the key in *Flora Europaea* 2: 251 relies on such niceties as whether the fruiting pedicel is more than 1.3 cm in fruit (*L. thuringiaca*) or not (*L. olbia*).

The very common plant in Hampshire gardens that I well know is always totally sterile; it is a shrub often vigorously branching up to 2 m tall and with a trunk 6 cm in diameter. Our winters tend to prune it, or even kill it, but it readily grows again from any cutting thrust into the soil. It flowers continuously from midsummer to late autumn and I have no doubt that it is *L. olbia* × *L. thuringiaca* and this is where such popular plants as *L.* 'Barnsley' and *L.* 'Rosea' belong (assuming that I was supplied with correctly named cultivars!).

Flora Europaea claims that *L. thuringiaca* is always a shrub, whereas *L. olbia* is always an herbaceous perennial. I have no reason to doubt this, but other literature, e.g. RHS's *The Plant Finder* (a most useful and dependable publication) suggests doubt and modifies this fact with the word 'usually'. Stace appears to agree saying *L. thuringiaca* is a 'perennial (± shrub)'; in ed. 1 the description is identical but the plant name was *L. olbia*!

Wild plants are apparently not difficult to find! A 10-minute walk from my home to Gilkicker Point (S. Hants), GR. SZ/607.975, reveals three scattered plants: one on the steep earth embankment of Gilkicker Fort (where there are no other plant introductions), another occurs alongside the trackway to the Fort, and a third is on scrubby waste ground to the west. A BSBI member (who will remain nameless!) saw the first plant and happily scribbled down *L. arborea* before I raised an eyebrow...

Jack Oliver has expressed agreement with me, but with reticence. He found two plants growing in a rural spot between a road and field side, near Bottlesford (Wilts.) at GR. SU/105.593. They were c. 1.75 m high, flowering from July to October. A voucher, collected 5 Oct. 1997, is now in **Herb. EJC** – it is quite sterile, the flowers mostly soon snapping off just below the calyx leaving the persistent pedicel.

It must not be assumed that all records pertain to this hybrid: it is possible that both parent species have self-sown from a few gardens and those sown in wildflower mixes are especially likely to be pure species.

May I, finally, plea for some kind, Latin-speaking botanist to provide us with a valid and legitimate nothoepithet for this deservedly popular shrub – or maybe one already exists in some obscure publication?

ERIC CLEMENT, 54 Anglesey Road, Alverstoke, Gosport, Hants PO12 2EH

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### ***ADIANTUM RADDIANUM* Presl IN LONDON**

A well established clump of a maidenhair fern, with c. 35 fronds, was seen growing on a sheltered house wall in Cambridge Street, Pimlico, in September 1997. Upon examination this proved to be *Adiantum raddianum* Presl, an alien not previously reported as an escape and not the native *A. capillus-veneris* which has become established in similar situations elsewhere in the British Isles. The South American *A. raddianum* is widely grown as a houseplant and has previously been reported as established in Europe in Portugal and the Azores. It can be separated from *A. capillus-veneris* by the shape of the pseudo-indusium, reniform around the leaf lobe sinus, as against oblong between the sinuses in the native species (see fig. on front cover). *A. raddianum* is usually a larger plant with more divided (to 4-pinnate) fronds. It is said to be less frost tolerant and this may account for its rarity as an escape in N. Europe, it may however have been overlooked. Specimens have been deposited at **BM**.

Unfortunately, within a month of the plant's discovery, to my dismay the house was re-pointed and painted, leaving no trace of the fern!

FRED J. RUMSEY, Dept. of Botany, Natural History Museum, Cromwell Road, London, SW7 5BD

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OENOTHERA* SECTION *OENOTHERA* SUBSECTION *OENOTHERA

In a comprehensive revision of *Oenothera* subsection *Oenothera* (formerly in subgenus *Oenothera*), 'representing the most complex species group in the Onagraceae' (Dietrich, Wagner and Raven 1997; see also Dietrich 1991), 13 species of Evening-primroses are recognised in place of 388 validly published specific and infraspecific names. The 'approach aggregates the essentially clonal . . . populations (or microspecies) into species . . . to reflect the evolutionary history of the group and to provide a reliable means for identification' (p. 1). 'The species of *Oenothera* subsect. *Oenothera* . . . are indigenous only to North America' (p. 3).

As a result of hybridisation, numerous new phenotypes have originated. The 'approach of giving formal names to every different true-breeding phenotype discovered' has been used in both Europe and North America. However, 'If this approach were taken to its extreme, hundreds or perhaps thousands of specific names would result' leading to a 'chaotic situation' (pp. 16-17).

The revision is described as 'a comprehensive attempt to include all of the many described species, especially from Europe, into a single taxonomic system with a uniform species concept' (p. 32). The authors claim that in Europe, 'Rostanski's treatment is based on a species concept that splits the species . . . into many microspecies' and is one that 'does not convincingly reflect the natural relationships of the species of subsect. *Oenothera*'. 'Overall', his 'classification is unnatural and uninformative, and we urge its abandonment.' (p. 35; see also K. Rostanski 1982).

As treated in the revision, '*O. biennis* consists of literally hundreds of minutely differing phenotypic races that are true-breeding, and recognising any in the taxonomic system would lead to a never-ending description of them.' Also included are 'the many phenotypes, including many of those in Europe, that have arisen subsequently through hybridization with other species of subsect. *Oenothera*

as long as those hybrids' satisfy the genetic criteria (p. 104). *Oenothera glazioviana* is accorded specific status, despite its unusual origin as a stabilised hybrid in Europe, because it has very distinctive morphological features, and has, partly through cultivation, become widely spread around the world' (p.111). The hybrid is designated *O. biennis* \times *O. glazioviana* 'without regard to the direction of the cross': hybrids are 'usually morphologically intermediate to the parents. Hybrids that are very close to one of the parental phenotypes are usually included under the taxon that they most closely resemble' (p.132).

Two of the 13 'collective' species and their hybrid are widespread in Britain: *O. biennis* L. (Common Evening-primrose) (including *O. cambrica* (Small-flowered Evening-primrose) and 67 other named microspecies (pp. 93-107)); *O. glazioviana* Micheli in Martius (Large-flowered Evening-primrose) (including 40 named microspecies (pp. 107-113)); and *O. biennis* \times *O. glazioviana* (including *O. \times fallax*, *O. \times britannica* and nine other named hybrids (pp. 133-134)). *O. fallax* (the microspecies) is not mentioned. *O. stricta* (Fragrant Evening-primrose) is one of 39 species in subsect. *Munzia*.

Comment

The Revision describes *O. biennis* as 'Self-compatible, usually autogamous' (p. 100). British *O. biennis* (the microspecies) is therefore exceptional in that it shows no significant self-pollination: it is the most frequent progenitor in most if not all of the countrywide hybrid swarms but 'pure' plants are seldom if ever found in them. *O. cambrica* is more persistent: up to 20% apparently 'pure' plants were found in one colony. *O. glazioviana* ('self-compatible, regularly outcrossing' (p.111)) also seldom if ever survives in hybrid swarms: its hybrids (most if not all back-crosses) are locally abundant but in fewer swarms than *O. biennis* and average, perhaps, one third of the present subsect. *Oenothera* population. In Britain, therefore, promiscuous hybridisation has effectively obscured the 'essentially clonal' nature of subsect. *Oenothera* (Bowra 1996/7).

If the revision is adopted in Britain, both of the true-breeding microspecies, *O. biennis* and *O. cambrica* and their many very varied hybrids (all potential true-breeding microspecies) would be included in a variable *O. biennis* that would be countrywide with large colonies mostly in South and West Wales and Lancashire. In the continued absence of related microspecies, *O. glazioviana* would remain morphologically unchanged and, if isolated, would continue to breed true. As at present, it would occur widely mostly as occasional recent garden escapes and also as a progenitor in many hybrid swarms. However, in contrast to the present, included in most swarms would probably be a number of plants 'very close to one of the parental phenotypes' that 'are usually included under the taxon that they most closely resemble'. Several distinctive differences in character would usually enable hybrids to be easily identified but, because of the low visual impact of some characters, the dividing line between hybrids and species is likely to be unevenly interpreted.

There is no doubt that a single taxonomic system would benefit Britain, if only to assist in the identification of casuals. There is also no doubt that the European taxonomy does not conveniently accommodate this very unusual North America-derived group of plants: there is a long history of confusion among British botanists that persists even among experts. It should now give way to a logical new approach that has taken into account the special difficulties.

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FASCICULARIA (BROMELIACEAE) ESTABLISHED IN NW EUROPE

Fascicularia are rosette-forming plants with stiff, spine-margined leaves, native in Chile – they look like the tops of pineapples, and indeed belong to the pineapple family, Bromeliaceae. When mature, a rosette will produce a central, sessile, almost flat-topped inflorescence of striking pale to dark blue flowers (similar plants with globular heads of pure pink flowers belong to the related genus *Ochagavia*). At least one taxon, generally named *F. pitcairniifolia* (but see below*), is established on the Isles of Scilly, and in Cornwall, Guernsey and western France.

The purpose of this note is to alert BSBI members to a new treatment of *Fascicularia* (*The new plantsman* 4 (December 1997): 232-239) in which we have attempted to establish how many different *Fascicularia* are growing in Europe, and their correct names. With other colleagues we are now preparing a comprehensive revision of the genus for *Flora de Chile*.

Very briefly, having studied wild-collected herbarium specimens and living plants (from a variety of sources, grown in the Palmengarten, Frankfurt, and at the National Botanic Gardens, Glasnevin), backed up with studies of DNA (RADP patterns), we consider that *Fascicularia* is a monotypic genus, *F. bicolor* being the only species. Two of the five species of *Fascicularia* recognised by earlier workers are phantoms, and the epithets 'litoralis' and 'pitcairniifolia' should no longer be used.

While there is just one species, our studies indicate that there are two distinct groups of plants in the wild and in gardens. These differ consistently in the relative sizes and proportions of their rosette leaves, and this consistent pattern of differences in leaf morphology and anatomy permits subdivision of *F. bicolor* into two subspecies. Other morphological characters, both floral and vegetative, have been investigated by us, but none allows clear separation of these two taxa – they may prove useful, however, in distinguishing and describing cultivated clones but that must await further observations on living plants.

Those plants, now properly named *F. bicolor* subsp. *bicolor*, with broad leaves always have a substantially thicker layer of water-storing tissue, composed of colourless, translucent cells without chloroplasts, on the adaxial (inner, upper) surface of each leaf; this layer can be seen with the naked eye when a leaf is sliced with a sharp blade (scalpel or razor blade). Each leaf is thickened, almost succulent, especially near the base, the adaxial surface is flat or slightly convex and the margins do not recurve.

Those plants, now properly named *F. bicolor* subsp. *canaliculata*, with slender leaves do not have such a large accumulation of water-storing cells, and the leaf cross-section is distinctly concave, especially towards the middle.

- a. Leaves succulent especially towards base, adaxial (upper) surface flat, margins not recurved, blade (1.0–)1.2–1.8(–2.2)cm wide.

F. bicolor subsp. *bicolor*

- b. Leaves not markedly succulent towards base, adaxial (upper) surface distinctly channelled especially towards the middle, margins distinctly recurving, blade (0.6)0.8–1.1cm wide.

F. bicolor subsp. *canaliculata*

* While it is unwise to generalise about names, because there is no consistency in the naming of *Fascicularia* in gardens and nurseries in Ireland, Britain or Germany, it is probable that cultivated and established plants formerly named 'pitcairniifolia' belong to *F. bicolor* subsp. *bicolor*. We suggest that plants should be carefully checked, using the key above, to determine their correct names.

We will be pleased to examine fresh specimens (2 or 3 mature leaves carefully detached near their bases from a fully-grown rosette) for anyone who is doubtful about plants established in their region, or grown in gardens.

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## MORE ROADSIDE *BASSIA SCOPARIA*

Last autumn, I noticed a plant on the central reservation of the Cheadle sliproad from the M63 which I thought looked like *Polygonum rivivagum* (Cornfield Knotgrass). This is not as stupid as it might seem, as it has appeared on disturbed road-verges twice in recent years (conf. J.R. Akeroyd). However, late one rainy evening, there was no traffic and I was able to leap out and grab it! Of course, you will have guessed that it was *Bassia scoparia* (Summer Cypress) complete with greenfly. My conscience was salved when the verge was cut a few days later. It seems that anything Yorkshire can do we can at least have a feeble attempt to emulate. See *BSBI News* 74 and 77. Whether it occurs elsewhere on faster sections of the local motorway system will not be so easy to determine, but I aim to avoid the obituary column for now!

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## *BASSIA SCOPARIA* IN V.C.C. 28, 53 AND 54 A POSSIBLE CONNECTION WITH EAST COAST PORTS

My call for records of *Bassia scoparia* (Summer-cypress) occurring elsewhere in the UK (*BSBI News* 74: 48-49) has produced a response only from Mr Ray Eades (*BSBI News* 77: 52-53), which indicates that this phenomenon may not be confined to East and South Yorkshire and North Lincolnshire. My own travels in the latter half of 1997 were limited to visits to Norwich and central Suffolk via Lincolnshire utilising the A15, A16, A17, A18, A47, A134, A1066 and A140 through five vice-counties.

I did not see any *B. scoparia* on the A15 route from the Humber Bridge via Lincoln or on the A18 heading in the direction of Louth. However, I have seen one plant at a roundabout on the A16 south of Louth (TF/3.8), a few near Partney (TF/4.6) and several plants, mixed with *Atriplex littoralis* (Grass-leaved Orache), south of Boston Docks (TF/3.4). Several plants were also seen at the A16/A17 roundabout at Sutterton and then many plants were found at Sutton Bridge (TF/4.2), especially on the Norfolk side of the bridge in TF/5.1. The various fly-overs and roundabouts near West Lynn were also seen to have *B. scoparia*, usually in scattered ones and twos. A large population surrounding a roundabout on the A140/A143 Scole by-passes at Stuston, Suffolk (TM/1.7) requires confirmation, as my attention to detail was rather rudely disturbed by someone honking their horn and gesticulating at me – he was adamant that there were only two plants!

As Ray mentions in his report of possible sightings near London, East Anglian plants were considerably smaller than those we see here in East and South Yorkshire and may be only half grown. The juxta-London plants could have travelled westward from Ipswich or Felixtowe via the A12 and M25 – are there any records for the species at or near these ports? Is *B. scoparia* only associated with East Coast ports, or can someone tell us a different story?

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## FOXTAIL BARLEY – A PREDILECTION FOR ROUNDABOUTS? – 2

With reference to the note in *BSBI News* 77: 29, one factor which is likely to induce a predilection for roundabouts in Foxtail Barley (*Hordeum jubatum*) is the relatively high level of salt applied by the road authorities. I have seen clouds of dust dense enough to photograph on a local roundabout on the A45, and organoleptic testing showed this to consist largely of salt. (In plain English, I tasted it!) This was right beside a local colony of Reflexed Saltmarsh-grass (*Puccinellia distans*).

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## ROUNABOUT FOXTAIL BARLEY – A CASE OF SALT DISPERSAL RATHER THAN SEED DISPERSAL PERHAPS?

Foxtail Barley (*Hordeum jubatum*) is introduced onto the verges of recently constructed bypasses and city ring-roads as a component of grass seed mixes. This species, from North America, has a taste for salt.

I think that the *H. jubatum* component of the grass seed mix very soon fizzles out in the absence of salt, as can be expected on the freshly sown verges of new carriageways where year-upon-year salt loading has not yet occurred. At roundabouts, which form the confluence of several trunk roads, high salt loading is achieved much more quickly than on the new carriageway verge because salt-spreaders serving the different carriageways use the one roundabout. A roundabout serving two intersecting single carriageway trunk roads could experience up to eight passes of a salt spreader for each carriageway application. Vehicles using the roundabout will tend to drag salt-laden spray for a short distance along the nearside verge of the exit.

In 1994 I used the Riccarton interchange south of Kilmarnock (NS/44.36) for several days, driving backwards and forwards along the A71. I noted that *H. jubatum* occurred only on the nearside verge of the carriageway leaving the roundabout, but not on the verge entering the roundabout. Since 1994 I have frequently used the north east quadrant of the York outer ring road in both directions. This is liberally sprinkled with roundabouts and the slow pace of the traffic has enabled a similar observation, i.e. that *H. jubatum* tends to occupy only the nearside verge of the roundabout and a strip of verge on the nearside of the exit carriageway.

I believe the predilection of *H. jubatum* for roundabouts is an edaphic rather than a seed dispersal phenomenon.

