

Edited by R. Gwynn Ellis

No. 51

Dept. of Botany, National Museum of Wales

Cardiff CF1 3NP



GE  
1988

A - *Brachiaria platyphylla* (Griseb.) Nash    B - *Urochloa panicoides* P. Beauv.  
C - *Brachiaria deflexa* (Schumach.) C.E. Hubbard ex Robyns  
del. G.M.S. Easy    ©1989

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9 Arun Prospect, PULBOROUGH, West Sussex RH20 1AL

HON. TREASURER (Payment of Subscriptions and change of address) Mr Michael Walpole,  
68 Outwoods Road, LOUGHBOROUGH, Leics. LE11 3LY  
(Please quote membership number on correspondence concerning membership or subscriptions  
- your membership number is on the address label of your mailings).

HON. FIELD SECRETARY (Enquiries on Field Meetings) Mr Roy Smith,  
8 Salcey Close, SWANWICK, Derbys. DE55 1HD

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21 Fishers Road, Totton, SOUTHAMPTON, Hampshire SO4 4HW

MEETINGS: Mrs Ailsa Lee,  
3, Rosliston Road, Stapenhill, BURTON-ON-TRENT, Staffordshire DE15 9RJ

PUBLICATIONS: Mr Arthur O. Chater,  
Dept. of Botany, British Museum (Nat. Hist.), Cromwell Road, LONDON SW7 5BD

RECORDS: Mr David J. McCosh,  
13 Cottesmore Gardens, LONDON W8 5PR

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CONTRIBUTIONS INTENDED FOR

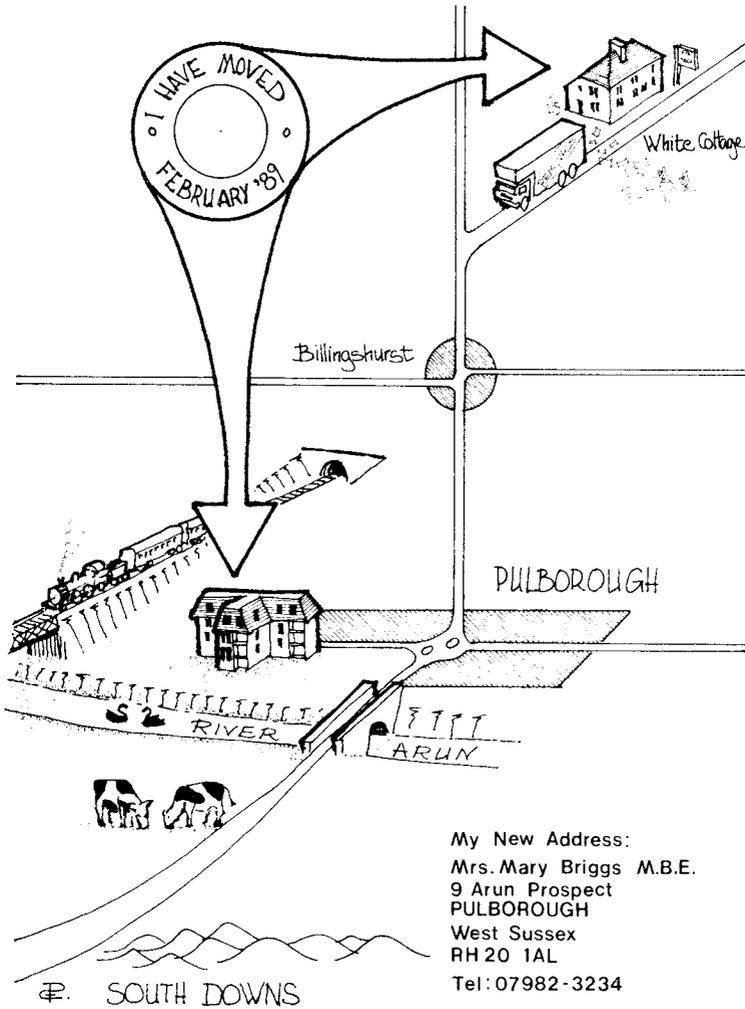
BSBI NEWS 52

should reach the Editor before

28th JULY 1989

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HON GENERAL SECRETARY'S NEW ADDRESS



My New Address:  
Mrs. Mary Briggs M.B.E.  
9 Arun Prospect  
PULBOROUGH  
West Sussex  
RH 20 1AL  
Tel: 07982-3234

**Some inside information on Mary's new habitat**

Mary has had to move to accommodate the vast piles of computer printout generated by the Monitoring Scheme. Her new habitat in the heart of Sussex overlooks the River Arun and its water meadows, Amberley Wild Brooks and the South Downs (some of the best botanical ground in the world). The view from the kitchen window alone is enough to make you enjoy washing up. She has 3 miles of customized book-shelves, a balcony for sunbathing and a railway station just round the corner. The only drawback is that she isn't allowed to sing between 11pm and 8am!

We wish her a long and happy life in her new home.

IMPORTANT ANNOUNCEMENTS

**On the Move**

Eric J. Clement is also on the move. His new address, with immediate effect, is:  
54 Anglesey Road, Alverstoke, GOSPORT, Hants. PO12 2EQ

**Field Trip to Poland**

Due to rescheduling, the field meeting to Poland now has a few vacancies. If you are interested please turn to page 34 and phone Arthur Copping immediately.

**Recorders Meeting Lancaster**

Any member interested in receiving a programme and booking form for the Recorders Meeting, Lancaster, Sept. 1st - 3rd 1989 - other than v.c. Recorders who will receive these before the end of April - please send 9" x 6" s.a.e. to: Mr D.A. Wells, NCC, Northminster House, PETERBOROUGH PE1 1UA

**Change to Salicornia meeting**

Please turn to page 35 for revised details of this meeting to be held at Chichester, Sussex on Saturday 30th September.

NB It is now possible to attend the **Salicornia** meeting on the Saturday and the **Cotoneaster** meeting on the Sunday.

**Watsonia publication dates**

Please note that in future Watsonia will be published and distributed to members in February and August each year and not in January and July.

EDITOR

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DIARY

NB. These dates are supplementary to those in the 1989 Calendar.

1989

May

1st :           Deadline for enquiries re the field trip to Poland (see above and page 34)

August

31st :          Deadline for bookings for the **Salicornia** field meeting (see above and page 35)

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CORRIGENDA CORNER

My thanks to Tony Primavesi for pointing out that in the account of the excursion for **Rosa** at the Taxonomic Workshop (BSBI News 50: 9), Grace Dieu Wood was visited to see not **Equisetum fluviatile**, which is common in suitable habitats in Leicestershire, but **E. hyemale** in its only Leicestershire station.

EDITOR

Mr Ian Lawrence Kuzerov

My sincere apologies for mistaking the distinguished gentleman in the photo (BSBI News 50: 41, no. 21) for a Bulgarian botanist. I would like to thank Ian for taking his change of identity with good humour - and, memo to Referees: stick to plants, they are unable to write to tell you that you have misidentified them! (on second thoughts it might be helpful if they could?)

MARY BRIGGS

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EDITORIAL

I was very sad and annoyed when I heard on the radio last November that Wurzell's Wormwood, a hybrid **Artemisia** new to science, had been destroyed by tipping. Was this an attempt to remove a potential threat to redevelopment or an unfortunate accident? If the latter then these seem to be getting more frequent. It is not now uncommon to hear that an interesting site has been ploughed up, drained or developed, just before some protective measure can come into force.

The weather, always a good talking point here in Wales, continues unabated. Never mind about the first cuckoo of spring, we had dandelions, daisies and groundsel in flower in January (surprise, surprise), and if I hear another reference to 'the very early Spring', I will scream!

EDITOR

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WELCH BEQUEST FUND  
Mechanism for awarding grants

1. A small sub-committee of 4 (including at least one financial 'expert' and one scientific 'expert') will oversee expenditure from the fund within general principles agreed by Council. At least initially the membership will be the three Officers plus Dr A.J. Richards.
2. It is hoped that this sub-committee could conduct most of its business by post, but in order to maintain the principles fairly it will not delegate decisions to one person (e.g. the Treasurer) even for very small amounts. However, if the sub-committee agreed to fund, for example, travelling expenses for members of a working party, claims relating to each of the separate meetings would not need to come before the sub-committee. Recommendations by the sub-committee for awards of £2,000 or above must be agreed by Council before implementation.
3. The sub-committee will be accountable to the Co-ordinating Committee, and at least one of its members will be a member of that Committee and be responsible for reporting to it. Alterations to the rules for applicants that may be proposed in the light of experience by the sub-committee must be agreed by Co-ordinating Committee before implementation.
4. Applications must be made on a simple form, obtainable from the Treasurer, which will request:
  - a) Purpose of project in not more than 12 words
  - b) Other participants in project, or links with other projects or organisations
  - c) Exact timing
  - d) Full cost of project
  - e) Whether efforts have been made to secure funds from other sources; if so, with what success
  - f) Amount applied for
  - g) Precise objectives, in 50 to 300 wordsIf the applicant has not been a member of the BSBI for at least five years, the application must be supported in 25 to 50 words by someone who has.

5. Grants will be made to any person who can demonstrate under 4.g) above that the proposed project is of scientific (in the broadest sense) value and is relevant to specific current aims and projects of the BSBI (not merely within its broad aims as printed, which can be read to cover virtually anything), and that the aims are attainable within the time stated. Short term, finite projects stand a greater chance of success than long term ones.
6. The application should be made at least three months before the intended project period. Retrospective applications will not be considered. Although there are no closing dates, it should be borne in mind by applicants requesting £2,000 or more that Council meets three times a year (normally November, February and May).
7. Payment for items will be made directly by the BSBI; hence unpaid invoices should be presented to the treasurer. Payment of expenses will be made by the Treasurer after they have been incurred by the successful applicant.
8. After the project is completed, a short report will be required. Its form will be decided by the sub-committee during their consideration of the application, and its submission to the Treasurer will constitute part of the conditions of the grant. It will vary from a sentence or two to a full report suitable for publication, according to the nature of the project.

CLIVE A. STACE, Botany Dept., The University of Leicester, Adrian Building, University Road, LEICESTER LE1 7RH

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#### HON. GENERAL SECRETARY'S NOTES

**Congratulations** to Rev. G.G. Graham whose County Flora was nominated as one of the six runners-up to the Natural World 1988 Book of the Year Award. An achievement indeed for a County Flora, and we send our congratulations to Gordon and his team of helpers on this recognition of The Flora and Vegetation of County Durham, by G.G. Graham (£30 + £2.50 p.p from Mrs M. Burnip, 38 Langholm Crescent, Darlington, Co. Durham - cheques payable to: Durham Flora Project). This Flora is reviewed in the current issue of Watsonia (17: 374, 1989).

#### More BSBI voices on the Air...

Dr Daniel Kelly (on Jamaica) and Dr Oliver Rackham (on Hatfield Forest) - both in the same programme.

#### BSBI Field Meetings Overseas

As you are aware botanical holidays around the world are offered commercially by a number of travel firms, but we do also get requests from members for more BSBI expeditions overseas. If any member has ideas for, and knowledge of, areas which are botanically rich and would be rewarding for members - and may be also prepared to volunteer to lead a BSBI meeting overseas - please send such suggestions to the Hon. General Secretary (**at new address**).

For some past BSBI excursions (e.g. Carnian Alps, Majorca) the travel was arranged for the Society by Cox & Kings Travel, and this long-established firm has offered to organise the travel for similar BSBI field meetings again, by special arrangement. These meetings would not be included in Cox & Kings brochure, and so would be at less cost to BSBI members.

#### Postponed Inserts

Two book adverts which we had agreed to send with the January mailing did not arrive in time for stuffing.

One, In Search of Flowers of the Amazon Forests, is now included with this mailing (the leaflet measures only 3.5" x 5", so be sure that it is not left in your envelope). The

publishers did not send these in December as just as the book was published the author, Margaret Mee, was tragically killed in a car crash. The publicity following the obituaries led to the first printing of the book being completely sold out before the items were assembled for our mailing, and the insert was not included as the book was not then available.

Margaret Mee was a remarkable artist who travelled painting the plants of the Amazon for many years; there is now a reprint.

### Watsonia Requests

We have had two requests for Watsonia, from Russia and from Poland, from botanical institutions which cannot afford the subscription in sterling. Would any member(s) be prepared to send on their copies when finished with? Local journals are offered in exchange, but as the BSBI has no Library (and as few members read Russian or Polish) we do not enter into exchange arrangements, but if any member is interested to help out please contact the Hon. General Secretary - at the new address!

The requests are from The Central Science Library of the V.I. Vernadsk Academy of Sciences of the Ukrainian S.S.R., Kiev - and my thanks to Arthur Chater for translating the Russian letter for me -, and The Botanical Institute of the Polish Academy of Sciences, Jagiellonian University, Kraków, Lubicz. The Director writes that the Jagiellonian University is 'very much in need of the publication "WATSONIA" and is unable to receive it from other source than on exchange.'

### **Please remember s.a.e.**

It has come to my attention that some v.c. Recorders who are based at home, DO NOT REPLY to requests sent to them if there is NO S.A.E. You have been warned.

MARY BRIGGS, Hon. General Secretary

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## RECORDERS AND RECORDING

### **Amendment No. 2 to Vice-county Recorders, September 1988**

One retirement to announce: Mrs J.W. Clark, v.c. 103, and we send our thanks to Joan for her ten years as Recorder for these Islands, Mull, Coll and Tiree.

We welcome the following new Recorders:-

v.c. 29 Cambs: jointly with Mrs Gigi Crompton, Derek Wells is appointed as Recorder; mail for the present to be addressed still to Mrs G. Crompton, 103 Commercial End, Swaffham Bulbeck, CAMBRIDGE CB5 0ND

v.c. 103 mid Ebudes: Dr Agnes Walker, Glasgow Museum & Art Galleries, Kelvingrove, GLASGOW G3 8AG

v.c. 109 Caithness: Mr N. Batchelor, Bulnow, Market Hill, DUNBEATH, Caithness

v.c. H12 Co. Wexford: Lady Rosemary FitzGerald jointly with Dr John R. Akeroyd. Lady Rosemary FitzGerald, Yard Flat, West House, EAST QUANTOXHEAD, nr Bridgewater, Somerset TA5 1FL  
Dr J.R. Akeroyd, c/o Dept. of Botany, Plant Science Laboratories, The University, Whiteknights, READING RG6 2AS

### Change or amendment of Address

v.c. 89 E. Perth: Dr R.A.H. Smith, Holburn, Pitcairnsgrreen, PERTH PH1 3LU

v.c. 90 Angus: Mr A.B. Ritchie postcode: DD3 6IS

Supplement no. 6 to Panel of Referees & Specialists, September 1986

New appointments: We are pleased to welcome the following two new Referees

GENTIANACEAE

**Centaureum:** Dr Francis Ubsdell, 'Hope End', 65 Hill Street, READING, Berks RG1 2NT  
Leaves, stem, calyx, corolla, habitat and locality.

OROBANCHACEAE

**Orobanche:** Jointly with Dr D.J. Hambler, Mr F.J. Rumsey, 93 North Street, HORNCHURCH,  
Essex RM11 1ST

Amendment to specimen requirements:

ROSACEAE

**Rosa** (for beginners): Rev. A.L. Primavesi, "fresh material preferred, mature fruits only  
(no rose flowers as these are not diagnostic for *Rosa*). Senders retain duplicate".

Amendment to species accepted, and change of address:

COMPOSITAE

**Lactuca:** Dr R.N. Carter, will now accept any **Lactuca** specimens.  
New address: 3 Chaucer Close, MALDON, Essex CM9 6DA

Amendment to specimen requirements and to species accepted:

ONAGRACEAE

**Oenothera:** Mr J.C. Bowra is now prepared to tackle all species of **Oenothera**. "Fresh  
material preferred, with colour notes, flowers, mature capsules, and one or two  
mid-stem leaves".

Change of address:

FAGACEAE

**Quercus:** Mr J.E. Cousens, 78 Falcon Court, Canaan Lane, Morningside, EDINBURGH 10

MARY BRIGGS, Hon. General Secretary

DAVID J. McCOSH, Hon. Secretary, Records Committee

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CORIANDER AND FENUGREEK AS CROPS AND THEIR WEEDS

In October 1988 I accidentally found a field of about ten acres planted with Coriander and Fenugreek as crops near Bradfield, v.c. 22, Berks: this field was later visited by Dr S.L. Jury and other botanists. It appears that the green matter is sold as a salad in Waitrose supermarkets and perhaps elsewhere. The crop plants were in flower and/or seed and were being cut in October; by December the field had been ploughed. The origin of the seed was not discovered.

The following unusual weeds were found in the crop, which had not been sprayed:  
**Brassica juncea**, **B. napus**, **Cannabis sativa**, **Chenopodium rubrum**, **C. urticum**, **Erucastrum varium?**, **Helianthus annuus**, **Lepidium sativum**, **Linum usitatissimum**, **Panicum miliaceum**, **Solanum luteum**, **Triticum aestivum**, and **Vaccaria pyramidata**. Specimens of many of these are now in the herbarium of Reading University. 'Native' weeds included **Avena fatua**, **Capsella bursa-pastoris**, **Chenopodium album** (including a form with crimson axils), **Euphorbia helioscopia**, **Fallopia convolvulus**, **Fumaria officinalis**, **Lamium amplexicaule**, **Matricaria inodora**, **Poa annua**, **Polygonum persicaria**, **Raphanus raphanistrum**, **Spergula arvensis**, **Stellaria media**, **Thlaspi arvense** and **Veronica persica**.

HUMPHRY BOWEN, 8 Glebe Road, CHRISTCHURCH, Reading, Berks RG2 7AG

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SMALL ECOLOGICAL STUDIES ON RARE PLANTS

During our work for the Nature Conservancy Council we have become aware of a number of short, applied projects ideal for students or amateurs, concerning rare plant ecology and distribution. These are listed here. Not only would they provide stimulating work for the researcher but would also be of great value in providing information urgently required for effective conservation of the species concerned. For all projects, back-up, advise, and guidance would be provided. Unfortunately no funding is available from the NCC but interested individuals will be eligible to apply for a small grant from the British Ecological Society or the Flora and Fauna Preservation Society.

Species requiring study

Scientific Name	British status (no. 10km sqs recorded from after date*)	Location of study	Best time for study	Minimum weeks required for study
<i>Asparagus officinalis</i> ssp. <i>prostratus</i> (Wild Asparagus)	5 post 1970	Cornwall	May - Sept	5
<i>Aster linosyris</i> (Goldilocks Aster)	7 post 1971	Somerset, Devon	September	3
<i>Genista pilosa</i> (Hairy Greenweed)	11 post 1967	Cornwall	May - June	4
<i>Helianthemum apenninum</i> (White Rock-rose)	4 post 1970	Somerset, Devon	May - June	3
<i>Leersia oryzoides</i> (Rice Grass)	5 post 1960	W. Sussex	July - Oct	4
<i>Lotus angustissimus</i> (Slender Bird's-foot Trefoil)	14 post 1950	Cornwall, Devon	July - Aug	4
<i>Ononis reclinata</i> (Small Restharrow)	4 post 1960	Devon	May	2

\* as given by Perring, F.H. and L. Farrell (1983); British Red Data Book, Vascular Plants, RSNL, Nettleham, Lincoln.

For further information concerning the **Leersia oryzoides** project please contact Chris Birkinshaw at the address below:

For Further information on all other projects please contact: Rosemary FitzGerald, Yard Flat, West House, EAST QUANTOXHEAD, nr Bridgewater, Somerset TA5 1EL.

CHRIS BIRKINSHAW, Plant Conservator, NCC, University Botanic Garden, Cory Lodge, Bateman Street, CAMBRIDGE CB2 1JF

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MERTENSIA MARITIMA (L.) Gray - CURRENT STATUS IN BRITAIN

During 1986 and 1987 Roland Randall and some of his students, conducted a survey of **Mertensia** in Britain for the Nature Conservancy Council. Many BSBI recorders also helped and provided information, for which they are gratefully thanked. The report was published by NCC in 1988 and copies are available at each NCC county office which has **Mertensia** sites. Individual copies were also sent to appropriate BSBI recorders. There are only 6 copies remaining, so please don't all write requesting one; ask your local ARO.



