B.S.B.I. NEWS

Sept. 1990

No. 55

Edited by R. Gwynn Ellis

Dept. of Botany, National Museum of Wales

Cardiff CF1 3NP

The Queen Mother's Birthday Card, see page 3

ADMINISTRATION

HON. GENERAL SECRETARY (General Enquiries) **Mrs Mary Briggs, M.B.E.,**
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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)
to December 31st 1990 Mr Roy Smith,
8 Salcey Close, SWANWICK, Derbys. DE55 1HD
from January 1st 1991 **Mrs Elinor Wiltshire,**
62 Carroll House, Craven Terrace, LONDON W2 3PR

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SECRETARIES OF PERMANENT WORKING COMMITTEES

CONSERVATION: Mrs Elsa G. Wood,
The Nurtons Field Centre, TINTERN, Chepstow, Gwent NP6 7NX

MEETINGS: Mrs Ailsa Lee,
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PUBLICATIONS: Mr Arthur O. Chater,
Windover, Penyrangor, Aberystwyth, Dyfed SY23 1BJ

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

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ATLAS OF THE BRITISH FLORA
Perring & Walters
1990

Handy poacher-pocket sized reprint of the 1982, 3rd Edition - only £23.50 including p.& p.
Includes new, up-to-date, bibliography by C.D. Preston of Distribution Maps published elsewhere since 1962.
Orders sent to BSBI Publications at the address below will be despatched as soon as the book is published.

BSBI Publications, 24 Glapthorn Road, OUNDLE, Peterborough PE8 4JQ

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CONTRIBUTIONS INTENDED FOR

BSBI NEWS 56

should reach the Editor before

5th NOVEMBER 1990

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LOYAL GREETINGS TO OUR PATRON HER MAJESTY, QUEEN ELIZABETH, THE QUEEN MOTHER ON THE OCCASION OF HER 90th BIRTHDAY

THE BIRTHDAY TRIBUTE

In the absence of our President, one Past-president and one Vice-president, David McClintock and I, with our wives, were privileged to be invited to be amongst the 6,000 guests who joined Her Majesty at the Horse Guards Parade on the evening of Wednesday 27th June to witness a birthday tribute: an extravaganza of music provided by the massed bands of the three services, by pipes and drums as well as by a full orchestra and immense choir, and a 'march'-past of representatives of many of the 300 or so organisations associated with the Queen Mother.

Several were in fancy dress: the National Trust presented a tableau representing all aspects of their work: the Mother's Union created a brilliant effect in the evening sunshine carrying a selection of those hand-embroidered banners, often full of wild flowers, usually seen languishing in a dark corner of your Parish Church. Towards the end a vivid splash of colour came from 30 or so Fellows of the Royal Society in scarlet gowns and caps - amongst whom, towards the tail, the white plastic boots of Dr Miriam Rothschild were suddenly prominent - that this remarkable 80-year-old lady should have the energy to march in tribute to another energetic 90-year-old lady who stood and smiled sweetly for nearly an hour made this 62-year-old, sitting in a comfortable seat, uncomfortable.

The Society had been invited to take part in the parade but did not have time to arrange it. I am sorry it was not possible. We could have carried a banner and walked beside the Chelsea Physic Garden - one man and his trug - who, with the Royal National Rose Society, represented the cultivated flowers. The trug (and trowel?) could have been useful, and the Rose Society interested when, at a later stage just before Sir John Mills was due to deliver a loyal tribute to Her Majesty from a spot in front of the dias, a fine black thoroughbred left his own tribute in the same spot.

There were amusing incidents and magic moments and, when 12,000 voices joined at the end in singing 'Jerusalem', 'Land of Hope and Glory' and the national Anthem there was scarcely a dry eye on parade and, as the pipes died in the distance to the refrain of 'Will ye no come back again', the whole of London seemed to hold its breath.

FRANKLYN PERRING, 24 Glapthorn Road, OUNDLE, Peterborough PE8 4JQ

THE BIRTHDAY CARD

A Birthday Card from the Society to the Queen Mother was delivered by Ruth Stungo who cycled to Clarence House on the eve of her 90th Birthday on 4th August.

The card was specially painted for the occasion by Jane Leycester Paige, a botanical artist from Kings Cliffe in Northamptonshire, and showed a group of Pasqueflowers in a natural setting based on sketches made at Barnack Hills and Holes National Nature Reserve near Stamford.

The wording was written by Jackie Devereau, a calligrapher from Peterborough, and said "Loyal Greetings to Her Majesty, Queen Elizabeth the Queen Mother from her fellow botanists in the Botanical Society of the British Isles on the occasion of her 90th Birthday". There were also a few words on the back on the rarity of the species.

The Pasqueflower design is extremely attractive (see front cover) and has been made into Greetings Cards (without words) which are now available from: BSBI Publications, 24 Glapthorn Road, Oundle, Peterborough PE8 4JQ, price £1 each post paid (or 6 for £5). Profits will be put towards the Queen Mother's Birthday Present.

MARY BRIGGS and FRANKLYN PERRING

THE BIRTHDAY PRESENT

The Council of the Society, at its meeting in February, approved the idea that we should try to find a nature reserve which could be named after our Patron. Her Majesty was approached and expressed delight at the thought and "feels the whole project is most imaginative".

We have found a reserve - it is Aldbury Nowers near Tring in Hertfordshire which is

being acquired by the Herts and Middlesex Wildlife Trust. It was once one of the finest areas of chalk grassland in Hertfordshire but has been sadly neglected and is overgrown with scrub.

The Trust requires £13,000 to fence the site and reinstate sheep grazing with the hope that the Pasqueflower, **Pulsatilla vulgaris**, which formerly occurred there will reappear - and that populations of horseshoe vetch (**Hippocrepis comosa**), purple milk-vetch (**Astragalus danicus**), squinancywort (**Asperula cynanchica**) and sainfoin (**Onobrychis viciifolia**) will increase.

Hertfordshire is a particularly appropriate county for the Birthday Present because a nephew of the Queen Mother, Simon Bowes Lyon, Lord Lieutenant of Hertfordshire, is President of the Herts and Middlesex Trust and the Queen Mother passed her childhood in the county.

It is planned that the reserve should be opened in the spring of 1991 and it is hoped that Her Majesty will agree to attend the ceremony.

The Society believes that members will agree that naming a reserve after our wonderful Patron and helping to protect some of our most beautiful wild flowers is an exciting way to mark this unique occasion, and bids you to make a generous donation to this cause. Council agreed that the Society should, from its reserves, start the fund with a gift of £500 towards the target.

Please send your cheque to: M. Walpole, 68 Outwoods Road, Loughborough, Leicestershire LE11 3LY made out to the BSBI in an envelope marked Birthday Appeal.

All donors of £10 or more will be listed in materials presented to Her Majesty at the time of the opening - unless anonymity is requested.

All donors of £25 or more will be invited to the Opening.

MARY BRIGGS and FRANKLYN PERRING

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DIARY

N.B. These dates are supplementary to those in the 1990 Calendar.

1990

SEPTEMBER

25-27 : Linnean Society three-day meeting (see BSBI News **54**, page 42)

OCTOBER

24 : Deadline for bookings for exhibits and/or supper tickets for Scottish Exhibition Meeting on November 3 (see leaflet enclosed with this mailing)

28 : Festival of Art in the Garden exhibition at the Royal Botanic Garden Edinburgh **CLOSES** (see page 37)

31 : Deadline for bookings for exhibits and/or Conversazione tickets for Annual Exhibition Meeting on November 24th (see leaflet enclosed with this mailing)

NOVEMBER

5 : Deadline for contributions to BSBI News **56**

1991

JANUARY

1 : Mrs Elinor Wiltshire takes over as Hon. Field Secretary

FEBRUARY

1 : Deadline for applications for grants from the Oleg Polunin Memorial Fund (see page 37)

JULY

8-11 : British Pteridological Society, International Symposium (see page 38)

13-19 : British Pteridological Society, Centenary National Tour (see page 39)

See also page 38 for details of British Bryological Society Meetings.

EDITOR

EDITORIAL

I apologise for any deficiencies there may be in the quality of the printing of this issue of BSBI News. This is the fault of my clapped-out daisywheel printer and not J & P Davison - Printers. It is anticipated that a new printer will be installed before the December issue.

April Fool!

My apologies (I think!) to those gullible souls who were deceived (and/or annoyed) by my feeble attempts at playing the April Fool in the last issue.

Your worst nightmare

Mary Briggs foolishly let slip 'her worst nightmare' over a pint or three in the Red Lion off Piccadilly after a rather strenuous Council meeting. It was to arrive at some exotic out-of-the-way botanical paradise, with a large entourage of botanical notables in tow, only to realize that she hadn't a clue about the flora of the area, the places to visit, nor who the 'notables' were!