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## A TALE OF TWO BIDENS

In 1988-9, Dave Tinston was surprised to find *Bidens frondosa* growing quite extensively by the Macclesfield Canal (MC) in the Congleton area of Cheshire (SJ/8.5 & 8.6). Last year (1996), I found a small colony in SJ/6.5, 20 km away by the Shropshire Union Canal (Middlewich Branch) (SUM), and in 1997 more was seen in SJ/6.5 by the Shropshire Union (Llangollen Branch) (SUL). This made me realise that it was necessary to assess its spread, which lead to many miles of towpath plodding, Cheshire being well endowed with canals. On the first day, I found it in 5 new hectares!

It was originally thought that Beggarticks had reached us via Staffs on the Trent & Mersey Canal (T&M), it being fairly common in the Birmingham area. However, although it peters out northward at the 12 Bosley locks (SJ/9.6) which are a major obstacle to water-born spread, the flow of the canal being southward, I found that it was common all down MC to where it joins T&M, but in T&M, there are no plants south to the Harecastle Tunnel and only scattered plants westward with the flow of the water. Brian Fowler tells me *B. frondosa* only occurs in south Staffs, so it seems probable that it reached Congleton by other means than floating on water and has spread south and now west from there. I saw one longboat, registered in Watford, that had the *Bidens* growing in the rope fender at the stern, so perhaps it hitched a long ride or maybe a fading bunch of wild flowers was discarded there. Mooring ropes could also carry its barbed fruits.

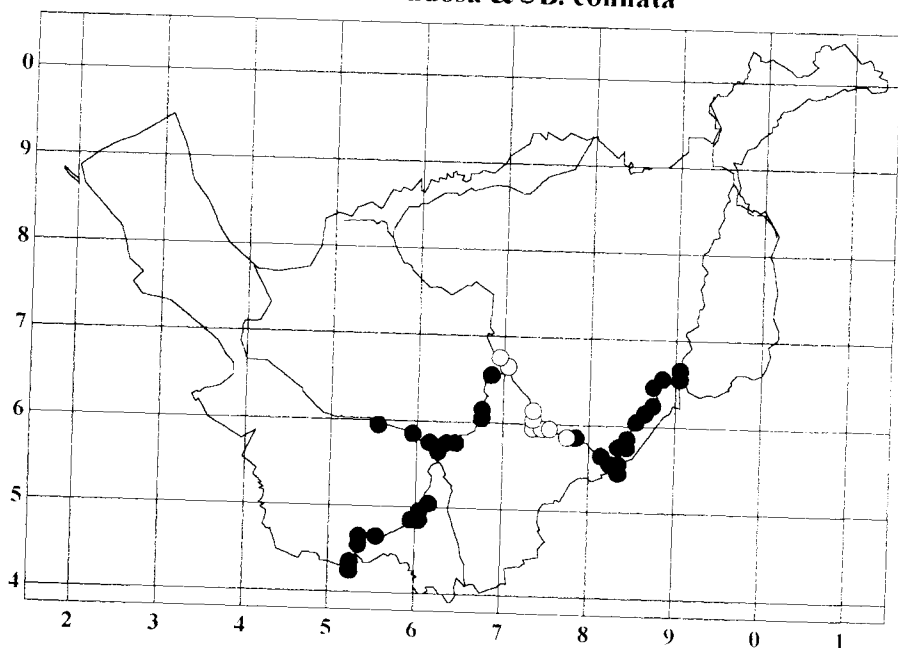
In SUL, it is especially common round Wrenbury (SJ/5.4 & 6.4) but occurs in diminishing numbers, mainly at locks, southward (against the flow) as far as Grindley Brook locks just into Salop. There are no plants southward on the SU Main Line, although at least 54 plants occur in Hurleston Locks where SUL joins SU, and only scattered plants northward with the flow to Beeston Stone Lock (SJ/5.5) and along SUM to Middlewich, which suggests a second 'epicentre' near Wrenbury.

During the survey, I found a *Bidens* which was common south and west of Sandbach (SJ/6.6) on T&M and which had non-tripartite leaves but was clearly not *B. cernua*. Study at home revealed it to be *B. connata*! confirmed as var. *anomala* by Eric Clement which is the form found round the London

canals. This is heading north to Middlewich and has spread east to Hassall Green in SJ/7.5 where two upward locks have so far contained it. *B. frondosa* has reached about 400 m to the east and I await their meeting with interest. The situation was further complicated by the discovery of *B. tripartita* var. *integra* in Audlem Locks on SU whence it has arrived from Salop (comm. Julie Clarke).

In 1978, Rodney Burton (*BSBI News* 18) warned us to look for *B. connata* by canals, but it has taken nearly twenty years for his advice to bear fruit in Cheshire! I know v.c. 58 is not unique, so I am sure it is worth checking all *Bidens* by canals for these aliens. *B. frondosa* looks like *B. tripartita*, but the clearly stalked leaves with the middle lobe also clearly stalked and the more numerous, neater teeth distinguish it. It can, but need not, have five leaflets. *B. tripartita* achenes have backwardly directed bristles on the body and barbs, whereas those on the body of *B. frondosa* are forwardly directed. *B. connata* looks like *B. tripartita* var. *integra* but the achenes are covered with warts and all bristles are forwardly directed. *B. cernua* has sessile, broad-based leaves and larger, nodding flower heads. I tried binoculars to identify plants growing on the opposite canal bank, but was dismayed when what seemed certain *B. cernua* proved to be *B. frondosa* when I managed to reach it. Unless the lobed leaves are clearly seen, fruits are essential. *B. frondosa* seems to prefer muddy edges, cracked stonework and crevices in locks; indeed, locks are the best places to look to check-out a stretch of canal. *B. connata* seems to prefer stonework cracks. There is an excellent illustration of it by Hilli Thompson in *BSBI News* 37. The native species seem to have been all but ousted from canals by their aggressive American relatives and the increased traffic, but they do survive occasionally.

### ● *Bidens frondosa* & ○ *B. connata*



## NOTICES (BSBI)

### COURSES ON BIOBASE, RECORDER AND DMAP

There are still places on a series of courses which can be studied individually or which can count towards the Biological Recording and Species Identification Certificate run jointly by the Field Studies Council, University of Birmingham and the BSBI.

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- Introduction to DMap and Recorder 22nd - 25th May at Preston Montford £135 (Alex Lockton)
- Tackling DMap and Recorder (experienced) 19th - 21st October at Preston Montford £135 (Alex Lockton)
- Biological recording with Biobase 29th - 31st May at Preston Montford £115 (Mike Thurner)

All three courses are residential and costs are all inclusive. There are forty-four individual courses within the certificate, most of which involve weekends on species identification.

For further details, call Sarah Whild on 01743 343789 or email to [sjw@whild.icom-web.com](mailto:sjw@whild.icom-web.com) or write to her at the address below.

SARAH WHILD (Academic Adviser in Ecology), School of Continuing Studies, University of Birmingham, Edgbaston, Birmingham B15 2TT.

### BSBI POSTCARDS

A reminder that these are still available – 16 superb different postcards of plants from Britain and Ireland produced on high quality card, and promoting the Society.

Please send £3.00 for one set (incl. p&p), or £5.75 for 2 sets to (and cheque payable to):

ANITA PEARMAN, The Old Rectory, Frome St Quintin, Dorchester, Dorset, DT2 0HF

## NOTICES (NON BSBI)

### COUNTRYSIDE PLANNING AND MANAGEMENT (CPM) ON THE MOVE

CPM has outgrown the buildings at Knights Gate and have returned to Coln St Aldwyns, Cirencester, Glos., where CPM started. Phone and fax numbers remain unchanged.

CPM services from Akeman Barns will continue to cover all aspects of environmental planning for land, development and management.

If you would like any further information on how our work can assist you or our solution oriented approach to project involvement, then please let us know.

ANN HEYWOOD & MARTIN LEAY, CPM, Akeman Barns, Coln St Aldwyns, Cirencester, Glos., GL7 5AW. Tel.: 01285 750555; Fax: 01285 750636

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## REQUESTS

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### FLORA-FOR-FAUNA – POSTCODE PLANTS DATABASE REQUEST FOR ILLUSTRATIONS

Flora-for-Fauna, is a small charity (no. 1060715) based at The Natural History Museum, that concentrates on encouraging the use of native plants in cultivation.

The centrepiece of Flora-for-Fauna is the Postcode Plants Database, which uses BSBI data to provide gardeners, and others, with a list of plants which can be considered native to any given postal district (e.g. – SW1, B22) in Britain. Recently, this has been made available to the general public via the Internet (<http://fff.nhm.ac.uk/fff>). The database also lists animal species, and most importantly, is being developed to describe interactions between fauna and flora, to enable gardeners and other horticulturists to select the most suitable plants for local wildlife. The plan is to provide a valuable resource for anyone cultivating plants for wildlife.

The next stage for the project is to provide good illustrations of most species within the database. We lack the funds for commercial picture libraries, so we are appealing to BSBI members to locate appropriate images from private collections. We require a series of pictures for each species, showing not only complete plants in their natural habitats, but also details of flowers and fruits. All slides will be returned, and individuals will retain copyright and receive full credit for any incorporated into the database.

If you think that you can help with this project, please contact Mike Sadka for further details and specifications.

We gratefully acknowledge the support of BSBI. Without its data, and endorsement, the Postcode Plants Database would not exist. We would also like to thank all the BSBI specialist referees for their help and suggestions in response to our previous request.

MIKE SADAKA, Research Assistant, Flora-for-Fauna Biogeography & Conservation Lab., The Natural History Museum Cromwell Road London SW7 5BD. Tel: 0171 938 8834. Fax: 0171 938 9072 E-mail: [miks@nhm.ac.uk](mailto:miks@nhm.ac.uk). Postcode Plants Database: <http://fff.nhm.ac.uk/fff>

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### TRUE FOX-SEGE – A REQUEST FOR INFORMATION

*Carex vulpina* (True Fox-sedge) in Britain is listed as vulnerable (British RDB: vascular plants 3rd Edition, in prep.) and is on the Biodiversity Action Plan middle list of globally threatened/declining species (*Biodiversity; The UK steering group report*, HMSO, 1995). The latter document in particular has focused the minds of conservationists on many of our rarer plants, true fox-sedge being just one of them.

I have been working on this plant in Oxfordshire, but it it has proven to be quite an enigmatic species. A Local Action Plan for the species was drawn up in 1996, and one of the principal objectives was to assess its status in Berkshire, Buckinghamshire and Oxfordshire. Although the title of the action plan purports to cover all three counties, only its status in Oxfordshire is discussed. The situation in the other two counties remains unclear. In Druce's *Flora of Buckinghamshire* (1926) several localities are listed under *C. vulpina* var. *nemorosa* (which might be what is now known as *C. vulpina*) but despite searches by Roy Maycock its occurrence has never been confirmed.

In Oxfordshire *C. vulpina* has been reported from 4 localities since the 1960's. In following these up I have been able to confirm that today it is extant, albeit in poor condition, at just one locality, Blackthorn, south of Bicester. It is interesting to note that in Druce's *Flora of Oxfordshire* (1886) under the entry of *C. vulpina* (following taxonomic revision in 1939 most records under this name were transferred to *C. otrubae*), refers to a form *nemorosa* at Blackthorn. Could this be the true

*C. vulpina* that is still present here today? Despite intensive searches at Otmoor, Asham Meads and Menmarsh, *C. vulpina* could not be re-found at these localities, all material collected being *C. otrubae*. It seems the last reliable sighting of *C. vulpina* at Otmoor was 1991/92. Although I could not re-find it here in 1997, the circumstances surrounding this particular population means that a further search should be undertaken.

A problem with many of the past records is that they are not supported by voucher specimens. There is some doubt over the identity of the plants because of the difficulties of separating it from *C. otrubae*. I am reluctant to name material, or accept records, that have not been determined microscopically (epidermal cells of utricles appear to be a reliable separating character) (Stace 1991; Rich & Rich, 1988, Jermy *et al.*, 1982) or which are not supported by vouchers. As part of my work, I hope to trace herbarium material and verify some of the older records.

My purpose in writing this note is to say I'd be very happy to hear from anyone who has recently seen *C. vulpina* in England. Indeed any information on this plant would be much appreciated. Even in counties such as Sussex and Kent, where there are a number of reports, it remains an enigmatic plant. Since 1970 it is reported as occurring in just 22 tetrads, but are we sure this is the true position? Is it declining to such an extent that conservation action must now be regarded as urgent? I have been nominated as the person in English Nature to lead on this species and take forward work under the Biodiversity programme, but I cannot be effective without the help of BSBI members, and any conservation action will need to be a collaborative effort.

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 RON PORLEY. English Nature, Foxhold House, Crookham Common, Thatcham RG19 8EL.  
 Tel.: 01635 268881; fax: 01635 268940; e-mail: ron.porley@english-nature.org.uk

## MANUSCRIPTS BY CHARLES ABBOT (1761-1817)

For the last couple of years I have been trying to locate entomological works by the Rev. Dr Charles Abbot. I have contacted numerous libraries and sent requests for help to newsletters of several entomological societies and other relevant organisations but have had no success to date. It is possible that the documents that I am looking for may have remained associated with a copy of Abbot's *Flora Bedfordiensis* (1798), hence this plea for help to BSBI members. The documents are:

- (1) *Entomologia Selecta* – a volume of notes in MS of over 300 pages referring to the Lepidoptera of the [Bedford] district. This was sold at auction in London in 1906 as one lot with a copy of *Flora Bedfordiensis*.
- (2) *Linnaei Insecta Anglica Lepidoptera* – an original MS 'being an account of the English Lepidoptera according to Linnaeus, with descriptions of their food plants, localities, etc., also further MS notes on localities by J C Dale, the later owner'. Listed in Wheldon and Wesley's catalogue of 1928 as 'together with a copy of *Flora Bedfordiensis*, 1798, bound in 2 vols, 8vo, calf'. (All records of the sale were destroyed in the war.) It is not clear whether this is the same MS appearing for sale twice under different descriptions or whether they are two different MS. I would be most grateful for any information on the past or present whereabouts of these documents and, if anyone has them in their possession, for permission to view them.

CHARLES BAKER, 3 Holywell Close, Studham, Dunstable, Beds LU6 2PB. Tel: (01582) 872718



## ORCHID POLLINATION

I am currently preparing to start the illustration of a complete monograph of British Orchidaceae, in full habitat, and with their pollinators (enlarged, in action on a floret, as a separate inset in the text).

Pollinator research in Britain is by no means comprehensive, therefore I would be very grateful for any records. The insect **must** have been actually observed pollinating. Please get in touch with me concerning identification. Pollinators are not required for subsp. or vars.

Perhaps I can encourage other botanists to stop awhile, have lunch maybe, when in an orchid-rich habitat: not too much to ask! But keep your eyes peeled!

JONATHAN TYLER, Sycamore Farm, Alphamstone, Bures, Suffolk CO8 5HP. Tel: 01787 269204

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DISTRIBUTION OF *PINGUICULA LUSITANICA*

I am writing as a new member of the BSBI in order to try and ask for help with my final year research project on *Pinguicula lusitanica* for my Botany degree at Reading University. For this project I am planning to study its ecology and distribution in this country especially in the New Forest. I would therefore welcome a letter or E-mail from anyone who has any information regarding this species' present or past distribution. Your help would be greatly appreciated.

CLIVE PANKHURST, 191 Lennard Road, Beckenham, Kent BR3 1QN.

E-mail: sbu96cep@reading.ac.uk

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## COELOGLOSSUM VIRIDE (FROG ORCHID) MANAGEMENT

I am most grateful to John K. Cross for passing on useful information on habitat management for *Lathraea squamaria* (Toothwort) in *BSBI News* 77. Can anyone give similar practical advice on management for *Coeloglossum viride* (Frog Orchid), a species which is sadly in decline in Shropshire. Is this a species which is generally declining in Britain? If so, why?

RUTH A. DAWES, Rosedale, Chapel Lane, Trefonen, Oswestry, Shropshire SY10 9DX

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FORMS OF *CYMBALARIA MURALIS*

As part of a study of the role of flavonoids in photoprotection we are looking for information on the distribution of the two forms (morphs) of *Cymbalaria muralis* (ivy-leaved toadflax). Both forms are, typically, components of the vegetation of walls. One form, which appears to be the most common, is characterised by an intense red pigmentation on the stolons and leaf undersurfaces, due to the presence of anthocyanin, whilst the other largely lacks any of this pigmentation. Although the extent of pigmentation in the red form can vary with the environmental conditions, particularly the degree of exposure, the two forms can always be easily distinguished. If possible, the locality, together with some information on the substrate and degree of exposure would be particularly useful.