The following is a summary of the current status of **Mertensia**:

1. It is now present in 50 10km squares, out of a total of 175 in which it has at some time been recorded. (See map, page 10, for extant sites; new record in 1988 for Tiree, since Randall's report).
2. It is a species of constantly changing distribution because of the niche it occupies. Randall concludes that there has been a decline northwards and westwards, exacerbated by disturbance pressures in very exposed or more heavily populated sites.
3. The total estimated population of mature plants and seedlings is 10,866.
4. It has been lost from the following vice-counties:  
27, 46, 48, 49, 52, 54, 60, 68, 69, 71, 76, 81, 82, 85, 90, 91, 92, 97, 98, 105.

Although it has declined, there are still some very strong populations remaining, especially in NE Scotland. It is a 'scarce' species, in national terminology, and one which we will continue to monitor.

LYNNE FARRELL, Chief Scientist Directorate, NCC, Northminster House, PETERBOROUGH PE1 1UA

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#### MORE MOBILE FLORA

Another example of 'mobile flora' (see BSBI News 50: 6) may be found on page 282 of the BEC Report of 1939/40, where there is a record from Hertford of *Galinsoga quadriradiata*. What is not recorded is that this was in a tub of, I think, Bay. I asked in the shop outside which it stood, where the tub had come from. They replied, Essex, whence it had arrived only a day or so earlier, and agreed that it might be sold to Middlesex. In that event, this single plant could, unintentionally, have made three new vice-county records, for this was a species hardly recognised at that time. There are similarities with chasing birds over county boundaries, intentionally!

DAVID McCLINTOCK, Bracken Hill, Platt, SEVENOAKS, Kent TN15 8JH

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#### WHAT'S IN A NAME?

Botanists are often asked why the names of plants keep changing, as this can be very aggravating to those affected by the changes. The International Code of Botanical Nomenclature reduces these changes as much as possible by defining precise circumstances under which a name must be changed. A name for instance may not be changed simply because it is inappropriate: *Scilla peruviana* L. stands although the plant is African. There are several accepted reasons for names to change which fall into two main categories: Nomenclatural reasons i.e. to change a name because it is not in accordance with the provisions of the Code; and Taxonomic reasons, arising from taxonomic research into the relationships and groupings of the plants.

The Botanical Code is subject to modification every six years at congresses and changes made are normally retroactive. It uses priority of publication (i.e. the earliest, correctly published name) to establish the correct Latin name for a plant. This name properly includes the author citation following the generic and specific names, hence the correct Latin name for daisy is *Bellis perennis* L. not *Bellis perennis*. Nomenclatural changes should logically gradually reduce in frequency as all the early names in obscure literature are found and, hopefully, as fewer nomenclatural errors are made in publishing new names.

Examples of nomenclatural reasons for changing names are:

- a) The name is illegitimate under the code. In 1831 Bunge gave the name *Viburnum fragrans* Bunge to a Chinese species unaware that the same epithet had been used seven years previously by Loiseleur for a different plant, the Bunge name was illegitimate and the next legitimate name was *V. farreri* Stearn (1966).
- b) The overlooking of an earlier, correct name through inadequate search in literature, often published in another country. The Willowherb name *Epilobium adenocaulon*

Hauskn. was published in Europe without the author realizing it had already been named in America - *E. ciliatum* Raf.

- c) Studies of an Author's original specimen sometimes reveals that his concept was quite different to the present one. In an excellent paper in *Watsonia* (vol. 6, pp 365-370, 1968) Townsend showed this by reference to the name of Pellitory-of-the-wall. He discovered that the original or type specimen on which Linnaeus based his name *Parietaria officinalis* L. was a non-British plant, the name does not apply to our plant, the correct name of which is *P. judaica* L.

The Code does however allow for the stabilisation of certain generic names that are well known but incorrect by the dual process of conservation of that name and the formal rejection of an earlier, correct name. At the Sydney Congress this principle was extended to the specific names of plants of major economic importance. This decision was influenced by the fact that several well-known names, such as that for Bread Wheat *Triticum aestivum* L., were in danger of having to be changed to very obscure earlier, correct names. The Berlin Congress has taken a further small step towards the conservation of species names and this should lead to increased stabilization.

The same cannot, unfortunately, be said for taxonomic reasons for changing names, as they are a direct result of research into, and opinions on, the relationships between plants. Commonly, examples of this type of change may be equated with the activities of the classes of botanists called colloquially 'Splitters' and 'Lumpers', the latter taking the more general view of any group and not separating so many different units. Thus the more recent opinion on *Azalea* is that it is part of the genus *Rhododendron* so that all the *Azalea* species had to have their names transferred to *Rhododendron*. In *Erigeron*, the introduced species, Mexican Fleabane used to be called *E. mucronatus* DC. but in *Flora Europaea* it was called *E. karvinskianus* DC. This was because the two species were regarded as only one, the correct name for this entity being *E. karvinskianus* DC. However if you consider the two species to be distinct then *E. mucronatus* DC. would remain the correct name for the British plants. Both names are correct within their respective classifications.

In any given classification there is only one correct name for each taxon, but in different classifications there may be different names, all of which are correct.

Nomenclature is thus the naming of plants according to a system of rules. Taxonomy is the study of classification.

#### Further Reading

Jeffery, C. (1968). *An Introduction to Plant Taxonomy*, London

Jeffery, C. (1977). *Biological Nomenclature*, London.

Many thanks are due to Dr C.E. Jarvis and A.O. Chater for much help.

This note has been adapted from one which first appeared in *Wild Flower Magazine* No. 410, pp 24-26 (Autumn 1987).

J. MICHAEL MULLIN, Botany Dept. British Museum (Natural History), Cromwell Road, LONDON SW7 5BD

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#### WELSH 'SUPERGRASS'

Following on from Brian Wurzell's note in the last issue of *BSBI News* on 'Supergrass', I am pleased to report that this hybrid has recently been discovered in a new Welsh locality.

Two very tufted plants of an apparently hybrid grass were seen on the border between two tetrads (31/3,8 D & I) on the upper surface of the River Usk bank on the eastern side of the George Street Bridge, Newport, Gwent (v.c. 35). Three possible parents grew nearby, *Festuca rubra* L. subsp. *rubra*, *Vulpia myuros* (L.) C.C. Gmelin and *V. bromoides* (L.) S.F. Gray. The flowering culm had the length of *Vulpia myuros* but was more erect and stiffer. The spikelets were more like those of *Vulpia bromoides*. Clive Stace compared the plant with his herbarium specimens and determined it as *Festuca rubra* L. agg. x *Vulpia myuros*. The bank nearby had a line of *Sambucus ebulus* L., a species which occurs in only a few sites in v.c. 35. The banks of the River Usk in Newport are subjects for development and

this site is being built up with all sorts of rubble and soil. Demolition towards the nearby road has left a waste area on which my wife and I also found numerous plants of *Silene gallica* L. The waste ground subject to tipping of soil had *Papaver lecoqii* Lamotte (2nd v.c. record) and *Vicia villosa* Roth. subsp. *villosa* which occasionally turns up on waste ground in Newport.

The x *Festulopia* hybrid is a new record for v.c. 35 and the only previous Welsh occurrence was at Arthog (v.c. 48), where it was recorded by P.M. Benoit in 1957 and again in 1970.

TREVOR G. EVANS, La Cuesta, Mounton Road, CHEPSTOW, Gwent NP6 5BS

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CABBAGE PATCH VI  
 RECOGNIZING RADISHES

Fruit and seed set in *Raphanus* is variable because pollination is unpredictable and the plants are self-incompatible. I have therefore been looking at characters which can be used for identification which do not depend on the number of ovules fertilized. Following my request for material in *BSBI News* 49, I have now been able to study material of *R. maritimus* Sm., *R. raphanistrum* L. and *R. sativus* L. from 22 British and six Irish vice-counties.

The characters I find most useful are given in the table (page 14) and fruits showing the variation are illustrated in fig. 1 (page 15). The best characters are fruit width, number of ovules, number of seeds and petal colour.

When measuring fruit width, it helps to distinguish fresh and air dried fruits. Fresh fruits are fleshy and shrink by an average of 0.95mm on drying (individual fruits may shrink by 0-2.5mm). Maximum width of at least 5 mature fruits should be measured to the nearest 0.5mm and averaged. Immature fruits are narrower and, when dried, shrink right down and wrinkle rather than have regular longitudinal veins or ribs. Pressed fruits are often distorted, hence determination of herbarium specimens is difficult.

There are three ways to count ovules (all require patience and practice):

- i) Slice the ovary (not your fingers) longitudinally with a razor blade and dissect out the ovaries. Accurate but very fiddly.
- ii) Remove petals, sepals and stamens and then stick the ovary onto sellotape, then stick the sellotape onto paper. As the ovaries dry out (it may take a week) the ovules stand out as dark green blobs. Not an instant answer.
- iii) Remove petals etc. and gently bruise the ovary between your fingernails - the ovules bruise the ovary wall and appear a darker green. Start bruising gently until the ovules can be seen - too much pressure and the ovules disintegrate. This can be seen in the field with a x10 lens.

In all cases, at least five (preferably more) ovaries should be examined. Ovules are most easily seen in old flowers. In newly-opened flowers the ovary and ovules are small and relatively undeveloped. Once the ovaries begin to develop into fruits the ovary walls thicken and the number of ovules (rather than developing seeds) is difficult to discern. In bruised or dried ovaries, a line demarks the bottom of the ovary which can be mistaken for an ovule.

The number of seeds developing in a fruit is more variable than stated in most floras and is variable on a plant. The relative depth of constrictions between the fruiting segments depends on which ovules develop into seeds. In *R. maritimus*, if the bottom, 3rd and 5th ovules develop, the constrictions will be deep (fig. 1a) but if the bottom, 2nd and 3rd ovules develop, they will be shallow (fig. 1b). Fruits of *R. sativus* are not always inflated and may have shallow constrictions between the seeds (fig. 1p). *R. raphanistrum* shows a clinal increase in fruit size and inflation northwards and fruits may resemble those of *R. sativus* (e.g. fig. 1p) in Scotland but always have a tough, woody inner wall and break into 1-seeded segments (Q. Kay pers. comm.).

The tap root of *R. sativus* may be swollen (i.e. our salad radish), long, not or

only moderately swollen and then tapering. Root fleshiness decreases in response to long days hence a swollen root may be absent in plants later in the season. Fodder radish (var. *oleiferus?*), sometimes grown as a green manure or forage crop, always lacks a fleshy root. It may occur as a casual.

Hybrids between *R. maritimus* and *R. raphanistrum* and between *R. raphanistrum* and *R. sativus* are reported by Harberd & Kay (in Stace, C.A. (1975) Hybridization and the flora of the British Isles). Both are + intermediate between the parents and have reduced (50-70%) pollen- and seed-fertility. The former are probably not infrequent near the sea in SW Britain (e.g. Scilly). Thus plants agreeing with the characters in the table can be recorded as good species; those intermediate should be sent for determination.

I dislike some other characters. Both *R. maritimus* and *R. raphanistrum* fruits may or may not break 'readily' into 1-seeded segments, but those of *R. sativus* remain intact. It is often unclear how the length of the 'beak' and top joint are measured to establish their relative lengths; the 'beak' is (1.5-)2.5-6 times as long as the top joint in *R. raphanistrum* and 1-4 times as long in *R. maritimus*. *R. raphanistrum* is annual-biennial, *R. maritimus* is biennial-perennial and *R. sativus* is annual-perennial, but these differences are difficult to use in the field.

As usual, I will determine specimens sent with full locality details etc. Fresh material must be sent 1st class and please contact me before sending it (rotten radishes are repulsive!).

Thanks to Brian Bonnard, Barbara Davies, David Donovan, Declan Doogue, Trevor Evans, Jeanette Fryer, Enid Hyde, Marcia Marsden, James Partridge, Frank Perring, Sylvia Reynolds, Alison Rutherford and Allan Stirling who responded to my request for material in BSBI News last year, thanks also to Len and Pat Livermore and Christopher Westall for specimens in previous years, and to Quentin Kay for many improvements.

#### Distinguishing characters based on wild and cultivated British and Irish material

	<i>R. maritimus</i>	<i>R. raphanistrum</i>	<i>R. sativus</i>
Fruit width			
Fresh	Range 5-10mm mean 6-8.1mm	Range 2.5-5.5(-6)mm mean 3.5-5mm	Range 5-12mm mean 6-9mm
Dried	Range (4-)4.5-8.5mm mean 5-7.3mm	Range (1.5-)2-5mm mean 2.5-4mm	Range 4-10mm mean 5-8mm
Ovules	1-5(-6)	4-14	(?)1-3-11
Seeds	1-5(-6)	1-10	1-12
Constrictions between fruiting segments	Deep to shallow	Medium, shallow or absent	Shallow, absent or fruit inflated
Petal colour	Yellow (rarely white)	Yellow or white, rarely purple but often with purple veins	White to purple or pink (colour spread through lamina) (exception- ally yellow)
Tap root	Not swollen	Not swollen	Swollen or not swollen
Lateral lobes on rosette leaves	(4-)5-10 pairs (sometimes with small intermediate lobes)	0-7 pairs	0-3(-5) pairs, rarely more in fodder radishes

Recorders and Recording

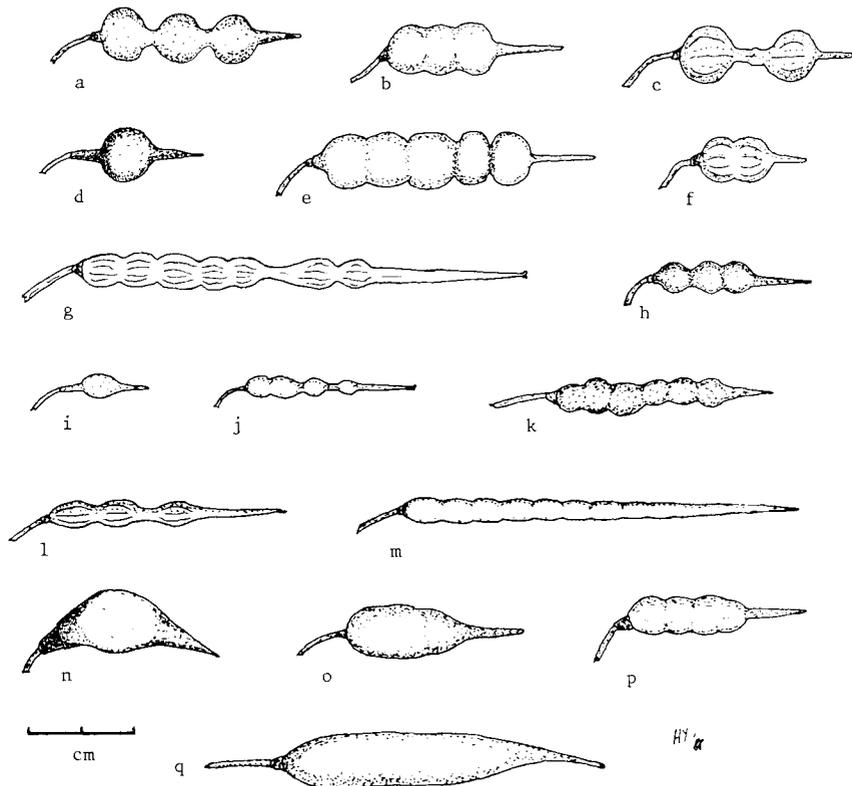


Figure 1. Variation in fresh fruits of *Raphanus* species: a-f *R. maritimus*; g-m *R. raphanistrum*; n-q *R. sativus*. Del H.A.D. Yagoin.

TIM RICH, Biological Records Centre, Monks Wood Experimental Station, Abbots Ripton, HUNTINGDON, Cambs. PE17 2LS

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AKEROYD'S WHEREABOUTS IN 1989

A number of BSBI members have expressed alarm that they may be unable to contact me following my departure from Reading on April 1st. My employment at the University has now expired, and from that date I shall be on my travels or living in rural seclusion on the Welsh border (on the eastern side of Offa's Dyke, naturally). However, I shall be retaining close links with the herbarium at Reading, one of the last bastions of Plant Taxonomy in our rapidly decaying Universities. Indeed, I shall continue to collaborate actively with Dr Stephen Jury and others on a number of projects on the British, Irish and Mediterranean floras. Thus, my contact address will continue to be Reading, as before (see below). Please keep sending specimens, etc.: I have not retired!

There are still places available on a botanical tour that I am leading to Albania, 15-22 May. Those interested should contact Voyages Jules Verne, 21 Dorset Square, London (01-486-8080).

JOHN R. AKEROYD, c/o Department of Botany, Plant Science Laboratories, University of Reading, P.O. Box 221, Whiteknights, READING RG6 2AS

RADIOLA LINOIDES

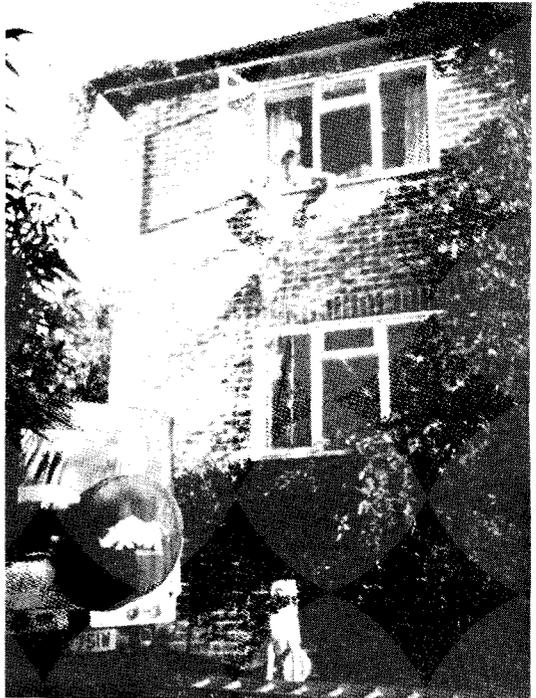
In a previous note (BSBI News 47: 24, Dec. 1987) I mentioned finding some specimens of *Radiola linoides* on the Isles of Scilly that were only 8mm high as against the 1.5-8cm quoted in the standard Floras. I now find that that this was a gross exaggeration, as the specimen shown on the photograph (see below) is only 3mm high! There were tinier ones (all complete plants), getting down to *Lemna minor* proportions (or less), but I wanted to get a specimen in which I could see leaves, flowers and fruits.

They were growing on Gugh Island, Isles of Scilly (GR SV/886.086) in windswept turf of tiny plants, mainly *Plantago coronopus*, *Armeria maritima*, mosses and lichens.

JACK OLIVER, High View, Rhyls Lane, LOCKERIDGE, nr Marlborough, Wilts. SN8 4ED



A: *Radiola linoides*  
Photo J. Oliver.



B: *Pteridium aquilinum*, Photo J. Oliver

EUROPE'S LONGEST LEAF

*Pteridium aquilinum* (Bracken) holds the distinction of having the longest single leaf in the European flora, and the unofficial record was, until recently, 4.12 metres.

Whilst botanizing in the dark depths of Savernake Forest (SU/221.652) in August, 1988, Eileen Rollo, Audrey Summers, and myself came across a monster growing through a hawthorn tree surrounded by oaks. With much difficulty we eventually managed to extricate the frond but unfortunately lost between 10 and 20 cms of the tip which was torn off as the frond was pulled down through the thorns. Nevertheless the remainder measured 4.32 metres (14'5") and thus becomes the new unofficial holder of the title 'Europe's longest leaf'.

The accompanying photograph (see above) shows the leaf reaching from the ground to the upper floor windows of my house.

JACK OLIVER, High View, Rhyls Lane, LOCKERIDGE, nr Marlborough, Wilts SN8 4ED



# B.S.B.I. MONITORING SCHEME

Telephone: (office hours)  
Abbots Ripton (04873) 381  
(outside office hours)  
Peterborough (0733) 49398

Biological Records Centre,  
Monks Wood Experimental Station,  
Abbots Ripton, Huntingdon,  
CAMBRIDGESHIRE PE17 2LS.

There were many contenders for the last records for the Monitoring Scheme on December 31st, including Ken Adams, David Donovan, Catriona Murray, the Reids and Ian Trueman. All stopped about dusk so I reckon it is a dead heat! It might be the end of the Monitoring Scheme (some people don't seem to think so as I've already had some 1989 records!) but don't think you can stop: We (Catriona Brady, Con Breen, Eimear Nic Lughadha and myself) are already claiming the first records for the new Atlas (cf. BSBI News 50: 8), recorded on Dursey Island, West Cork on New Years Day. Not only were they the first records, but we had to travel by Cable Car to make them!