Being a glutton for punishment, Mary has recently confessed to a second 'nightmare' - that of sealing a letter, remembering a postscript, writing this all over the back of the envelope, then turning it over and finding it's the wrong one!.

Any contributions to this series will be gratefully pounced on and published.

A fate worse than death?

The following piece in Flora of North America Newsletter 4(1): 3 caught my eye.

'If there is a fate worse than death, it may have befallen a population of western lily (**Lilium occidentale**). Standing 21/2 to 31/2 feet tall and bearing nodding crimson to deep-red flowers with greenish centers and maroon spots, western lily is one of the Pacific Northwest's most beautiful flowers. One of 42 historically known populations of this rare and elegant species now lies entombed under the agent of its extinction, a public restroom [which] serves visitors to an Oregon state park's main attraction, a botanic garden.'

Watch out there's a thief about

Mrs M. Sykes sent in this timely reminder to make sure that all cars are securely locked before leaving the car park on a field meeting or field work.

A note published in the Darlington & Stockton Times reports that "Cars parked at isolated beauty spots are at risk from thieves unless basic security measures are taken,... A Dutch family had more than £2,000 worth of goods stolen from their car at Toy Top picnic spot on the A68... Motorists are advised to keep all valuables out of sight or to lock them in the boot of the car. ...car owners in urban areas, too, should continue to be aware of the dangers of theft.'

The warnings contained in this note have probably been repeated in newspapers all over the country. Do take care to heed them.

Thanks

A special thank-you to my son Paul, who typed in most of the initial copy for this issue.

EDITOR

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CONVERSAZIONE

The buffet supper this year will be held in The Natural History Museum, upstairs in the recently opened de Blank Restaurant. This can offer a good buffet meal, seated and in pleasant surroundings.

Those who have in the past two years enjoyed the company, the conversation, and the opportunity to relax at the Conversazione, after the bustle of the day at the exhibition meeting, will appreciate this year staying in the same building and not having to walk outside for the meal. Those who have stayed on recently to the Conversazione have very much enjoyed it, and we hope that others will decide to join us this year.

MARY BRIGGS, Hon. General Secretary

YEAR BOOK

We plan for 1991 a **BSBI YEAR BOOK**, to be sent out with the New Year mailing (end of December or early January). It is hoped to contain within one cover the essential information for members for the year.

Contents should include:

Officers and Council Members.
Members of Permanent Working Committees, Sub-committees and Working Groups - with Secretaries' names and addresses.
1991 Calendar, Field Programme and Indoor Meetings.
Updated lists of Vice-county Recorders and Panel of Referees and Specialists
Selected useful contact addresses
The List of Members could also possibly be included every second or third year.

Between us Gwynn Ellis and I will be preparing these lists during the autumn months, so will be grateful to hear from any member who has corrections to current lists.

MARY BRIGGS, Hon. General Secretary

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HON. GENERAL SECRETARY'S NOTES

Congratulations to BSBI members awarded the Engler Medal of the International Association of Plant Taxonomists:

Peter Taylor, our **Utricularia** Referee, for his work on the **Utricularia** of the world and his publication The Genus **Utricularia** - a taxonomic monograph, Kew Bulletin, Additional Series no. 14 published by H.M.S.O. in 1989. Peter has been to U.S.A. to collect this medal. At the same meeting Dr John Dransfield, jointly with Natalie W. Uhl, was awarded a Medal for their Genera Palmarum.

And to Prof. W. Chaloner, elected a Foreign member of the French Academy of Sciences.

Also to David & Ann McClintock who celebrated their Golden Wedding Anniversary on June 30th.

The John Dony Field Centre in the Bushmead Community Centre in Luton, has been named after John, who celebrated his 90th Birthday last year; he is described in the Borough of Luton Newsletter as "one of the country's leading botanists who was Honorary keeper of botany for the Luton Museum Service for almost half a century". The Field Centre is designed to become "the focal point for natural history conservation, education and study in the Luton district".

It is encouraging to read of the publication of a Local Flora being acclaimed with local celebration. On the publication of her Flora of the East Riding of Yorkshire on 30th April this year, the launch was celebrated at Bishop Burton College of Agriculture with, among the guests, the Lord Lieutenant of Humberside, the High Sheriff of Humberside, the Chairman of Humberside County Council and the Vice-Chancellor of the University of Hull. A sherry reception with speeches was followed by a buffet lunch for 90 guests, including local BSBI members who had been involved with the Flora. A fitting acknowledgement to Eva, who was Head of Biology at Malet Lambert High School, Hull for almost 29 years, and whose Flora represents a life-time of interest and work in the botany of her local countryside. The Flora was published jointly by Hull University Press and Humberside County Council.

Dept. of Botany, The Natural History Museum - B.M. (N.H.)

Through the volume of comment in the media and press in recent months, members will be aware of changes in staff and work priorities, partly due to shortage of funds, in the Dept. of Botany at the Museum. The Keeper of Botany has assured us that BSBI liaison with the Department should continue, but members will be saddened to hear that we have lost three very good friends of BSBI at the BM.

Arthur Chater has taken early retirement, and moved back to his beloved Cardiganshire where his address now is - Windover, Penyrangor, Aberystwyth, Dyfed SY23 1BJ. Arthur is planning to write his Flora of Cardiganshire and with our very sincere thanks for all his help we wish him well for his retirement and for his flora-writing. We hope to keep in touch as Arthur will continue as Secretary of the BSBI Publications Committee, and as Recorder for Cardiganshire, v.c. 46; he will also look at pressed specimens of sedges - but see note on **Carex** Referees on page 7.

Michael Mullin has also left The Natural History Museum, and he has been appointed Warden/Development Officer for the Gunnersbury Triangle Nature Reserve owned by the London Wildlife Group. Many members know Mike through his identification of their puzzle plants and/or from BSBI Exhibition Meetings. Michael will continue as Referee for **Chenopodium** and for Aliens. Specimens please to be sent to: Mr J.M. Mullin, 43 Woodstock Avenue, West Ealing, LONDON SW7 5BD. We trust that we shall continue to see him at future meetings, but meanwhile we send him our very good wishes for his new venture.

Richard Pankhurst is also leaving the B.M., and at the time of writing this, his future is uncertain.

MARY BRIGGS, Hon. General Secretary

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RECORDERS AND RECORDING

Amendment No. 6 to Vice-county Recorders, September 1988

Change of Address

v.c. 8 S. Wilts. - Miss A.M. Hutchison, The Malthouse, Castle Street, Mere, WARMINSTER, Wilts. BA12 6JE

v.c. 46 Cards. - Mr A.O. Chater, Windover, Penyrangor, ABERYSTWYTH, Dyfed SY23 1BJ

Supplement No. 8 to Panel of Referees and Specialists, September 1986

CHENOPODIACEAE

Atriplex: Following our note in BSBI News 54: 14, Dr Pierre Taschereau has written apologising for his long delay in r2plying to those sending specimens. He was away for a year and following this was ill. Now we are pleased to hear that he has recovered, and he hopes very soon to have all the specimens retrieved and replies sent. Pierre now checks at the University each week for mail, so his address can remain as listed in the 1986 Panel of Referees and Specialists.

Chenopodium: Michael Mullin has now left The Natural History Museum and specimens should be sent to: Mr J.M. Mullin, 43 Woodstock Avenue, West Ealing, LONDON SW7 5BD.

POTAMOGETONACEAE & ZANNICHELLIACEAE

Potamogeton & Zannichellia: Clive Jermy wishes to resign as Referee because of shortage of time. We thank Clive for his help for many years with this group. Dr Nigel Holmes remains as Referee for both these families.

CYPERACEAE

Carex: Because of the retirement of Arthur Chater from the Natural History Museum on 31 August, pressed **Carex** material for him to name should in future be sent to him at Windover, Penyrangor, Aberystwyth, Dyfed SY23 1BJ; he advises that live material should not be sent to him except by prior arrangement. As the three referees are likely to be able to meet for joint identification sessions less often in the future, specimens of the **C. muricata** group should always be sent to Dick David, and those of the **C. acuta** group (**C. elata, C. aquatilis, C. nigra** etc.) should be sent to Clive Jermy.

ALIENS (General): Michael Mullin has now left The Natural History Museum and specimens should be sent to: Mr J.M. Mullin, 43 Woodstock Avenue, West Ealing, LONDON SW7 5BD.

NOMENCLATURE: Arthur Chater has resigned, and we thank him for his ready help with this in past years. Duggie Kent, also an authority on nomenclature, has agreed to be our Referee: Mr D.H. Kent, 75 Adelaide Road, LONDON W13 9ED

MARY BRIGGS, Hon. General Secretary

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A NEW NORFOLK FLORA

A new project to produce a mapping flora of Norfolk by the year 2000 is now under way. Recording is on a tetrad basis following the numbering and species lists used in the BSBI survey.