BRUCE OSBORNE, Botany Department, University College Dublin, Dublin 4, Ireland.
Tel.: +35317062249. Fax.: +35317061153. E-mail: BOSborne@Macollamh.ucd.ie

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## BOOK NOTES

*Wild Flowers of Oldham*, B. Langridge, 52 pp. £5.50 plus £1.00 p.& p. Available from Oldham Art Gallery & Museum, Union Street, Oldham, OL1 1DN.

*A Flora of Saddleworth*, L.N. Kidd & W.F. Edwards, 85 pp. £5.00 plus £1.00 p.& p. Available from, and cheques payable to, Mr W. Edwards, 20. Armit Road, Greenfield, Oldham, OL3 7LN.

The former is 'a colourful look at the rich variety of flowers to be found in the Borough of Oldham', the latter is a traditional listing of the area which is the most floristically interesting part of the same borough.

### Stop Press

*Wild flowers of the British Isles*. Illustrations by Ian Garrard, text by David Streeter. At last this is being reprinted with an updated text, and will be available in early April 1998. Many think this is the best illustrated Flora of the British Isles (although it does not include grasses, sedges and rushes).

DAVID PEARMAN, The Old Rectory, Frome St Quintin, Dorchester, Dorset DT2 0HF

## REVIEWS OF RECENT BSBI PUBLICATIONS (2)

The following reviews of BSBI publications are additional to those listed on pp. 66-67 of *BSBI News* 77. I am grateful to those who have sent details of reviews I had missed and shall be glad to receive details of any others known to members.

### 1. *Alien plants of the British Isles* by E.J. Clement & M.C. Foster (1994)

*The Garden*, **121** (6): 381 (1996) by Tony Lord.

*The Horticulturist* **5** (4): 34-35 (1996) by John Simmons.

*Irish Naturalists' Journal* **25** (6): 234-235 (1996) by Brian S. Rushton.

*The Naturalist* **121** (1016): 36 (1996) by M.R.D. Seaward.

*Taxon* **47** (1): 205-206 (1998) by Margaret Souchier.

### 2. *Pondweeds of Great Britain and Ireland* by C.D. Preston (1995)

*Biologist* **43** (3): 138 (1996) by F.M. Slater.

*Kew Bulletin* **52** (1): 251-252 (1997) by D.A. Simpson.

*Taxon* **46** (3): 629 (1997) (brief notice).

### 3. *Alien grasses of the British Isles* by T.B. Ryves, E.J. Clement & M.C. Foster (1996)

*Bulletin of the Irish Biogeographical Society*, No. 20: 297-298 (1997) by Paul Hackney.

*Candollea* **52** (1): 218 (1997) by Alessandro Natali (in French).

*The Horticulturist* **6** (4): 40 (1997) by Stephen Jury.

*The Naturalist* **122** (1023): 136 (1997) ?by M.R.D. Seaward (brief note).

*Taxon* **47** (1): 216 (1998) by Margaret Souchier.

### 4. *Dandelions of Great Britain and Ireland* by A.A. Dudnian & A.J. Richards (1997)

*CAB Abstracts* (CAB International): 82139 (1998) (note giving statistics and describing contents).

*Geo Abstracts* (Elsevier) (1998) (brief note listing contents).

*Krypto News* No. 52: 18.5340 (1997) (brief note listing contents).

PHILIP OSWALD, Editor of BSBI Handbooks, 33 Panton Street, Cambridge CB2 1HL

## ECOLOGY IN SOMERSET

Can we bring to the attention of BSBI members the journal *Ecology in Somerset*? This is published jointly by the Somerset Archaeological and Natural History Society and the Somerset Wildlife Trust as part of the larger journal *Somerset Archaeology and Natural History*, but is also available as a free-standing offprint. It is published annually, with four issues already published, a fifth in press and a sixth in preparation.

Ecology in Somerset seeks to publish papers which provide a sound scientific basis for conservation within Somerset, though many of the themes explored are likely to be of much wider interest. Recent issues have included several botanical papers, notes and reports likely to be of interest to BSBI members including papers on Black Poplars, the loss of unimproved grasslands since the 1930s, a new (hitherto undescribed) wet grassland plant-community, and the management of *Molinia* fen-meadow. Papers currently in preparation include ones on ancient woodland indicator species and saltmarsh colonisation following sea-wall realignment, and there are reviews of several botanical books in the pipeline including *British Plant Communities* (Vol. 4), Stace (edition 2), Sell & Murrell, the Pondweeds handbook and *Aquatic Plants in Britain and Ireland*.

If you wish to consider subscribing to this journal – or (better still) if you feel you might have something to contribute to it – please, in the first instance, contact P.H-C at the address below. Single issues of Ecology in Somerset are currently priced at £4, and back numbers of all issues are still available.

PAT HILL-COTTINGHAM & SIMON LEACH, *EIS* Editorial Board. The Mill House, 18 High Lane, Shapwick, Bridgwater, Somerset TA7 9NB. Tel: 01458 210557

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BOTANICAL CORNWALL 8 (1998)

This journal will now be published by Cornwall Wildlife Trust, and all orders should be placed either with the Trust or with BSBI Publications, Peterborough. The new arrangement will apply to everyone, whether or not on the mailing list, as the Trust will find it easier to deal with all those who subscribe. It is hoped that the journal will be available within the next month, and enquiries as to cost (probably £7-£8) should be sent to: Cornwall Wildlife Trust, Five Acres, Allet, Truro, Cornwall TR4 2DJ, Tel. 01872 273939 Fax 01872 225476, e-mail cornwt@cix.compulink.co.uk.

Articles include a report on the arable weeds of West Pentire near Newquay, *Poa humilis* in Cornwall (recent records), *Erica vagans* on Gear Sands near Perranporth and 39 pages of records!

ROSE MURPHY, 'Shang-ri La', Reskadinnick, Camborne, Cornwall TR14 0BH

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## WILTSHIRE BOTANY - A NEW JOURNAL

Wiltshire Botanical Society, founded in 1992, has launched a new journal – *Wiltshire Botany*. The Society has published a newsletter from its earliest days, and the new publication is intended for articles on or closely related to Wiltshire botany which are of a more technical nature, though still of interest to the general reader. The first issue has been published, and it is planned to produce further issues at intervals as material becomes available. Articles included might deal with research and/or practice in, for instance, plant identification, habitat and species surveys, updating of records, or habitat management.

This first issue illustrates well the intended scope of the journal. Firstly, there are surveys of particular habitats – the Wiltshire part of the New Forest by Philip Wilson and Wiltshire riverside vegetation by Jack Oliver. David Green contributes a single species study – of Black Poplar (*Populus nigra* subsp. *betulifolia*). There are articles which combine recording with conservation activities – control of Bracken (*Pteridium aquilinum*) and promotion of Autumn Saffron (*Colchicum autumnalis*) in Bentley Wood (near Salisbury) by Pat Woodruffe, and conserving Green-winged Orchid (*Orchis morio*) on a Water Board site at Winsley (near Bradford-on-Avon) by John Presland. John Presland

also contributes an identification article, distinguishing Fodder Vetch (*Vicia villosa*), found at Trowbridge, from Tufted Vetch (*Vicia cracca*). An edited version of the Society's 1995 records is included.

Copies of Issue No 1 are available from the office of Wiltshire Wildlife Trust, 18/19 High St, Devizes, Wilts SN10 1AT (Tel. 01380 725670). The cost of these is £2.50 by post and £2 if collected at the office. Cheques should be made out, not to the Trust, but to Wiltshire Botanical Society.

JOHN PRESLAND, By-the-Way, 175c Ashley Lane, Winsley, Bradford-on-Avon, Wiltshire BA15 2HR

### **THE FLORA OF WALLS IN WEST NORFOLK**

Probably the most extensive survey of wall plants ever carried out in Britain, this 32-page booklet by R.M. Payne, analyses the results of a 7-year study of almost 1000 walls throughout West Norfolk (v.c. 28). Privately printed, it is available for £3 (incl. p&p) from the author at the address below. All profits will go to the fund for producing the new Norfolk *Flora* due to be published in 1999.

RON PAYNE, Applegate, Thieves Bridge Road, Watlington, King's Lynn, Norfolk PE33 0HL

### **A NATURAL HISTORY OF SUTTON PARK**

#### **Part 1: THE VASCULAR PLANTS**

As promised in *BSBI News* 75: 26, I now inform members that a second and updated edition of this booklet has been published. Copies are available from Dr P. Coxhead, 71 Russell Bank Road, Sutton Coldfield, B74 4RQ (Tel.: 0121 353 5044) or from BSBI Publications at £4 including p&p.

HAROLD H. FOWKES, 21 Tudor Grove, Streetly, Sutton Coldfield B74 2LL

### **FLORA OF ALDERNEY: A CHECKLIST WITH NOTES (1988)**

Members possessing a copy of Brian Bonnard's book, can now download over the Internet, a new annual update which includes corrections to the original work, changes of nomenclature since publication and a list of all new records 1988-1997. The address of the Web site is:

<http://members.aol.com/Bjbonnard/alderney.htm> and the author may be contacted by E-mail at [Bjbonnard@aol.com](mailto:Bjbonnard@aol.com)

BRIAN BONNARD, The Twins, Le Petit Val, Alderney, Channel Islands

## **REPORTS OF FIELD MEETINGS — 1996 & 1997**

Reports of Field Meetings (with the exception of Atlas 2000 reports written by Trevor Dines and Reports of Irish meetings written by Alan Hill) are edited by, and should be sent to: Dr Alan Showler, 12 Wedgwood Drive, Hughenden Valley, High Wycombe, Bucks, HP14 4PA, Tel.: 01494 562082.

#### **A CORRECTION**

The *Erodium* on the tip at Esholt noted as *E. chium* in the report of the field meeting at Apperley Bridge on 31st August 1997 (*BSBI News* 77: 83), was later redetermined as *E. crinitum*. My sincere apologies for this error.

PHYL ABBOTT

## 1996

HAYLING ISLAND, HANTS. (v.c. 11). 27th APRIL

The meeting began on a lovely spring day at the car park at SZ/713.988 where the fixed shingle just to the north had an abundance of *Poa bulbosa* (Bulbous Meadow-grass) and *Aira praecox* (Early Hair-grass). *Trifolium suffocatum* (Suffocated Clover) and *Cerastium diffusum* (Sea Mouse-ear) were frequent and other species of interest were *Erophila verna* agg. (Common Whitlowgrass) and *Trifolium striatum* (Knotted Clover).

The party then proceeded to Westfield Beach car park (SZ/716.988) where species seen included *Cerastium diffusum*, *Trifolium suffocatum*, *T. striatum*, *T. ornithopodioides* (Bird's-foot Clover), *Vicia lathyroides* (Spring Vetch), *Stellaria pallida* (Lesser Chickweed), *Spergularia rubra* (Sand Spurrey) and *Silene uniflora* (Sea Campion). *Poa bulbosa* was again locally abundant, as was *Moenchia erecta* (Upright Chickweed) but *Sagina subulata* (Heath Pearlwort), plentiful in summer, was not noted at this early date. Nearer the sea on barer shingle were *Crambe maritima* (Sea-kale) and *Raphanus raphanistrum* subsp. *maritimus* (Sea Radish).

After lunch the Sandy Point Nature Reserve (Hampshire County Council) at SZ/747.982 was visited. This rich and varied area contains sand dunes, a sandy foreshore, fixed dune turf, dune heath, scrub, dried out former saltmarsh and a dune slack. Among the interesting species seen here were, in addition to others already mentioned, *Hypochaeris glabra* (Smooth Cat's-ear) (locally abundant), *Teesdalia nudicaulis* (Shepherd's Cress) (locally frequent), *Juncus acutus* (Sharp Rush) in a dune slack in its only Hampshire locality, *Poa humilis* (Spreading Meadow-grass), *Crithmum maritimum* (Rock Samphire), *Eryngium maritimum* (Sea-holly), *Euphorbia paralias* (Sea Spurge), *Calystegia soldanella* (Sea Bindweed), *Myosotis discolor* (Changing Forget-me-not), *M. ramosissima* (Early Forget-me-not), *Claytonia perfoliata* (Springbeauty), *Ulex minor* (Dwarf Gorse), *U. gallii* (Western Gorse), *Viola canina* (Heath Dog-violet) locally abundant on grassland and on clay, *Lavatera arborea* (Tree Mallow), *Sedum anglicum* (English Stonecrop), *Polygonum maritimum* (Sea Knotgrass) and *P. oxyspermum* subsp. *raii* (Ray's Knotgrass) occur nearby but were not visited on this occasion; nor was *Carex punctata* (Dotted Sedge) advanced enough to identify.

The party then moved west to the car park east of Sinai Common (SZ/702.989) and studied the shore area to the west between the golf course and the sea, as far as Gunner Point, examining both the wide shingle beach and the low dunes to the rear. Interesting plants seen here that were not noted elsewhere included *Orchis morio* (Green-winged Orchid) locally frequent in the fixed dune turf, *Barbarea verna* (American Winter-cress), *Geranium purpureum* subsp. *forsteri* (Little-Robin), *Leymus arenarius* (Lyme-grass), *Anthriscus caucalis* (Bur Chervil) and *Crassula tillaea* (Mossy Stonecrop). Many of the species listed for the other sites were also seen but not *Teesdalia*, though seen in recent years. *Crambe maritima* occurs as strong populations on the open shingle with *Raphanus raphanistrum* subsp. *maritimum*.

F. ROSE

## 1997

PWLLHELI, CAERNARFONSHIRE (v.c. 29). 10th & 11th MAY

Six members met for the first day of this meeting to record and update records for Atlas 2000. Divided into two groups of 3, one group set off for Llanystumdwyl, burial place of Liberal statesman David Lloyd George. Here they recorded in woodland on the banks of the Afon Dwyfor, finding an extensive population of *Gaultheria shallon* (Shallon) and also *Stellaria neglecta* (Greater Chickweed). *Juncus maritimus* (Sea Rush) was, surprisingly, a new hectad record for this coastal square.

The second group explored Morfa Abererch, an area of sandy grassland and dunes to the east of Pwllheli, treading carefully in one heathy area as adders were in evidence in the late spring sunshine. New records included *Ceratocarpus claviculata* (Climbing Corydalis) and *Vulpia bromoides* (Squirrel-tail Fescue) but this area would repay further visits later in the year.

Ten members met to record on Sunday morning. Following a coastal path round the cliffs, quarry and hedgebank at Llanbedrog, one group recorded *Allium triquetrum* (Three-cornered Garlic), which appears to be on the increase, in Caerns. at least, *Hedera helix* ssp. *hibernica* (Atlantic Ivy), *Myosotis ramosissima* (Early Forget-me-not), *Poa humilis* (Spreading Meadow-grass) and a population of over 200 plants of *Erodium maritimum* (Sea Stork's-bill). A problem arose here when the party found a specimen of *Zostera* later determined as *Z. marina* (Eelgrass), washed up on the beach. How do we know from whence it came and how do we record it? Back at the car park at lunch time, Arthur Chater demonstrated the differences between *Hyacinthoides hispanica* (Spanish Bluebell) and its hybrid with the wild *H. nonscripta* (Bluebell).

The afternoon was spent at Cors Geirch NNR with warden Les Colley. Cors Geirch is a fine example of a base-rich fen system and is one of the largest of its type in North Wales. Many rare and uncommon species grow here, including several orchids and a variety of sedges. *Dactylorhiza traunsteineri* (Narrow-leaved Marsh-orchid) was at its best, coming into flower as it does 2 or 3 weeks before other marsh-orchids. Sedges included *Carex lasiocarpa* (slender Sedge) and *C. viridula* subsp. *brachyrryncha* (Long-stalked Yellow-sedge).

The special plant of the day was undoubtedly *Eriophorum gracile* (Slender Cottongrass), first found here many years ago by Peter Benoit, but not refound until very recently. It was just coming into flower and we were able to do a population count.

An enjoyable weekend then, finishing on a high note, for which I would like to thank Les Colley, for allowing us on to this very special reserve.