## Coverage 1987-88

The chocolate biscuit deadline passed without so much as a crumb and the map (on page 18) shows squares and tetrads for which we have received no records to date (23/2/89). It is frustrating because I know there are more cards to come in despite my urgent pleas. In all, we have failed to visit 9 10km squares and 52 tetrads (just under 5% of the total), but the coverage in Ireland is much better than predicted and that in Scotland absolutely outstanding. Congratulations to one and all.

The map shows one interesting quirk: there are 15 unrecorded A tetrads, 13 J tetrads and 25 W tetrads. This difference is statistically significant (using  $\chi^2$ ) to the 5% level and suggests that W tetrads are relatively unrecorded. Is this a result of botanists starting in tetrad A first thing in the morning, going on to J after lunch and then doing W only if there was time before tea?

There are some interesting statistics for Ireland (data for Britain not yet compiled) where a total of at least 2200 hours has been spent recording, never mind travelling or stopping for tea and chocolate biscuits. This averages out at about 21 hours for each 10km square recorded, but varies in individual squares from 2 to 96 hours. The average time spent recording in each of the selected tetrads is just under 5 hours, but ranges from 30 minutes to 33 hours. Clearly the time spent recording will be a large factor in determining the species list obtained.

## Presentation of Results

Some thought has been given recently to presentation of the results of the Monitoring Scheme. At the moment, a special publication for the BSBI with details of the methods, analysis of the data, lists of taxa which may or may not have changed in distribution or abundance since the Atlas, selected maps and case studies, is being proposed. This could well be produced for early 1990.

Preliminary conclusions will be presented at the Recorders Conference at Lancaster in September, the Irish AGM in Belfast in October and at the Exhibition meetings.

## Corrigenda to Plant Crib

Corrigenda slips for the Plant Crib are now available from me. Please send an s.a.e. labelled 'Plant Crib corrigenda'.

TIM RICH, Monitoring Scheme Organiser

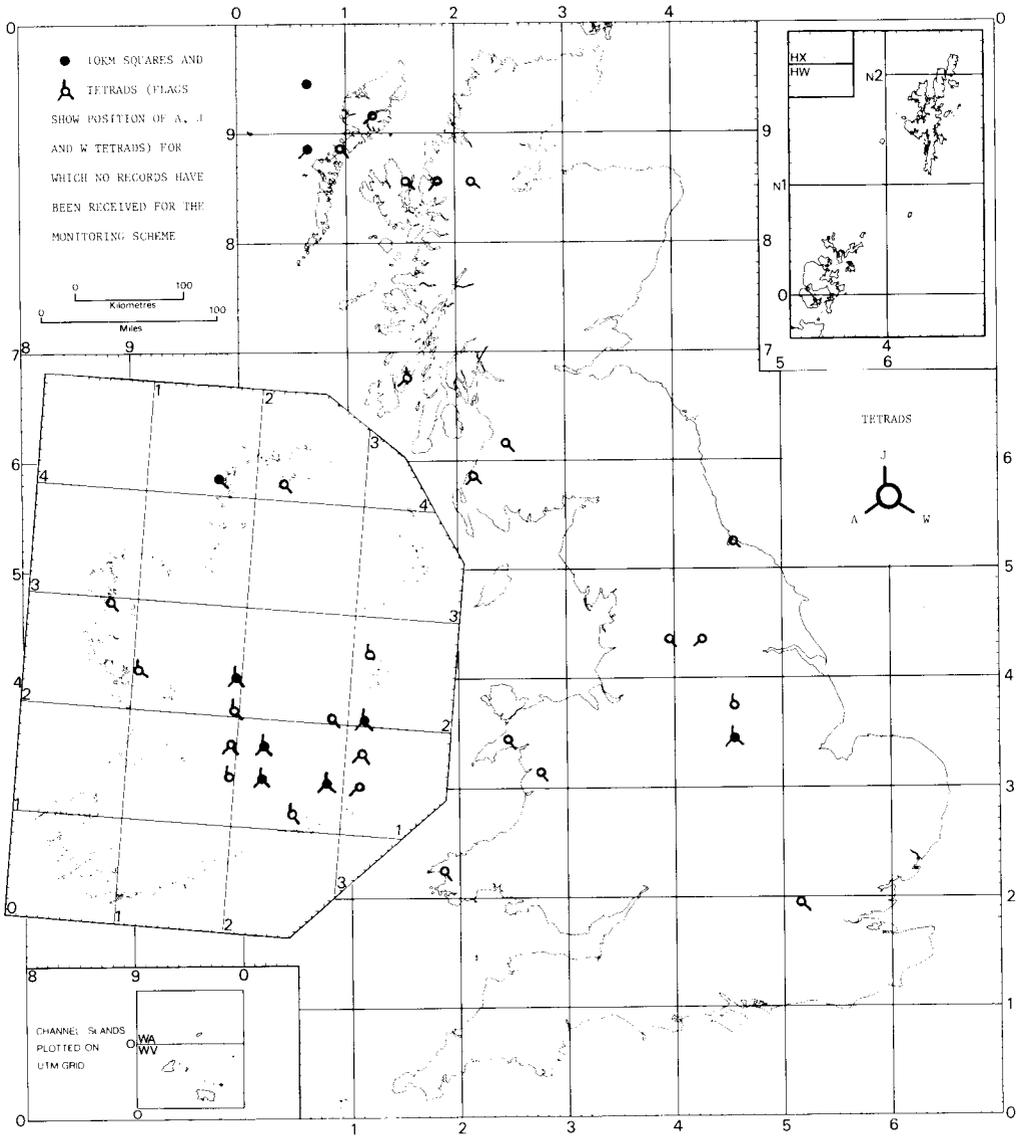
## New Atlas funding

Unfortunately the NCC, because of severe financial stringencies, have been unable to fund the first stage of the new Atlas in their 1989-1990 budget (see BSBI News 50: 8).

Negotiations have been opened to find alternative funding.

DAVID J. McCOSH, Hon. Secretary, Records Committee

# Monitoring Scheme



## NOTES AND ARTICLES

HOW STERILE IS SENECIO x BAXTERI?

As is well known, there are two hybrids between *Senecio squalidus* and *S. vulgaris*: the triploid F<sub>1</sub> (called *S. x baxteri* by Druce), and the hexaploid *S. cambrensis* Rosser. The former is reported to be sterile, the latter, as is often the case with amphipolyploids, fully fertile. Since the two taxa are not easily distinguished on morphological characters, sterility is an important character in identification.

In April 1988 I observed in a locality between Wimbleton and Kingston-upon-Thames in Surrey, a colony of *Senecio* in full, if early, bloom. The timing was unexpected, apart from *S. vulgaris* - which it was not - there should be no *Senecio* species in bloom at that time. Subsequent studies of my photographs and the, admittedly poor, material I had brought back, and comparison with the descriptions in *Flora Europaea* and the latest (1987) edition of the *Flora of the British Isles* (Clapham *et al.* 1987), pointed towards the *S. squalidus* x *S. vulgaris* complex, but there were in those descriptions no morphological characters that could decide whether this was the triploid or the hexaploid.

So early in the season, there were no fruits, so the fertility could not be decided by direct observation. However, there was a large colony, stretching at least 500m along the Kingston bypass (on the A3) on the eastern verge of the road, with a distinct centre of distribution in the middle, indicating beyond doubt that the plant had spread by seed; this would seem to indicate *S. cambrensis*. I may add that I observed *S. vulgaris*, but no specimen of *S. squalidus* along the road. However, as I did not look specifically for it, it might have been there.

Still in doubt, I submitted material to the British Museum (Natural History), where Mr Mike Mullin stated that the plant was the supposedly sterile triploid (*S. baxteri*).

In the meantime, I had found the plant still in flower at the end of December, but again there were no fully developed fruits, which was perhaps not so surprising, considering the advanced stage of the specimens, although some young plants were still in bud.

The information about fertility of the triploid is contradictory. In *Flora Europaea* Vol. 4 (Tutin *et al.*, 1976), Chater and Walters write (p. 202) that the hybrid is "rare and highly sterile." In *Flora of the British Isles* (Clapham *et al.*, 1987), under *S. cambrensis* it is stated that "the F<sub>1</sub> hybrid has low fertility...", whereas under *S. vulgaris* this has changed to "The triploid hybrid ... is highly sterile".

Considering the strength of the colony along the A3, I would submit that the more cautious statement under *S. cambrensis* is more correct, at least in this case.

Dr KNU T FAEGRI, University of Bergen, Botanical Institute, P.O. Box 12, University, N-5027 BERGEN, Norway

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SCHOENOPLECTUS LACUSTRIS (L.) Palla : ARCHIVAL INFORMATION

The story of my discovery that *Schoenoplectus lacustris* was called the 'Dumbles' in S.E. Yorks. has been related elsewhere (Crackles, 1974).

The usual meaning of the modern dialect words 'dumble' and 'dimble' is a 'deep place' or 'pool'. The most likely origin of 'dumble' seems to be the old English 'dympe!' = a pool or hollow and it is 'cognate with Norwegian "dump" = pit, pool; Danish dialect word "dump" = natural depression in the earth and old high German "dumphil" = pool' (Smith, 1937). There is some evidence from the use of the German equivalent that the word 'dumble' may have originally described a shallow lake, of the kind once common in Holderness, and it seems that the rush took its name from the habitat in which it grew (Crackles, 1983).

As is well known, the stems of *S. lacustris* were formerly widely used to make mats, chair seats and horse-collars as well as for caulking casks and providing packing for pack saddles. There is ample evidence that the 'Dumbles' provided a source of income for the Lords of the Manor and other land owners as well as for other individuals.

The earliest references to 'Dumbles' are from the manorial accounts for Withernsea GR 54/3.2, 1270-1471 (K.J. Allison pers. comm.). The first mention is for 1270-71 when dumbulis mare (dumbles from the mere) were sold (Public Record Office; SC 6/1078/13).

Later references include:

1324-25; cirpis called 'dumble' (P.R.O. SC 6/1080/10) and

1470-71; sirpis called 'dumble' in marra (in the mere).

By 1470, the accountant is being let off part of the charge for the sale of the 'dumbles' because erosion by the sea had affected the mere (P.R.O. SC/1084/5). As Withernsea Mere was near the coast, the 'dumbles' may in this case have referred to **Schoenoplectus tabernaemontani** and it would be interesting to know whether its stems are as good for weaving as those of **S. lacustris**.

All other references to 'Dumbles' are for the River Hull valley. The following references relate to benefits received by land owners:

1631. Arram Carr, near Leconfield, GR 54/04.44.

Lease of land to include "all the earl's dumbles growing in Arram Carr" (Pentworth House Archives; Leconfield Leases No 62, K.J. Allison pers. comm.)

1647. Leconfield. Rents paid at Michaelmas:

"Received for the Dumbles £5-3s."

There are similar entries for subsequent years e.g. 1648, Lady Day: "William Lee for the Dumbles £5." (Ainwick Castle Archives XII 6 Box 2L; D. Neave pers. comm.)

1697. Arram Carr.

"rec'd then of Sir Charles Hotham the sum of £3 for a year and a halph rent for the dumbles in Aram Carr due and ending Lady Day 1697 by me Edw, Elrington" (Account book of Sir Charles Hotham of Scarborough 1691-99; Hull University Library Archives DDHO/15/3; S. Neave pers. comm.).

1749/50. Wawne Common GR 54/10.39.

Jan 8th. "Received of Simon Simpson one year rent for ye product of Dumbles reap'd off ye Morass in Waghen Common, due Michaelmas 1749 = 16/8". (Burton Constable Estate papers, East Riding County Record Office, Ref. DDCC 140/18; A. Harris pers. comm.)

1798. Cowtram Marr, Leven GR 54/10.44 Enclosure Act.

"The Commissioners are requested to take into consideration the right and interest of the said William Bethel (Lord of the Manor) in the fish and the dumbles now had and taken by him in a certain part of the said Common Carr, called or known by the name as Cowtram Marr".

1802. North Frodingham GR 54/09.53 Enclosure Award.

An area "whereon the dumbles grow" was granted to Mrs Charlotte Bethel, the Lady of the Manor (F. Nicholson pers. comm.).

Arthur Young passed through E. Yorks. in 1798. His assessment of Arram Carrs is as follows: "Arram Carrs would not let for 1/- per acre, producing nothing but fish, ducks, frogs and dumbles for horse collars".

Individuals also derived an income either from the sale of 'dumble' or of articles made from them. The fact that William Lee, a tenant farmer on the Leconfield Estate, and Simon Simpson were prepared to pay a considerable rent to harvest the 'dumbles' suggests this as do the following references:

1689, Dec. Thomas Hakeney of 'Weel (GR 54/06.39) at the time of his death had "one boat with nets and dumbles" (Inventory. Borthwick Inst. York; A. Harris pers. comm.).

1734, August 30/31. Marriage Settlement.

Reference to a "moiety of dumbles in Carlon Pitts" (Wawne GR 54/10.36). (Hull University Library Archives DDWI/78; S. Neave pers. comm.).

In addition, Dr D. Neave recently came across the baptism in 1718 of a child of Robert Lith, 'dumbler' in a parish register of St. Mary's, Beverley, GR 54/0.3.

There must be similar references to **Schoenoplectus lacustris** in archives in other parts of the British Isles using the English name by which it was known locally. The name 'Dumbles' seems to have been a very local one. In many parts of England **S. lacustris** was called the Bulrush, a name given to **Typha latifolia** in some areas including S.E. Yorks. In Norfolk, **S. lacustris** was called the 'Bolder' (Lambert, 1965) and in some parts of England including Lincolnshire it was known as the 'Bumbles' (Wright, 1898).

#### Acknowledgements

I am indebted to Dr K.J. Allison, Dr A. Harris, Dr D. Neave and Mrs S. Neave for supplying me with archival references to 'dumbles' as they came across them during their own researches.

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EVA CRACKLES, 143 Holmgarth Drive, Bellfield Avenue, HULL, North Humberside HU8 9DX

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ANIMALS TRAPPED BY PLANTS : FINALE

There have been four notices of this phenomenon in BSBI News, (43: 13-14; 44: 14-15; 48: 19 and 49: 19), with the animal victims increasing progressively in size from insects through small birds and bats to a storm petrel. I myself have released a dog from capture by (as far as I can remember) Crataegus, but this does not really count because it was the broken rope which the dog was trailing that had caught in the bush and not the animal itself.

I would be very interested to hear if any BSBI member has ever come across a dead specimen of Homo sapiens var. rhodomanes (the Greater Rose Maniac) trapped by a wild rose bush, or if any member has arrived in time to rescue one from this terrible fate. This is a real hazard for those who specialise in Rosa or indeed for any botanist who investigates a rose bush. A similar risk is incurred by the batologist, but the malignant intention of brambles seems to be the infliction of severe wounds rather than capture.

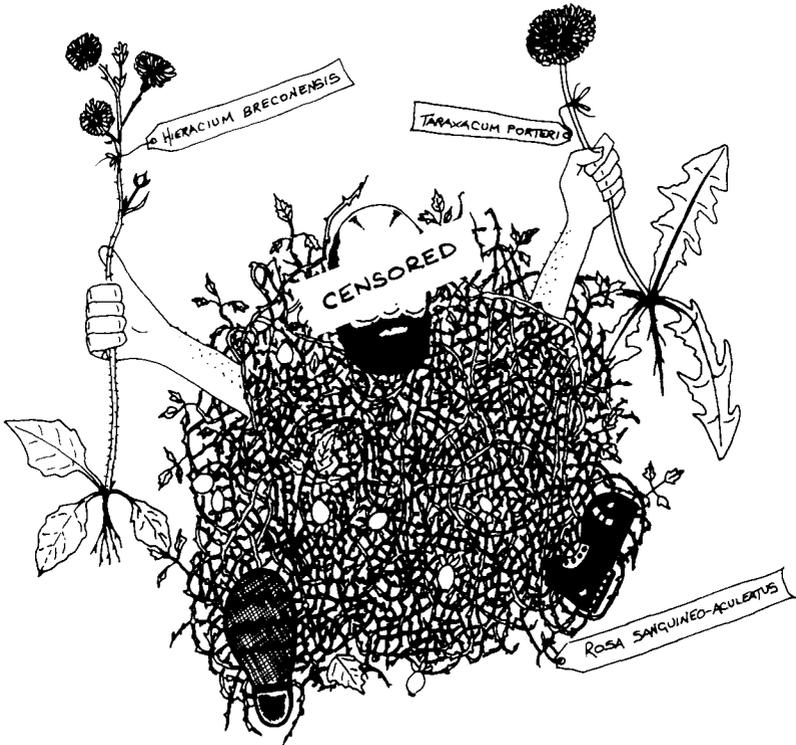
I have several times experienced this fiendish malignancy of the roses. On one occasion whilst walking through a wood I was suddenly brought up short by a trailing rose stem which had managed to embed a prickle deeply into my ear. As I could not see how the capture had been effected my efforts to extricate myself resulted in quite a severe wound. Usually the tactics of the rose bush are more insidious; a small portion of your clothing becomes entangled, and any endeavour to release this without tearing the cloth results in the capture of your right arm. Unless you are a contortionist the left arm cannot be employed to help, and any attempt results in its capture as well. This is the stage when panic seizes you, when you realise that the only means of escape is a convulsive movement which will leave large portions of your clothing and your flesh in the possession of the rose bush.

The worst example I have heard about of this harrowing experience befell my friend and fellow BSBI member Harry Handley. I am glad of this occasion for mentioning Harry because it gives me an opportunity to pay a tribute to him. He is an exceptionally competent field botanist with eyes like a hawk. Most of the work on Taraxacum for our new Flora of Leicestershire was done by him, and he was responsible for at least half of the specialised field work which resulted in a virtually complete coverage of the county for Rosa. It was during the course of this latter activity that he was caught by a hedgerow specimen of Rosa obtusifolia x R. arvensis. He confessed to me that he became so deeply entangled that he really did begin to panic and to despair of ever extricating himself without assistance. A little while later we visited this same bush together, and believe it or not we both got caught by it, side by side. The prickles of Rosa obtusifolia are perhaps the fiercest of all rose species; they are stout and so strongly hooked that the lower side makes a complete semicircle with the very sharp end pointing vertically down the stem. To make matters worse this particular specimen was provided with the clustered prickles characteristic of Rosa arvensis hybrids. If natural selection should ever result in the evolution of a man trap I doubt if it could improve on this hybrid.

One other question: has any other BSBI member who plays golf ever made a poor shot on a seaside golf course where the rough consists of a dense growth of Rosa pimpinellifolia?

TONY PRIMAVERSI, Ratcliffe College, SYSTON, Leicester LE7 8SG

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This drawing (del. H. Reynolds) is based on a cartoon which first appeared in the BSBI Welsh Bulletin no. 42, Autumn 1985, with the caption 'I don't want to be critical but these plants get a grip on you'. It has been censored to protect the innocent!.

EDITOR

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### THE HOST SPECIFICITY OF SALIX GALLS

Darlington (1968) describes and illustrates twelve gall-causing invertebrates on willows that are widespread in lowland England. Since each gall is restricted to certain Salix groups only, its presence may help botanists to identify the host. Thus my personal observations related here aim to expand upon the data already published.

'Red Bean Galls' (sawfly *Pontania proxima*) abound on all taxa within the *Salix fragilis/alba* group, extending also to their hybrids with *S. babylonica*. The 'Dwarf Witches' Brooms' common around London (mite *Eriophyes triradiatus*) are not given in Darlington, but are described in Stubbs (1987); these patronise precisely the same range of trees.

'Green Bean Galls' (sawfly *Pontania vesicator*) locally inhabit *S. caprea*, *S. cinerea*, *S. caprea* x *S. cinerea*, *S. caprea* x *S. viminalis* and *S. cinerea* x *S. viminalis*; also *S. calodendron*. 'Osier Leaf Curl' (midge *Dasyneura marginemtorquens*) may abound on *S. viminalis*, but also occurs sparingly on *S. caprea* x *S. viminalis*, and *S. cinerea* x *S. viminalis*: logically any Sallow bush found supporting both galls will be one of these latter hybrids.