One of the main reasons behind the new flora is the great changes which have taken place in the county since that described in Petch and Swann's 1965 Flora. That book was the result of a lifetime's work in the county and includes many records and estimates of frequency based upon data collected from 1930 onwards. Since then things have changed and plants then described as frequent are often now sadly uncommon. To get an objective view of the present state of the flora, it was decided that the map is the best tool, avoiding the otherwise inevitable bias towards one's home area and those areas which are rich in species and interesting to record. The starting date for records has been fixed at 1985, which allows us to make use of the 1986-1988 BSBI survey and saves duplicating a lot of work. West Norfolk is now in its third year of recording but East Norfolk is only just beginning so there is a long way to go. With more than 1400 tetrads overall, almost equally distributed between the two vice-counties, it is obvious that the help of any visiting botanist in the next few years will be most welcome. We are following the Watsonian boundaries where they meet adjacent counties, but are abandoning the rather wayward division between the East and West in favour of the 100km grid line which cuts us so conveniently in half. TF and TL are in West Norfolk and TG and TM in the East. So if you are coming to Norfolk, please think of us and record everything, even **Urtica dioica**, and better still contact one of the v.c. recorders.

GILLIAN BECKETT, (W. Norfolk), Bramley Cottage, Stanhoe, KING'S LYNN, Norfolk, PE31 8QF
ALEC BULL, (E. Norfolk), Hillcrest, East Tuddenham, EAST DEREHAM, Norfolk, NR20 6JJ

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PLANT CRIB SUPPLEMENT

I am beginning to compile information and accounts for a supplement to the Plant Crib (Rich and Rich 1988), and would welcome suggestions for taxa to be included, and possible contributions.

TIM RICH, c/o Unit of Vegetation Science, Biological Sciences, University of Lancaster, LANCASTER LA1 4YQ

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LYME DISEASE : A HAZARD IN THE COUNTRYSIDE?

I read with interest the timely article by Martine Archer in BSBI News **54**: 15 describing this interesting disease, and the actions one should take in reducing the risk to oneself following the bite of a tick in an area where the disease is known to occur.

The advice to remove the offending tick with methylated spirits or (perish the thought!) whiskey, will not prove very effective. It is better to use an insecticidal aerosol of dichlorvos (Nuvan Top) as applied to flea infested dogs and cats, or if that is not available a drop or two of carbon tetrachloride or lighter fuel. In neither case are these fluids suitable as a whiskey substitute, else the cure will be worse than the disease.

DAVID LANG, 20 Ferrers Road, LEWES, Sussex BN7 1PZ

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PLOT'S ELM ON THE VERGE OF EXTINCTION IN ENGLAND?

It seems highly likely that the variety of elm known to most botanists as Plot's Elm (**Ulmus plotii** Druce, and various synonyms) will soon become extinct in the English countryside. Of the four populations know\ to me as surviving in the East Midlands in 1989, two suffered further casualties during the winter, probably as a direct effect of drought on trees already weakened by Dutch Elm Disease. I do not yet know whether the same has happened to the two Gloucestershire populations. Most of the other recorded populations were early casualties in the epidemic, though one on the county boundary between v.c. 53 and v.c. 55 was destroyed in a road reconstruction scheme (A52, Muston 833383). Plot's Elm is not a prolific generator of suckers in most situations, and the

most vigorous sucker population known to me, at Lowesby VC55 SK714063 died not very long after the last of the trees there. The former population in hedgerows at Ryhall v.c. 55 TF040116 had its suckers regularly ploughed out since the adjacent hedges were destroyed by the farmer years before trees themselves succumbed and were felled.

Apart from the recently published Floras of Leicestershire and of Rutland, only the Flora of Gloucestershire (Riddlesdell et al.) 1948 gives sufficiently precise lists of localities of Plot's Elm for these to be recognised and re-examined when once the trees recorded have been lost. Plot's Elm suckers are almost impossible to distinguish from those of other elms in laid or trimmed hedges, and without exact knowledge of where trees formerly stood, the chance of finding survivors is pretty small.

I should very much welcome such precise information on the location of former trees from County Recorders who have them in their records. It is worth remembering that Melville's determinations are reliable even if his views on taxonomic status are suspect. I am prepared to visit any such sites to examine them for possible surviving juvenile specimens.

GUY MESSENGER, 5 Wheatley Avenue, UPPINGHAM, Rutland, Leicestershire LE15 9SN

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SMALL ISLANDS - IN SCOTLAND

Having been v.c. Recorder for one of the groups of islands mentioned by Barry A. Thomas (BSBI News **54**) for more years than I care to remember, I am only too familiar with the problems created by forcing many shapes of land surrounded by sea into any sort of squares. Even tetrads don't work as often the sea channel separating two islands is less than 1km. Hoy, mentioned by Barry Thomas, is in fact included in parts of seven 10km squares, three of which it shares with other islands. Rousay, just as interesting, botanically, as Hoy, is in parts of four 10km squares, all of which it 9hares with one or more other islands. Moreover, the 'northings' and 'eastings' run against the grain of the land and are extremely difficult to pinpoint in the field. Stronsay is the only island which manages to fit itself - almost - into one 10km square. 10km square 57/60. which came out in the Monitoring Scheme lottery 'draw' managed to get its only bit of land (Copinsay) into one of the special tetrads.

Of course I keep separate lists for all inhabited islands, regardless of their position on the National Grid, and I have some 30 or more plant lists of uninhabited islands and holms. Between 60 and 80 separate lists would be required to cover Orkney thoroughly, quite apart from tetrad recording. I can see no clear way of showing the exact distribution on a map based on the National Grid. In my Checklist in The Natural History of Orkney I have endeavoured to mention the island location of specialities. Orkney Field Club is in the process of setting up a Local Biological Records Centre and as far as possible, ALL records will be based on six-figure GR's. We are a6so attempting to re-record in tetrads and these of course will not be 'shared' although not 'mappable'. Although there is now more than one active botanist resident in Orkney, co-operation from visitors is always welcome and photocopies of 'master cards' can be provided.

If you can think up a "better 'ole" - or square, please.....?

p.s. Extending some islands in Orkney to the adjacent sea square would link them up with Caithness.

ELAINE R. BULLARD, Toftwood, KIRKWALL, Orkney KW15 1SB

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AN INVITATION TO THE ISLE OF WIGHT

One of the most controversial introductions to the Island was the evergreen oak, **Quercus ilex**, with its dramatic colonization of our downland and its appearance in many wooded areas, replacing native species. Opportunities for further colonization following the hurricane of October 1987 are enormous and remain a problem still in need of solution. It is in the now maturing thirty acre woodland (the largest **Quercus ilex** wood in Britain) on the south facing escarpment of St Boniface Down, that intriguing developments are

unfolding in rapid succession. What this Mediterranean species has done is to take over the area to the almost total exclusion of the former native vegetation, leaving a fear of a permanent monospecific covering.

This has proved incorrect, for an understory is developing, with **Viburnum tinus** (laurustinus) a shrub also of Mediterranean origin the most successful. More surprising is the arrival of two of our rarest local orchids; white helleborine (**Cephalanthera damasonium**) and Bird's-nest orchid (**Neottia nidus-avis**) and this closely followed by the discovery of a truffle, **Tuber aestivum,** the first record for the Island.

Apart from an initial investigation into the associated plant galls, which has already produced new local and national records, the entire fauna awaits investigation.

Reports from visiting naturalists on every aspect of this unique area in Britain would be most welcome.

B. SHEPHERD, 87 Elm Grove, NEWPORT, Isle Of Wight PO30 1RN

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THE DISTRIBUTION OF GENDER IN PETASITES HYBRIDUS (BUTTERBUR)

In the last issue of BSBI News, Dr Margaret Curtis raised some interesting questions about the reproductive biology of **Petasites hybridus.** The sex forms of Butterbur were in fact described in some detail by a past president of our society, the late Professor D.H. Valentine, in a pair of preliminary papers (Valentine 1939, 1947) on the distribution of male and female plants in Britain; his intended synthesis on the species for the 'Biological Flora' series unfortunately never materialised. Valentine's accounts, together with my own observations of Butterbur, form the basis of the following attempt at answering Curtis's two chief questions.

Is Butterbur really dioecious?

It is well-known that Butterbur comprises two sexual morphs; one has capitula composed largely or wholly of tubular florets, the other has a predominance of small filiform florets in the flowering head. The first morph is usually described as male and the second as female, but Curtis makes the intriguing suggestion that one or both morphs may be functionally bisexual. Most of the available evidence indicates that this is not the case.