WENDY MCCARTHY

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LLANGOLLEN, DENBIGHSHIRE (v.c. 50) 31st MAY

Llangollen lies in the Dee valley, with limestone cliffs to the north, and heather moorland to the west. It is a good centre for a variety of habitats. Six of us met here on a warm May day, and divided into three pairs for recording. One pair climbed to the top of Moel y Gamelin overlooking the Horseshoe Pass, finding wet flushes with *Drosera rotundifolia* (Round-leaved Sundew), *Narthecium ossifragum* (Bog Asphodel) and *Vaccinium oxycoccus* (Cranberry). It was surprising too, to find a track for four-wheel drive vehicles along the top of the ridge; so much for the peace of the mountains. The second pair took a 3 km. walk along farm lanes above the river, finding *Ilex* × *altaclerensis* (Highclere Holly), *Cotoneaster horizontalis* (Wall Cotoneaster) and *Pulmonaria officinalis* (Lungwort), all signs of human activity, as well as *Saxifraga granulata* (Meadow Saxifrage) on the lane verge and *Myosotis discolor* (Changing Forget-me-not). *Rhododendron ponticum* (Rhododendron) is spreading on the hillsides here and *Aquilegia vulgaris* (Columbine), which is native in the woods, also seeds itself from gardens in various colours.

Two of us followed a path downstream along the river Dee passing under the canal viaduct by a rich woodland with *Ranunculus auricomus* (Goldilocks Buttercup), *Campanula latifolia* (Greater Bellflower) and *Milium effusum* (Wood Millet). On the river bank were *Trollius europaeus* (Globe-flower), *Crepis paludosa* (Marsh Hawk's-beard), *Glyceria maxima* (Reed Sweet-grass), *Lycopus europaeus* (Gipsywort) and *Lythrum salicaria* (Purple Loosestrife). The woods contained *Tilia cordata* (Small-leaved Lime), *Sorbus torminalis* (Wild Service-tree) with Ash, Oak, Alder and Willow.

After the morning recording, we met again at 3 p.m. and walked down to the canal. This starts here where a weir diverts Dee river water into a narrow channel. It is at this point that *Luronium natans* (Floating Water-plantain) enters the canal system from upland lakes draining into the Dee. We saw no *Luronium* but it was recorded here in 1993. In the fast-flowing water was *Ranunculus penicillatus* (Stream Water-crowfoot) (a previous identification) and an unidentified *Sparganium* (Bur-reed). The churchyard we had intended to look at had just been 'strimmed' but the riverside walk was pleasant, with *Mimulus* sp. (Monkeyflower), *Caltha palustris* (Marsh Marigold) and a well-established clump of *Rubus spectabilis* (Salmonberry) (det. A. Newton 1988) in the wall of the canal. It had been a useful day and we added 17 and 30 species to the two hectads in which we had been recording.

JEAN A. GREEN

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## CROOK PEAK &amp; BREAN DOWN, N. SOMERSET (v.c. 6) 7th &amp; 8th JUNE

The two-day meeting was for members to explore the flora of two extremely rich areas of limestone grassland at the western end of the Mendips.

Crook Peak and Brean Down are both Sites of Special Scientific Interest, and owned by the National Trust. The party was fortunate to have Adrian Woodhall, the National Trust's North Somerset Countryside Manager, who knows both properties extremely well, as one of the leaders.

23 members and guests met at the roadside car park below Crook Peak on Saturday morning. The party made its way along the south-facing slopes, climbing gradually and slowly to the summit. The lower slopes where rabbits were frequent were characterised by a thin, bare sward where *Centaureum erythraea* (Common Centaury), *Sanguisorba minor* (Salad Burnet) and *Vulpia bromoides* (Squirreltail Fescue) were abundant. *Filago vulgaris* (Common Cudweed) was frequent along the small paths and on the bare soils of the rock outcrops, and was often accompanied by *Euphorbia exigua* (Dwarf Spurge). Both male and female plants of *Trinia glauca* (Honewort) were present in vast numbers on these warm, south-facing slopes. The common associate of this plant at this location is usually *Koeleria vallesiana* (Somerset Hair-grass) but very few plants were detected on this visit and most of those which were found were small with few leaves or inflorescences. There was evidence that this rare Red Data Book species had suffered a severe reduction of numbers during the previous hot summer, as dead remains of the distinctively felted bases were found on the thin soils and rock outcrops.

The Nationally Scarce *Carex humilis* (Dwarf Sedge) is a rare plant on the Mendips. It had previously been recorded in small quantities on the south-facing slopes of Crook Peak and, much to the delight of the party, several clumps were relocated.

After lunch, just below the summit, from where a magnificent view across the Bristol Channel was seen, the party crossed an area of limestone heath with *Erica cinerea* (Bell Heather), *Potentilla erecta* (Tormentil) and *Carex pilulifera* (Pill Sedge) and then descended towards the bridle-path below. In an area of scrub and woodland, a large clump of *Astragalus glycyphyllos* (Wild Liquorice) was noticed, growing by the path. This was an unexpected find, as this species is rare in Somerset, and had not previously been recorded here. The grassy green-lane that runs between the scrubby north-facing slopes of Crook Peak and the valley fields below had a wide assemblage of hedgerow and grassland plants. A large rhizomatous grass that defied identification in the field was later determined as *Bromopsis inermis* subsp. *inermis* (Hungarian Brome).

On Saturday evening several members who were staying locally for the weekend were made very welcome at the Gardeners Arms in Cheddar where they met up for a meal and a chat after a good day's botanising.

Sunday was spent on the rocky promontory of Brean Down, the western extension of the Mendips, which juts out into the Bristol Channel. The eastern end was explored first and the short trampled sward at the top of the vehicle slope revealed a rich association which included *Trifolium ornithopodioides* (Bird's-foot Clover), *T. micranthum* (Slender Trefoil), *T. scabrum* (Rough Clover), *T. striatum* (Knotted Clover). The north-facing slopes at this end of Brean Down are a good example of species-rich limestone grassland with the added interest of *Hyacinthoides non-scripta* (Bluebell) and the Nationally Scarce *Hypericum montanum* (Pale St John's-wort).

As progress was made slowly westwards, *Carex humilis* (Dwarf Sedge) became an abundant component of the grassy sward, and in places on some areas of the south-facing slopes this species was dominant. Some time was spent searching for *Botrychium lunaria* (Moonwort) near the tumulus where it had been recorded in the past, but without success on this occasion. The trampled edges of the paths and the numerous rabbit scrapes appeared to be ideally suited for *Erodium maritimum* (Sea Stork's-bill) which was extremely abundant here.

The south-facing rocky outcrops provide a suitable habitat for *Koeleria vallesiana* (Somerset Hair-grass) and *Helianthemum appeninum* (White Rockrose). One plant of *Helianthemum* × *sulphureum*, the hybrid between the White and the Yellow Rockrose, was recorded where both parents occur. Rain drove in from the west during the afternoon causing the remaining members to shelter in one of the 2nd World War gun emplacements at the end of the promontory. Tea was much appreciated in one of the cafes at the base of the hill at the end of a very interesting day.

## UPPER EDW VALLEY, RADNOR (v.c. 43) 6th JULY

It is pleasing that so much interest is now being taken in the preservation of traditionally farmed areas, and of traditional farm buildings. It was at such an enterprise that 5 members met at Coed Mawr on this occasion, and were welcomed by the owner Diana Hulton, who explained to us what it was hoped to achieve, and who was anxious to know more about the flora.

The valley of the upper reaches of the River Edw is extensively wooded, but flanked here by meadows that had remained unimproved, and the 6 fields here were recorded individually, so that comparisons could be made in future years. Over 150 species were found on this occasion, and it seems likely that there may be even more when the management plan has been operative for longer. Typical finds were *Serratula tinctoria* (Saw-wort) and *Sanguisorba officinalis* (Great Burnet) with *Carex pallescens* (Pale sedge), *Carex acutiformis* (Lesser Pond-sedge) and *Scirpus sylvaticus* (Wood Club-rush) in the wetter areas, and of course *Dactylorhiza fuchsii* (Common Spotted-orchid) in plenty.

A hot day out was rewarded by home-made lemonade at the farm, and we admired the way that the 14th century farm building was being painstakingly restored as nearly as possible to its previous structure.

## D.R. HUMPHREYS

## THE LIZARD, CORNWALL (v.c. 1), 10th &amp; 11th MAY

A party of 12 met for this weekend meeting under the leadership of Nick Stewart and Rose Murphy and on the Sunday we were pleased to have Richard Lansdown to assist with the *Callitriche* species.

The weather was cool with rain at times, but otherwise good and amongst the aquatics found were *Pilularia globulifera* (Pillwort) and *Callitriche brutia* (Pedunculate Starwort), whilst on drier ground *Carex montana* (Soft-leaved Sedge) was noted. The main objective was to look for Stoneworts and in this the meeting was very successful, finding the very local *Chara fragifera* (Strawberry Stonewort), *C. baltica*, *C. hispida*, *C. curta* and *Nitella opaca*.

## Summarised by A. SHOWLER

## CHARTLEY MOSS, STAFFS. (v.c. 39), 20th SEPTEMBER

The meeting was attended by seven members (two more booked but could not attend) and three friends and was led by Mr Tim Coleshaw of English Nature, the Site Manager of the Staffordshire National Nature Reserves. Access to the site is strictly by arrangement with English Nature.

A most enjoyable day was spent at this ancient and amazing site, which is the second largest floating bog and arguably the best of its type in England. Chartley Moss rests on a lake which occupies a 10 m deep hollow formed by subsidence following the collapse of subterranean salt caverns; this is all surrounded by the intensively dairy farmed landscape of rural lowland Staffordshire.

Scot's Pine trees, planted originally by the Victorians, grow in places on the surface of the Moss; when they get large and heavy, the trees gradually sink down through the peat raft and disappear; years later, their tops poke up again through the *Sphagnum*, an eerie spectacle.

Chartley Moss is in the charge of English Nature and as well as seeing its fascinating plants and communities (including *Andromeda* in its southernmost locality) we were given an insight into the intricacies and difficulties of managing the Moss.

We would like to thank Tim Coleshaw very much for showing us the Moss and making the day so instructive and entertaining for all concerned.

## AILSA BURNS



BSBI FIELD MEETINGS IN IRELAND (reprinted from *Irish Botanical News* 8: 36-39)

Once again we had a full calendar of field meetings the first of which was to South Kerry (v.c. H1) and was centred on Waterville and was attended by members and friends from Belfast, Dublin and some more local. The trip was led by Caroline Mhic Daeid and on Saturday 17 May we travelled east from Waterville in dull conditions to search for the rare *Polygonum sagittata* (American Tear-thumb) but despite very good directions we did not find it, but we may have been too early. We proceeded to Abbey Island near Derrynane to look for the Kerry Lily (*Simethis planifolia*) and despite parts of the island being burnt the lily was growing well with some plants in flower. On the Sunday we headed west to Ballinskellings and Bolus Head and with the weather improving we were able to record more squares for the Atlas 2000 project.

The second meeting was to Co. Cork (Mid and West Cork, H4 and H3) and was led by Maura Scannell and Tony O'Mahony. On Saturday 7 June after heavy rain the previous day the party worked eastwards from the town of Bandon and laybys, an old railway line and hilly areas with scrub and trees were botanised. After lunch a quarry on the east side of the estuary and upper reaches of the Ballinadee creek were checked for saline flora and two shrubs of *Hypericum hircinum* (Stinking Tutsan) were recorded, apparently a second record for H3 as it was reported by Ian McNeill elsewhere in West Cork (v.c. H3) in 1996. On the Sunday other areas of the River Bandon were visited as well as a wet marsh at Clonomera and an area of marsh and open water at Portlougha where an extensive colony of *Carex limosa* (Bog-sedge) was found.

On 14 and 15 June, Co. Down (v.c. H38) was the venue for a two day meeting with areas around Downpatrick and Killard Point visited. Plants recorded included *Vulpia bromoides* (Squirreltail Fescue), *Carex riparia* (Greater Pond-sedge) and, after a forced march through thick Alder carr, a fine patch of *Hottonia palustris* (Water-violet). There were between 30 and 40 spikes of Water-violet, a good improvement on three years ago when there were only about five flowering spikes. At Killard Point on the Sunday the flowering spikes of *Orchis morio* (Green-winged Orchid) were over but *Ophrys apifera* (Bee Orchid) were in flower. Also recorded were *Cynoglossum officinale* (Hound's-tongue), *Koeleria macrantha* (Crested Hair-grass) and *Euphrasia tetraquetra* (Eyebright).

Co. Leitrim (v.c. H29) was the next county to be visited and we met at Derrycarne amenity area on the Leitrim side of the River Shannon and recorded in various habitats from woodland to wet marsh, riverside and bog. The main plants were *Moehringia trinervia* (Three-nerved Sandwort), *Leycesteria formosa* (Himalayan Honeysuckle), *Hydrocharis morsus-ranae* (Frogbit), *Orobanche hederæ* (Ivy Broomrape), *Galium boreale* (Northern Bedstraw), *Ranunculus lingua* (Greater Spearwort), *Stellaria palustris* (Marsh Stitchwort) and all three species of *Drosera*, *D. rotundifolia* (Round-leaved Sundew), *D. anglica* (Great Sundew) and *D. intermedia* (Oblong-leaved Sundew).

In July we were at Ferbane in Co. Offaly (v.c. H18) and here, in a variety of habitats, we recorded *Galeopsis angustifolia* (Red Hemp-nettle), *Rubia peregrina* (Wild Madder), *Pimpinella saxifraga* (Burnet-saxifrage), both species of *Gentianella*, *G. campestris* and *G. amarella* (Field and Autumn Gentian), *Hordeum secalinum* (Meadow Barley) and *Lathyrus palustris* (Marsh Pea) unfortunately were not in flower.

August saw us in Co. Roscommon, v.c. H25, and we visited the dense undergrowth of St John's Wood and the shoreline of Lough Ree proved profitable with *Teucrium scordium* (Water Germander), *Lathyrus palustris* (Marsh Pea) again not in flower, *Rorippa amphibia* (Greater Yellow-cress), *Carex pseudocyperus* (Cyperus Sedge), *Oenanthe fistulosa* (Tubular Water-dropwort), *Hydrocharis morsus-ranae* (Frogbit), *Sagittaria sagittifolia* (Arrowhead), *Equisetum* × *litorale* (Shore Horsetail) (a hybrid of *E. fluviatile* and *E. arvense*), *Eleocharis multicaulis* (Many-stalked Spike-rush) and *Thalictrum flavum* (Common Meadow-rue).

At the end of August we met at Cahir in South Tipperary (v.c. H7) for the last official field meeting of the year. Again a variety of sites were visited and one plant which was in profusion was *Orobanche hederæ* (Ivy Broomrape). Other notables were *Spiranthes spiralis* (Autumn Lady's-tresses), *Clinopodium acinos* (Basil Thyme), *Chaenorhinum minus* (Small Toadflax), *Galium mollugo* (Hedge Bedstraw), *Melampyrum pratense* (Common Cow-wheat), *Geranium sanguineum*

(Bloody Crane's-bill), *Utricularia minor* (Lesser Bladderwort), *Geranium columbinum* (Long-stalked Crane's-bill), *Clinopodium ascendens* (Common Calamint), *Verbena officinalis* (Vervain), *Pinguicula lusitanica* (Pale Butterwort) and *Andromeda polifolia* (Bogrosemary).

There were two further field meetings, one in Westmeath (v.c. H23) and the other in NE Galway (v.c. H17) but I was unable to attend these two.

I would like to thank all the leaders of the various field meetings for the effort they put into the trips which made them not only informative but also very enjoyable. Enclosed with this edition of Irish Botanical News is a list of field meetings that I have arranged for 1998 so I hope to see as many of you as can get away for the occasional weekend.

ALAN G. HILL, 2 Woodgrange, Hollywood, Co. Down, BT18 0PQ

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## REPORTS OF OVERSEAS FIELD MEETINGS OR TRIPS

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### TURKEY, 29 JUNE-13 JULY 1997

A party of 13 BSBI members led by David Pearman gathered at Heathrow on 29 June. After volumes of P.H. Davis' *Flora of Turkey* were distributed amongst the group, we flew to Trabzon via Constantinople. At Trabzon we were joined by Adnan Dövençi, our Turkish guide, Zeki Bahadır, the coach driver, and Mungo McCosh, who also provided valuable local knowledge.