Neither author accounts for a spectacular and possibly midge-transmitted bacterial gall plaguing *S. caprea*, *S. cinerea*, and *S. calodendron* in N.E. and Central London and elsewhere. Scattered female catkins first harden, sterilise, and enlarge, then become persistent and gross purple-brown or blackish pineapple-shaped projections, lignifying after the first season into knobby outgrowths. Eventually, these turn into heavily mammillate wooden bulges of irregular size, clusters of which severely encumber the older branches. Any initially affected leaves appear unnaturally broad, bronzed, bunched, and, above all, deeply laciniately toothed towards the base. Overall these abnormalities are, at all stages, a striking enough sight to arouse public concern, but I still have no name for them!

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BRIAN WURZELL, 47 Rostrevor Avenue, Tottenham, LONDON N15 6LA

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### ALCHEMILLA MOLLIS (Buser) Rothm. AND RELATED SPECIES IN GARDENS

Most botanists and gardeners know *Alchemilla mollis*. Indeed, to the thousands who use it in cut-flower arrangements, it is the only *Alchemilla* worth growing in the garden, and very often it looks after itself, spreading both vegetatively and from the abundantly-produced seed. As Stearn (1948) reported, the plant was first introduced "by the plant collector Thomas Pichler of Lienz, who gathered it on the mountain called Ulu-dag in the Bithynian Olympus, Turkey in 1874." It spread slowly in cultivation, mainly in Botanic Gardens in Europe, and was, for example, grown in the Cambridge University Botanic Garden before 1914 as '*Alchemilla grandiflora*'. Bowles records in his book *My garden in Summer* (1914) that he received the plant under that name from Cambridge, and grew it himself.

*Alchemilla mollis* belongs to a group of about 25 species, all centred in the mountains of SE Europe and SW Asia - the Series *Elatae* Rothm. (see Rothmaler, 1938). They are typically robust plants like *A. mollis*, with relatively showy inflorescences of yellowish-green flowers. None of the *Alchemilla* species native to Britain belong to this group. All *Elatae* are easy to tell from '*Alchemilla vulgaris*' by the size of the epicalyx-segments in the flowers: in ordinary '*A. vulgaris*' these extra segments alternating with the sepals are distinctly shorter than the sepals, whereas in the *Elatae* they are as long as the sepals (see fig. 1, page 24), making the inflorescence of *A. mollis* more attractive than that of the wild British species.

Whilst *A. mollis* is overwhelmingly the common *Alchemilla* of our gardens today, this was not the case in Victorian times, when it was merely one of the several *Elatae* in cultivation. It is only in the past 20 years or so that *Alchemilla mollis* has become such a common and familiar garden plant, and is now beginning to be widely recorded as a garden escape, though as yet rarely far from gardens. As to other *Elatae*, apparently some of these still persist unrecognised in gardens, though they seem to be quite rare. I am interested to trace any of these plants. The following simple key will distinguish between *A. mollis* and the other, much rarer, *Elatae* *Alchemillas* which I know to occur in British gardens. Note that the key only applies to the tall robust *Elatae* *Alchemillas* of gardens, not to wild plants, nor to the 'Alpine Lady's-mantles', which may also be cultivated.

- 1a Leaves hairy on upper surface  
 2a Leaves very shallowly lobed: pedicels glabrous A. mollis  
 2b Leaves deeply lobed (up to 2/5 of diameter): pedicels hairy A. speciosa Buser
- 1b Leaves quite glabrous on upper surface  
 3a Petioles with sparse, appressed hairs A. 'venosa'\*  
 3b Petioles with a dense cover of spreading hairs A. indivisa Formanek

\*This name is still used here, although we know that it is incorrect. A paper is in preparation.

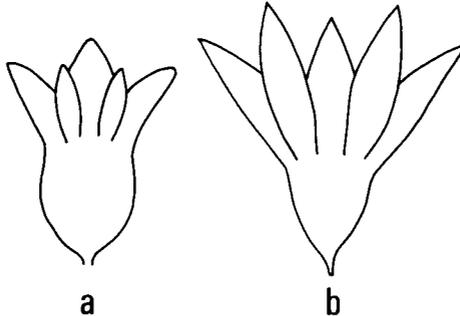


Fig. 1. Calyx and epicalyx-segments in a) *A. vulgaris* and b) Series *Elatae*

If you think you have seen in a garden or as a garden escape an *Elatae* *Alchemilla* which is not *A. mollis*, I would be most interested to see pressed material. One inflorescence and two or three well-grown summer leaves will be sufficient to identify it. Please send to the address at the foot of this note.

**References**

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S.M. WALTERS, Inland Close, 46 Mill Way, GRANTCHESTER, Cambs. CB3 9NB

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THE FUMARIA BASTARDII Boreau / F. MURALIS Sonder ex Koch COMPLEX  
 IN THE BRITISH ISLES

The only lengthy discussion of this complex is by Pugsley (1912), a work not easily available to most BSBI members. In view of this I feel some sort of explanation is needed for the variants included in my key (Rich, 1988). Also, the note in BSBI News 40 (1985) by Paul L. Smith on *Fumaria bastardii* var. *hibernica* (Pugsley ex Praeger) Pugsley raises two points. First that *Fumaria bastardii* can be distinguished from the most common variants of *F. muralis* by other characters than the fruit, and secondly var. *hibernica* is not the only variety of *F. bastardii* with dark wings to the upper petal.

In a note in BSBI News 41 (1986) I pointed out the importance of studying all taxa of all ranks when elucidating the complexities of the genus *Fumaria*. This was never more true than in the *F. bastardii/muralis* aggregates. I have a great admiration for H.W. Pugsley's elucidation of those groups (1912) and can make no suggestions that will better it. In his obituary A.J. Wilmott (1949) said that Pugsley knew his fumitories at a glance and all I have seen of his work confirms this.

The two most common large-flowered (over 9mm) fumitories of western Britain and Ireland are *F. bastardii* and *F. muralis* subsp. *boraei* (Jordan) Pugsley. In *F. bastardii* the racemes are rather lax, normally many (15-25) flowered and exceeding the peduncles. The sepals are

2-3.5 x 1-2mm and more or less serrate. The fruits are rounded, broadest at the middle and not much narrowed at the base. When dry they are rugose. *F. muralis* subsp. *boraei* has a rather short raceme of flowers (which do not normally exceed 15) which is more or less equal to the peduncle. The sepals are 3-5 x 2-3mm and subentire to irregularly dentate towards the base. The fruits are usually obovate, broadest above the middle and narrowed at the base. When dry they are smooth or slightly rugose.

*Fumaria bastardii* var. *bastardii* is easily distinguished from all the other large-flowered fumitories by its lack of dark colouration in the wings of the upper petal. *F. bastardii* var. *gussonei* (Boiss.) Pugsley has dark wings to the upper petal and is perhaps the most handsome variety of *F. bastardii*. It is usually of dwarf habit, has narrow leaf segments, broad blunt flowers and fruits about 2 x 2mm. I have seen it from the Channel Islands and Isles of Scilly. On the Mediterranean coasts of France and Italy it is frequent. *F. bastardii* var. *hibernica* (Pugsley ex Praeger) Pugsley also has dark wings to the upper petal. It is of diffuse and straggling habit with broader leaf segments, narrower more acute flowers and fruits about 2.5 x 2.5mm. It occurs in western Britain and Ireland and is perhaps endemic.

*Fumaria muralis* subsp. *boraei* has two quite distinct varieties and a number of variants which are difficult to fit into the system. Subsp. *boraei* var. *major* Koch., is the most handsome of the *boraei/bastardii* group. It has large (10-12mm), rose-pink or rose-red flowers and sepals 4-5 x 2.5-3mm. Forma *rubens* Pugsley and forma *elongata* Pugsley can comfortably be included in var. *major*. Var. *britannica* Pugsley has smaller (9-10mm), pale pink flowers and sepals 3-4 x 2-2.5mm. Forma *longibracteata* Pugsley and subvar. *sarniensis* Pugsley can be included in var. *britannica*. When var. *major* and var. *britannica* grow together they look almost like distinct species.

If one comes across a colony of var. *ambigua* Pugsley there may be some difficulty in identifying it. Unfortunately I have never seen it living. Its flowers are small and pale and its sepals smaller, like var. *britannica*, but its inflorescence tends to be longer and laxer and its fruit nearly square rather than obovate in outline, and more rugulose. It suggests to me a hybrid with *F. bastardii* or *F. officinalis*.

As Pugsley pointed out it bears a strong similarity to *F. painteri* Pugsley which is thought to be a fertile hybrid between *F. muralis* subsp. *boraei* and *F. officinalis*. *F. painteri* in fact seems only to differ from var. *ambigua* in its more truncate fruits and spatulate lower petal. It needs to be looked for in its original localities of Bishop's Castle and Iron Bridge in Salop (v.c. 40).

*Fumaria muralis* subsp. *boraei* var. *gracilis* Pugsley has the large flower and sepals as in var. *major* but they are pale in colour. The fruit is also similar to var. *major*. A distinctive feature is that the bracts are as long as the pedicels which are erect-spreading, divaricate, flexuous or even recurved as in *F. capreolata*.

*Fumaria muralis* Sonder ex Koch subsp. *muralis* does not seem to have been recorded in the British Isles for many years. It has the few-flowered racemes of subsp. *boraei*, but its fruits are subglobose-ovoid with a subacute apex and are smaller (2 x 2mm). British plants so named are mostly not typical and some with large fruits (2.5 x 2.5mm) have been named var. *decipiens* Pugsley which forms a link with subsp. *boraei* var. *britannica*.

*Fumaria muralis* subsp. *muralis* var. *cornubiensis* Pugsley (1924) was described from Tregony in W. Cornwall where, in 1922, it was growing abundantly over nearly a square mile. There are no recent records for it. It has the slender habit, nearly entire sepals and very small, smooth, subglobose, slightly pointed fruits of *F. muralis* subsp. *muralis* var. *muralis*, but differs in its small flowers (8.5-9.5mm) which are very pale pink, with the lower petal forming a subspatulate outline recalling *F. officinalis*. Its intermediate position between the large-flowered and small-flowered fumitories suggests that it may have arisen from hybridization, perhaps between the *F. muralis* aggregate and *F. officinalis*.

*Fumaria muralis* subsp. *neglecta* Pugsley is known from only a few places in Cornwall where it is recorded at intervals. It has the many-flowered racemes exceeding the peduncles, short sepals (3 x 1.5-2mm) and blunt flowers of *F. bastardii* var. *gussonei* and differs only in the obovate, nearly smooth fruit which is an *F. muralis* character. I think subsp. *neglecta* could have originated from a cross between *F. muralis* and *F. bastardii*.

A survey of the group would not be complete without some discussion of the rare *F. martinii* Clav. (*F. paradoxa* Pugsley). This very handsome species also seems in some respects to occupy an intermediate position between *F. bastardii* and *F. muralis*. Its long racemes of up to 20 flowers, much exceeding the very short peduncles, and upper petals with dark wings resemble *F. bastardii* var. *gussonei*, but the large, subentire sepals and



## VIABILITY OF LONG-BURIED SEED

Following publication of a short note in BSBI News 50 (Dec. '88), about plants arising from long-buried seeds following the storm of October '87, I received many letters on the subject. Some of these have prompted me to write this rather longer note on the subject, and to ask a few questions that have arisen from the correspondence.

In the original note, I mentioned that I had observed large numbers of plants of *Verbascum thapsus* and *Atropa belladonna* which apparently arose from seeds brought to the surface when soil was disturbed by the uprooting of large trees during the hurricane. The plants I have seen in several sites are of a size consistent with germination following the storm, and often no sign could be found of a parent plant nearby from which the seeds could have originated. I concluded that the parent plant was probably long gone from the site, and that the seeds had been lying dormant, buried deep in the soil until the storm.

It is well known that seeds of some species, for example *Papaver rhoeas* and *Chrysanthemum segetum*, do remain dormant when buried for long periods, and that these species often appear in huge numbers after soil-disturbance. The flush of poppies that often appears on newly-constructed motorway verges is a familiar sight and an example of such dormant seeds germinating en masse.

I believe that this dormancy in the seeds is maintained whilst they remain buried by the high concentration of carbon dioxide in the deeper layers of soil. When the soil is disturbed, the level of carbon dioxide falls, enabling seeds near the surface to germinate. Perhaps readers with a better knowledge of plant physiology could enlarge upon this?

In some of the letters I received, the writers have listed large numbers of different species in which they have seen great increases in population since the storm, and some letters suggest that the major factor in such population explosions is that there has been a dramatic increase in light reaching the ground since the storm opened the woodland canopy. It seems to me that although such an increase in light would certainly enable the flowering of plants which had previously existed in a vegetative state, it would not account for the appearance of large numbers of perennial or biennial species since October '87, since there simply would not have been a sufficiently long period for these species to propagate to such an extent by the autumn of '88 when the observations were made. Several questions now arise:

1. Can an increase in light prompt the germination of seeds which are already present on the soil surface, without any soil disturbance?
2. Have the increases in population that have been noticed occurred in areas of soil-disturbance only, in areas where there has been a light increase only, or in areas where there have been both? - or neither?
3. How many species are involved, and which species are they?

It would be interesting to compile a list of plant species whose seeds appear to show the ability to remain dormant when buried. Perhaps observers would like to report their own finds in BSBI News, since I know from correspondence I have received so far that there is considerable interest in the subject, and that several people are presently carrying out research into the long-term effects of the storm.

V.A. JOHNSTONE, 25F Nevern Square, LONDON SW5 9PD

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## GERMINATION OF LONG-BURIED SEED IN W. SUSSEX

V.A. Johnstone's note of the mass germination of presumably buried seed of *Atropa belladonna* and *Verbascum thapsus* after the great storm (BSBI News 50) reminded me of a similar discovery in 1982. I was working as a woodman for the National Trust in W. Sussex, hand-weeding (with sickle) a recently planted area on the E. scarp slope of Noar Hill on the Slindon estate near Arundle. The area of about 5 acres had suffered severe windblow, and many old beeches, ash and yews had been uprooted.

The consequent germination of *Atropa* was astounding. It had to be cut down in dense stands between rows, having blanketed the greater proportion of the site. But much was left to flower and fruit. More interestingly, at least 60 spikes of *Verbascum lychnitis* and much *Erigeron acer* were in flower. These latter two were, needless to say, carefully spared. It is just conceivable that the *Erigeron* could have found its way here on the

wind, although the sheer quantity of plants and the fact that the site is surrounded by tall 'High Forest' seems to preclude this. I think it more likely that all three arose out of soil upheaval.

They have no doubt decreased as the habitat has changed to a closed community, but this brief period of fruiting will have replenished the dormant seed bank.

The windblown yews and beeches were of great age, up to 200 years. Does this mean the seed had remained viable for this length of time?

JOHN POINGDESTRE, Links View, Leazemoor Lane, Pitney, LANGPORT, Somerset TA10 9AR

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#### THE FLOWERING OF OAKS PARK, SURREY

The letter from V.A. Johnstone in BSBI News 50 on the subject of plants arising from long-buried seeds following the storm of October 1987, prompts the following observation.

The Oaks Park, Carshalton Beeches, Surrey and its environs was severely devastated by the hurricane, with considerable soil disturbance and in some parts almost complete collapse of the dense-shading Beech canopy. These two factors, plus the increased availability of nutrients from lower strata, have led to considerable increase in both diversity and abundance of the ground flora, which was scarcely remarkable previously.

On a late autumn walk, returning from the Oaks Park by the woodland walk flanking the golf course, I was so astonished by the number of wild 'flowers', many in flower, that I attempted to list them, though I am not a botanist per se. I counted over 50 different species in marked contrast to the paucity of the flora previously. This was indeed a bonus from the hurricane - a sheer joy, similar to that experienced on visiting a coppiced woodland in Spring.

LMOGEN H. YEOMANS, 1 Salisbury Court, 12 Salisbury Road, CARSHALTON, Surrey SM5 3HD

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#### 'GREEN DESERTS' BLOOM

In the summer of 1988, the dull rye-grass landscapes of a number of urban parks and open spaces near my home began to bloom unexpectedly. This was not, however, a wildflower garden project by the local urban wildlife group, but one of the more positive effects of the great storm of October 1987.

Uprooting trees as it went, it left behind a well-ploughed soil that soon began to sprout a surprising crop of ruderal plants, calcicoles, aliens, arable weeds, garden flowers and vegetables. This, at least, was the scene in the Brighton and Hove area of Sussex. It was with interest therefore, that I read the account by V.A. Johnstone in BSBI News 50 of *Verbascum thapsus* and *Atropa belladonna* appearing in disturbed soil around trees felled by the storm in Kent and Surrey.

Both of these plants, as well as *Hyoscyamus niger*, sprang up in storm-damaged parks around here, possibly from long-buried seeds, as many of these sites were laid out in Victorian times. Solanaceous species seemed to find these conditions particularly favourable as, in addition to those already mentioned, I recorded *Datura stramonium*, *Solanum nigrum*, *S. nitidibaccatum*, *S. rostratum*, and *Lycopersicon esculentum*. The tomatoes were followed by a mixed salad of carrots, radishes and Brussels sprouts, accompanied by the inevitable garden Alyssums and pot marigolds.

While unearthing of dormant seeds probably accounted for the presence of some of these species, others may have resulted from dispersal by wind or other agents or may have been introduced with topsoil. Many of the alien plants seemed to be of bird-seed origin, and from an examination of a selection of wild bird food, I found that, as well as the named ingredients, they contained a wide variety of other seeds as contaminants. Among the plants I am fairly sure came from this source were *Setaria pumila*, *S. viridis*, *Echinochloa crus-galli*, *Brassica juncea* and *Linum usitatissimum*. Botanical 'tourists' of uncertain origin included *Bromus willdenowii*, *Salsola pestifer*, *Malva parviflora*, *Carthamus tinctorius*, *Ambrosia artemisiifolia*, *Papaver atlanticum* and *Amaranthus hybridus*. Lastly I should mention finding native species such as *Myosoton aquaticum* and *Salsola kali* which I would not normally expect to see in such habitats.

Botanists, too, are a species not commonly encountered practising their craft in urban parks and recreation grounds, but perhaps these disdained 'green deserts' have more to interest us than we had supposed.

TONY SPIERS, 69 Elm Grove, BRIGHTON, East Sussex BN2 3ET

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#### LADY PAMELA FITZGERALD - A CORRECTION

I must take issue with John Akeroyd's statement in BSBI News 49: 22 (Sept. 1988) that Lady Pamela, wife of Lord Edward FitzGerald, "went into exile in France".

Lord Edward was born in 1763, the 12th child of James FitzGerald, the first Duke of Leinster. On the death of James, Edward's mother married the family tutor and the family moved to France where Edward was educated. There he developed his love of gardening and is reputed to have planted his mother's favourite flowers at the old family home at Frascati in Ireland. Having joined the British Army, Edward saw active service in America and was also stationed in Gibraltar and Canada. When back in France, he met and married Pamela, the natural daughter of Madame de Genlis, a royal bastard. Edward was cashiered from the army in 1792 for supporting the proposal for the abolition of hereditary titles. He returned to Frascati, Ireland, described his garden, then led the ill-fated 1798 rebellion during which he was fatally injured.

Lady Pamela was left penniless as Lord Edward had been attained; she later married the United States Consul at Hamburg.

The point I am making is that Lady Pamela, far from going into exile, went home to France in 1798, whatever may have happened to her later. Quite why she was brought to England I don't know, as the wife of an Irish rebel she should surely have been left in her native land, or put with Lord Edward if she had to be moved.

I have always had a soft spot for Lady Pamela and am amazed that, even in death, she was not allowed to rest in peace. Personally, I would do a little haunting to show my displeasure at being brought to England of all places.

Many of the above facts may be found in Con Costello's book Looking Back (1988), the best book so far on Kildare history.

PAMELA Y. CHADWELL, 81 Parlaunt Road, SLOUGH, Berks SL3 8BE

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#### COMPUTERS

##### COMPUTER USERS GROUP

I would like to thank all those who have returned their questionnaires (referred to in BSBI News 50: 20). We now have 69 members of whom 26 are vice-county Recorders; 28 have IBM/PC compatibles, 14 have Amstrad PCWs and 10 have BBC systems. More results from the questionnaires will be given in the forthcoming user group newsletter.

Now for a word about standardization. Many people have called for a standardized recording system. We wish to make it clear that we do not advocate standardization of hardware or software but only of the data content. Recommendation of a single hardware/software configuration is not feasible because, as the above figures show, there are at least three types of system in common use. Most people want to use the computers they already have access to rather than buy a 'standard system'. Another factor is that many users have written programs to solve their own particular problems and will want to continue using them. Data standards are necessary if data are to be sent to Monks Wood or regional record centres. If we can encourage as many standards as possible (e.g. data formats, BRC species numbers, etc.), any plans for sending data to Monks Wood from recorders would be easier to implement.