As far as the male morph is concerned, although the tubular florets appear superficially to be hermaphrodite, with pollinifero:s stamens and a well-developed pistil, they are actually seed-sterile and therefore functionally male. Their female sterility appears to be related to the structure and behaviour of th2 stigmatic lobes, whose inner surfaces are devoid of papillae and remain appre sed; their outer surfaces serve in pollen presentation rather than pollen receipt. Some Floras describe the variable occurrence of a few filiform florets around the periphery of male capitula, although none was reported by either Valentine or Curtis. I have observed up to nine (usually three or four) such florets in male flowering heads from a dioecious population at Millers Dale, Derbyshire; in contrast none was found in two male-only colonies in Anglesey. The filiform florets are phenotypically very similar to those found in female plants (see below), but they are usually described as sterile and I have seen no evidence of them setting seed in the field. The functional gender of the male morph really does seem to be male.

The numerous filiform florets in female capitula surround a few tubular florets. There were up to six, usually three or four, of the latter per head in the Millers Dale population. They are similar to those found in the male plants, but are only about half as big and have shrivelled empty anthers. They have no sexual function, and the gender of female plants is determined solely by the filiform florets. According to Valentine, these filiform florets have no stamens, but possess fully functional pistils, with receptive bifid stigmas, and set seed freely; this is also my experience. Knuth (1908) and Toman (1972) likewise state that the filiform florets have no trace of male structures. These observations imply that the female plants are indeed unisexual, indicating functional dioecy in Butterbur. It was therefore surprising to learn of Curtis's report of possibly fertile stamens in the filiform florets of female plants. If the observation is confirmed, the Lancashire population studied by Curtis would be androdioecious (with males and hermaphrodites), an exceedingly rare sexual system in flowering plants (see Charlesworth 1984).

How do males reproduce in the absence of females?

The answer to this question must be sought underground rather than in the aerial plants of the plant, for Butterbur has a vigorous and far-spreading rhizome system. Indeed, it seems very likely that most male-only colonies are single clones maintained asexually. Long distance dispersal of polliniferous genotypes may be largely attributable to man; it is believed that males were planted in the past as vernal sources of nectar and pollen for hive bees (see also Stace 1989).

An evolutionary footnote

Gender differentiation is rarely complete in sexually dimorphic species (Kay & Stevens 1986), and the occurrence of seemingly anomalous flowers in one or both sex forms can be of considerable evolutionary significance. Although Butterbur populations typically show functional dioecy, the two sex forms are phenotypically less clearly differentiated. The presence of structurally opposite-sex florets in male and female inflorescences suggests that dioecy in Butterbur has evolved via the so called paradioecious pathway (see Lloyd 1979). This pathway originates in monoecy, a system found in the closely related species **Tussilago farfara** (Coltsfoot), and proceeds to dioecy by a gradual divergence in the ratio of male to female florets in the two evolving sex forms.

Acknowledgements

Carrie Rimes, Tim Blackstock and Jane Stevens kindly helped with field sampling.

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MORE QUERIES ON BUTTERBUR FORMS

Margaret Curtis' note in BSBI News April 1990 interested me very much. The questions she asked are the ones I have been asking since 1976. The site I have been monitoring is in a small damp woodland/marsh, part of a Nature Reserve at SP/203760. There are two small colonies of **Petasites hybridus** in this reserve and until 1977 all plants were recorded as 'male'. Since that date one colony has remained all male whereas in that year one female flower was seen in the middle of the other site. Over the past thirteen years female plants have increased from just this one plant to a third of the original area - the middle third - the male plants now only seen at either side. In addition to this in 1985 three female plants were seen on the outer edge of the males and to give a rough indication of the distance between these and the other females, I paced out thirty good strides. These three female plants have now increased to about twenty plants but as the reserve is small (approx 11 acres) it has become necessary to check their growth by

digging them out around their perimeter. However, as I thought (mistakenly as it turned out) that propagation was only vegetative and seeds were rarely viable, we did gather some seeds in 1988 which germinated and continued to flourish the only problem being lack of space for these aggressive plants. Mr. C. Jeffrey, the Compositae Referee, gave me some interesting suggestions:

a) the species is not necessarily dioecious, some are andromorphic and some are gynomorphic
b) a change in sex-expression could have occurred in one or two individuals.

Further reference was made to an article of D.H. Valentine M.A. Ph.D, Durham in the North Western Naturalist for March and June 1947.

The map in the Critical Supplement shows the above site to be on the southern limits of the female range.

The following queries therefore arise:

a) was the first female plant produced by one of the systems suggested above or did it arrive from elsewhere as Dr A.J. Richards suggested and just happened to be in the middle of the site by great coincidence? (Dr Richards very kindly sent me an extract from his "Plant Breeding Systems").
b) why should the female plants grow in different localities from the males or is this a myth?
c) when the two sexes grow together (which is evidently rare) is the female predominate as appears to be the case in this nature reserve?

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BUTTERBUR FORMS - SOME ANSWERS

I have been asked by Mary Briggs if I can comment on Margaret Curtis's observations in BSBI News **54**: 27 on **Petasites hybridus.** Unfortunately time does not permit me to search the literature. However, there is a brief note and references to articles by D.H. Valentine in Wild Flowers by Gilmour & Walters (Collins New Naturalist) which could be worth following up. Meanwhile I can perhaps offer clarification of some points.

Let us accept the CTW terminology for heads in which 'male' means 'completely or nearly completely male' and 'female' means 'completely or nearly completely female'. But we can reject their term for the florets of the 'male' head even though it is put in quotes to show that it is being used loosely to save space. These so-called "sterile 'hermaphrodite'" florets can be described equally briefly and more informatively as 'functionally male' florets ; here, as in many dioecious plants, vestiges of the structure of the non-functional sex are present in the flower. These florets are, of course, not sterile but male-fertile. Like virtually all Compositae, **Petasites** uses the unopened style-apex to convey pollen out of the anther-cylinder and make it accessible to pollinators. Consequently the style of the functionally male flowers has to be well-developed because it still has a function (the loss of its female function is reflected in the fact that the stigmatic branches do not separate). However, it is a surprise to me to learn that the ovule (I think ovary is meant) is bigger than in the female floret. With regard to the 'female' heads, it is also surprising to learn that they produce apparently good pollen. Presumably it does not in fact germinate on the stigmas. Although plants of each sex produce a few florets of the opposite sex, the fact that in the south of the range where the plant is supposed to be introduced, colonies are usually of one sex suggests that these florets do not succeed in reproducing the plant. According to Hegi's Illustrierte Flora von Mitteleuropa the same situation is found on the north European continent, except that the sexually mixed populations occur in the south and the unisexual in the north; presumably colonization is from the valleys of the alps into the lowlands. Incidentally, Hegi adopts special terms for 'predominantly male' and 'predominantly female', namely, 'androdynamic' and 'gynodynamic'.

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FINANCING THE PUBLICATION OF LOCAL FLORAS

The writing of a Local Flora is a difficult but usually rewarding and enjoyable task. Getting it published is often much more difficult, and can involve authors and others in a great deal of frustration, expense and delay. The BSBI Publications and Records Committees are often asked by members for help in financing the publication of their Floras, and we are aware of an increasing number of Floras completed but held up because of lack of funds to get them published. The experiences, good and bad, of those who have already published should help us to give better advice, and to this end we circulated a questionnaire to the authors of 58 of the County and other significant Local Floras published in the last 20 years; 52 replies were sent in. The questions chiefly covered the numbers of copies printed and sold, selling price, details of pre-publication offers, and how much publication cost, how it was financed, and whether costs were recouped. Replies were often of necessity incomplete, and confidential, but they do enable some interesting and, we hope, useful points to be made. The 52 replies are, for the sake of discussion, split into 36 County Floras or equivalents (called here "Major Floras"), 3 "Major Supplements", and 13 smaller scale, more local Floras, checklists and supplements (called here "Minor Floras"). Much of the discussion is concerned with the Major Floras (the Minor Floras are a much more diverse lot, and much less easy to generalize about). Many of the points made under the headings that follow are qualified and expanded in the section on "Procedure" that comes later.

Number of copies sold

For Major Floras this ranges from 350 to 2500, with half selling over 1000. It seems that in normal circumstances one can rely on selling at least 600 copies of a Major Flora. There are only three exceptions, Man, which was grossly under-publicised, Mull, which by today's prices was by far the most expensive of all the Floras, and one other which was printed in only 530 copies, all of which were sold. Major supplements sell 500-650 copies, while Minor Floras sell 100 to 300 copies, unless they are of popular areas when they can sell 1,000 or 2,000.