#### 30 June-4 July North Kaskar Mountains

After a delay while we waited (in vain) for missing luggage at Trabzon airport, we travelled east on 30 June along the Black Sea coast to the İkizdere valley. The coast was dominated by boulder beaches disrupted by coastal defences, and only one small sandy area with *Eryngium maritimum*, *Euphorbia paralias* and *Otanthus maritimus* was glimpsed from the coach. Turning inland into the valley, we began to see the broad-leaved forest of this high-rainfall area, interspersed with small tea plantations. The commonest roadside tree, *Alnus glutinosa*, looked disconcertingly different to the familiar plant, and turned out to be the acute-leaved subsp. *barbata*. *Rhododendron ponticum* was also frequent. A stop at Güneyce revealed a mixture of familiar ferns (*Asplenium scolopendrium*, *A. trichomanes*, *Blechnum spicant*) and less well-known species (*Asplenium onopteris*, *Pteris cretica*) on a roadside bank, along with the wavy-leaved grass *Oplismenus undulatifolius*. The first of many Euxine endemics, the unspectacular *Myosotis lazica*, grew in trickles of water, and *Veronica filiformis* was also present as a native, its flowers much paler than those of the plant established in Britain. After lunch in İkizdere, the photographers in the party demanded the first of many 'photostops' by a roadside landslip covered by masses of *Campanula lactiflora*. We spent most of the afternoon in an area between İkizdere and İlicakoy where streams fanned out across species-rich hay meadows on a steep hillside. Many familiar British grassland species were accompanied by a few less familiar plants, including *Arunco vulgaris*, *Calamintha grandiflora*, *Cirsium hypoleucum*, *Digitalis ferruginea* and three species of *Paspalum*. The grassland was dotted by clumps of a large *Heracleum* species and *Rhododendron luteum*. These hay meadows were clearly 'unimproved', as were all the others we visited during the meeting. On roadside banks the legumes included *Argyrobolium biebersteinii*, *Lathyrus laxiflorus* and *Psoralea acaulis*. The shrub *Myricaria germanica* was seen on gravel by the river as we travelled further down valley.

The next day, 1 July, we made for the top of the Ovitdagi Pass, at 2600 metres, where melting snowpatches and streams were surrounded by grassland. Areas recently uncovered by snow had sheets of flowering *Draba bruniifolia* subsp. *olympica*, *Gagea* cf. *fistulosa* and *Sibbaldia parviflora*. Many interesting species grew in the nearby grassland, including *Ajuga orientalis*, *Coronilla orientalis*, *Corydalis conorhiza*, *Fritillaria latifolia*, *Gentiana pyrenaica*, *Muscari armeniacum*, *Primula algida*, *P. auriculata* and *Veronica gentianoides*. *Cardamine uliginosa* and *Caltha polypetala* grew in the

flowing streams, with *Pedicularis nordmanniana*, *P. pontica* and *Pinguicula balcanica* in nearby moist ground. A walk to a nearby lake revealed more interesting plants, including *Campulula aucheri* and *Primula longipes* growing with handsome clumps of the purple-flowered oxlip *P. elatior* subsp. *meyeri*, but botanising here was curtailed by descending mist and the party retreated for a moist lunch by the coach with plenty of plants to discuss.

The rain had cleared for an afternoon visit to a rocky slope 4 km north of the pass, where the herbaceous flora was extremely speciose, and we encountered new plants at almost every step. The most impressive included *Aquilegia olympica*, *Campanula alliarifolia*, *Geranium ibericum*, *Lilium carniolicum* subsp. *ponticum*, *Pedicularis atrosanguinea*, *P. condensata*, *P. wilhelmsiana*, *Pilosella hoppeana*, *Polygonum bistorta* subsp. *carneum*, *Sedum pilosum*, *Stachys macrantha*, *Trifolium ambiguum*, *T. canescens* and *Vicia dadianorum*. Further rain drove us into a local tea house, but after refreshment we looked at a riverside meadow near Derekey (c. 1200 m) where *Geranium psilostemon* provided masses of lurid colour; other species here were *Orchis coriophora*, *Papaver lateritium*, *Pilosella piloselloides* subsp. *megalomastix*, *Saxifraga cymbalaria*, *Symphytum asperum* and *Valeriana alliarifolia*, along with large snails and spectacular Orthoptera in the damp grass.

On July 2 we transferred to Ayder in the Çamlıhemşin valley. We had a picnic lunch above Ayder, where a scramble into the river valley revealed a rich assortment of ferns, including *Dryopteris affinis*, *D. dilatata*, *D. filix-mas*, *Oreopteris limbosperma*, *Phegopteris connectilis* and *Polystichum aculeatum*. After lunch the party split, one group botanising along the valley, where the highlight was *Rhynchochorys elephas* in a steep gully. A smaller party ascended the steep valley side, walking through the *Picea orientalis* forest to the grazed slopes above. The weather deteriorated steadily, and after hopes that we would emerge above the mist proved unfounded we were fortunate in being invited to warm up and dry out by the fire in a windowless wooden dwelling in a yayla, a summer village now inhabited by 15 families. Plants in the forest included *Scutellaria pontica*, *Scrophularia chrysantha* and *Vaccinium arctostaphylos*, and there was a stand of the variable *Rhododendron* × *sochadzeae* (*R. caucasicum* × *R. ponticum*). *Rumex alpinus* and *Urtica dioica* were abundant around the yayla.

The rain continued on 3 July, when we boarded a covered lorry with mobile benches to ascend to Upper Kavron, a yayla above Ayder at 2000 m. After a hair-raising journey we reached a stretch of track which was completely impassable. Fortunately a Caterpillar earth-mover was at work and constructed a new route for us as we waited. At this stage some members of the party deserted, and walked back to the baths at the hot springs in Ayder. By the time the survivors reached Kavron the rain had stopped, and we found many interesting plants in the alpine grassland, streams and hillside *Rhododendron* scrub. These included *Androsace intermedia*, *A. villosa*, *Anthemis marschalliana*, *Briza marcowiczii*, *Bupleurum falcatum* subsp. *polyphyllum*, *Carex capitellata*, *C. melanorrhyncha*, *C. pyrenaica*, *C. tristis*, *Daphne glomerata*, *Epilobium ponticum*, *Geum coccineum*, *Gnaphalium supinum*, *Myosotis olympica*, *Narthecium balansae*, *Primula auriculata*, *Rhododendron caucasicum* and *R. × sochadeae*. On the return journey we stopped to admire a large colony of the remarkable Tertiary relic *Epigaea gaultherioides*, growing by the road. We also glimpsed *Carex sylvatica* subsp. *latifrons* and *Paris incompleta* by the track as we lurched down to Ayder to well-deserved hot baths.

On the final day in this area, 4 July, we travelled west to the heavily wooded Firtina valley. This gave us some idea of the species-rich deciduous woodland: the trees, shrubs and lianes included *Acer cappadocicum*, *Alnus glutinosa* subsp. *barbata*, *Buxus sempervirens*, *Carpinus betulus*, *Castanea sativa*, *Clematis vitalba*, *Cornus sanguinea* subsp. *australis*, *Corylus maxima*, *Daphne pontica*, *Euonymus europaea*, *E. latifolius*, *Fagus orientalis*, *Frangula alnus*, *Hedera colchica*, *Juglans regia*, *Rhododendron luteum*, *R. ponticum*, *Sambucus nigra*, *Tilia rubra* subsp. *caucasica*, *Ulmus glabra*, *Viburnum opulus* and species of *Crataegus*, *Prunus*, *Quercus*, *Rosa* and *Salix*. Dense masses of the large glandular bramble *Rubus platyphyllus* dominated more open areas. Above 800 m. *Picea orientalis* became increasingly dominant, and the *Buxus* trees bore masses of epiphytic mosses. Hay meadows by the river included the remarkable *Hypericum bupleuroides* and *Cirsium obvallatum*, *Hydrocotyle ramiflora*, *Papaver lateritium*, *Thalictrum minus* and *T. simplex*. There was little time to explore the apparently promising pastures above Çat, but the luxuriance of a 45 cm diameter patch of *Asplenium septentrionale* was surprising. We returned to our accommodation just above Çamlıhemşin, by the now turbulent river, to be treated to a spectacular display of fireflies in the damp evening dusk.

### 5-11 July Artvin and the Çoruh gorge

On 5 July we travelled along the Black Sea coast almost to the Georgian border, and then inland over the Cankurtaran pass to the south side of the mountain range and the Çoruh gorge, a spectacular 70 km rocky gorge which extends from Borçka to Yusufeli. The rainfall in this area is much less than that to the north, and it was immediately apparent that the flora had changed. The temperate trees and shrubs were replaced by species such as *Arbutus andrachne*, *Capparis ovata*, *Coronilla coronata*, *Cotinus coggyria*, *Ephedra major*, *Ostrya carpinifolia*, *Paliurus spina-christi*, *Punica granatum* and *Rhus coraria* as well as the Çoruh endemic *Acer divergens*. The pink-flowered bush *Trachomitum venetum* was frequent by the road and river and *Rubus platyphyllus* was replaced by the grey-leaved species *R. discolor* and *R. sanctus*. The rocky sides of the gorge had scattered patches of *Centaurea pecho*, *Centranthus longiflorus*, *Dianthus orientalis* and the lovely *Origanum rotundifolium*, and the roadside herbs included *Bothriochloa ischaemum*, *Centaurea calcitrapa*, *Eryngium caeruleum*, *Euphorbia myrsinites*, *Scolymus hispanicus* and *Xeranthemum annuum*. A more detailed examination of the hillside below the church at Hamamli confirmed the change in the flora: most of the species were unfamiliar and we found it difficult to assign many to genera. Herbs recorded on these dry, stony slopes included *Alcea hohenackeri*, *Consolida hohenackeri*, *Cleome steveniana*, *Peucedanum palimboides* and *Medicago papillosa*. We explored further sites along the gorge on 6 July. A dripping roadside cutting 20 km south of the Artvin-Kars road junction had flowering and fruiting plants of *Epipactis veratrifolia* amongst *Schoenus nigricans* and masses of *Adiantum capillus-veneris*. Some 10 km further south, we found *Celtis glabrata*, *Cheilanthes marantae*, the minty *Micromeria fruticosa* (infusions of which are drunk locally as tea), *Zizyphus jujuba* and a few plants of *Pelargonium endlicherianum*, one of only two *Pelargonium* species which occur as a native outside Africa. After lunch we drove into the Barhal valley north of Yusufeli, a lovely valley with dry rocky sides contrasting with a narrow strip of lush cultivated land and stands of the graceful *Populus usbekistanica* 'Afghanica' along the river. The highlight here was a large stand of *Pelargonium endlicherianum*, colouring a scree-covered hillside a vivid rose-magenta; other interesting plants included *Paracaryum artvinense*, a bright blue member of the Boraginaceae, and the endemic *Sempervivum glabrifolium* and *S. stantonii*. Finally we reached a waterfall above Sarigol, where the leaders bathed and others photographed another endemic, the white-flowered *Campanula trogerae*. The return journey was interrupted by a stop to join the men of a local village who were harvesting and feeding on the very sweet white mulberries growing on roadside trees.

The next two days were spent on higher ground. On 7 July we gradually ascended the Yalnızcım Pass. Lush, species-rich hay meadows between 1250 and 1550 m were a particular delight, with *Astrantia maxima*, *Centaurea macrocephala*, *Geranium asphodeloides*, *G. platypetalum*, *Hypericum bithynicum*, *Lathyrus aureus*, *L. rotundifolius*, *Linum hypericifolium*, *Lonicera caucasicum*, *Melampyrum arvense*, *Pedicularis comosa*, *Pimpinella rhodantha*, *Polygala major*, *Rhynchochorys stricta*, *Trifolium ambiguum* and *T. spadiceum*. *Lilium kesselringianum* was a special attraction to the photographers. There were small patches of *Populus tremula* in the meadows, and surrounding *Picea orientalis* woodland contained *Cephalanthera damasonium*, *C. rubra*, *Moneses uniflora* and *Pyrola rotundifolia*. A gully at 1900 m held *Polygonatum verticillatum* and the handsome sedge *Carex caucasica*. Sadly, in his enthusiasm to demonstrate the sedge our leader tumbled head-first into the stream below. Fortunately we were able to leave him to recover at a nearby tea-house, a process aided by several glasses of raki provided by hospitable shepherds, as we proceeded to the higher pastures at c. 2000 m. Rather bare turf and scree held a variety of plants including *Cerastium gnaphalodes*, *Hypericum linarioides*, *Lallemantia canescens*, *Scleranthus perennis*, *S. uncinatus*, *Scutellaria orientalis*, *Sobolowskia clavata* and *Veronica liwanensis* as well as *Poa bulbosa*, which is found in Turkey from sea-level to 3000 metres.

After the exertions of the previous day, 8 July was spent identifying material, followed by a visit to the mountain above Artvin. This was a much drier area than the one we had visited the previous day, with a less diverse flora. After lunch at 1900 m one party went on to the summit at 2100 m, finding lots of plants including *Scorzonera seidlitzii*. Another group walked down the valley, where they saw *Rhododendron ungernii* and *R. smirnovii* (growing just above the *R. ponticum* – *R. luteum* zone)

together with *Viburnum orientale* and the herbs *Brunnera macrophylla*, *Prenanthes purpurea*, the huge *Senecio platyphyllus* and several stands of *Lilium carnolicum* subsp. *orientale* var. *artvinense*. It was reassuring when checking plants in the evening to find that Peter Davis has visited the mountain forty years before and found the same plants.

On 9 July we travelled to the lakeside forest lodge at Karigol, near Savsat, 50 km east of Artvin, an idyllic setting at 1600 m. Goldfish and large frogs swam amongst flowering stands of *Polygonum amphibium* in the lake, with *Ceratophyllum demersum*, *Equisetum fluviatile*, *Myriophyllum spicatum* and *Potamogeton berchtoldii*; a nearby pool held *Carex vesicaria*, *Potamogeton gramineus* and *Utricularia vulgaris* sens. lat. After arriving we spent the afternoon on the surrounding slopes, where species-rich meadows were interspersed with coniferous woodland (*Abies nordmanniana*, *Picea orientalis*). Many of the species here had been seen earlier in the trip; additions included *Asperula orientalis*, *Dianthus calocephalus*, *Hypericum orientale*, *Limodorum abortivum*, *Mespilus germanica*, with *Leonurus cardiaca* by houses and the tall herb *Datisca cannabina* on roadside banks. *Atropa belladonna* and *Hyoscyamus* were abundant around a yayla in the hills.

### 10-12 July Erzerum

Leaving the forest lodge on 10 July, we detoured to a particularly rich meadow at 1600 m by the pass above Savsat, where many of the species seen on the Yalnızçam pass were seen again in spectacular abundance, including large bushes of *Lathyrus roseus* and the most spectacular of the Turkish *Rhynchochorys* species, *R. orientalis*. We then travelled to Erzerum for the final phase of the trip, making brief stops at a very dry limestone gully at the north end of Tortum Golu (where the narrow endemic *Centaurea straminecephala* grew with *C. virgata* by the road) and at a rocky roadside about 56 km north of Erzerum. The latter provided the first *Acantholimon* of the trip, *A. armenum*, as well as *Asphodeline tenuior*, *Eryngium billardieri*, *Isatis* cf. *erzurumica*, *Morina persica* and *Phlomis armeniaca*.

As we ascended towards Erzerum, many fields were a blaze of colour, dominated by domed white bushes of *Crambe orientalis* and purple-flowered legumes (especially *Vicia* spp.). Others had frequent *Stipa* inflorescences, beautiful in the evening sun. Here we got our first impression of the inner Anatolian steppe, with rolling grassland, scattered bushes, flocks of brown, long-haired sheep, small clusters of shepherds' tents and numerous groups of bee-hives. It is easy to forget that this undulating steppe is at an altitude of 2000 m, almost as high as the Pontic passes we had visited earlier.