As far as software is concerned, we aim to evaluate and review a variety of programs and will shortly be reviewing distribution mapping software. Many user group members have programs or data and some are willing to distribute them. I have already contacted some of these people and asked them for copies of their programs for evaluation.

We are willing to give advice on purchasing computers and software. Please contact

Richard Pankhurst (BM(NH)) or Pete Rooney (Royal Botanic Gardens, Kew) for hardware advice, or myself for software, and we will do our best to help.

When we have reviewed some software, and perhaps received some letters containing your views or problems, we will issue a newsletter and send it to all those on the mailing list. If you want to be on this, then please write to me. Most of the business of the user group will take place in the newsletter, but I will put a short note in each issue of **BSBI News**.

MARK D. ATKINSON, 308 Mill Road, CAMBRIDGE CB1 3NL

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## CONSERVATION MATTERS

### CONSERVATION PROBLEMS IN TORILIS ARVENSIS

In mid-November, 1987, I found a small colony of **Torilis arvensis** (Hudson) Link in Upper Hamble County Park, near Botley, Hampshire. There were a few fruit-bearing skeletons of adult plants, all rather small, and perhaps twenty seedlings. The colony occupied a strip at the edge of an arable field, about eight metres by two.

I reported the find to the Nature Conservancy Council at Lyndhurst and, after several reminders, received a note that they had arranged conservation measures with Hampshire County Council, the landowners. Nonetheless, the plants were ploughed-in shortly afterwards. However, there was a further flush of germination in early 1988, restoring numbers to around twenty. These received the spring cereals-spray in common with the rest of the field's weeds, but eleven survived after being badly damaged, mainly in the outermost furrow.

The 1988 autumn germination occurred in August, which is rather early, and gave rise to perhaps forty seedlings. These were promptly ploughed-in a month later and no replacements were visible in November. But a visit on 21st January, 1989 revealed unprecedented numbers of young plants, the first time the writer has seen the species in such abundance as to recall the old name **Torilis infesta**. There was also a mass of **Aphanes arvensis** L. How these plants will fare as the season proceeds, remains to be seen.

Were it not for the plentiful germination recently noted, it would be natural to blame the NCC for the apparent loss of a population of a very rare and reduced species. The above brief outline of events shows that **T. arvensis** embodies several strategies in its struggle against the destructive forces of modern cereal farming, though it cannot be assumed that the present abundance of young plants will produce a bumper crop of seeds.

I would have expected September-only ploughing, and protection from spraying, to be the ideal and simplest conservation measure. Perhaps other workers with experience of the species can advise on this. In the meantime it seems best to assume that the present abundance is fortuitous, and to trust that the NCC will co-operate with the landowners to preserve a modest but viable population.

MERVYN J. SOUTHAM, 72 Fareham Road, GOSPORT, Hants PO13 0AG

[It is only fair to point out that the NCC do not consider themselves to be responsible for the lack of conservation measures so far, and, possibly stimulated by the above note, have arranged a site meeting with landowners, tenant and other interested parties, to discuss ways of safeguarding the colony. Ed.]

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### PURPLE COLTSFOOT PROBLEM

Purple Coltsfoot was one of the 31 species added to Schedule 8 last year. It occurs in one place only in Scotland, and covers a very restricted area on the ground. The number of visitors to this plant has increased considerably over the past 3 years. As a direct result, erosion problems from trampling are now very evident. There is a bare peaty patch in the centre of the colony. We are concerned that this will cause die back of the root system and adversely affect the rest of the colony. We ask for everyone's co-operation regarding this species.

It is a parallel to the Lady's Slipper Orchid situation, and we are very pleased to say how well botanists respond to the requests not to visit this species in order to lessen the erosion near the plant. There are now several seedlings at the native site, and we hope these will grow into mature plants.

Please do not visit the wild **Homogyne** site in 1989, and please do not 'spread the word' of its whereabouts. NCC will have a warden on site. If you are in the area information can be obtained on the latest situation from the warden at the Forfar office.

LYNNE FARRELL, NCC Rare Plants and Heathland Specialist, Northminster House,  
PETERBOROUGH PE1 1UA

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## ALIENS AND ADVENTIVES

ADVENTIVE NEWS 40

compiled by Adrian L. Grenfell

### COVER ILLUSTRATION

The grasses featured on Graham Easy's front cover composite are:-

- A) **Brachiaria platyphylla** (Griseb.) Nash Rubbish dump, Cherry Hinton, Cambridge, Aug. 1982. G.M.S. Easy. Det. ALG. In their survey of bird seed aliens in Britain, Hanson and Mason [Watsonia 15 (1985)] recognise this and the following species as occasional on tips.
- B) **Urochloa panicoides** P. Beauv. Grown from canary seed in 1975 by G.M.S. Easy. Det. Dr T.A. Cope.
- C) **Brachiaria deflexa** (Schumach.) C.E. Hubbard ex Robyns Rubbish dump, Cherry Hinton, Cambridge, Aug. 1982. G.M.S. Easy. Det. Dr T.A. Cope. First British record of this tropical African grass.

### MORE ON FERULA COMMUNIS

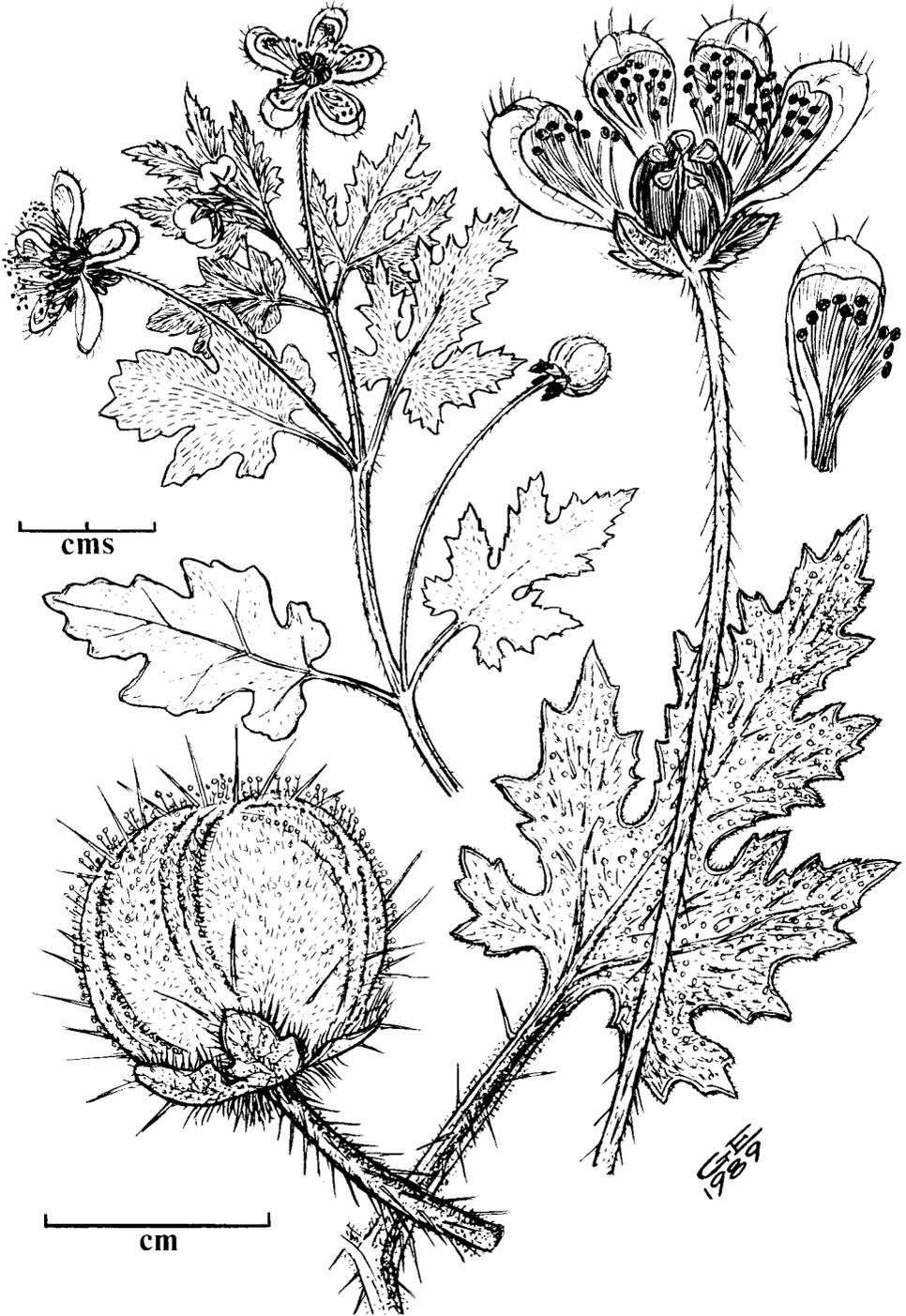
The note on the occurrence of Giant Fennel in Suffolk (Adventive News 39) has evoked much interest and correspondence. Quoting B.W.H. Coulson who writes (13-1-89) from 32 Glaphorn Road, Oundle, "The record in David McClintock's book to which you refer probably derives from the publication in the Oundle School Natural History Society's Annual Report.

...1956. 'The most interesting botanical discovery of the year was due to Mr Freeman. He drew our attention to a large umbellifer which he had noticed growing in his yard in West Street. The plant, when in flower, was 11-12ft high with masses of yellow [not whitish as in McClintock - ALG] flowers. We are indebted to the staff of the Herbarium of the British Museum (Natural History) for its identification as **Ferula communis** L. This is a Mediterranean species and its presence in Oundle is not easily explained. It is possible that it was introduced with Italian marble, presumably as a seed. Three plants have appeared during the last year but only (this) one has flowered. This will, we hope provide seed which will enable us to raise more plants'. ....1957. '**Ferula communis** (Umbelliferae). This did not flower in 1957 but Mr Freeman informs us that three plants still survive' ....".

Mr Coulson enclosed a 'somewhat inadequate photograph' depicting a track leading to the yard in 1956 which, if no more, illustrates the huge plant considerably overtopping a wall. He refers to the area being used for "stacking building material" and goes on to express doubts "that Italian marble ever passed this way!" However far-fetched this suggestion regarding the mode of introduction may seem, it could be correct (remember the Gloucester Docks granite aliens) - one can imagine the large, but light, fruits of **Ferula communis** adhering to cobwebs for example on a marble consignment.

Dr D.E. Coombe (Christ's College, Cambridge) writes (10-2-89) .... "The 1988 plant was highly fertile - both Chris Birkinshaw & I have grown hundreds of seedlings at the C.U. Bot. Garden - germination must have approached 100% after 4-6 weeks without chilling (in contrast only 1 **Pastinaca** collected at the same time has yet germinated and no **Heracleum**: Piggot tells me there are several papers on the chilling requirements of the latter). I guessed that the **Ferula** would behave as a Medit. or Oceanic plant -..."

"I am reluctant to trample too much round the **Ferula** as the seedlings are very brittle



*Blumenbachia hieronymii* Urb. del. G.M.S. Easy © 1989

with their long (5-6cm) cotyledons - but there must be at least 20 with one true leaf on the A11 verge, and others with cotyledons only."

"Either the **Ferula** is not monocarpic (hapaxanthic) or there were two separate plants growing jammed side by side (a pair of mericarps?) of which one flowered in 1988, and the other is growing again. On the whole I am inclined to think that like some yuccas, etc. the plant is not strictly monocarpic, but may grow again from the old crown." (Dr Coombe enclosed photographs of the 1988 plant shooting again from the base: a week or so earlier Graham Easy had told me independently of this in a telephone conversation).

Dr Coombe continues ...."Lewis Frost tells me that female **Trinia** behaves somewhat similarly - if it fruits very copiously, the whole plant dies: if fruiting is poor for one reason or another it can flower at least another year. But the **Ferula** was very fertile!"

"We will set out some widely spaced individual seedlings at the Bot. G. and see what happens in the 1990s!"

As a footnote, Dr Coombe adds ...."Incidentally it is the first species in Vol III of William Turner's *Herbal* of 1568!"

J.M. Mullin (British Museum) tells me of the occurrence of **Ferula communis** from 1966-68 in the South Marine Park, South Shields, Co. Durham, v.c. 66. The park was built on ballast heaps which may have been the source of this and other very interesting aliens. In 1967 a single plant of **Ferula communis** flowered in an overgrown flower bed where it reached a height of about six feet. 'Masses and masses' of seed was formed and seedlings came up in six or seven places nearby but failed to establish. Also present were much **Rumex scutatus** and **R. sanguineus** var. **sanguineus** (Red-veined Dock), also the umbellifer **Smyrnium perfoliatum** and **Sisymbrium strictissimum**. JMM points out that the latter two often occur together, an interesting association. In addition to this example he cites Battersea Park and Chelsea Physic Garden in central London and a close proximity of the two species at Kew (the former in Kew Gardens and the latter in the churchyard on Kew Green).

Meanwhile the plant in my garden is showing signs of increased activity (mid-february)- will it flower in 1989?

#### BLUMENBACHIA HIERONYMII

A.R. Church (v.c. 100 Recorder) communicates details of this extraordinary find by his friend J.G.H. Williams: the plant was growing in shingle (at the high springs level) at the head of Loch Ranza, a sea loch, a couple of hundred yards from the Lochranza Youth Hostel, Arran. Doubtless of very much more convincing status than its previous record (see *Adventive News* 33)! Graham Easy has provided the excellent drawing on page 32.

**B. hieronymii** Urb. has been much confused with **B. insignis** Schrad. in the past with the two names probably used as synonyms: the two are very closely related taxa from geographically adjacent areas of Argentina and Brazil. Mr Church writes "The plant was first noted in early August 87 and continued to flower and even set seed until the equinoctial tides in mid-September killed it. Both my friend and I had the misfortune to be stung by the handsome beast - a sting reminiscent of a wasp's, though in my case the pain was short-lived, and this was despite holding it with a poly sandwich bag!"

In general, plant seeds are highly susceptible to salt water and so an ocean journey from South America to the Arran strand-line is only an extremely remote possibility. If the propagule was in fact brought in on the tide then it must have entered the sea much closer to Lochranza. Is it cultivated nearby and does anyone have previous (Scottish) records?

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Once again I thank you for the many interesting records received: also various experts for their help with these. I can still offer 5" x 3" record slips - SAE please. The 1989 season is almost upon us - good hunting!

ADRIAN L. GRENFELL, 19 Station Road, Winterbourne, BRISTOL BS17 1EP

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Notices (BSBI)

NOTICES (BSBI)

BOTANICAL CORNWALL

The third issue of Botanical Cornwall is now available. As with the two previous issues, its major role is to provide information for local botanists, but it also includes distribution maps - now mainly tetrad - and short articles on botanical matters as well as new grid-square records - post 1987. One of the short articles is written by Keith Spurgin and concerns Cornish Fumitories, another is a longer report on the bramble meeting that took place in Cornwall last year. Subscription charge is £1.50, including postage, details from the address below.

Miss R.J. MURPHY, Shang-ri-la, Reskadinnick, CAMBORNE, Cornwall TR14 0BH

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A PROPOSED CYTOLOGICAL CATALOGUE OF THE BRITISH AND IRISH FLORA

The British and Irish flora is one of the best known from a taxonomic and distributional point of view, but it is much less well known cytologically. In fact c. 62% of the native flora have no properly documented chromosome count made on indigenous material from known localities.

An earlier attempt to catalogue our knowledge resulted in the production of a card-index which is now at LTR. This index was discontinued in about 1977, but a group based in Leicester (R.J. Gornall & J.P. Bailey), Dublin (J.A.N. Parnell) and Invergowrie (M.J. Wilkinson), has been formed to revive it and to add to it further a) by trawling for counts in the published and thesis literature, and b) by making original counts. The results will be published in the form of a catalogue documenting the collated cytological data.

BSBI members wishing to assist in this project, either by collecting seeds for chromosome counts, or by contributing counts themselves, are invited to send their names and addresses to me, indicating the way in which they would like to help.

RICHARD J. GORNALL, Botany Dept., The University, LEICESTER LE1 7RH

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POLAND FIELD MEETING 1989

Accommodation problems have led to the rescheduling of the field meeting to Poland, and it will now take place from August 6th to August 20th, 1989, eight days later than originally planned. Consequently, some members have withdrawn from the party and there are now at least two vacancies. The cost is £574 for 21 persons and £609 for 10 to 20 (single room supplement £80). Deposits of 30% of the total price are due to reach POLORBIS by **May 6th at the latest**. At the time of going to press, 17 members have made firm bookings and 2 more are doubtful. It is hoped to increase the party size to 21 to qualify for the cheaper price. **Members interested in taking part should telephone the leader, Arthur Copping, as soon as possible** during the evening on 0375 373350 (Mondays to Thursdays) or 0379 642109 (Fridays to Sundays). Full details will then be given.

ARTHUR COPPING, The Nook, The Green, ROYDON, Diss, Norfolk IP22 2SD

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SEDGES OF THE BRITISH ISLES

BSBI Computer Key No. 1, Illustrated Edition

This new key has the same data as the original version, but has monochrome illustrations for more than 50 characters and occupies more discs. Pictures appear on the screen to explain the characters as the program runs. The Illustrated Edition is only available for IBM/PC compatibles with either monochrome Hercules graphics monitor (2 discs) or EGA

colour monitor (5 discs). The monochrome version will run from a single floppy disc drive; the EGA colour version requires a hard disc. (Older machines with monochrome monitors may or may not have Hercules graphics; machines less than 2 years old mostly do have them.) The documentation is virtually the same. The price of either monochrome or colour version of the Illustrated Edition (please specify which) is £20 including postage and packing. Owners of the original unillustrated version can upgrade to the Illustrated Edition for £10 on return of their original discs.

Orders and original discs to be sent to BSBI Publications, 24 Glapthorn Road, OUNDLE, Peterborough PE8 4JQ. The original version, for either IBM/PC or BBC, is still available for £10.

ARTHUR O. CHATER & RICHARD J. PANKHURST, Department of Botany, British Museum (Natural History), Cromwell Road, LONDON SW7 5BD

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#### DETAILS OF THE CHICHESTER, SUSSEX FIELD MEETING

This meeting will now be for one day only, Saturday 30th September, thus allowing members to participate in the Cotoneaster meeting on the following day if they wish.

The meeting commences at 10.30am, based indoors at North Mundham village hall, GR SU/876.024. Two papers will be read. 'Why can't we identify glassworts?' by Dr D.H. Dalby and 'How many species? The non-expert's approach' by Dr M.J. Ingrouille, with time for discussion afterwards. In the afternoon the coast at East Head, West Wittering will be visited, where, hopefully, all our Salicornia species are present, along with two species of Limonium.

Mr G.H. Forster has kindly undertaken the local organisation for this meeting. Bookings and requests for further information should be sent to him at: "The Whyte House", 37 High Street, SELSEY, nr. Chichester, Sussex PO20 0RB, **before August 31st**.

ROY SMITH, Hon. Field Secretary, 8 Salcey Close, SWANWICK, Derby DE55 1HD

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#### UMBELLIFERS OF THE BRITISH ISLES

This handbook is being revised by Stephen L. Jury, Sabina Knees and Mervyn Southam. Dr Jury would be pleased to receive any corrections or suggestions for improvement towards the second edition. Some additional plates featuring extra species are proposed and even some deletions from full treatment. Does any BSBI member use the 'multi-access' key?

In order to keep the handbook available during the revision, the 1st edition has just been reprinted but with only a short print-run.

STEPHEN L. JURY, Plant Science Laboratories, University of Reading, Whiteknights, READING RG6 2AS

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#### NOTICES (OTHERS)

##### EXCHANGE OF BRITISH AND BULGARIAN BOTANISTS - 1990

Following the very successful botanical excursion to Bulgaria in June 1988 by members of the BSBI, the suggestion has been made, and Professor V. Velchev, Director of the Botanical Institute, Bulgarian Academy of Scientists has welcomed it, that there should be an 'exchange' of British and Bulgarian botanists in the summer of 1990. Very briefly, this involves a visit of 10-12 British botanists to Bulgaria in early June and a corresponding visit of 10-12 Bulgarian botanists to Britain in July 1990. The only costs for the visiting botanists would be the air-fares but for the host botanists it would mean providing accommodation, some spending money and contributing to the total cost of providing the botanical excursions and visits.