Number of copies printed

Most Major Floras have had print runs of 1,000 to 2,500 copies, and about one in five seem to have been landed with a third or more of their copies unsold. More problems have been caused by printing too many than too few copies.

Pre-publication offers

24 out of 35 Major Floras had pre-publication offers, and these offers usually accounted for about a third to a half of all the copies sold. It is impossible to tell to what extent they helped total sales, but they certainly speed up sales at the start, and are of course an important way of getting money in quickly to pay off publication costs at an early stage. Most pre-publication offers have been at a third or a quarter off the published price.

Costs

Costs are difficult to comment on because of inflation, increases in printing costs, etc., over the last 20 years. At today's prices, Major Floras have mostly cost between about £15,000 and £40,000, but it is perfectly possible to produce a saleable, albeit technically slightly inferior product for £2,000 to £10,000 (no more than a new car, and moreover with the likelihood of getting one's money back). Elaborate, hardbacked Major Floras with a print-run of 1,000 to 2,000 copies cost about £10 to £30 a copy to produce, but again an A4 softback from camera-ready copy can be produced for as little as £3 to £7 a copy.

Price

Major Floras sell for £5 to £50. There is some evidence that the most expensive have suffered reduced sales because of their price but two of the six Floras selling for over £20 have sold over 1,000 copies. Up to £20 price seems to have little obvious effect on sales.

Sources of funding

Of the Major Floras, publication of six was financed entirely by Museums or Local Authorities, five entirely by Natural History Societies, two entirely by the authors, and only two by a commercial publisher. Most were financed from a mixture of sources, a Museum helping one other, Natural History Societies helping four others, three were helped by Royal Society loans, two each by the BSBI and Local Charities, and one by NCC. Private loans helped in several cases. The BSBI and the Wild Flower Society have contributed to the cost of colour plates or dust-covers in other cases. Minor Floras show a similar range of sources. Information on the sources of funds is very incomplete, but it is clear that unless the author has adequate private means, the best bet is to get a Museum or Local Authority (often essentially the same), or a local Natural History Society, to finance publication. It may be possible to persuade Local Authorities of the usefulness of your Flora in such matters as planning enquiries, as well as in local amenity and publicity. Royal Society loans are worth trying for. The Ray Society has so far published only one modern Local Flora. Nothing can be lost by approaching NCC (who certainly make enough use of Local Floras once they are published), private and local charities, and local universities. Industry has, surprisingly, made a negligible contribution (only two cases) and should certainly be approached more often, especially as Museums and Local Authorities are finding it increasingly difficult to fund this sort of activity.

Role of the BSBI

The BSBI itself might be expected to give more financial support. But because of the number of Floras involved, and the need for relative impartiality, substantial outright grants are out of the question, and loans are not viable because the Society's charitable status would require it to demand the sort of security that authors or publishers would be unable to satisfy. The Society's role is, of course, always open to discussion, but at present it tends to restrict itself to giving small grants, e.g. for plates or for a dust-cover (which can greatly increase the attractiveness and sales of a Flora) and to distributing advertisement leaflets and pre-publicity offers to the membership free.

Procedure

In their responses to the questionnaire a number of authors made heartfelt recommendations on how to set about financing publication, borne from bitter experience. Do not leave this problem until the Flora is completed, but explore the possibilities from the earliest stages. The elaborateness or otherwise of the Flora should be conditioned from the start by the funding that you know will be available. Few authors have been lucky enough to get the financial problems taken entirely out of their hands by a commercial publisher, Museum or other organisation. It is of little use to write a model Flora if it is never published, and it is unlikely that any organisation, let alone a commercial publisher, will be impressed enough by your product to offer to shoulder the financial burden of publication for you.

Remember that a perfectly acceptable Flora can be published very cheaply. The Livermores' "Flowering Plants and Ferns of North Lancashire" was produced on a shoestring, hard work and no outside funding at £3.30p a copy. Between this sort of book and a glossy hardback with colour plates, costing £20 a copy to produce, there is often much more contrast in appearance than there is in scientific content.

If you are publishing the Flora yourself, always cost the three main stages separately: typesetting or preparation of camera-ready copy, printing and binding. Get several estimates for each stage, as they frequently vary by as much as a factor of four. Remember that estimates can get out of date in a very short time, so get revised estimates if there has been any delay. Quality of paper affects costs considerably, and will affect final weight and hence postage. Do not guess the postage,but weigh a mock-up plus envelope and recheck it when necessary. Printers seem extraordinarily unreliable, and errors in weight of paper, large numbers of faulty copies discovered too late, and other such unexpected snags are all too frequent. Always inspect all copies on receipt if you can. Typesetting is usually prohibitively expensive today and it will usually be best too get camera-ready copy prepared by word-processor. Decide the price at the last possible moment when in effect there is no chance of any further rise in costs.

Contact the BSBI Hon. Gen. Sec. at an early stage about distributing advertisement leaflets or pre-publication offers, and BSBI Publications who will be keen to stock copies. Review copies sent to learned journals in most cases probably do little to help sales, chiefly because reviews take so long to appear, but are worth it for other reasons.

Mentions in the local press and on local radio, or for example in nature notes in the national press, can be enormously helpful. Remember that the stock will have to be housed somewhere ("storage of two tons of books is a problem", as one author alarmingly commented).

Depending on the processes involved, it may be more satisfactory to print more copies and base the costs on selling the expected 600 copies, say, with another few hundred copies zero-costed, than to print and reprint smaller batches as required. It may be useful to give here an example of a formula for calculating the selling price of a flora:

Cost of publication £10,000, minus grant of £3,000 = £7,000
Minimum expected sales 700
Income per copy needed to recoup outlay $\frac{£7,000}{700}$ = £10

Therefore price of pre-publication offer should be £10 + postage
Retail price, allowing booksellers' discount of 33.3% = £15
This will mean that after 700 copies have been sold (either on pre-publication offer or after), further sales will be profit.

It is perfectly possible, even with an elaborate Flora, to recoup 70-90% of the costs from the pre-publication offer; but unforseen delays between announcement of the offer and production of the book can be disastrous if the costs increase meanwhile (as they almost inevitably will). This applies even more to subscriptions, which aim at raising all or most of the money for producing the book in advance and which are announced ever longer ahead; there have been very few subscription schemes for Floras in the last 20 years.

In short, take nothing and nobody for granted, make sure all your estimates are up-to-date, do not embark on the publishing process unless you are certain that the successive stages will follow on time, and seek as much advice as you can. The willingness with which members replied to the present questionnaire suggests that authors would do well to contact someone else who has already published a comparable Flora for a comparable area.

Most of the above comments of course apply not just to private publication but to the production of Floras in general. Many other helpful points were made. An attractive advertisement leaflet or pre-publication offer, with a coloured picture, can increase sales greatly, especially in a well-populated county. If you hope to sell significantly through local bookshops, keep the date of publication tucked away on the reverse of the title page as booksellers can be reluctant to display books that might be considered even a year or two out of date. If your Flora or checklist is short enough, consider getting it published in a local journal so that you can then buy offprints comparatively cheaply; you can get these inexpensively covered for separate sale.

Two thirds of the Major Floras considered here have recouped their costs or even made a modest profit. There is no suggestion that anyone has got rich in this way, but in several cases Societies or Museums have been able to plough significant sums back into a publications fund, giving them the means and confidence to back other similar ventures in the future. Attempts have been made to interest publishers in producing a series of County Floras, in much the same way as Barracuda Books has done with "The Nature of ....." series for the County Wildlife Trusts, but these have not yet met with success.

Acknowledgments

I am grateful to all the authors and other informants who responded so helpfully to the questionnaire, and must single out some of those who went to a great deal of extra trouble to relate their experiences in detail, and whose recommendations form the bulk of this paper: Ken Adams, David Allen, John Dony, Gordon Graham, Mary Hignett, Len Livermore, Mary Martin, Mrs C.W. Murray, Eric Philp, Mr B. Shepard, Alan Silverside, Mr F.W. Simpson and John Trist. David McCosh and Mike Walpole also provided ideas and information.

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BOTANIZING IN ULTIMA THULE!

Apart from much travelled BSBI members and those who have researched one plant or group all over the British Isles, there is a certain lack of awareness by southerners of how things differ in the northern half of Britain. For instance in a recent rare weed survey, not one species occurs in v.c. 99 and none has even been recorded as a casual. The churchyard survey is another good example. The organiser may have wandered at a certain lack of response from Scotland - so much was 'inapplicable' to use marketing jargon. We tend, if pushed for time or if no lover of letter-writing, just to put questionnaires aside and to fail to explain the difficulties. Our churches often have no graveyards round them and usually are species poor. I must plead guilty to doing no better myself, as through ignorance I told members helping with the Irish Ivy Survey that churchyards were good for the so-called Irish Ivy. Not so in Ireland! I've never seen such neat green lawns and lack of diversity as in the churchyards in the Republic (I don't know about Northern Ireland).