On 11 July we went first to the Palandoken Pass (2250 m), but the grassland here was too grazed and dry to provide much of interest. Retracing our route towards Erzerum, we stopped at a streamside with fringing *Salix* bushes and occasional shrubs of *Potentilla fruticosa*. The narrow endemic *Lathyrus leyardii* was found here, its pale lilac flowers smelling sweetly, and the delicate grass *Zingeria biebersteiniana*. We then returned through Erzerum to an area by the Artvin road 30 km north of the town, where we looked at dry, grazed hills and lush riverside meadows. Species in the dry grassland included at least three *Artemisia* species, *Acantholimon glumaceum*, *Beta trigyna*, *Carex supina*, *Cicer anatolicum*, which has a greenish upper side to the standard which conceals the purple petals beneath, *Dianthus zederbaueri*, *Geranium collinum*, *Helichrysum plicatum*, *Hypericum scabrum*, *Lallemantia canescens*, *Phlomis tuberosa*, *Polygonum setosum*, *Rindera lanata* (a boraginaceous plant with insignificant flowers and extraordinarily winged fruits), *Trifolium pannonicum*, *Vicia canescens* subsp. *variegata*, *V. cracca* subsp. *stenophylla* and a range of *Astragalus* species of which *A. lagurus* was the only one which we could identify. Tracksides weeds included *Chenopodium foliosum* and *Fumaria microcarpa*, and stands of *Epilobium angustifolium* grew on nearby rocks. The lush riverside meadows contained masses of *Gladiolus kotschyanus*, *Groenlandia densa*, *Potamogeton berchtoldii* and *Zannichellia palustris* sens. lat. grew in a riverside pool. Tearing ourselves away from this rich area, we returned to Erzerum, stopping briefly by a ditch in the plain where we found the handsome grass *Beckmannia eruciformis* with more familiar aquatics including *Alisma plantago-aquatica*, *Alopecurus aequalis*, *Butomus umbellatus*, *Catabrosa aquatica*, *Lemna minor*, *Potamogeton crispus*, *P. nodosus*, *P. pectinatus*, *P. pusillus*, *Rorippa sylvestris*, *Sagittaria sagittifolia* and *Sparganium erectum*.

On 12 July we undertook the long drive back to Trabzon. A stop at the top of the Kop pass, at 2370 m, was notable for a flowering stand of *Eremurus spectabilis*, the inflorescences silhouetted

against a deep blue sky, and a photogenic clump of *Paonia mascula* subsp. *arietina*. Other species here included *Coluteocarpus vesicaria* (a crucifer with swollen fruits), *Crepis willdenowii*, *Daphne oleoides* subsp. *kurdica*, *Geranium stepporum*, *Senecio laurentii* and *Stachys lavendulifolia*, with *Lamium album* providing a familiar plant amongst so many exotics. By the time we reached the Zigana pass (c. 1900 m) we were back into the wetter hills, as demonstrated by the richness of the Cyperaceae (including *Blysmus compressus*, *Carex capillaris*, *C. capitellata*, *C. curta*, *C. ovalis* and *C. pallescens*) as well as *Parnassia palustris* and *Nardus stricta*. The final stop was for three flowering plants of *Eryngium giganteum*, growing 3 km south of Macko at the unusually low altitude of 300 m.

Our final meal on the evening of 12 July was held against the rather unnerving background of a circumcision celebration. We were able to thank David Pearman for his hard work planning the tour and his enthusiastic leadership of what must surely rank as one of the most memorable of all BSBI field meetings, and Adnan and Zeki for their invaluable contribution. We should also record what a boon it was to have the *Flora of Turkey*: as we travelled through the widely different vegetation types of eastern Turkey, which seemed to have nothing in common but their species-richness, we realised the magnitude of Peter Davis' achievement in bringing this project to fruition. We returned to Britain on 13 July, most of us in a state of some exhaustion.

C. D. PRESTON

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RECORDING FOR THE NORBOTTEN FLORA, SWEDEN, JULY 1997

Fame came briefly to Pajala a few years ago when the town mayor lured single women there with the offer of free travel, lodging and an unrivalled opportunity for matrimony – there was a troublesome surplus of bachelors. Lennart Stenberg's letter in *BSBI News* offered us instead the inducements of free lodging and the chance to botanise under the midnight sun. Several of us were attracted to help with the Norbotten Flora Project, based at Pajala in 1997.

On first sight, it didn't seem a particularly alluring small town, hardly justifying a complicated trip north of the Arctic Circle, it could have been Basildon. True, there was a 24 hour sundial with a whole pine-trunk for a gnomon, but the urban botany seemed very similar to that of any English housing estate. The landscape looked almost as flat as East Anglia – where were those romantic Scandinavian mountains?

An introductory ramble conducted by Lennart Stenberg dispelled some fears: the unimproved hay-meadows and the lush vegetation sparkling in the 11 p.m. sun were full of colour; even familiar plants such as *Chamerion angustifolium* (Rosebay Willowherb) and *Vicia cracca* (Tufted Vetch) seemed to have more abundant and more brilliant flowers, perhaps because they had to cram into a few weeks of constant sunlight all the flowers that would be spread over an English summer. And we met some special plants – the piercing blue *Gentiana nivalis* (Alpine Gentian), the sturdy cream and pink spires of *Pedicularis sceptrum-carolinum* (Kung Karls spira).

We knew realised what were missing: nothing with thorns, no roses, brambles, or hawthorns, no climbers, very few species of trees or shrubs (apart from willows) and a very limited range of annuals in the potato plots. The neat lawns grew no daisies or rye-grass or bromes, there was *Plantago major* (Greater Plantain) but not *Plantago lanceolata* (Ribwort Plantain). The *Heracleum sphondylium* (Hogweed) had green flowers, it was subsp. *sibiricum*.

Each day when we went out in groups of 2 or 3 to record a new 5 km square we discovered the real hunting-grounds – the wetlands and the forests – where the native Northern European flora still flourishes. We were taught to distinguish 4 sorts of clubmosses, several *Botrychium* species, winter-greens and plants extinct or very rare in Britain such as *Woodsia alpina* (Alpine Woodsia) and *Lychnis alpina* (Alpine Catchfly) – 'alpines' growing here almost at sea-level. *Linnaea borealis* (Twinflower) was everywhere, said to be the favourite flower of Linnaeus.

Surprisingly, in the country of Linnaeus, scientific names were not used during recording, on the grounds that the amateurs – who were very familiar with their local plants (even the 30-40 sedges) –

might be deterred by Latin, and standardised Swedish names were used instead. Some of these were easily learnt because they revealed the source of British popular names, thus Rhön becomes Rowan, Vitklöver is White Clover, and so on.

There is considerable enthusiasm for the Flora Project, which has some 200 participants, local and national, amateur and professional. They were hospitable, spoke excellent English and taught us enthusiastically: why the Stepmother's Violet got its name (*Viola tricolor*, Wild Pansy), that parasol fungi grow on moose droppings, how to make a little wreath of the locally abundant *Hierochloe odorata* (Holy-grass) to scent the car. We were introduced to Reindeer, and Reindeermeat, 'Kaviar' on crispbread, and swimming at every opportunity in the tea-coloured lakes and lazy rivers – to escape the midges and various biting flies, and to cool off after battling through mires booby-trapped with fallen trees and swamp-holes. Though the midnight sun and the spartan bedding made sleeping difficult for some of us, there was a compensating brightness in the evenings – 'We'll work until its dark' said one of our more industrious leaders, with a smile.

I think there may be a chance to participate again in 1998 at a different location in Norbotten, and I would recommend other BSBI members to make the journey.

JAMES PARTRIDGE, 85 Willes Road, Leamington Spa, CV31 1BS

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## MEDITERRANEAN FIELD BOTANY IN SOUTHERN SPAIN, APRIL 1997

Three external BSBI members joined a party of six staff, twenty undergraduates and six post graduates from the University of Reading for a fortnight of field botany in the provinces of Almería and Granada of Southern Spain.

The first ten days were based in the small fishing village of Las Negras on the arid east facing coast of Almería province about 40 km from Almería city. Local walks on the first three days introduced the local flora around the village, the coastal path along the cliffs to the south of the village, and the rambla (dry river bed) up into the hills behind the village.

Much of the ground is bare with tufts of the dominant grass, *Stipa tenasissima* (False Esparto). The mainly north African genus *Launaea*, a member of the Asteraceae with Dandelion-like flowers, has several species found only in Europe in this corner of Spain. *Launaea arborescens* is a spiny bush which may blow around in the wind when it is dry. *Launaea lanifera* (*L. spinosa*) is smaller and has less obvious spines, while *Launaea nudicaulis* has a basal rosette of leaves. Other local plants included the distinctive groups of yellow flowers on *Genista umbellata*, and the pale pinkish-lilac Jerusalem-sage, *Phlomis purpurea*. The relatively common blue and cream flowered Mediterranean sea-lavender, *Limonium sinuatum*, was found together with the much more local species with small cream flowers surrounded by translucent paper coloured bracts, *Limonium thouinii*.

*Periploca laevigata* and the endemic *Caralluma europaea* (only seen by some of the party) are two of the few European members of the largely American family, Asclepiadaceae.

The remaining days in Las Negras were taken up with all-day coach excursions to a variety of habitats. Three of these were in the Parque Natural de Cabo de Gata - Níjar.

Playa de Mónsul is an area of sand dunes and sandy soil near the sea which was surveyed in some detail with up to twenty species being found in a 4 square metre quadrat in spite of the plant ground cover often being as little as 10% of the area. The dominant large species are *Chamaerops humilis* (Dwarf Fan-palm) with an occasional plant of *Genista spartioides* covered with bright yellow flowers. Here and there was the grass *Lygeum spartum* (Albardine), with an unusual inflorescence, and a number of salt tolerant species including *Thymelaea hirsuta*, and *Mesymbranthemum crystallinum*. The sea cliff track up the Sierra del Cabo de Gata to the lighthouse at the point yielded further species including the very local endemic pink snapdragon, *Antirrhinum charidemi*, and pink, *Dianthus charidemi*. (The specific name, *charidemi*, is the ancient Roman name for the Cabo de Gata.) Another Jerusalem-sage, this time bright yellow-flowered, *Phlomis lychnitis* appeared as an occasional medium sized plant.

The salinas, salt pans, near Cabo de Gata were used for salt evaporation and now include protected areas for birds. The sandy beach and grassland between the sea and the open water yielded further typical Mediterranean littoral species. In the dry salt marsh areas however, a strange dark-red flowered parasite, *Cynomorium coccineum*, from the Balanophoraceae family was found close to bushes of various Chenopodiaceae species.

The Rambla de Tabernas is an arid inland area with many salt tolerant species in an area of very small rainfall including the cream and yellow *Cistanche phelypaea*, parasitic on Chenopodiaceae species such as *Salsola genistoides*. Here and there were bright splashes of colour from the beautiful bright pink sea-lavender *Limonium insigne* to relieve the monotonous grey of the sandy soil. Also present were the endemic cream-flowered Crucifer, *Euzomodendron bougeanum*, and a near relation of the British Saw-wort, *Volutaria lipii*.

The Sierra de Los Filabres is a large inland range of hills with a much more typical Mediterranean flora. Finds included the large *Barlia robertiana* (Giant Orchid) and the small *Neotinea maculata* (Dense-flowered Orchid). Also found was a small orange poppy, *Hypecoum imberbe*, later seen colouring whole fields orange, and another local Crucifer with lilac flowers, *Matthiola lunata*. Return that day was by way of a mountain of marble and then a detour to Los Molinos du Rio Aguas, an area of gypsum soil, with unusual local species, some not listed in *Flora Europaea*. The plants included a Rock-rose bush, *Helianthemum alypoides*, a white Narcissus, *Narcissus tortefolia* with twisted leaves, a pink spiny Restharrow, *Ononis tridentata* and a member of the Asteraceae, *Santolina viscosa*.

The Sierra de Bedar is an inland hill area rich in widespread Mediterranean species. Botanising however was restricted by heavy and continuous rain. The return trip by Mojácar and Carboneras along a corniche road high on the side of the coastal cliffs provided a stunning view of the scenery in spite of the rain.

The transfer day included a stop at Campohermoso to visit an agricultural site typical of this arid area where almost every hectare of level ground has been converted to agricultural use by erecting plastic covered units for intensive horticulture. The plastic covering reduces the sun exposure to acceptable levels (a reduction of about 4 times) and encourages retention of moisture which is provided artificially by a computer controlled irrigation system. Chemicals are added automatically by the computer system both to correct deficiencies in the water supply and to provide appropriate nutrients. Many of these installations achieve up to five crops a year. Crops such as cucumbers, gourds, melons and tomatoes, are destined for Northern Europe including Britain. Our relatively low priced winter salads come from installations such as these.

The remaining three days were based in Lanjarón, a spa town on the south side of the Sierra Nevada mountain range in Granada province. Expeditions included a visit to Haza de Lino, an upland cork oak forest area, where groups surveyed the regeneration of an area burnt some years previously. This survey has been carried out each year since the burning, so long term records are being developed charting the rate of regeneration. Highlights included *Orchis papilionacea* (Pink Butterfly-orchid) in old grassland and *Neotinea maculata* (Dense-flowered Orchid) in the regenerating area, together with several *Cistus* species.

The villages of Capileira, Boubión and Pampaneira at an altitude of about 1500 metres on the south side of the Sierra Nevada provided a fascinating downhill walk through habitats some of which were reminiscent of the British countryside. One stop was made at a point where every species within a few metres was a well known British species. Highlights were *Helleborus foetidus* (Stinking Hellebore) in the hedgerows and *Cephalanthera longifolia* (Narrow-leaved Helleborine) in some deciduous woodland.

The final day most of the party spent in Granada touring the Alhambra Palace and other beautiful buildings in the city as well as scouring the shops for souvenirs. The remaining two tackled the north face of Mulhacén (height 3482 m), the principal peak of the Sierra Nevada; exploring it from the magnificent motor road up to the ski resort and observatory at 2500 metres altitude.

On the lower slopes (c.1400 m) highlights included the yellow *Berberis hispanica* (Spanish Barberry) and the bright pink-red *Paeonia broteroi* (Paeony) together with an unusual, almost white, variety of *Orchis mascula* (subsp. *olbiensis*). Higher up an endemic spiny cushion plant, *Vella spinosa*,



from the Brassicaceae was covered with pale yellow flowers and nearby the beautiful pink flowers of *Prunus prostrata* covered its spiny prostrate stems. Higher up still, at 2300 m, *Crocus nevadensis* and *Gagea nevadensis* were in full flower close to the edge of snow patches. This day brought an unforgettable fortnight to a fitting conclusion.

Our thanks are due to all the staff involved for their patient help and the students for their tolerance of us. Special thanks to Dr Stephen Jury and Dr Richard Carter for their help with identification and background information.

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## NOTES ON THE PLANTS OF REMOTE PARTS OF THE OUTER HEBRIDES

During August 1997, I spent several days recording for Atlas 2000 in some of the least accessible and least well recorded parts of the Outer Hebrides (OH), concentrating on 'mainland' parts (surprisingly the outer islands are often the best recorded, and the main islands are much less well covered). Since some of these seem to be visited very rarely, it seemed a good idea to set down my thoughts and impressions, with the hope that they will be useful for future recording and monitoring in the OH. I am grateful to Richard Pankhurst (RP) for providing summary records as the basis of recording and updating in the squares mentioned, from which much of this account is constructed, to landowners for access to various sites, and to several referees who have assisted with (sometimes large numbers of) critical specimens.

### Eye peninsula, Lewis (NB/5.2 & 5.3)

Records for NB/5.3 have been well updated by a 1995 visit, but I was able to relocate *Ranunculus hederaceus* (Ivy-leaved Crowfoot) and *Myosotis laxa* (Tufted Forget-me-not) in exactly the locality (near Loch an Dùin, 51.30) they were last seen in 1938, and to add several other records in the same place, including *Potamogeton perfoliatus* (Perfoliate Pondweed) (confirmed Chris Preston). NB/5.2 was the first of several hectads with minimal amounts of land, and often with minimal numbers of previous records – this one has none at all in RP's database! This was a mixture of two habitats – rough blanket mire grading to extremely treacherous mats of vegetation round a few small lochans, and some coastal short turf and rocks. Nothing terribly unusual by Hebridean standards, with *Carex limosa* (Bog-sedge) probably the nicest species.

### The Park, Lewis (NB/2.0, 2.1, 3.0, 3.1, 4.0 & 4.1)

The Park (or Phairc if you prefer the gaelic spelling), despite its name is one of the remotest parts of Lewis. NB/2.1, 3.1 and 4.1 all have roads going through them, but the three southerly hectads all require a considerable amount of effort to get to before you can start recording. (More accessible parts of Harris are in NB/2.0 and 2.1 too, however). NB/4.0 is another square with a tiny amount of land and no previous records. This was a very bleak little headland with peat hags behind a sea cliff with *Asplenium marinum* (Sea Spleenwort). Most of the route to this was a mixture of peat hags, small rocky outcrops and lochans – a very typical OH landscape, but I was rewarded by *Sparganium natans* (Least Bur-reed) *en route* through NB/4. 1. This latter is an interesting hectad, with a fair amount of land, and accessible by road, but with only 3 species previously recorded! A couple of visits turned up several *Rubus* species, a single plant of *Cotoneaster simonsii* (Himalayan Cotoneaster) (a very unusual escape on the OH), a surprising (to me at any rate) amount of *Anagallis minima* (Chaffweed) and produced a good list of over 120 species.