The British-Bulgarian Friendship Society which has experience of organising such

## Notices (Others)

exchanges for teachers, ornithologists and other specialist groups would be happy to organise this. Anyone interested is invited to write to me as soon as possible for more information. Although it is a long time ahead, I would like to know the extent of the interest so that I can start to make arrangements.

Professor E.J. SHELLARD, 244 Ellerdine Road, HOUNSLOW TW3 2PY

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### ATLAS FLORA OF SOMERSET PROJECT

The Atlas Flora of Somerset project is being carried out on a 2km square basis. Cards for recording purposes are now available. Only modern Somerset is being surveyed (not the part that has now become Avon).

Any member prepared to assist with the recording, either a 10km square, or even just a 2km square, please write to the address below.

PAUL and IAN GREEN, 66 Eastland Road, YEOVIL, Somerset BA21 4EX

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### GRASS IDENTIFICATION COURSE

A Commonwork grass identification course for beginners and those who wish to increase their confidence, will take place at Bore Place near Sevenoaks, Kent on Sunday June 25th from 10am to 5pm. The leaders will be Linda Davies and Graham Hemington. For further details please contact Dr Linda Davies at the address below.

LINDA DAVIES, Ecology Project Co-ordinator, Commonwork Land Trust, Bore Place, Chiddingstone, EDENBRIDGE, Kent TN8 7AR (tel. 0732 463255)

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### FORTHCOMING MEETINGS OF THE BRITISH BRYOLOGICAL SOCIETY

2-9 August 1989. Summer field meeting, Aberystwyth.

Full details from the local secretary: Mr A. Orange, Department of Botany, National Museum of Wales, Cardiff CF1 3NP.

22 - 24 September 1989. Paper-reading meeting and A.G.M., Lincoln.

Full details from the local secretary: Dr M.R.D. Seaward, Postgraduate School of Studies in Environmental Science, The University, Bradford BD7 1DP.

As always, BSBI members would be most welcome at these meetings.

Dr P. LIGHTOWLERS, British Antarctic Survey, Madingley Road, CAMBRIDGE CB3 0ET

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### COURSE IN BOTANICAL ILLUSTRATION

A weekend course in Botanical Illustration, under the tuition of Sybille Ernie, has been arranged by the Aberystwyth Arts Centre. It will run from Friday August 12th to Sunday August 14th 1989, and will be held at the Aberystwyth Arts Centre, University College of Wales. For further details of the course, the fee, and accommodation, please telephone Polly Mason on 0970 624278.

JENNY FELL, Exhibitions Assistant, Aberystwyth Arts Centre, University College of Wales, Penglais, ABERYSTWYTH, Dyfed SY23 3DE

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FIELD STUDIES CENTRES

From time to time I receive brochures from various Field Studies Centres in Britain and Ireland, and members may find the following addresses useful:

Corrib Conservation Centre, Ardnasillagh, Oughterard, Co. Galway, Ireland (tel. 091-82519).

Caer Llan Field Studies and Conference Centre, Lydart, Monmouth, Gwent NP5 4JJ (tel. 0600-860359).

Field Studies Council, Central Services, Preston Montford, Montford Bridge, Shrewsbury SY4 1HW (tel. 0743-850674)

EDITOR

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OFFERS

CIRSIUM TUBEROSUM SEEDS

Some years ago I collected a few seeds of *Cirsium tuberosum* from a colony in Wiltshire and I now have several splendid plants in my garden. They are most attractive and not excessively prickly.

If anyone cares to let me have a stamped and addressed envelope I would be delighted to send them seeds from these plants.

BARBARA LAST, The Stables, Berwick St James, SALISBURY Wilts SP3 4TN

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REQUESTS

ROSA DUMETORUM Thuill.

The Rev. G. Gordon Graham and I are at present engaged in the preparation of a BSBI Handbook of the British roses. There still remains a problem concerning what many British rhodologists have hitherto called *Rosa dumetorum* Thuill. Thuillier's type specimen, kindly obtained for us on loan from Geneva by Professor Clive Stace, seems to be a distinct entity differing significantly from the 'hairy *canina*' (for want of a better description) which is fairly frequent in Britain and which we have been naming as *R. dumetorum*. Among the large numbers of specimens we have examined in the herbaria of the British Museum and Kew, and which we have seen in the field or in our capacity as referees for *Rosa* only one specimen (at Kew) bears any close resemblance to Thuillier's type specimen of *R. dumetorum*.

We would be very grateful if any member could give us full details of any specimens they have come across with the following characters:

Leaflets broadly ovate to orbicular, obtuse, strictly uniserrate with coarse falcate teeth, eglandular, more or less densely pubescent on both sides with rather long silky hairs; petiole and rachis densely hairy.

TONY PRIMAVESI, Ratcliffe College, SYSTON, Leicester LE7 8SG

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CONTROL OF REYNOUTRIA IN WALES

Richards Moorehead and Laing Ltd, consulting engineers and environmental scientists, have been commissioned by the Welsh Development Agency to carry out a study of Japanese Knotweed (*Reynoutria japonica*) to establish the extent to which it is a problem in Wales and to assess ways in which it is currently being controlled. The study includes input

Requests

from the School of Pure and Applied Biology at the University of Wales College of Cardiff and Environmental Science students at the University College of Wales, Aberystwyth. All relevant published material will be accessed and local authorities and other bodies with information on knotweed, its distribution and control will be contacted. RML would be pleased to hear of any unpublished observations which BSBI members might wish to make on *Reynoutria japonica* or *R. sachalinensis* and their ecology, spread and control. Please send these to the address below.

JOHN PALMER, Richards Moorehead and Laing Ltd, 3 Clwyd Street, RUTHIN, Clwyd LL15 1HF

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NOTHOFAGUS SPECIES IN BRITAIN AND IRELAND

I am trying to obtain information about the sixteen or so species of Southern Beech (*Nothofagus*), which are frequently grown for ornament and occasionally for forestry. I would particularly like information about notable specimen trees, whether self-sown seedlings have been seen, and whether severe damage by disease, winds or woodpeckers have been observed. Any comments will be gratefully received.

HUMPHRY J.M. BOWEN, 8 Glebe Road, READING, Berks RG2 7AG

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MATERIAL OF CARDAMINE

I am anxious to see material, preferably in the field, of *Cardamine flexuosa* x *C. pratensis* (*C. x haussknechtiana*) and would be very grateful for details of any extant sites or live material. Fresh flowering material of *C. raphanifolia*, *C. heptaphylla* and *C. trifolia* would also be much appreciated. Postage refunded.

TIM RICH, Biological Records Centre, Monks Wood Experimental Station, Abbots Ripton, HUNTINGDON, Cambs PE17 2LS

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TRANSLATION OF GERMAN PAPER ON ARABIS

Would any member be prepared to translate, a paper in German on the *Arabis hirsuta* aggregate (including *A. brownii*) for me?

TIM RICH, Biological Records Centre, Monks Wood Experimental Station, Abbots Ripton, HUNTINGDON, Cambs PE17 2LS

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CARDAMINE BULBIFERA IN SOUTH DEVON

Tim Rich and I are working on the distribution of *Cardamine bulbifera* (L.) Crantz in the British Isles and would welcome details of any colonies in v.c. 3, South Devon, including whether they are native or regarded as introductions, with a view to visiting them this year. Details will be kept confidential if requested and postage refunded. If you can help, please write to me at the address below.

ALAN SHOWLER, 12 Wedgwood Drive, Hughenden Valley, HIGH WYCOMBE, Bucks. HP14 4PA

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MONESSES UNIFLORA IN SCOTLAND

I am at present trying to determine the present status of *Moneses uniflora* in Scotland. Although the plant is usually associated with native pinewoods, many of the known extant

populations are in commercial plantations and are vulnerable to major disturbance. *Moneses* is an elusive plant and there are a number of old records that need reconfirming. I would be most grateful for detailed records for this species and all communications would be treated in confidence. Please send records to me at the address below.

PHIL LUSBY, Nature Conservancy Council, 12 Hope Terrace, EDINBURGH EH9 2AS

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## BOOK NOTES

In the July 1989 part of *Watsonia*, vol. 17(4), reviews of the following books will be included:

Biological Recording: need and network, ed. S. Berry.

Poisonous plants and Fungi: an illustrated guide, by M.R. Cooper & A.W. Johnson.

The Irish Red Data Book: I. Vascular Plants, by T.G.F. Curtis & H.N. McGough.

The evolution and classification of flowering plants, 2nd edition, by A. Cronquist.

Kew Index for 1987, compiled by R.A. Davies & K.M. Lloyd.

Brambles of the British Isles, by E.S. Eedes & A. Newton (ed. D.H. Kent).

Vegetation ecology of Central Europe, 4th edition, by H. Ellenberg.

Lilacs: the genus *Syringa*, by J.L. Fiala.

Collins New Generation Guide to Wild Flowers of Britain and Northern Europe, by A.H. Fitter.

Wildflowers of Canada, by T. Fitzharris.

A Bicentenary History of the Linnean Society, by A.T. Gage & W.T. Stearn.

100 Families of Flowering Plants, 2nd edition, by M. Hickey & C. King.

Atlas Florae Europaeae, vol. 7, ed. by J. Jalas & J. Suominen, and Fytokartograficke synteszy CSR, by B. Slavik.

The Archaeology and the Flora of the British Isles, ed. M. Jones.

Plants of Dhofar, the Southern Region of Oman: Traditional and Medicinal Uses, by A.G. Miller & M. Morris.

Collins Photoguide to Wild Flowers of Britain and Northern Europe, by O. Polunin, ed. J.R. Akeroyd.

Flora of Leicestershire, ed. A.L. Primavesi & P.A. Evans.

Taming the Flood, by J. Purseglove.

A checklist of the Flowering Plants and Ferns of East Lothian, ed. A.J. Silverside & E.H.

Jackson, and A Checklist of the Flowering Plants and Ferns of Midlothian, ed. D. McKeane.

Birds and Berries, by B. & D. Snow.

Flowers of the Himalaya - a Supplement, by A. Stainton.

Vegetation of Inland Waters, ed. J.J. Symoens.

Saxifrages of Europe, with notes on African, American and some Asiatic species, by D.A. Webb & R.J. Gornall.

Domestication of Plants in the Old World, by D. Zohary & M. Hopf.

The following books have been received recently. Those that will not be reviewed in *Watsonia* are marked with an asterisk.

\*North American terrestrial vegetation, ed. by M.G. Barbour and W.D. Billings. Cambridge U.P., 1988. £45 (ISBN 0-521-26198-8). [Describes major vegetation types from Alaskan tundra to Central American tropical forest. Comprehensive bibliography.]

\*Some beautiful Indian climbers and shrubs, by N.L. Bor & M.B. Raizada. Reissued 2nd ed. Bombay N.H. Soc. & Oxford U.P., 1988 (1982). £9.95 (ISBN 0-19-562163-8). [31 colour and 99 monochrome plates of species used in ornamental horticulture; descriptions.]

The correspondence of Charles Darwin, vol. 4: 1847-1850, ed. F.H. Burkhardt & S. Smith. Cambridge U.P., 1989. £32.50 (ISBN 0-521-25590-2).

\*Plant Reproductive Ecology. Patterns and strategies, ed. by J.L. & L.L. Doust. Oxford U.P., 1988. £38 (ISBN 0-19-505175-0). [15 review articles under 3 headings: 'conceptual issues in plant breeding systems', 'ecological forces' and 'reproductive strategies of non-angiosperms'.]

- \*Ecological relationships of plants and animals, by H.H. Howe & L.C. Westley. Oxford U.P., 1988. £22.50 (ISBN 0-19-504431-2). [Wide-ranging study including herbivory, pollination, seed dispersal, chemical plant defences, ant/plant mutualism.]
- The carnivorous plants, by B.E. Juniper, R.J. Robins & D.M. Joel. Academic Press, 1989. £75 (ISBN 0-12-392170-8).
- \*The ages of Gaia, by J. Lovelock. Oxford U.P., 1988. £13.50 (ISBN 0-19-217770-2). [Elaborates the hypothesis that the Planet Earth constitutes a single living organism.]
- \*Flowering Plants in West Africa, by M. Steentoft. Cambridge U.P., 1988. £45 (ISBN 0-521-26192-9). [Describes each of the major families, with separate paragraphs on their economic species and principal genera. Packed with detailed field observations.]

JOHN EDMONDSON, Botany Dept., Liverpool Museum, William Brown St, LIVERPOOL L3 8EN

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#### NEWS FROM OUNDLE BOOKS

An up-to-date supplement to the annual Book list with many new titles and news of in and out titles is always available for a s.a.e., Amongst important new books is Saxifrages of Europe under the combined authorship of our President-elect, Professor David Webb and Watsonia editor, Richard Gornall. We are always willing to look for books you need but cannot find - especially recently out of print titles. 'Umbellifers' has been reprinted, 'Plant Crib' is being reprinted, and the 'Fern Crib' is out of print.

MARGARET PERRING, BSBI Publications, 24 Glaphorn Road, OUNDLE, Peterborough PE8 4JQ

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#### INSTRUCTIONS FOR CONTRIBUTORS TO WATSONIA

The purpose of this note is to outline general editorial policy and to provide some guidelines about points of style for authors intending to submit MSS to Watsonia. The editors receive MSS which often require a great deal of work in order to bring them into line with Watsonia format, and this can, under certain circumstances, result in a delay in publication. We would, therefore, urge all potential contributors to take great care in the production of their MSS in order to ensure a swift passage through the editorial process.

#### General Policy

**Scope.** Authors are invited to submit papers and short notes concerning the taxonomy, biosystematics and distribution of British and Irish vascular plants, as well as topics of a more general or historical nature.

**Manuscripts** must be submitted in duplicate, typewritten on one side of the paper, with wide margins and double-spaced throughout. If the journal is pressed for space, MSS of more than 25 pages may be held over until space becomes available; the editors will try to ensure that the delay will be no more than one issue of the journal.

**Format** should follow that used in recent issues of Watsonia. Some commonly ignored or forgotten points are detailed in the special section below.

**Tables, figure legends & appendices** should be typed on separate sheets and attached at the end of the MS.

**Figures** should be drawn in black ink and identified in pencil on the back with their number and the author's name. They should be drawn no more than three-times final size, bearing in mind they will normally be reduced to occupy the full width of a page. Scale-bars are essential on plant illustrations and maps. Lettering should be done with transfers or high-quality stencilling, although graph axes and other more extensive labelling are best done in pencil and left to the printer. Photographs can be accepted if they materially assist in the understanding of the article.

**Contributors** are advised to consult the editors before submission in cases of doubt. Twenty-five offprints are given free to authors of papers and short notes; further copies

may be purchased in multiples of 25 at the current price. Neither the Society nor the editors take responsibility for the views expressed by authors.

### Some Points of Format

- 1) Authors' names - please use all your initials, unless you never do so. Double-barrelled names are OK only if they have a hyphen.
- 2) Authors' addresses - only one per author, underlined, and including the post code. Correspondence addresses can be indicated, if desired, in the case of multi-authored papers. For Short Notes one address only, irrespective of the number of authors.
- 3) Abstract - only necessary for papers; please provide an informative summary of the work. All new taxonomic names should be listed here and indicated as such (**comb. nov.**, **sp. nov.**, etc.). No references should be cited in the abstract.
- 4) Numbers - one to twelve to be written out in full unless they are followed by a unit of measurement or are part of a formal taxonomic description; 13 onwards to be in arabic. '+' may only be used in descriptions or tables. 'Circa' is abbreviated to 'c.'
- 5) Units - use only metric units and their approved abbreviations, unless there is a special reason (e.g. when quoting).
- 6) Dates - sequence to be 'day month year', with no commas, e.g. 2 November 1951.
- 7) Capitals - use for proper nouns only, e.g. 'Lesser Spearwort' vs 'spearwort'; also note their restriction to proper nouns and the word 'Flora' (when it refers to a book rather than vegetation) in book and journal titles (q.v.).
- 8) Italics - do not use italic fonts on typewriters or word processors; underline where italics are required, which will be in the following circumstances only: a) Latin plant names at genus level and below; b) when using 'et al.'; note that all other Latin words or abbreviations go in roman typeface; c) authors' addresses; d) book and journal titles; e) collectors' names and numbers in the citation of specimens (q.v.); f) any text which needs emphasis.
- 9) Quotes - double quotes are used when quoting; single quotes are used for a quote within a quote, or usage, or a chapter title when cited in the text.
- 10) Abbreviations are followed by a full-stop, contractions are not.
- 11) Points of the compass - please use 'northern', 'south-eastern', etc. when using the adjectival form; in certain very well-established cases, e.g. North America, the noun may be used.
- 12) Citation of references - in the text use 'et al.' if the number of authors exceeds two; in the reference list, cite in full up to four authors, but use 'et al.' if there are more than this. When citing references in the text use a semi-colon to separate articles where authorship changes, e.g. (Boggs 1957, 1971; Jones 1967). Journal and book titles should be underlined, the former being abbreviated as in the World list of scientific periodicals. In cases of doubt, do not abbreviate. Only proper nouns and the word 'Flora' (when it refers to a book rather than vegetation) need be capitalised.  
Some examples:  
BABINGTON, C.C. (1856). Manual of British botany, 4th ed. London.  
BURTT, B.L. (1948). On Erigeron bonariensis L. Kew Bull. 3: 369-372.  
HALL, T.B. (1839). A Flora of Liverpool. London.  
PERRING, F.H. & WALTERS, S.M., eds (1962). Atlas of the British flora [note l.c. 'f']. London.  
TUTIN, T.G. (1950). Polinia Schrank, in TUTIN, T.G. et al., eds. Flora Europaea 5: 254. Cambridge.
- 13) Citation of specimens - use the following sequence when citing a specimen in full: locality, date, collector & number (underlined), herbarium abbreviation (following Kent & Allen's British and Irish herbaria (1984)). For example: Leics., v.c. 55, Botcheston Bog, 12 July 1939, Horwood 2219 (LTR).  
Cases where the specimen was collected by one but mounted and numbered by another should be cited as, e.g. Cooper in Fryer 1469. Private herbaria are cited as, e.g. herb. R.C. Palmer, or, if the person is the collector or author of the article, as herb. R.C.P.
- 14) Citation of synonyms - list them in chronological order, each on a new line. If space is limited and the list of synonyms long, then they may be run on one from another.
- 15) Formal taxonomic treatments should follow the format in C.D. Preston, Watsonia 17: 217-245 (1989).

### Submission of Manuscripts

Papers & Short Notes: Dr R.J. Gornall, Botany Dept., The University, Leicester LE1 7RH  
Books for Review: Dr J.R. Edmondson, Botany Dept., Liverpool Museum, William Brown St.,  
Liverpool, L3 8EN

Field Meeting Reports (published in BSBI News): Dr B.S. Rushton, Department of Biological  
and Biomedical Sciences, University of Ulster, Coleraine, Co. Londonderry, N.  
Ireland BT52 1SA

Plant Records: the appropriate vice-county recorder, who should then send a collated list  
to C.D. Preston, Biological Records Centre, Monks Wood Experimental Station, Abbots  
Ripton, Huntingdon PE17 2LS.

RICHARD J. GORNALL, Botany Dept., The University, LEICESTER LE1 7RH

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### A GUIDE FOR CONTRIBUTORS OF FIELD MEETING REPORTS

The following notes are intended to help authors prepare suitable reports of Field Meetings for inclusion in BSBI News. Reports are edited by Dr B.S. Rushton and should be sent to him at the following address - Department of Biological and Biomedical Sciences, University of Ulster, Coleraine, County Londonderry, Northern Ireland BT52 1SA. In future, the majority of Field Meeting Reports will be published in the December and September issues of BSBI News and only a small number will appear in the April issue. Authors should therefore be aware of the publication schedule for BSBI News and send material to Dr Rushton at least five weeks before the copy deadline, which means that reports for the December issue should be sent about late September/early October and for the September issue about early June. Authors should contact Dr Rushton directly if any queries arise.