Allan Stirling and I did little about the **Arum maculatum** survey as our (not native here) Lords-and-Ladies grew in a way that made it near impossible to decide what was one plant! Perhaps they have a mode of growth different to that in the parts where it's native.

Hedges in Scotland are not measured in hundreds of years by the number of species in them, in v.c. 99 some are known to have been planted as windbreaks and landscape improvements under an enlightened Duke in the 1850s. Possibly people working with the distribution of naturalised garden plants have a better idea of how much we differ in this respect. We have in Dunbartonshire, and for that matter, in much of central and south-west Scotland, plants which are rare or absent from the Home Counties of England. I'd forgotten that **Libertia** species are not considered reliably hardy there, but we have a large colony of **L. elegans** in Helensburgh, and some **L. chilensis** has been discovered in Argyll. It is difficult to picture the wet-loving red Montbretia, **Crocosmia pottsii** escaping, let alone flourishing in a most alarming manner, in England, except perhaps in Cornwall.

But the biggest difference between England and even the heavily-populated central belt of Scotland, is in the degree of backup a Recorder can hope for. This is possibly adequate in the around Edinburgh and Glasgow, but many areas have few people even in a natural history society (should you be lucky enough to have one) interested or able to help.

I was a shade disconcerted when on a spring botanical excursion with the local Society, to see a large number of the members, as soon as we had a view of the Clyde shore, take out binoculars to name the birds floating on the river! The plants came off a poor second.

All too often authors of short notes in BSBI News casually remark that one should leave voucher specimens in your local museum; well Helensburgh, with a population of over 15,000, has been trying to get a museum going (without success) for over 100 years; we now have three locking glass boxes in the library, but these are only for displaying antiques and there is no room or facilities for lodging herbarium specimens or having a database. South of the Border every county may have its wildlife trust, but in Scotland the Scottish Wildlife Trust covers the whole country, there are no 'local' Trust publications.

Other aspects of botanizing may differ; huge sums of money were spent recently in an attempt to kill off the vegetation along the shore of Loch Long; as well as spraying something considered deadly to Japanese Knotweed, teams of unemployed lads hacked and tore out many trees; luckily the only results of their efforts are some bare boulders stripped of their covering of **Hedera hibernica** Hort. Only five people protested, most of the locals, the man in charge said, were pleased at the tidying up; smooth lawns from the tar to the top of the shore was obviously what was wanted. I feel alas, that a lot of Scots do not appreciate the 'wild side', except for the hills and the sea, both of which can be taken in from the safety and comfort of a car at the viewing point!

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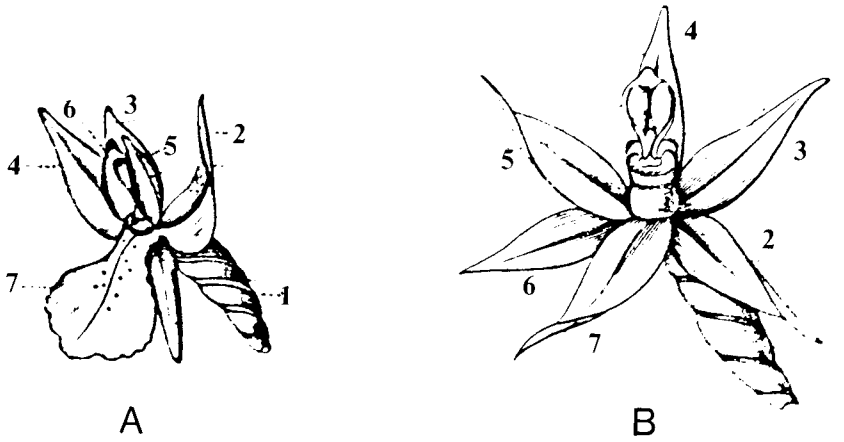
PELORIA IN DACTYLORHIZA

In 1987 I found a pseudopeloric specimen of **Dactylorhiza maculata** (L.) Soó subsp. **ericetorum** (E.F. Linton) P.F. Hunt & Summerhayes in the Dalby Forest, v.c. 62, N.E. Yorks. In confirming that the plant could be categorised as pseudopeloric, Richard Bateman (pers.

comm.) commented '...the narrow, entire labellum and narrow, unnaturally elongate outer perianth segments compare well with the D. **fuchsii** that I illustrated in my Watsonia paper, though these features are less extreme in your plant and the spur has been retained more or less intact.' I have slides and colour prints of this plant.

This find led to my interest in peloria and pseudopeloria in the orchids of the British Isles. I read Bateman's Watsonia paper on 'Peloria and pseudopeloria in British orchids' (Bateman 1985) and noted that pseudopeloria appears to be very rare in the genus **Dactylorhiza.** It was, therefore, with great interest that I traced an important paper written by Achille Richard in 1823 and entitled: 'Notice sur une monstruosité remarquable des fleurs de l' Orchis latifolia, L.' (Richard 1823).

Orchis latifolia was declared a nomen rejiciendum by the 1975 Leningrad Botanical Congress. Clapham (1987) gives O. latifolia L. sec. Pugsley as a synonym of **Dactylorhiza incarnata** (L.) Soó, and O. latifolia L., p.p. as a synonym of **Dactylorhiza majalis** (Reichenb.) P.F. Hunt & Summerhayes, s.l.



Figures A and B (above) are from Richard's paper. Figure A depicts the normal flower and Figure B, the monstrosity. A2, 3 and 4 are the outer perianth segments; 5 and 6 the lateral inner perianth segments, and 7 the labellum. B2, 3, 4, 5, 6 and 7 are the six divisions of the regular perianth. I must quote Richard's own words on the perianth segments of his monstrosity: 'On est frappé, en les voyant, de leur trouver un calice tout-à-fait régulier; les six divisions sont étalées, parfaitement régulières et égales entre elles. Il n'y a aucune apparence ni de labelle, ni d'éperon, c'est-à-dire que la division interne et inférieure du calice ressemble entièrement aux autres.' "Peloria" is discussed in Richard's paper in the context of this monstrosity.

Bateman (1985) states that 'Peloric orchids have either (a) the lateral, inner perianth segments replaced by additional labella or (b) the labellum replaced by a third, undifferentiated, inner perianth segment.' Further, that 'Aberrant orchids with poorly differentiated labella that resemble their outer perianth segments are best described as pseudopeloric'.

Clearly Richard's specimen is not type (a) peloria sensu Bateman (1985). Neither is it type (b) since the lateral inner perianth segments are indistinguishable from all the other perianth segments. The labellum shows no differentiation whatsoever: it is identical with the outer perianth segments. It is not, therefore, pseudopeloric sensu Bateman (1985).

A further category of peloria is, therefore, required to accommodate orchid flowers in which all the perianth segments are identical. Type (c) is proposed, although it is clearly nearer to being actinomorphic than types (a) and (b) sensu Bateman (1985). I would be pleased to hear of any similar examples of peloria in orchids.

Dressler (1981) states that 'The evolution of orchid flowers must have started with a generalised lily-like flower', with radial symmetry (actinomorphic). Richard (1823) states: 'Il nous semble que des observations précédentes, on peut conclure que dans tous les genres de la famille des Orchidées, le type naturel et primitif est une fleur régulière, composée d'un calice à six divisions égales entre elles;...'

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THE DISTRIBUTION OF THE SUBSPECIES OF ARRHENATHERUM ELATIUS

Thanks to the sterling efforts of BSBI members across the country who have responded to our request for information (BSBI News: 54), and with the co-operation of Chris Preston at the Biological Records Centre who has kindly allowed us access to the existing data within the monitoring scheme, we have been able to produce some provisional distribution maps for the two subspecies of **Arrhenatherum elatius.**

Although records of the occurrence of the species show an almost 100% cover of the U.K. (Atlas of the British Flora), few of these records indicate which subspecies is present, and those which do are most often for the bulbous form because to most people it is the more noteworthy. The paucity of records detailing the occurrence of individual subspecies of **A. elatius** is demonstrated in the provisional distribution map of subsp. **bulbosum** shown on page 19.

So far it appears that in the semi-natural habitats in which the species is most often found (primarily roadsides, hedgebanks and other rough grasslands) the non-bulbous, subsp. **elatius,** is fairly ubiquitous through-out the U.K., but subsp. **bulbosum** (shown on map, page 19) is restricted to the West and North, except for a number of isolated coastal and river bank occurrences in the South and East. Interestingly the distribution of subsp. **bulbosum** in semi-natural sites appears to be in stark contrast to the distribution of the same subspecies as a weed of arable land. The reasons for the apparently different distributions for individuals of the same subspecies growing in different habitats are currently the subject of investigation.