Parts of NB 3.1 have been well covered in the past by two visits to Eishken Lodge, and I was only able to refine some of the species and add a few new ones. One interesting sideline was finding *Coriolus versicolor* (a bracket fungus) on a *Sorbus aucuparia* (Rowan) in the middle of nowhere on the edge of Loch Shell. I wonder where the spores came from?

NB/2.0 and 2.1 have been quite well recorded from the Harris side, but there were several interesting areas in both hectads. Some cliffs at the north-east end of Beinn na h-Uamha (282.124) produced a fine crop of ferns – *Asplenium adiantum-nigrum* (Black Spleenwort), *A. trichomanes* (Maidenhair Spleenwort), *Cystopteris fragilis* (Brittle Bladder-fern), *Dryopteris affinis* (Scaly Male-fern),

*Hymenophyllum wilsonii* (Wilson's Filmy-fern) and *Phegopteris connectilis* (Beech Fern) – and there were plenty more cliffs in the area which I did not have a chance to explore. The other surprise find here was *Equisetum palustre* (Marsh Horsetail) in one patch of blanket bog, but nowhere else! Despite the remoteness of the habitat, and the lack of paths (not even any fixed paths for stalking), there was plenty of *Epilobium brunnesces* (New Zealand Willowherb) around. There were two nice places in NB/2.0, the first a 'wooded' ravine. My interest was piqued by the area being marked as woodland on the 1:50000 OS map, and for OH it was certainly tree-rich, though in no sense a closed canopy, with *Ilex aquifolium* (Holly), several *Salix* species, *Betula pubescens* (Downy Birch) and *Corylus avellana* (Hazel), though surprisingly no *Populus tremula* (Aspen). In fact the whole ravine had a very acid flora, and several of the plants which might have been expected in such a sheltered habitat were sadly lacking (for instance no *Oxyria digyna* (Mountain Sorrel) or other alpine on the rocky ledges). Nevertheless the area might repay a more thorough search in the future. The second interesting area was a tiny patch on the top of nearby Gormol (NB/296.069) with *Salix herbacea* (Dwarf Willow), *Diphysastrum alpinum* (Alpine-clubmoss) and one plant of *Arctostaphylos uva-ursi* (Bearberry), the last two known otherwise only from the high ground on Harris, on the other side of Loch Seaforth. The whole of the upland parts are heavily deer-grazed, possibly resulting in these species hanging on in only a few patches. This was an area apparently no different from lots of adjacent habitat, so it's rather unclear why these species should only be found here, and in such small quantity. There is also plenty of ground as high or higher in areas of The Park that I didn't get to, so it will be worthwhile to return and search for these alpine species there in the future.

I only managed to cross the corner of NB/3.0, a square of mostly land, but only accessible on foot or by boat, but there was *Salix herbacea* here too on the high ground, and a nice gulley running east from Gormol had *Oxyria digyna*, *Sedum roseum* (Roseroot) and *Asplenium trichomanes*. This is another area that would benefit from a more thorough survey, possibly concentrating on the higher areas.

#### **Toddun, North Harris (NB/2.0)**

I made a quick trip to Toddun, a rather steep mountain with a narrow summit forming a ridge. There are some old records for interesting species (*Alchemilla alpina* (Alpine Lady's-mantle), *Oxyria digyna*, *Saxifraga oppositifolia* (Purple Saxifrage) and *Saussurea alpina* (Alpine Saw-wort)), but walking up the south-east shoulder and down the north-east flank failed to turn up any remotely suitable habitat for any of these. The summit ridge had a lot of small cliffs and rocky outcrops, but most were dry, and the intervening parts were very sheeped. There was *Salix herbacea* in small quantity on the tops, and a few ferns on damp cliffs low on the east side (*Phegopteris connectilis* and *Asplenium trichomanes*), but I presume that the rich bits are either on the west, or that the 'nice' species have been grazed out.

#### **Eaval, North Uist (NF/8.5, 8.6, 9.5 & 9.6)**

Never happier than when doing something slightly crazy, I aimed for Eaval on my way south. Whoever planned the national grid inconsiderately arranged for four hectads to more or less coincide on the summit, with the result that you can go crazy trying to remember what you've already recorded and which square you are in. Nevertheless a rewarding day turned up *Hammarbya paludosa* (Bog Orchid) in a very shallow gulley in 8.5, roughly doubled the number of species from 9.5 (another of those hectads with not much land) and refound several species in 8.6 which had not been seen since the 1930s, including *Ranunculus acris* (Meadow Buttercup), *Sedum anglicum* (English Stonecrop) and *Solidago virgaurea* (Goldenrod). I was also happy to find *Salix herbacea* (9.6) and *Hymenophyllum wilsonii* (8.6) near the summit. Again, however, I was struck by the amount of grazing (most of the evidence was for deer this time), and there were a lot of old records for 'nice' species which I did not rediscover, although I only managed to record the south side. Maybe a more comprehensive survey would again be useful.

If there is a moral to the story, it would seem to be that there are lots of plants to be found or refound in the OH, and lots of fun to be had (especially if the weather is as sunny as August 1997 was and you don't mind a midge or two million!). Any volunteers?

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## ANNUAL EXHIBITION MEETING 1997 – ABSTRACTS

The reports that follow have been edited for publication by Ailsa Burns who has taken over this task from Dr Sarah Webster.

### SEEMINGLY CASUAL OCCURRENCES IN SCOTLAND OF SOUTHERN *RUBUS* SPECIES

A bramble collected by G. A. Ballantyne in 1995 near the Fife end of the Forth Bridge in v.c. 85 has proved to be *Rubus naldrettii*, hitherto believed to be endemic to S.E. England, where it is almost confined to West Sussex, v.c. 13. As with *R. surrejanus*, another S.E. England species of which a colony was found, no less surprisingly, at Brodick, Isle of Arran, v.c. 100, in 1997, accidental human introduction seems the more likely origin than dispersal by a migrant bird. The reverse, however, seems more probable in the case of a bramble collected on the Isle of Eigg, v.c. 104, by S.M. Macvicar in 1895 (specimen now in **BM**), for this has proved to be *R. venetorum*, a species about to be described from Brittany, where it is common, but which otherwise appears to occur almost exclusively as a bird-brought casual in S.W. England.

The specimens in question were exhibited, with non-Scottish material for comparison.

D.E. ALLEN

### A CYTOLOGICAL SURVEY OF *BUTOMUS UMBELLATUS* IN THE BRITISH ISLES

Recent work by Czech authors has shown that *Butomus umbellatus* is represented by two cytotypes in Central Europe, one diploid ( $2n=26$ ) and the other triploid ( $2n=39$ ). The preliminary results of a survey of British material were presented. Most of the samples collected in the wild in Britain were triploid, but two, (from Dorset and Devon) proved to be diploid. The only Irish plant counted so far is diploid. The triploid populations include some sites such as the River Cam in Cambridge where the species has long been known and is presumably native, and others such as the River Eden in Cumbria where the population has increased greatly in recent decades. Reproduction of *B. umbellatus* is predominantly vegetative, and herbarium specimens were exhibited to demonstrate robust rhizomes with lateral buds and inflorescences with bulbils: the latter were collected recently from a triploid population in Cambridgeshire. Chromosome counts of plants obtained from nurseries have shown that both diploids and triploids are available commercially.

J.P. BAILEY & C.D. PRESTON

### THE 'DISAPPEARING' CHARACTERS OF *OENOTHERA*

The existence of occasional, very isolated minor traces of *O. glazioviana* in large green-sepalled colonies of *O. biennis*/*O. cambrica* prompted speculation (supported by American literature) that when, say, one or two red-sepalled *O. glazioviana* invade such a colony, the outnumbered genes sooner or later all become permanently recessive and the visual characters disappear (*BSBI News* 76: 67).

Exhibited were specimens and photographs demonstrating 'disappearing' leaf characters (usually inherited as a group). For many years leaf and other characters in two small colonies have given an appearance of homogeneity but both were found to be hybrid swarms of *O. biennis* × *O. cambrica*. The leaf characters of *O. biennis* were dominant in one, and those of *O. cambrica* in the other.

Also exhibited were specimens from a larger young triple hybrid swarm: leaf patterns of all three species were widely intermingled.

J.C. BOWRA

### A HYBRID *PILOSELLA*

A population of the hybrid *Pilosella* × *stoloniflora* in the chapel graveyard at Tan-y-groes, SN/284.493, v.c. 46 Cards, has most stems with only one capitulum and the phyllaries with abundant glandular but no eglandular hairs (this hybrid normally has most stems with more than one capitulum and the phyllaries with both glandular and eglandular hairs). It is confirmed by P.D. Sell as matching exactly *Hieracium* × *stoloniflorum* nothosubsp. *schurianum* Nageli & Peter, described from Transsilvania, and is assumed to be the hybrid between *Pilosella officinarum* subsp. *euronota* and *P. aurantiaca* subsp. *carpathicola* which are growing with it. This nothosubspecies is believed to have arisen here de novo, and is new for the British Isles.

A.O. CHATER

### *FALLOPIA* × *BOHEMICA* – A NEW RECORD FROM AUSTRALIA?

– and possibly from the Southern Hemisphere (New Zealand is being checked) – was found in the herbarium in Canberra but had been collected in a suburb of Sydney.

ANN P. CONOLLY

### THE LINK BETWEEN GENETIC IDENTITY AND LEAF MORPHOLOGY IN NATIVE BLACK POPLAR (*Populus nigra* subsp. *betulifolia*)

This project is being undertaken as a Ph.D. studentship at the University of Nottingham, funded by the Environment Agency. Much leaf variation has been observed in the taxon and it is thought that further infraspecific taxa may exist. Five hundred trees from the native range as described by Edgar Milne-Redhead will be genetically tested and a comparison made with the corresponding leaf form. Members of the National Working Group were consulted and they suggested the inclusion for comparison purposes of specimens from the Republic of Ireland, the Channel Islands, and Eastern and Western Europe, together with a Manchester poplar and the species known to hybridise with black poplar. It is anticipated that the project will be completed in October 2000, and it is hoped to publish a summary of the thesis.

Ms FIONA COOPER

### MAPPING TAXA ON ATLAS 2000 DATE CLASSES

The Vascular Plant Database (VPD) from which the Atlas 2000 will be produced, currently includes records from a variety of sources, including The Scarce Plants Project, The Red Data Book, and *Aquatic Plants in Britain and Ireland* (C. D. Preston and J. M. Croft). We therefore have a good, pre-Atlas 2000, database for a variety of taxa. In order to assess the quality of this database, it was decided to plot all Scarce and some aquatic taxa using the three Atlas 2000 date classes (1987 onwards, 1970- 1986, and pre-1970); differentiation was also made between native and alien records as it will be in the final Atlas. This exercise proved very instructive and a variety of taxa mapped in this way was displayed. Maps of selected Scarce and aquatic taxa will be published as a green booklet in the *Field-work for Atlas 2000* series.

T.D. DINES & C.D. PRESTON

### FURTHER PROGRESS WITH LANCASHIRE RUBI

Herbarium sheets representing the most outstanding discoveries of 1997 for the county were exhibited. Specimens included a new southern limit for *R. furnarius* at Catlow, v.c. 59, SD/88.36, new northern limits for *R. diversus* near Burnley Barracks, v.c. 59, SD/83.33, and *R. rudis* at Gisburn v.c. 64 SD/82.49 plus *R. silurum* at Bashall Eaves, SD/68.44, new to Watsonian Yorkshire.

Also exhibited were several undescribed plants including 'The Lancashire Bramble', 'The Lever Park Bramble', and 'The Lancashire False Griffithianus', the last having been found recently within v.c. 64.

Propagated plants of *R. adenanthoides* and *R. echinatus* were also displayed. Over 50 species of *Rubus* are currently under propagation; it is intended that material from such plants will be available for future *Rubus* chromosome number, DNA profile and genecological research programmes.

D.P. EARL

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A NEW HERBARIUM FOR THE 21ST CENTURY

Plans for a new herbarium and library in the Mountford Building, adjacent to Liverpool Museum's existing building, were displayed along with information on the botanical collections and sample publications. An opinion survey of visitors to the exhibition was carried out by means of a questionnaire. The relocation of staff and collections is due to begin in 1998/99 and the redevelopment of the Museum, along with new gallery displays and an enhanced Natural History Centre, is expected to be completed by 2001. Some interruption of access to the herbarium is likely.

J. EDMONDSON

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### MAINLY GRASSES AND SEDGES OF N. E. TURKEY

This was a display of plants that are less often seen by British botanists. Of particular interest was *Carex caucasica* that grew above 2,500m at Yalnizcam. Yayla, at 3,500m provided the sedges *Carex melanorrhynca*, *C. brevicollis*, *C. atrata*, *C. tristis*, *C. capitellata*, *C. pyrenaica*, and *Juncus alpigenus* and the blackish Quaking Grass, *Briza marcowiczii*. Some dry hills, south of Tortum yielded *Carex supina* and the grasses *Hordeum nodosus* subsp. *caespitosus*, *H. violaceum* and *Eremopoa songarica*. The grasses *Elymus hispidus* subsp. *barbulatus* and *Zingeria pisidica* came from the Palandoken Pass. Bulbous-based culms of *Beckmannia eruciformis* subsp. *eruciformis* were found south of Erzurum; Kop Pass provided the grasses *Psathrostachys fragilis* and *Bromus danthoniae*. Five species of *Stipa* were shown, and from near Trabzon Airport, *Paspalum paspalodes*, *P. thunbergii* and *P. dilatatum*. One beautiful, purplish, delicate grass, *Agrostis delicatula* from Sierra de Gredos, Central Spain was mounted with notes to show identification problems.

T.G. EVANS

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THE ATLAS FLORA OF SOMERSET

A display to show the new *Atlas Flora of Somerset* by Paul R. Green, Ian P. Green and Geraldine A. Crouch with a special offer to BSBI members of £20.00 per copy, signed by the three authors. Further copies are still available from the three authors at the full price of £25.00 per copy.

P.R. GREEN

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## POPULUS IN CARMARTHENSHIRE, V.C. 44 – 21 TAXA IDENTIFIED SO FAR

Pubescent *Populus nigra* was discovered in the county in 1991 during field work for the Flora of Carmarthenshire. This prompted a more intensive study of all *Populus* in v.c. 44, Carms. Initial results were presented in the exhibit. This included a map showing the main areas of *Populus* in the county, and a distribution map and notes for each taxon. Main visit dates were given, mostly late April and early May to study catkins, colour of emerging leaves and the relative time of leaf emergence, then summer for mature leaves. 21 identified specimens and 11 photographs of trees were also displayed.

During the survey it was noticed that a new generation of poplars was being planted along new link roads and in landscaped former industrial sites. The morphological characters of these approved clones need to be unravelled for the botanists of the next millennium.

G. HUTCHINSON

## ALIENS IN V.C. 58

A selection of aliens found in Cheshire, v.c. 58, during recording for Atlas 2000 was exhibited, including: *Agrostis castellana*, *A. scabra*, *Ambrosia psilostachya*, *Anisantha diandra*, *A. tectorum*, *Bassia scoparia*, *Bidens connata*, *B. frondosa*, *Bromus inermis* subsp. *inermis*, *Crepis setosa*, *C. tectorum*, *Cyperus eragrostis*, *Guizota abyssinica*, *Herniaria glabra*, *Hordeum jubatum*, *Lathyrus hirsutus*, *Mentha pulegium*, *Persicaria wallichii*, *Polygonum rurivagum*, *Polypogon monspeliensis*, *Rapistrum rugosum*, and *Setaria pumila*.

G.M. KAY

## EPILOBIUM × MONTANIFORME

The hybrid between *Epilobium montanum* and *E. palustris* was treated as of British occurrence in the London Catalogue and Dandy's List, but has been disregarded in recent years. The supposed first discovery of this cross in Britain in 1892 certainly seems untrustworthy, and this has coloured subsequent views.

A specimen found in v.c. 105 West Ross in 1996 was exhibited, which restores this taxon to the British flora. Relevant characters are the intermediacy of the leaves and the 'clenched fist' shape of the stigma, and the length of those seed pods which are not sterile. Earlier records were re-evaluated.

The rarity of the hybrid does not correspond with the frequency with which the parents may be in close proximity, and data were given as to the relative frequency in Britain of recorded *Epilobium* hybrids.

G.D. KITCHENER

## PLANT CRIB 1998

The original *Plant Crib* is being combined with the *NCC Guide to the Identification of some of the More Difficult Vascular Plant Species* and the *BM Fern Crib* for the BSBI Atlas 2000 project.