**1. Style and content.** This is very much a personal matter and the Editor will not change the prose unless the meaning is ambiguous. You should include the name of the leader(s), if different from the author, and you should acknowledge specific help given in organising the meeting and in particular permission to enter sites or help with identification following the meeting. An indication of the number of participants should be included. If the meeting is held jointly then this should also be mentioned. Some background to the site, e.g. its ecology, ownership, history, conservation status, etc. is desirable. Try to avoid long unannotated lists of species. It is probably better to name fewer species and to comment specifically on these, e.g. whether they were flowering or not, flower colour variation, habitat characteristics, etc. Do not include too many details on the weather (which is usually awful!) or the gastronomic delights of lunch, or detailed travel arrangements.

**2. Length.** The Editor does not wish to be too specific about the length of reports but generally a one day field meeting should be reported in about half a page (350 words), a two day meeting in about three-quarters of a page and a week excursion in between one and two pages of BSBI News. As a rough guide, one typed A4 sheet, double spaced contains between 250 and 300 words. Meetings to places of considerable botanical interest or places overseas may warrant more space.

#### **3. Format and specific points.**

a. Reports should be preferably typewritten, double-spaced and with wide margins. If typing facilities are not available, hand-written reports are acceptable but they must be legible and all species names and all place names must be written in upper-case.

b. Title - this should follow the format established in BSBI News No. 50 and should include, in the correct order: Site name, Vice-county name, Vice-county number and Date(s).

e.g. BEN HOPE, WEST SUTHERLAND (v.c. 108), 16th-17th JULY .  
The site name should correspond to the site name used in the Field Meeting Programme sent out each year. The name of the author(s) should go in upper-case at the end of the report on the left-hand side.

c. Species names - Latin names should be given priority and, if it is felt necessary, common names should be included in parentheses, e.g. *Digitalis purpurea* (Foxglove). The names should conform as far as possible to those in Clapham, A.R., Tutin, T.G. and Moore, D.M. 1987, Flora of the British Isles, Cambridge University Press or Flora Europaea for those not listed in CTM. Special attention should be given to the spelling of species names particularly those which cannot easily be checked, e.g. species of *Rubus*, *Hieracium* etc. Since Latin names are shown in BSBI News in bold lettering, they should not be underlined nor typed in italics in reports.

d. Place-names - Whilst it is comparatively easy to check the spellings of species names, checking the names of places is much more difficult and authors should give special attention to these to ensure that they are correct. If possible, only use place names that appear on Ordnance Survey maps.

e. All distances, altitudes, lengths, heights, etc. must be in metric units.

f. Grid references should conform to the style established for Watsonia, e.g. 52/5.7, 52/55.70 or 52/555.705 for Wicken Fen.

g. References should be included in the text in parentheses not listed at the end of the report, e.g. (Swan, G.A. & Walters, S.M. 1988. Watsonia 17: 133-138). Books should include the title, e.g. (Trist, P.J.O. ed. 1979. An Ecological Flora of Breckland).

BRIAN S. RUSHTON, Department of Biological and Biomedical Sciences, University of Ulster, Coleraine, County Londonderry, Northern Ireland BT52 1SA

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#### ANNUAL EXHIBITION MEETING, 1988

The Annual Exhibition Meeting was held in the Conversazione Room, British Museum (Natural History), London, on Saturday 26th November 1988, from 12.00 to 17.00 hours. The following Exhibits were shown.

#### FLORA EUROPAEA: THE REVISION OF VOLUME 1

Flora Europaea Volume 1 (published in 1964) has been revised at the University of Reading and will go to press shortly. Publication is expected in 1990. The exhibit followed the pattern of previous years, showing portions of revised text to give some idea of the number and type of changes involved (see, for example, BSBI News 49: 39, 1988).

J.R. AKEROYD

#### POLYGONACEAE AT READING

The herbarium of the University of Reading contains some 150,000 sheets of Higher Plants, mostly from the British Isles, Europe and the Mediterranean region, notably Spain, Italy and N.W. Africa. Families that are well represented include Compositae, Gramineae, Leguminosae, Umbelliferae and Polygonaceae. This last family represents my own research interest, and we are thus in the process of building up our collections, both from my own efforts and from the many specimens sent in by BSBI members for identification. We now have an extensive reference collection of some 3000 specimens. The collections have been especially enriched by the bequests of the herbaria of the late J.E. Lousley (*Rumex*) and E.C. Wallace (*Polygonum*).

J.R. AKEROYD

MORE CONTINENTAL BRAMBLES IN ENGLAND

The publication of the new Ray Society monograph, Brambles of the British Isles by E.S. Eedes & A. Newton (1988) has brought our knowledge of Rubus in the British Isles up to a splendid new base-line of comprehensiveness and accuracy. But it is unlikely that the species contained in its pages represent the full number of named taxa that will eventually prove to occur in these islands. The Rubus flora of northern France, in particular, is still little known and more of the southern English brambles (to say nothing of the Channel Isles ones) that are presently without a name will surely turn out to be identical with species already described on the other side of the Channel. In Hampshire alone some 50-60 forms occur quite widely or at any rate locally in quantity that remain unmatched with any of the existing British Isles taxa. It is difficult to believe that at least a proportion of these are not also on the Continent, and one or two tentative matches that have been made formed the subject of this exhibit.

D.E. ALLEN

SOME RUBUS DISCOVERIES OF 1988

Exhibited were two brambles new to Hampshire and one new to the Isle of Wight. Their presence in each case had been known for some years, but it was only in 1988 that their identity was established.

Rubus informifolius Eedes has hitherto been on record from the central Welsh Marches, with the Wyre Forest as its centre. Its discovery in Hampshire is thus unexpected. It occurs on a woodland margin near Alton, v.c. 12, in very small quantity.

Rubus nitidiformis Sudre is so tightly restricted to south-eastern England that its extension as far west as S. Hampshire, v.c. 11, has looked hardly less likely. A bramble long known on two Southampton commons has now proved to be a dwarf variant of it, however.

Rubus aequalidens Newton, by contrast, sitting astride St. George's Channel, has appeared too impossibly western. One Cornubian species after another has nevertheless been turning up in coastal Wessex, and now this very distinct bramble can be added from Wight, v.c. 10 : Parkhurst Forest, in the north, and St. Boniface Down, above Ventnor on the south coast. In the second of these localities it was discovered only in 1988, in abundance, dominating the extensive area of heath.

These additions bring the Hampshire / Wight Rubus list up to 132 named species (of which 4 are known in Wight but not in Hampshire).

D.E. ALLEN

ALDERNEY'S 'WILD' FLOWERS

Because of the island's geography and geology, many plants which are common in the UK are absent from, or rare in Alderney.

Conversely, being at the northern limit of the range of many European species, and with frost rarely occurring, other species thrive which are rare in England, and some more exotic 'garden escapes' persist for many years.

The exhibit showed mounted colour photographs of 34 species which fall within these categories, including Isoetes histrix, Azolla filiculoides (showing spores), Raphanus maritimus, the white-flowered form common in Alderney, Tuberaria guttata, Hirschfeldia incana, Polycarpon tetraphyllum, Vicia bithynica, Crassula helmsii, Thesium humifusum, Bupleurum baldense, Euphorbia peplis (now not seen for 10 years), Geranium submolle, Limonium normannicum, four Orobanche spp., Echium pininana, Dracunculus vulgaris, Gnaphalium luteo-album, Juncus capitatus, Romulea columnae and Allium triquetrum.

Two further albums of photographs, the recently published "Flora of Alderney, a Checklist with Notes", checklist cards and the 1988 annual botanical report for the Alderney Society Bulletin were also displayed.

B. BONNARD

UMBELLIFER PORTRAITS

Whilst ripe fruits are regarded as a diagnostic feature for identifying Umbelliferae, the flowering plant, and especially the leaves, can in fact be used for separating most species.

This exhibit of 18 pencil drawings illustrated some of the leaf-diversity within the family, from the the fern-like leaves of *Anthriscus sylvestris* (L.) Hoffm. to the fleshy segments of *Crithmum maritimum* L., or the fine thread-like leaves of *Foeniculum vulgare* Miller.

J. COMBES

WEST LLEYN 1988

Additions to the West Lleyn flora in 1988 included two major finds and a number of critical taxa, all rare and most new to v.c. 49.

*Cirsium dissectum* discovered by Dr E. Pulford, in just a small patch, gives a considerable extension in range to a species mainly concentrated in mid- and south Wales. Only one other site is known in north Wales - an isolated colony in Merioneth. *Trifolium fragiferum*, reported from Bardsey Island, is already known from the Caernarfonshire coast 80km to the north, as well as on Anglesey; this find fills a gap between these and the next stations some 50km to the east on the Caerns.-Merioneth coast.

Critical taxa added to the W. Lleyn flora include segregates of *Rubus* (see next item). From the salt-marshes of Pwllheli and Abersoch come *Salicornia ramosissima* and *S. dolichostachya* (Pwllheli only). Two critical segregates of *Festuca rubra* have been identified: subspecies *arenaria*, and subspecies *litoralis* for which latter, previous Welsh records were all on the south coast. A rose hybrid is now confirmed as *Rosa arvensis* x *R. canina* (*R. x wheldonii* Wolley-Dod), new for v.c. 49.

A.P. CONOLLY

RUBUS IN WEST LLEYN

Three days of bramble hunting in August 1988 in this area not previously systematically studied produced 24 *Rubus* 'species' of which 17 are new to W. Lleyn; also two hybrids. Of these 17, five are new to v.c. 49 and give major extensions of range: *R. raduloides* new for western Wales, *R. leyanus* with but a single other north Wales record (v.c. 52), and *R. conjugens*, *R. amplificatus* and *R. dentatifolius*, hardly known in the northern part of west Wales. *R. vigorosus* and *R. infestus* are both very rare species in Wales, though the former is known from nearby Criccieth. Two species, *R. riparius* and *R. monensis* are endemic to NW Wales, barely known beyond Gwynedd; *R. ordovicum* with a similar narrow Gwynedd range but recently also encountered near Dublin (D.E. Allen, *BSBI News* 49: 39, 1988), was seen in all 10km squares covered. The new Lleyn records fit in well for two species with a marked western British range - *R. dumnoniensis* and *R. lanaticaulis*; likewise for the mainly west Britain - Irish sea *R. wirralensis*.

New for Lleyn, but not for v.c. 49, were the more widespread *R. pyramidalis*, *R. nemoralis* and *R. dasyphyllus*; they show expected extensions into a former 'gap'; whereas *R. lindleianus*, a scarcer species uncommon coastally, was only seen once. Of the remainder, all had prior W. Lleyn records and the new ones merely fill gaps.

A.P. CONOLLY & A. NEWTON

BAILIWICK OF GUERNSEY - NEW RECORDS

The more remarkable records made in the islands of the Bailiwick recently are:

New to Channel Islands

*Thalictrum minus*; *Geranium canariense*; *G. x magnificum*; *Lathyrus grandiflorus*.

Second Channel Island record

*Lathyrus japonicus*.

New to Bailiwick

**Geranium lucidum; Ornithopus compressus; Lythrum hyssopifolia; Petroselinum segetum; Stellaria holostea.**

Re-discovered in Bailiwick

**Veronica scutellata**, only previous record in 1790.

New to Guernsey

**Lysimachia nemorum; Phalaris aquatica.**

Re-discovered in Guernsey

**Galeopsis tetrahit**, second record this century; **Carex divulsa**, last record in 1891; x **Festulolium loliaceum**, last record in 1851; **Bromus erectus**, second record.

New to Alderney

**Laurus nobilis; Berberis vulgaris; Geranium pyrenaicum; Epilobium cf. ciliatum; Myriophyllum aquaticum; M. verticillatum; Cyclamen hederifolium; Pentaglottis sempervirens; Campanula portenschlagiana; Lactuca cf. serriola; Allium neapolitanum; Ipheion uniflorum; Typha angustifolia.**

New to Sark

**Galeopsis tetrahit; Ajuga reptans; Ambrosia artemisiifolia.**

Re-discovered in Sark

**Barbarea verna**, last record in 1906; **Orchis mascula**, last seen in 1896.

New to Herm

**Bromus erectus, B. catharticus.**

R. COOK

VEGETATIVE PROPOGATION OF LYTHRUM HYSSOPIFOLIA L.

**Lythrum hyssopifolia** L., Grass Poly, 'has a longer and more continuous history in Cambridgeshire than in any other county. It was first recorded from "corn fields ... in many places around Cambridge" by Ray in 1660' (C.D. Preston & H.L.K. Whitehouse, Biol. Cons. 35: 31-62, 1986). Since 1958, when it was re-found by Mrs G. Crompton and myself, it has occurred in five parishes in v.c. 29. Typical sites are natural (? periglacial) depressions in arable fields on chalk which flood in wet seasons like 1974-75 and 1987-88. Generally considered an annual, vegetative shoot-tips root very readily with mist-propagation at 20°C; 100% rooting in ten days is usual; some have rooted in only four days. Preston & Whitehouse quote my 1971 experiment in which **L. hyssopifolia** from S. France germinated after 14 years' dry storage, as did **L. thymifolia** and **L. borysthenicum**, which have been kept at the Cambridge University Botanic Garden for 31 years. Rooted cuttings and seedlings of **L. borysthenicum** which germinated freely in nine days after 14 years' dry storage, were shown, as were associated plants from similar East Anglian sites.

D.E. COOMBE

SOME ATTEMPTS AT THE CONTROL OF THE ALIEN AQUATIC  
CRASSULA HELMSII (T. Kirk) Cockayne

Various attempts to control **Crassula helmsii** have been studied but as even more occurrences (currently 200, November 1988, with a doubling rate of every two years) have been recorded, a specific study on control by herbicides has been initiated. Initial tank and autumn field trials of all available Approved aquatic herbicides have shown the particular resistance of emergent stands, with only glyphosate producing any noticeable degree of control. The growth of submerged stands was however rapidly suppressed using diquat and diquat-alginate, although buds on separated shoots started to regrow over subsequent weeks before finally dying, whereas treatment with dichlobenil required 1-2 months to become effective. The commercial chemical hydrogen peroxide was also tested at 20 and 100gm<sup>-3</sup> because the absence of toxic or long-term residues made it suitable for nature reserves; regrowth was unfortunately only suppressed temporarily. Field observations on other techniques such as shading material (successful) and flame throwers (laborious, expensive, and not very effective), were studied and some preliminary guidelines for control of sites with differing degrees of dominance by this plant have been produced.

F.H. DAWSON

VARIATION IN PAPILLATE STIGMA MORPHOLOGY  
IN LIMONIUM (PLUMBAGINACEAE)

Two British species of sea lavenders, *Limonium vulgare* Miller and *L. humile* Miller, have different type of stigmas and pollen. *L. vulgare* exhibits dimorphy with cob stigmas and pollen characterized by large reticulae on the surface of the grains (type A). The other morph has papillate stigmas and pollen finely covered with minute fovi (type B). *L. humile* is monomorphic, with type A pollen and a papillate stigma.

One of the most interesting discoveries from my morphological studies is the differing cell shape in papillate stigmas from *L. humile* and the BPap morph of *L. vulgare*. Although the stigmatic cells have a single large papilla, the shape varies between the two species. In *L. vulgare* the cells are more sharply protruberant than those of *L. humile*, which tend to be more rounded and tumescent. The cells of *L. vulgare* also have a rounded process at their tip. Anatomical studies by previous workers have shown that the cuticle is thickened at the apex of the papillae. These two distinct types of papillate stigma occur in populations throughout the geographical range of both species in the British Isles.

H.J. DAWSON

EXHIBITION OF PROGRESS IN THE TETRAD MAPPING  
OF THE FLORA OF V.C. 35 (MONS.)

The exhibit consisted of charts showing simplified physical and geological features of the county, co-ordinators and recorders participating in the scheme on a continuous basis, and the species numbers recorded per tetrad. Information displayed gave some of the causes for a reduction in diversity of species and numbers in the species still present. Other sheets showed plants occurring at one to three sites only, probable extinctions, first and second v.c. records and established aliens. Mini-maps showed how the work load was divided between co-ordinators and the organiser, the BSBI recorder, and how choosing a different colour for recording each year eased the load of detecting new entries. Some specimen county maps were displayed to show how some historic records related to the current survey. Others showed plants, not recorded in Shoobred's *Flora of Chepstow* (1920), to be now widespread. Others showed area distribution, e.g. hilly & lowland plants, calcicoles & calcifuges, coastal & inland etc.

In four years 88,396 records have been processed to produce 1148 species-maps (including a small number of hybrids). This does not include any pre-1985 records.

T.G. EVANS

THE NATURE CONSERVANCY COUNCIL RARE PLANT SURVEY

Conservation of rare plant species requires detailed knowledge of their distribution. Sites can be hard to identify simply because old records are imprecise; often a parish is the closest they can be pinpointed, but secrecy is a large factor in the situation. Sometimes, a number of botanists know a site and may feel responsible for it, but have the knowledge hidden in their heads and notebooks. Publicity for rare plant localities is obviously undesirable, but as Britain does have legislation (the Wildlife and Countryside Act 1981) to protect rare species, it is essential for the statutory body to have adequate and quickly accessible information.

In 1974 a pilot scheme began in East England, and during the next 10 years the surveyor, Mrs Gigi Crompton, and Lynne Farrell developed the methodology and completed the first Rare Plant Survey. Since 1985 most regions have been involved (Scotland and Ireland excluded). The surveyors establish what Red Data Book species (those occurring in 15 or less 10km squares in Britain) have been found in their region, they pull together the historical records, survey existing sites, and try to re-find 'lost' species. Localities are recorded with site photographs and sketch maps in such a way that they can easily be re-found, and a rapid and accurate assessment made of decline or increase in the population, and of changes in habitat. Detailed reports go to the Rare Plant Officer at NCC Headquarters, and to appropriate Regional Offices, where they are available for consultation by appropriate bodies and individuals.

Lady R. FITZGERALD, V. MORGAN & I. TAYLOR

## IDENTIFICATION OF NATURALIZED COTONEASTERS

An ever-increasing number of species of *Cotoneaster* are being found naturalized in this country. The greater number of these have been found in chalk and limestone areas, although they will grow on any soil type so long as it is not waterlogged.

These *Cotoneasters* present the would-be identifier with a challenge, as there are around 300 species in the genus, of which the majority are apomictic, with a few outbreeding species.

Bertil Hylm  from Sweden has divided the genus into sections, subsections and series, which makes the situation much easier, and we are at present working together to produce a key for this, which will enable us to put a species directly into a series. Later we shall construct a key for the species, but it is going to be a long task!

I should be grateful to receive any specimens of *Cotoneaster* found naturalized, or even species from gardens that need identification; I shall be only too pleased to give help if I can, with this extremely difficult genus. Postage will be refunded.

J. FRYER

## AN INTRODUCTION TO THE FLORA OF TEMPERATE CHILE

As the longest country in the world, Chile spans a range of climatic and vegetational extremes from desert to tundra; ranging from latitude 18°S in the north, where it shares a common boundary with Peru, south to latitude 55°S. It is 4,200km long, and on average the country is no more than 180km wide. The areas visited in 1986 and 1988 lie between latitudes 38° and 43°S in a region known locally as the 'Chilean Lake District'. Four main vegetation zones found in this region were depicted in the exhibit; coastal, coigue, lenga and alto andino. Much of the area is still covered by mainly evergreen, cool temperate rainforest, although the herbaceous flora is somewhat depauperate and largely augmented by European aliens. The problems associated with the conservation of native coniferous species were also raised, with particular reference to *Araucaria araucana*, *Fitzroya cupressoides* and *Pilgerodendron uviferum*. All are listed on Appendix I of CITES because the threat of continued international trade in their timber is seriously affecting remaining populations.

M.F. GARDNER & S.G. KNEES

## HALORAGIS MICRANTHA - CREEPING RASPWORT

This species was discovered growing near Lough Bola, 3km north of Carna in Co. Galway (v.c. H16) on the west coast of Ireland, on 25 September 1988, by Paul Green, whilst recording for the BSBI monitoring scheme with Ian Green and Geraldine Crouch. This small, mat-like plant was growing in a very wet peaty heath, seemingly preferring the areas laid bare by peat-cutting activities.

This is the first record of the species, native from Australasia to the Himalaya, in Europe. It was well naturalized, trailing in habit, forming mats up to 1m across, with opposite round leaves, bearing minute inconspicuous flowers with four petals, four sepals and eight stamens on spikes up to 5cm; the fruits were tiny, grooved and dark.

The only association with man, in this remote area of Ireland, appeared to be the peat-cuttings. There was certainly no evidence of any recent habitation nearby. Strangely, also growing alongside *Haloragis micrantha* was *Juncus planifolius*, which has been well naturalized in the area for several years, and which also originates from the same part of the world.