A complication to research on **Arrhenatherum elatius** is that, although the accepted terminology is to describe the bulbous and non-bulbous forms as separate subspecies, both forms will in fact freely interbreed so that a range of morphologies varying from completely bulbous to completely non-bulbous can be produced. The definition that we are working with is that plants where the basal stem internodes are consistently swollen to over 5mm in diameter belong to subsp. **bulbosum** (a definition suggested by C.D. Preston in Plant Crib 1988).

Please keep those records of the occurrence of the **Arrhenatherum elatius** subspecies rolling in. If these records include six-figure grid references, locality, habitat description and dates of observation, they can be passed on to the Biological Records Centre. Also, if where-ever possible, records could be accompanied by small samples of the material it would help us greatly in our study of the degree of 'bulbosity' expressed by plants in different habitats.

Even if you don't have any precise records of the occurrence of either subspecies, but can give us some idea of the relative proportions of the bulbous and non-bulbous forms which are present in your area (especially in Ireland and in the north of Britain), please let us know.

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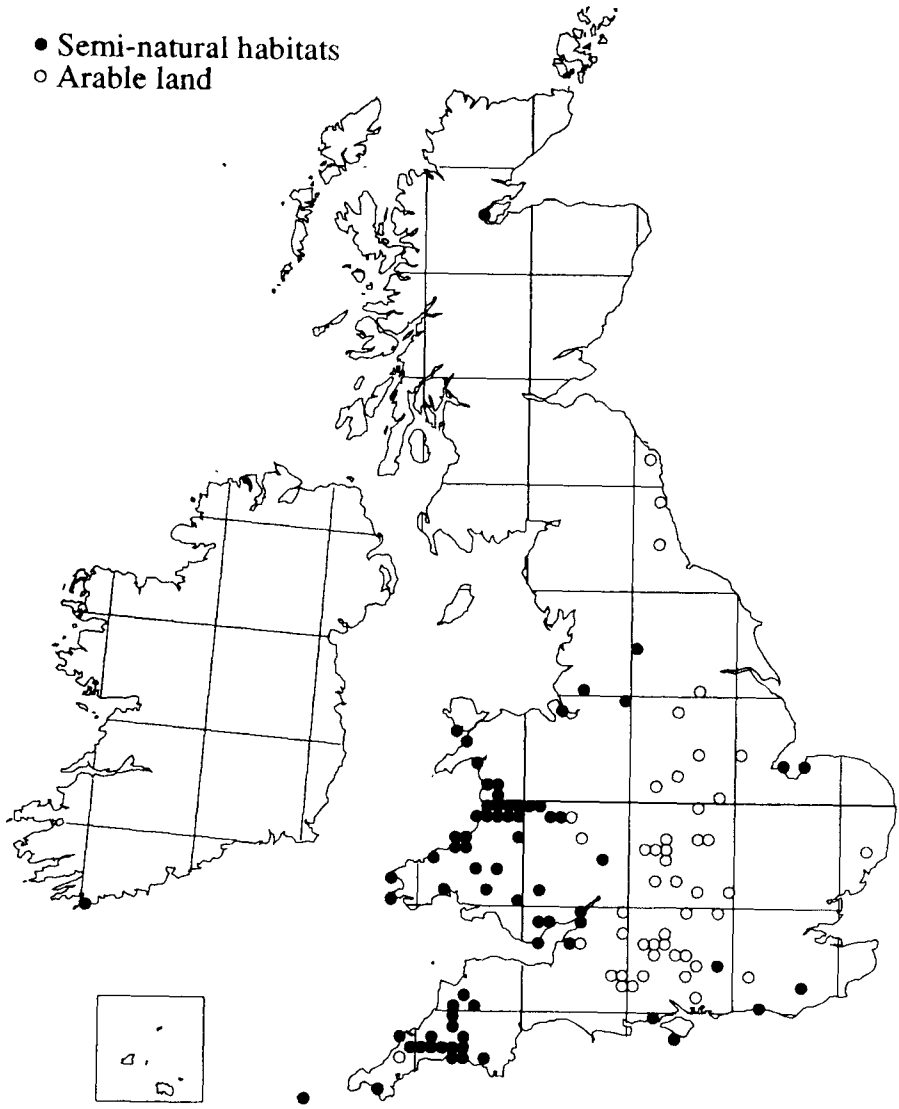
Provisional Distribution Map of
Arrhenatherum elatius subsp. bulbosum
(Generated by DMAP)



COCHLEARIA DANICA ON INLAND ROADSIDES

In BSBI News **52** Tim Rich and I presented a map showing the 10km squares in which we had seen **Cochlearia danica** L. growing on inland roadsides, or from which its occurrence had been reported. We asked for any additional records and the response was fantastic, with twenty-three members adding records for more than 50 10km squares. This spring has also produced many new records, and to date (12th July 1990) **C. danica** has been seen on roadsides in 182 10km squares. The map on page 21 shows these records, together with those 10km squares in which dual carriageways or motorways have been checked (usually by me, and often at great speed!) and in which **C. danica** has so far not been found.

C. danica has spread at an astonishing pace, with most observers having first come across it on roadsides within the last five years or so: several people who began recording maritime plants on roadsides in the 1970s did not start to see it until the early 1980s - although some of the earliest colonies were already so large when they were discovered that they must have originated a few years earlier, possibly in the late 1970s. Could the plant's rapid spread have been aided by the recent run of mild winters? Certainly, until **C. danica** is well established it can easily be missed: it flowers early (before most botanists come out of hibernation?!) and occurs almost exclusively along the central reservations of motorways and dual carriageways - not the sort of place to grab the attention of passing plant-spotters (however bad their driving!).

But why does **C. danica** show such a marked preference for central reservations? Perhaps it is because the soils there are more saline than they are adjoining the inside lane or hard shoulder. Or perhaps the central reservation is more free-draining and prone to drought, and the vegetation cover more 'open', thereby giving more opportunity for annual species such as **C. danica** to become established. Or could it be that seeds are being introduced with sand and gravel brought in when central reservations are being constructed or repaired?

So far I have three bits of evidence to support this last suggestion. First, **C. danica** was reported this spring along a stretch of the M6 where the central reservation had been rebuilt only months before. Second, there are cases of extremely isolated sites for **C. danica** also supporting other maritime species, such as **Aster tripolium** on the same twenty metre stretch of the Northampton by-pass, or **Armeria maritima** with **Cochlearia danica** on a short section of the A40 near Oxford. Third, this spring I found **C. danica** growing in the vicinity of sand pits near Southwold in Suffolk - could material used in the construction of central reservations along the A47 and A12 in Suffolk and Essex have come from these sand pits?

Many thanks to all those who responded so enthusiastically to the note in BSBI News **52**. There are still many stretches of motorway and dual carriageway that have not, as far as I am aware, been checked for **C. danica**, and I would be grateful for any further records (including 'negative' ones) - so next year, why not keep an eye out for this plant and make the most of those twenty mile tail-backs and jam-packed contraflows? But please don't take any risks!