*Plant Crib 1998* aims to revise and extend existing accounts, to draw attention to problems, to incorporate recent work, and to indicate the current taxonomic status of certain groups and suggest how best they may be recorded. Approximately 200 taxonomic groups will be covered, but taxa adequately covered in Stace's *New Flora* (1991, 1997) and the BSBI Handbooks will be excluded except for updates. It is due for publication in Spring 1998.

Draft pages were exhibited, with a request for help for various taxa.

T.C.G. RICH

## CATALOGUE OF TYPE SPECIMENS AT NATIONAL MUSEUM AND GALLERY OF WALES (NMW)

Type specimens are key assets for solving taxonomic and nomenclatural problems. One of the first documentations undertaken at the National Museum and Gallery of Wales (NMW), was to catalogue the vascular plant type specimens.

The herbarium was searched for types, including the internationally important E.S. Edees *Rubus* and C.R. Fraser-Jenkins fern collections. The specimens were verified against the original published details, during which it was found that a significant number of specimens in red folders were not types.

The catalogue lists the name, type of type, place of publication, and details on the herbarium sheet with additional notes where appropriate. 309 types are listed representing 206 taxa, mostly *Rubus*! Topotypes of some geographically restricted taxa such as *Coincya wrightii* have not been listed. Copies of the catalogue are available free to bona fide research workers on written request.

T.C.G. RICH, J.L. CAREY, R.D. RANDALL, R. SEWELL & R. SPEARS

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WE WENT TO LOOK FOR *GENTIANELLA ANGLICA* IN FRANCE

The widespread distribution of Early Gentian, *Gentianella anglica*, in Britain, from Cornwall and Pembrokeshire to the White Cliffs of Dover and Beachy Head at Eastbourne, suggests that it could occur on the chalk in Northern France.

In June 1997 we went to search limestone grasslands in France for three days. Alas, much of the French chalk is even more intensively farmed than it is in England, and suitable sites were few and far between. We found a number of rare British species, such as Field Eryngo, *Eryngium campestre*, and Man Orchid, *Aceras anthropophorum*, and two sites for a Gentian, (*Gentianella* species, possibly *G. germanica*), in one of which it was growing with Grass-of-Parnassus, *Parnassia palustris*, in dry chalk grassland.

Further searches on the scarp would be worthwhile, but for the time being, Early Gentian remains an endemic British species.

T.C.G. RICH, A. MCVEIGH & N. HINSON

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## MEDITERRANEAN FIELD BOTANY IN SOUTHERN SPAIN, APRIL 1997

The exhibit displayed records and photographs, including a computer-based video presentation, of the BSBI Field Meeting in Andalucia in Southern Spain with staff and students from University of Reading in April 1997. The visit covered two markedly different habitats. The first explored the arid coastal and inland habitats in the province of Almeria with endemic and local species, including several parasitic species, specially adapted to salt-rich conditions. The second covered montane habitats in the Sierra Nevada in Granada province. The wide variety of plants seen included a very different set of endemic and local species but also contained a surprising number of species from the British flora.

D.J. SCOTT

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UMBELLIFERAE HORT. AT GOSPORT

This was a partial view of species grown at Gosport, v.c. 11, over the last ten years. The material was mainly in the form of pressings backed up by some photographs and a few living plants. As about 120 species were under cultivation in 1996, the exhibit was of necessity only a selection. The majority of the plants were of Southern European or Turkish origin with a few from more distant regions such as Himalayas, China, and Macronesia. A brief summary of the methods was presented, together with observations on each of the individual exhibits.

M.J. SOUTHAM

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## PAINTINGS OF ESTABLISHED ALIENS 1997

Paintings of established garden plants seen on holiday in Kent and Central England were displayed.

### RECORDS FROM v.c. 73

Specimens of the following were exhibited:

- *Atriplex praecox*, second county record, only extant record.
- *Crassula helmsii*, new county record.
- *Gnaphalium sylvaticum*, third extant record of a declining species.
- *Egeria densa*, found in a small pond at New Abbey, the mystery is, how did it get there?
- *Clematis vitalba*, second extant record, a vertical panorama of an enormous dead elm with 40 feet of Traveller's Joy cascading from the top.
- *Cardamine corymbosa*, arrives in a rock garden nursery, some plants suit the old name, *C. uniflora*, others would suit *C. corymbosa* with a corymb, or are they another New Zealand species?
- *Ranunculus flammula*, a creeping form covering a damp hollow in the Forestry Commission forest.

### NEW VICE-COUNTY RECORD FROM v.c. 80

A specimen of the following was exhibited:

- *Carex × boenninghausiana*.

OLGA STEWART

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TREES OF SARK (AND OTHER NEW RECORDS)

The exhibit was introduced with a review of past records of trees 'in the wild'. 'Wild' had not been defined and it was decided, instead, to lay down guidelines defining what plants should be recorded and where. These limits were more liberal than before; partly owing to this, and partly owing to better identification, 21 newly planted trees and a single established one were recorded. In addition, *Rhus typhina* and *Pseudosasa japonica* had become established. *Prunus × fruticans* was a new native and *Hydrangea macrophylla*, *Nepeta × faassenii* and *Fargesia spathacea* new planted records. *Oxalis stricta* and *Delairea odorata* were new casuals. Updated were *Mentha pulegium* (native, last seen 1902) and *Onopordum acanthium* (casual, last seen 1881). A specimen is now available of *Asplenium × sarniense* (native, recorded new 1996). Most records were illustrated by specimens, many by photographs.

R.M. VEALL

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### THE STATUS, DISTRIBUTION AND GENETIC DIVERSITY OF *ASPLENIUM CSIKII* IN THE BRITISH ISLES

*Asplenium csikii* Kümmerle & András. (syn. *A. trichomanes* subsp. *pachyrachis* (Christ) Lovis & Reichst.), the Lobed Maidenhair Spleenwort, is a tetraploid taxon within the *A. trichomanes* L. complex. Although *A. csikii* has been widely recognised in continental Europe, it was reported as occurring in the British Isles only recently from the Wye valley. The fern has been included in the forthcoming edition of the British *Red Data Book*. In Europe, *A. csikii* is widespread but scattered and grows on natural rock faces but rarely on buildings, whereas in the British Isles most reported occurrences are on castles. This raises the question of its native status. A field survey was carried out to resolve the extent and distribution of this critical taxon. Allozyme electrophoresis was carried out to investigate breeding systems and the distribution of genetic variation within and between populations.



It was demonstrated that the ancient Norman castles in the Wye valley have been colonised from populations from natural sites close by, thus *A. csikii* is confirmed as a native taxon to the British Flora.

This work has been supported by a generous grant from the BSBI Bequest Fund.

J.C. VOGEL, F.J. RUMSEY, JACQUELINE S. HOLMES, S.J. RUSSELL, J.A. BARRETT & MARY GIBBY

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Other exhibits included: *Some Dorset heathland plants*, Gillian Barlow; *Mistletoe survey – analysis so far*, J. Briggs; *Saving wild flowers*, Lynne Frankland; *Avon Gorge Appeal Fund: sale of Veronica spicata subsp. hybrida*, Libby Houston; *Help and Galls*, S. & Ann Karley; *DMA for Windows*, A. Morton; *BSBI Postcards*, Anita Pearman; *Cyprus flora*, Wendy Taubert; *Botany on the Internet*, R. Whitehead & C.S. Crook.

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## STOP PRESS

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THE NATIONAL FESTIVAL OF BRITISH WILDLIFE MILTON KEYNES, 24–26 JULY

The BSBI would like to be involved in this Festival and we are considering various options, including the purchase of exhibition screens, etc. The Festival is planned to be a three day event allowing the general public to meet, discover, and learn about the numerous bodies involved in the study, conservation and recording of all aspects of British wildlife.

The biggest problem we face is lack of sufficient people to man our exhibit. As this is a three day event, we need, ideally, a stream of volunteers to stand or sit by our exhibit for a few hours at a time, preferably in pairs so that they will not be tied to our exhibit for the whole time.

If you would like to help please contact Cameron Crook, BSBI Co-ordinator, who is looking into our possible involvement.

For further information on the Festival contact: Gordon Ramel, c/o J.G.E.R., North Wyks, Devon EX20 2SB, Tel.: 01837 82558, Fax: 01837 82139, e-mail: Gordon.Ramel@bbsrc.ac.uk., web site: <http://www.ex.ac.uk/~gjlramel/fbw1998.html>

EDITOR

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### BSBI BROOCHES / TIE-PINS

Gwyn Lee (son of Ailsa Burns our Youth Officer and Secretary of Meetings Committee) has offered to produce in hallmarked Sterling Silver, oval brooches or pendants (1¼ × 1¼ inches) or smaller tie-pins all with the BSBI logo in relief, for the remarkably low price of about £19 (tie-pins a little less). Ailsa will bring samples to the AGM in Cardiff. Queries to Ailsa or Gwynn at: 3 Rosliston Road, Stapenhill, Burton-upon-Trent, DE15 9RJ

EDITOR

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BE RECOGNISED

Thanks to David Carstairs for these suggestions! Who will be the first to take one of them up? Come to think of it, the bottom left figure looks strangely familiar . . .

The Editor Gwynn Ellis can be contacted by phone or fax on 01222-496042 or e-mail: bsbihgs@aol.com
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Continued from back cover

ALIENS	55
Alien records	55
<i>Lavatera albia</i> × <i>L. thuringiaca</i> does occur in Britain	59
<i>Adiantum raddianum</i> Presl in London	60
<i>Oenothera</i> Section <i>Oenothera</i> Subsection <i>Oenothera</i>	60
<i>Fascicularia</i> (Bromeliaceae) established in NW Europe	62
More roadside <i>Bassia scoparia</i>	63
<i>Bassia scoparia</i> in v.c. 28, 53 and 54, a possible connection with east coast ports	63
Foxtail Barley – a predilection for roundabouts?	63
Roundabout Foxtail Barley – a case of salt dispersal rather than seed dispersal perhaps?	64
A tale of two <i>Bidens</i>	64
NOTICES (BSBI)	66
Courses on Biobase, Recorder and DMap	66
BSBI postcards	66
NOTICES (NON BSBI)	66
Countryside Planning and Management (CPM) on the move	66
REQUESTS	67
Flora-for-Fauna – postcode plants database – request for illustrations	67
True Fox-sedge – a request for information	67
Manuscripts by Charles Abbot (1761-1817)	68
Orchid pollination	69
Distribution of <i>Pinguicula lusitanica</i>	69
<i>Coeloglossum viride</i> (Frog Orchid) management	69
Forms of <i>Cymbalaria muralis</i>	69
BOOK NOTES	70
Reviews of recent BSBI publications	70
<i>Ecology in Somerset</i>	71
<i>Botanical Cornwall</i> 8 (1998)	71
<i>Wiltshire Botany</i> - a new journal	71
<i>The flora of walls in West Norfolk</i>	72
<i>A natural history of Sutton Park</i> Part 1: the vascular plants	72
<i>Flora of Alderney</i> : A checklist with notes (1988)	72
REPORTS OF FIELD MEETINGS — 1996 & 1997	72
A correction	72
Hayling Island, Hants. (v.c. 11)	73
Pwllheli, Caernarfonshire (v.c. 29)	73
Llangollen, Denbs. (v.c. 50)	74
Crook Peak & Brean Down, N. Somerset (v.c. 6)	75
Upper Edw Valley, Radnor (v.c. 43)	76
The Lizard, Cornwall (v.c. 1)	76
Hartley Moss, Staffs. (v.c. 39)	76
BSBI Field Meetings in Ireland	77
REPORTS OF OVERSEAS FIELD MEETINGS OR TRIPS	78
Turkey, 29 June-13 July 1997	78
Recording for the Norbotten flora, Sweden, July 1997	82
Mediterranean field botany in Southern Spain, April 1997	83
Notes on the plants of remote parts of the Outer Hebrides	85
ANNUAL EXHIBITION MEETING 1997 – ABSTRACTS	87
Seemingly casual occurrences in Scotland of southern <i>Rubus</i> species	87
A cytological survey of <i>Butomus umbellatus</i> in the British Isles	87
The 'disappearing' characters of <i>Oenothera</i>	87
A hybrid <i>Pilosella</i>	88
<i>Fallopia</i> × <i>bohemica</i> – a new record from Australia?	88
The link between genetic identity and leaf morphology in native Black Poplar	88
Mapping taxa on Atlas 2000 date classes	88
Further progress with Lancashire Rubi	89
A new herbarium for the 21st Century	89
Mainly grasses and sedges of N. E. Turkey	89
<i>The Atlas Flora of Somerset</i>	89
<i>Populus</i> in Carms., v.c. 44 – 21 taxa identified so far	90
Aliens in v.c. 58	90
<i>Epilobium</i> × <i>montaniforme</i>	90
<i>Plant Crib</i> 1998	90
Catalogue of Type specimens at National Museum and Gallery of Wales (NMW)	91
We went to look for <i>Gentianella anglica</i> in France	91
Mediterranean field botany in Southern Spain, April 1997	91
Umbelliferae Hort. at Gosport	91
Paintings of established aliens 1997	92
Records from v.c. 73	92
New vice-county record from v.c. 80	92
Trees of Sark (and other new records)	92
The status, distribution and genetic diversity of <i>Asplenium esikii</i> in the British Isles	92
STOP PRESS	93
The National Festival of British Wildlife	93
BSBI Brooches / Tie-pins	93
Cartoon	94

CONTENTS

ADMINISTRATION	2
BSBI Web site address	2
Deadline for <i>News</i> 79	2
IMPORTANT NOTICES	3
Presidents Prize	3
An Apology	3
BSBI Wales Quadrennial Meeting and 36th AGM, 1998	3
Barra excursion – change of date	4
Glenfinnan excursion – change of venue – to Strontian	4
Identification Workshop, Glasgow – new meeting	4
Scientific and Research Committee	4
DIARY	4
EDITORIAL & NOTES	5
Congratulations, Obituaries, BSBI Web Site, BSBI AGM Cardiff	5
Llandovery Field Meeting, A satisfied customer, Apologies, Rare Plants in Cultivation, Tailpiece, And finally	6
ATLAS 2000	6
Progress report	6
Lancaster 1997 and 1998	7
Field Meetings	8
Butterfly Atlas	8
Rare and Scarce on the N. Scotland Field Card (RP25)	8
Into the Field!	9
RECORDERS AND RECORDING	10
Amendment no. 1 to <i>BSBI Year Book 1998</i>	10
Panel of Referees: Change of address:	10
V.c. Recorders: Changes, Changes of address.	10
The BSBI Recorders' Conference, Lancaster, Sept. 5-7th, 1997	10
Botanical recording and conservation	12
Plant status and recording	14
More on grid references	17
More on grid references and O.S. maps	17
Recording cards: some more views	18
Phytogeography and recording	19
Native Black Poplar recording cards	20
NOTES AND ARTICLES	20
News from the BSBI Database	20
The Vice-comital Census Catalogue project	21
Dialect plant-names	23
Natural nursemaids again	23
New O.S. maps	24
Recording trees of Sark for Atlas 2000	24
<i>Arenaria norvegica</i> subsp. <i>anglica</i> alive and well in Yorks. but what about its Scottish relative?	27
More about the vasculum (and other practical matters)	27
Long distance identification skills?	28
Variability in the Common Ash (<i>Fraxinus excelsior</i>)	28
Database of BM Orchidaceae	31
Postscript on <i>Dipsacus</i> in Dublin	32
Flowering of <i>Dipsacus fullonum</i>	34
Flower colour variation within and between populations of Wild Radish	35
Aberrant Flora update	36
<i>Oenanthe pimpinelloides</i> , a new plant for Northern England?	36
Hybrid Sloes	38
<i>Gagea lutea</i> in Moray (v.c. 95)	39
Botanists and Botany in literature – 8: Addendum	40
Botany and botanists in literature - 9	41
Botanists in literature – 10	42
Botany (Plant products) in literature – 11	44
Botany in literature – 12	45
<i>Astragalus danicus</i> on high	46
Bird's-foot-trefoils winning ways	46
Multicoloured yarrows	47
A rich opinion	47
So you don't like 'mints'	48
CONSERVATION NEWS & VIEWS	49
Have you seen Floating (or submerged!) Water-plantain?	49
Toothwort management	50
The successful introduction of <i>Artemisia campestris</i> to Suffolk	50
Sowing the right seeds	52
<i>Flora locale</i> bites back	53
Uncropped wildlife strips for arable wild flowers	53
<i>Liparis loeselii</i> - visiting arrangements	54

Continued on inside back cover