P. GREEN

## ANOTHER FLORISTIC LINK BETWEEN MOROCCO AND SW ASIA

Links between the floras of Morocco and South-West Asia are now widely recognized (Davis & Hedge, Ann. Naturhist. Mus. Wien. 75: 43-57, 1971). Another link was demonstrated by a collection made in 1987 (Jury, Rejdali & Watson 9007, RNg, BM) of *Draba hederifolia* Cosson whose nearest relatives occur in Iran and Afghanistan, over 5000km away.

R.D. HYAM & S.L. JURY

ASPLENIUM HYBRIDS IN THE BRITISH ISLES

Eleven species and subspecies of **Asplenium** and ten hybrids found in the British Isles were exhibited with a further five hybrids involving the above species, found on the European mainland, and which could occur here. Two species (**A. ceterach** and **A. marinum**) have not been shown, so far, as being parental to any hybrid.

Hybrids are typically intermediate in morphology between the parents and have a high proportion of abortive spores per sporangium. It was seen from the specimens exhibited that some hybrids from different, but related, parents can be almost indistinguishable. It is therefore very important to observe what species are growing in the vicinity; usually both parents are found growing nearby. One should beware of mistaking for hybrids sporeling plants and mature fronds whose development has been affected by adverse environmental conditions.

A.C. JERMY, J.M. CAMUS & A.M. PAUL

POPULATION STRUCTURE AND INTER-RELATIONSHIPS  
IN A RARE BRITISH ANNUAL GRASS : MIBORA MINIMA (L.) Desv.

**Mibora minima** is a diminutive, winter-flowering annual grass of W. & S.W. Europe. Outbreeding is confirmed by the level of heterozygosity and high pollen / ovule ratio, inbreeding being minimised by strong protogyny. Rare in Britain, it occurs naturally on sand-dunes and cliff-tops in Anglesey, Gower, Guernsey, Herm and Jersey. It may be overlooked elsewhere.

Genetic variation within and between 16 natural populations was assessed by gel-electrophoresis of six polymorphic enzymes, and the data compared using the PHYLIP computer program to produce an unrooted maximum likelihood evolutionary tree.

Guernsey, lying closest to the plant's main area of distribution, shows the greatest variation in isozymes. There is a progressive reduction in alleles with increasing distance from Guernsey, the different suites of alleles on Gower and Anglesey probably resulting from founder effects and/or genetic drift in long-established native populations. Although the effects of natural selection in limiting habitats cannot be discounted, different habitat types do not appear to influence variation.

M.R. JOHN & Q.O.N. KAY

A PLANT-COLLECTING EXPEDITION TO BULGARIA, AUGUST 1988

A report was presented of some of the interesting plants found on a two-week package holiday to Bulgaria, 7-21 August 1988. This was to collect *Achillea* species for a Ph.D. research project, and to make a general collection of herbarium specimens for RNG. The hire of a car at Slănčev brjag for the first week enabled 1000km of unimpeded botanizing. Excursions on foot and by taxi were made for one week in the Rhodope Mountains.

**Achillea clypeolata** Sibth. & Sm. was collected in seed from three locations and **Peucedanum obtusifolium** Sibth. & Sm. recognized for the first time in Bulgaria on sand-dunes c. 30km SE of Burgas. **Iris reichenbachiana** Heuffel was collected 22km N of Smolyan and added to the National Council for the Conservation of Plants and Gardens Iris collection at Reading.

S.L. JURY & S.P. THORNTON-WOOD

"HELP"

This annual exhibit, designed to give informal assistance with the identification of plants, including **Pennisetum villosum** from La Paz, a very attractive grass; a very "untypical"-looking **Valeriana dioica** in its winter leaf-form which looked at first more like **Ranunculus flammula**; and a piece of **Forskalia angustifolia** which had lain for 33 years in a notebook.

The exhibit will be available again next year: please look out your own awkward bugbears. You can bring them to the meeting, or if you prefer, send them to me in advance.

S.L.M. KARLEY

CENTAUREA INCANA Desf. IN S.W. EUROPE

A recent expedition to Morocco in 1987 by S.L. Jury, Moh. Rejdali and M.F. Watson brought back herbarium specimens of *Centaurea incana* Desf. (1780). The morphological and chemical variation exhibited by this species was shown and compared with that of *C. ornata* Willd. (1803), endemic to Spain and Portugal. It was concluded that the two species were conspecific and that the correct name for both is *Centaurea incana* Desf.

S.J. KERLEY & S.L. JURY

ERICA ANTHURA Link, A GOOD SPECIES?

Four sheets were shown from over 30 gatherings made in October in Dalmatia to demonstrate the distinctness of this Adriatic species from the Aegean *E. vagans* L. (*E. manipuliflora* Salisbury), and its greater similarity to *E. didyma* Stokes (*E. vagans* auct. mult.).

D. McCLINTOCK

ERICA VAGANS L.

Linnaeus's diagnosis of this species, e.g. white stems and "sparse" inflorescence, agrees with the type specimen. These characters show that this is referable to the Aegean populations of what was later called *E. verticillata* Forskål, and *E. manipuliflora* Salisbury. Attempts are in hand however to try to retain *E. vagans* in the sense in which it is now universally known, i.e. for the plants of the Atlantic fringe of Europe.

D. McCLINTOCK

BLUE-FLOWERED ALLIUM VINEALE

From a blue-flowered colony at Milltown, Co. Kerry (v.c. H2), Ireland, first discovered in 1984, this colour variation is constant both in the wild and in cultivation. The colours usually recorded in this species are pink or greenish-white. Enquiries to acknowledged *Allium* experts in the British Isles and Europe have so far drawn a blank with regard to information or records of a similar colour variant. Although *Allium vineale* is a notably variable species, this colour variant must, as of now, be classed as rather rare.

D. McCLINTOCK

IN THE STEPS OF LINNAEUS: LAPLAND 1988

The survey of the north made by Linnaeus in 1732 provided a data-base concerning both the Laps and the three natural kingdoms - geological, zoological and botanical - which the Swedish Royal Society of Science had commissioned Linnaeus to produce. The 1988 journey (25 July - 7 August) was organised by the Linnean Society of London and by Svenska Linne-Sällskapet as part of the Bicentenary celebrations of the former society.

Our journey began in Uppsala and followed much the same route as Linnaeus as far as Kvikkjøkk, where we examined the floras of Mt Sjnjerak and Mt Vallevare. Linnaeus had then travelled over the mountains until meeting the Norwegian coast at Sørfold, whereas we went to Narvik via Kiruna, where we ventured into the depths of the iron mines, and Abisko. The return was to Pajala, Haparanda, Oulu, Vaasa, and Turku, and then by ship through the archipelago and back to Sweden. The exhibit was built around two large colour plates by Rosemary Wise of the plants encountered around Kvikkjøkk and Abisko. These have now been published as limited editions of 250, the first of each having been presented to the King of Sweden.

The results of the trip are being published in an illustrated booklet with the same title as this note, and contain floristic lists for the main localities observed. There is also a general account and references to literature useful to naturalists visiting the area.

J.R. PACKHAM, R. MOBERG & R. WISE

IDENTIFICATION OF BRITISH CAREX SPECIES USING COMPUTER GRAPHICS

The *Carex* identification program is already available as BSBI Computer Key No. 1. An extension to this was demonstrated with illustrations to nearly 60 characters. Explanatory pictures appear on the screen for each character chosen during identification. This enhanced version will run with an ordinary monochrome screen with an IBM/PC compatible, or with an EGA colour monitor, and does not require a hard disc.

R.J. PANKHURST

PEROXIDASE ISOENZYME VARIATION IN DEVON SORBUS SPECIES

Peroxidase phenotypes from polyacrylamide gel-electrophoresis of bark tissue showed great variability in *S. aria* and *S. aucuparia*, and some variability in *S. torminalis*. In all the apomictic microspecies of which we were able to examine, a number of individuals were substantially uniform in peroxidase phenotype (*S. anglica*, *S. rupicola*, *S. porrigenti-formis*, *S. vexans*, an unnamed population from the N. Devon/W. Somerset coast ('Taxon D'), *S. subcuneata*, *S. devoniensis*). We found recognisably distinct peroxidase phenotypes in all of these, and in the following further species of which we were only able to examine one or two individuals: *S. leyana*, *S. minima*, *S. arranensis*, *S. pseudofennica*, *S. hibernica*, *S. lancastriensis*, *S. bristolensis*, *S. intermedia*. The peroxidase phenotypes of members of the *S. anglica* and *S. latifolia* groups showed clear evidence of relationship to *S. aucuparia* and *S. torminalis* respectively. The peroxidase isoenzyme evidence supports Liljefors's conclusion from chromosome pairing that *S. intermedia* is related to *S. torminalis*, and not to *S. aucuparia*. A few minor local or regional variants were found. *S. devoniensis* in the vicinity of Watersmeet, N. Devon, differs from the typical variant in the absence of one rather weak band. A single plant from Leigh Woods, Bristol, identified by the late E.F. Warburg as *S. porrigenti-formis* and grown in Cambridge Botanic Garden, differed markedly from the uniform Devon material referred to this species. We have found isoenzyme characters valuable in critical identification of *Sorbus* microspecies; they should provide a powerful tool for future research on taxonomy and relationships in the genus.

M.E. PROCTOR, M.C.F. PROCTOR & A.C. GROENHOF

SOME PROBLEMATIC EPIPACTIS IN NORTHERN BRITAIN

*Epipactis leptochila* aggregate. The 'traditional' concept of two British species in this group, *E. leptochila* (Godf.) Godf. of southern beechwoods, and the endemic *E. dunensis* (T. & T.A. Steph.) Godf. of western dune slacks, has been changed by the discovery of morphologically intermediate populations in N. Lincs., N. Yorks, Durham, S. Northumberland and Lanark. They are associated with birch on open metal, coal or other spoil. As the two species are only clearly distinguished by epichile shape and posture, it is suggested that *E. leptochila* var. *dunensis* (T. & T.A. Steph.) T. & T.A. Steph. is used for plants with short recurved epichiles.

*Epipactis youngiana* Richards and Porter. This distinctive species lies morphologically between *E. helleborine* (L.) Crantz and *E. phyllanthes* G.E. Sm. In the main Northumberland colony it occurs with both presumptive parents, between which it is considered to be a stabilized autogamous hybrid. A single individual has been discovered in S.E. Yorks, growing with *E. helleborine*. *E. phyllanthes* is known from the area. Two strong populations occurring on coal bings in Lanark, together with *E. helleborine* and *E. leptochila* var. *dunensis* are indistinguishable from Northumberland plants. Is this long distance dispersal (as suggested by the presence of *E. leptochila* var. *dunensis*), or is *E. youngiana* of polyphyletic hybrid origin?

A.J. RICHARDS

THE EVOLUTION OF COPPER TOLERANCE IN APOMICTIC TARAXACUM

Individuals of *T. hamiferum* Dahlst. and *T. euryphyllum* (Dahlst.) M.P. Christ. were found on bare and apparently toxic copper waste on Parys Mountain, Anglesey. Seedlings of *T. hamiferum* were compared with control plants from a Northumberland road verge. Plants were grown in tapwater, supported by inert beads, for a two week establishment period, and

for 22 days in concentrations of copper sulphate varying from zero to 50mg/l. The experiment was repeated. For all treatments with copper the dry weight of surviving leaves was significantly greater for plants from Parys Mountain than for the control population.

These *Taraxacum* are obligate agamosperms. This appears to be the first time that the evolution of metal tolerance has been demonstrated in an asexually reproducing plant.

A.J. RICHARDS

#### REVISION OF THE TAXONOMY OF THE GENUS HEDERA

This has been carried out by Dr Hugh McAllister at Liverpool University Botanic Gardens, Ness. In the British Isles there are two species of wild ivy and several naturalized aliens. In Spain there are at least four species and another is naturalized and commonly grown. It is hoped that authors of Floras or revisions will contact Ness or Miss A. Rutherford, 19 South King Street, Helensburgh, Dunbartonshire G84 7PU, before publishing. A poster showing three of the Spanish species, the Cyprus and common ivies was exhibited.

A. RUTHERFORD

#### SOME OBSCURE GREEK UMBELLIFERS

This geographically localized exhibit followed a series of more general offerings in the Umbelliferae over the past few years, and dealt mainly with species that are infrequently studied and poorly represented in the British collections.

About 40 species were discussed in the accompanying text, with pressed or living material available for examination in 22 cases. The majority of the plants are restricted to the mountains, such as *Lecokia cretica*, *Ligusticum olympicum* and *Laserpitium pseudomeum*, or are chasmophytes, as *Eryngium ternatum*, *Smyrniium apiifolium* and *Ferulago thrysiflora*.

Problems can arise if *Flora Europaea* is the sole reference source. The need to consult Boissier, Hálacsy, Heldreich *et al.* was stressed, both for localities and formerly-recognised species which have since been included within others.

Some notes on the photography and horticulture of Greek umbellifers were shown, with examples of both activities included in the exhibit. Surplus growing plants of several species were available free to good homes.

M. SOUTHAM

#### ILLUSTRATIONS FOR A NEW FLORA OF THE BRITISH ISLES

A selection of twelve plates to be used as illustrations in a new British Flora was exhibited. The plates fell into the following categories:

1. Drawings of whole plants or parts of shoots to show general habit. These are being prepared by Hilli Thompson and are mostly of alien species, especially ones not illustrated in other British Floras.
2. Drawings of diagnostic parts of plants (e.g. fruits, flowers, leaves) of closely related or easily confused species. Most of these are being prepared by Hilli Thompson, but a number of other artists have helped as well.
3. Photographs of diagnostic parts of plants (mostly leaves), especially of groups of closely related species where the features can be shown at least as clearly as in a drawing.
4. Scanning electron micrographs of minute parts of plants (e.g. seeds, tiny flowers), where these are the diagnostic organs. Most of these structures have not hitherto been illustrated in a British Flora.

The new Flora will contain about 1300 pages, of which around 150 will be plates. Publication is due in 1990.

C.A. STACE

PILULARIA GLOBULIFERA IN KIRKCUDBRIGHTSHIRE

*Pilularia globulifera* was first recorded in Kirkcudbrightshire by Dr John Hutton Balfour at Lincluden in 1843. It was found again in 1961 and then in 1976 on Loch Ken at Parton and Waterside. This was in the area covered by water when the Electricity Board dammed the River Dee at Glenlochar about 1935. In 1988 the water level was lowered for maintenance of the dam and this coincided with two months of dry weather, so a survey of Loch Ken was started. *Pilularia globulifera*, besides the two known sites, was found all round the lower part of the loch below the railway viaduct, on fine gravel and inlets of firmer mud, making this probably one of the most extensive populations in Scotland.

O.M. STEWART

NEW RECORDS FROM V.C. 73

Specimens of the following species new to v.c. 73 were exhibited:

*Drosera* x *obovata*, *Limosella aquatica*, x *Festulolium loliaceum*, *Lemna trisulca*, *Festuca arundinacea* var. *stricta*, *Fumaria bastardii*, *Rosa multiflora*, *Veronica longifolius*, *Cardamine latifolia*, *Corydalis solida* (2nd record), *Chenopodium rubrum* (2nd record), and *Salix myrsinifolia* (2nd record).

O.M. STEWART

CALAMAGROSTIS PURPUREA SSP. PHRAGMITOIDES IN GREAT BRITAIN

The exhibit showed measurements of the type specimen of *Calamagrostis purpurea* ssp. *purpurea*, borrowed by the BM from Leningrad. This grass is smaller in all its parts than ssp. *phragmitoides*.

Specimens and measurements of ssp. *phragmitoides* from Sweden, Norway and Scotland were compared and show that the Scottish material compares well with northern European material.

O.M. STEWART

A BOTANIST'S GARDEN

Drawings of the following plants from the garden were shown:

*Clematis jackmanii*, *Digitalis purpurea*, *Lupinus nootkatensis*, *Robinia luxurians*, *Laburnum* spp., and *Papaver rhoeas*.

Plates for the new *Flora* by Prof. C.A. Stace were also shown, including *Rosa* hips, *Hebe* and *Medicago* fruits.

H. THOMPSON

ALCHEMILLA MOLLIS (Buser) Rothm. AND RELATED SPECIES

The exhibit showed three species of *Alchemilla* related to *A. mollis*. All three are to be found, unrecognised, in British gardens. A note appears on page 23 of this issue of BSBI News.

S.M. WALTERS

ITER MEDITERRANEUM I

An account was exhibited of some of the results of an expedition by OPTIMA (Organization for the Phyto-Taxonomic Investigation of the Mediterranean Area). The areas around Gaudix and Santiago de la Espada in S.E. Spain were intensively examined by twelve botanists from seven countries, including M.F. Watson from the University of Reading. Two thousand herbarium accessions are now being processed from this expedition for incorporation into RNG. Further expeditions will visit Israel and Italy.

M.F. WATSON

PURPLE-LEAVED VARIANTS OF OXALIS CORNICULATA L.

*Oxalis corniculata* L. is a successful, common weed of cultivated ground, particularly garden borders and glasshouses. Not only does it readily propagate vegetatively from stem fragments, but it is fully self-fertile and produces copious quantities of seed. This species now has a cosmopolitan distribution and exhibits variation in growth-habit, leaf-size, colour, etc. Some of this variation has been induced in clonal replicates grown under environmental stress at Reading; however, purple colouration of the leaves remain phenotypically invariable. The pigments responsible for this purple colouration have been identified as cyanidin 3-glucoside and delphinidin 3-glucoside by thin layer chromatography. The function of these pigments varies according to their site in the plant; the most plausible account for leaf pigmentation is a role in U.V. screening for photosynthetically active molecules. Typical green-leaved *O. corniculata* inhabits shaded areas, whereas the purple-leaved variant can extend into more open, sunny habitats. The purple variant has been recognized as var. *atropurpurea* Planchon.

M.F. WATSON

MORPHOLOGICAL AND ISOZYME VARIATION  
IN AMARANTHUS L. SECTION AMARANTHUS

There is considerable taxonomic confusion in *Amaranthus* section *Amaranthus*, especially in Europe, due to phenotypic plasticity and continuous morphological variation. Isozymes were studied in eight taxa; *A. caudatus* L., *A. hypochondriacus* L. and *A. cruentus* L. (ornamental or grain-crop species); *A. retroflexus* L., *A. bouchonii* Thell., *A. powellii* S. Wats. and *A. hybridus* L. (their weedy progenitors); *A. albus* L. (from section *Blitopsis* Dumort. for comparison). Phosphoglucosomerase produced species-specific bands at the PG1-2 locus, but malate dehydrogenase and phosphoglucumitase also proved valuable. The section showed considerable isozyme monomorphism, in common with several other weedy groups. Careful morphological study revealed that the taxa could be distinguished using certain floral characters.

P. WILKIN & J.R. AKEROYD

**The following also exhibited:**

- Dr M. ATKINSON & Dr T.C.G. RICH, BSBI Computer-users group.  
A. COLSTON, Conservation of plants in Northamptonshire and the Soke of Peterborough.  
B.A. GALE, University of London Botanic Garden.  
Dr R.J. GORNALL, Dr M. WILKINSON & J.P. BAILEY, A proposed cytological catalogue of the flora of the British Isles.  
V.A. JOHNSTONE, Photographs of wild flowers of southern England.  
Dr T.C.G. RICH, BSBI Monitoring Scheme.  
Mrs O.M. STEWART, Flower paintings.  
Mrs E.G. WOOD, Botanical paintings.

**In the lecture-hall the following members gave short talks illustrated by colour slides.**

- Dr J.R. PACKHAM, Lapland '88.  
Dr A.J. RICHARDS, *Epipactis* in Britain.  
J. KILLICK, Arable and ruderal flowers in England.  
P. SELBY, Plants as photographic subjects.  
K. SPURGIN, Flowers of France.  
Dr P. YEO, Colour variation in *Geranium sanguineum*.  
Dr F.H. PERRING, Endemics in Crete.

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'BSBI NEWS' (ISSN 0309-930X) is published by the Botanical Society of the British Isles.

Enquiries concerning the Society's activities and membership should be addressed to:- the Hon. Gen. Sec., c/o Dept. of Botany, British Museum (Nat. Hist.), Cromwell Road, LONDON SW7 5BD.

amera-ready copy produced by Gwynn Ellis and printed by J & P Davison, 3 James Place, Treforest, Pontypridd, Mid Glamorgan CF37 2BT

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