SIMON J. LEACH, 74 Silver Street, Fletton, PETERBOROUGH, Cambs. PE2 9BX

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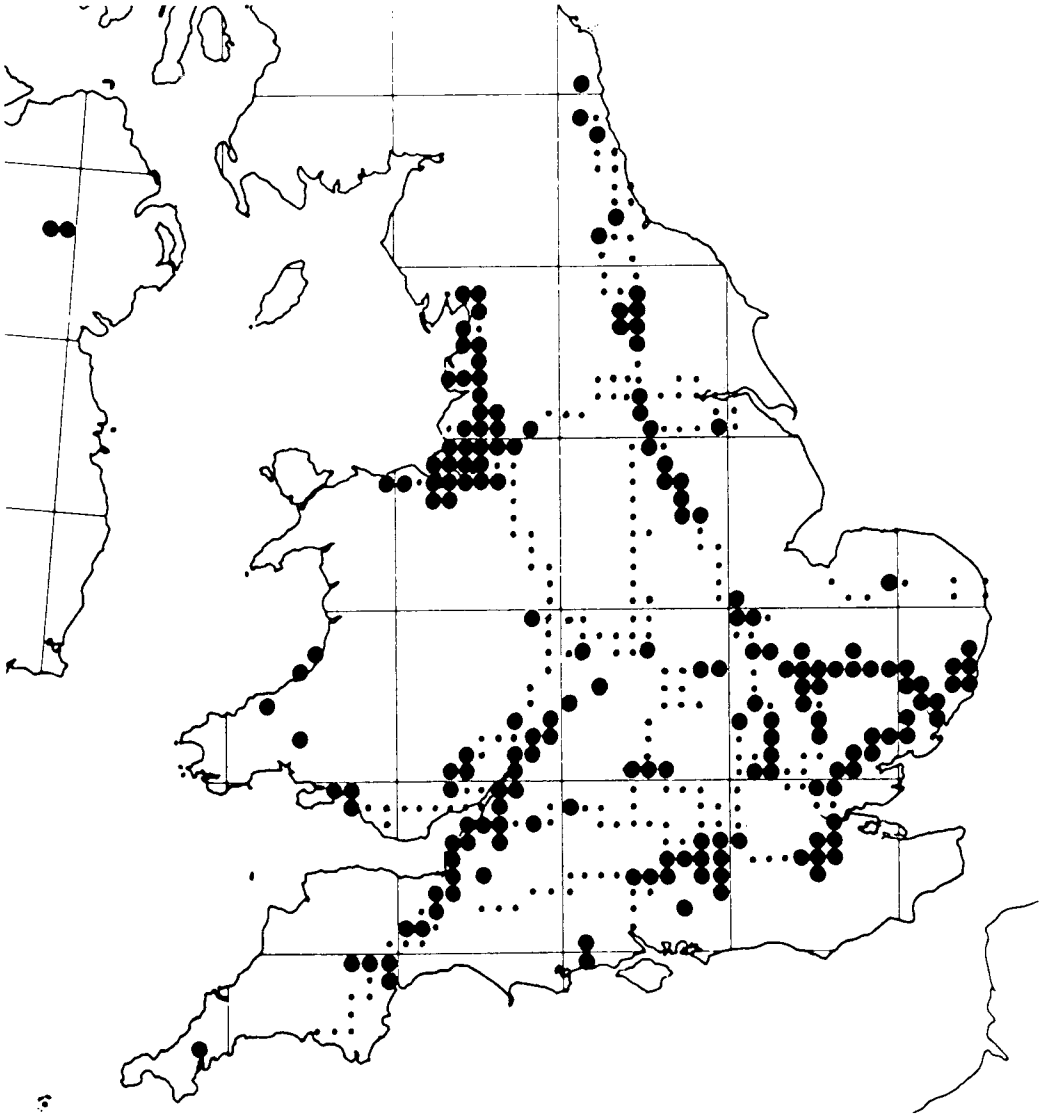
PRESERVING COUNTY FLORA DATA

After reading John Cannon's note concerning the importance of ensuring the survival of archives of botanical records I thought that it might be useful to let members know of the Biology Curators Group Beetle Down leaflets. These are part of a campaign organised to publicize the biological services offered by Museums. The reverse of the leaflet has a list of all museums in the U.K. with biological services which may be of interest to BSBI members.

Leaflets are available free from the address below or from Derek Whiteley, Sheffield Museum, Weston Park, Sheffield S11 2TP.

We have already had 35,000 produced and are now looking for a sponsor to support a further update and reprint!

STEVE GARLAND, Bolton Museum, Le Mans Crescent, BOLTON BL1 1SE



Distribution of **Cochlearia danica** on inland roadsides
● present
• absent on motorways and dual carriageways (see text for details)

OROBANCHE MARITIMA : AN OVERLOOKED FEATURE?

I have always regarded **Orobanche maritima** Pugsley, which was recognised in the first edition of Flora of the British Isles (Clapham, Tutin & Warburg, 1952) as a good species, and have refrained from following the lead offered in the Third Edition (Clapham, Tutin & Moore, 1987) where it was abandoned as 'at most... a variety of **O. minor**' on evidence of 'a full range of intermediates between typical **minor** and Pugsley's **maritima**' which had been reported (unpublished) from a single coastal population. Could this have been a hybrid swarm?

A specimen from South Wales (Fig. 1A, page 23) found by Ian Morgan and sent to me this season (1990) was clearly **O. maritima.** However, it possessed a feature which may be undescribed. It is certainly one with which I (as a referee) was unfamiliar, despite having seen **Orobanche** specimens from innumerable British localities: the lowermost few flowers on the spike were long-pedicellate. Subsequently Dr George Hutchinson found that one (Fig. 1B, page 23) of three specimens in the herbarium of the National Museum Of Wales (**NMW**) collected from the Kent coast by R.A. Boniface in 1963, and determined as **O. maritima** has similar (c. 3.5cm long) pedicels; the others did not (Fig. 1C, page 23). Some of the lowermost flowers of **Orobanche,** whether pedicellate or not, appear smaller than mature flowers further up the spike.

The genetic basis of the pedicellate feature is unclear, although pedicels are present throughout the inflorescence in the genus **Aeginetia** of the Orobanchaceae and in **Lathraea** (which is sometimes referred to the Orobanchaceae). If pedicellate flowers in British **Orobanche** are confined to coastal populations indentifiable, on other grounds, as **O. maritima** this provides a further reason for suggesting that these have a common ancestry and regarding them as belonging to a distinct species. That the localities from which the specimens came are, respectively, in the western part and the extreme east of the range of **O. maritima** shown in Atlas of the British Flora (Eds. Perring F.H. & Walters S.M. (1962)) may also be significant.

I should like to accumulate relevant information, and would therefore be very pleased to receive any information regarding:-

(a) HERBARIUM SPECIMENS of any **Orobanche** where the normally sessile flowers give way to pedicellate flowers towards the base of the spike,

and

(b) COUNTS, made in the field, from ANY population, to give the relative frequencies of individuals with and without the feature. Members with access to such a population might care to do a little counting (even when the plants are 'over') and let know what they find.

Required Information

1. Identification to generic level: i.e. **Orobanche.**
2. Identification to species level (even provisional) if possible.
3. Habitat and likely host.
4. Grid reference and locality.
5. For field-counts : the number of plants examined (the larger the sample the better) at random through a site, and the number with pedicellate lowermost flowers. A NIL RECORD for this feature is just as valuable as a number.
6. Any photograph or specimen* available and/or notes on any of the characteristics used in descriptions of **Orobanche** species to help me confirm the species. *Whole specimens are probably best avoided at present. A few flowers sliced from the stem complete with their bract may be sufficient.

I am sorry that I cannot offer to refund postage - second class mail will do!

If I accumulate sufficient data I shall be happy to make a further contribution on the subject.

References

Clapham, A.R., Tutin, T.G. & Moore, D.M. (1987). Flora of the British Isles Ed. 3, pp. 398-399. Cambridge University Press.

Clapham, A.R., Tutin, T.G. & Warburg, E.F. (1952). Flora of the British Isles Ed. 1, pp. 921-922. Cambridge University Press.

Perring, F.H. & Walters, S.M. (Editors) (1962). Atlas of the British Flora p. 238. BSBI - Nelson.

DAVID HAMBLER, 14 Yew Tree Avenue, BRADFORD, West Yorkshire BD8 0AD

Fig. 1. **Orobanche maritima** : A from East Kent (1963); B & C from Pembrey Burrows, South Wales (1990). Specimens in **NMW.**

THE HERBACEOUS BORDER - 2

ROSA RUGOSA AND ITS HYBRID

Readers may well be wondering why this is not being called the mixed border - another pair of shrubs! However these alarming roses are kept outside nearby and prevented from travelling by metal sheets driven into the ground, and are shown to visitors as examples of what not to plant, or what to give an enemy if one is about to leave the country for good.

Rosa rugosa Thunberg, the Ramanas Rose or Japanese Rose (though there are other Japanese species) is quite well-known as an escape, but recorders may be unaware that they may be misidentifying it; at least half the roses of this group in v.c. 99, Dunbartonshire, are **Rosa** 'Hollandica' which is superficially like it. This hybrid was the result of a chance crossing in Boskoop in 1888 at the nursery of J. Spek, and is considered to be **R. rugosa** crossed with either the Cinnamon Rose, **R. majalis** J. Herrmann (R. cinnamomea L. 1759 non 1753), or the closely-related **R. marrietii** Léveillé, all these roses belong to the same group, the Cassiorhodon (Cinnamomea). For the history of the introduction and uses of the Ramanas Rose, see the 1980 edition of Bean's Trees and Shrubs 4: 134, there is also a photo of the most 'extreme' cultivar, that is, the most 'chunky' and deeply veined and therefore the most opposite to the hybrid, it's called 'Fru Dagmar Hastrup'. It is said there that the Japanese name for **R. rugosa** means 'shore-spear'; most of the records for both these roses are from shores of lochs, the Clyde or not far inland on light well-drained soils. The foliage is the part needed to tell these apart, and this cannot be done 'till the leaves are well expanded, from June onwards here. The hybrid was used as graft stock. Our thanks to David McClintock for getting this named. Drawings of both **Rosa rugosa** and R. 'Hollandica" are on pages 26 and 27.

Rosa 'Hollandica	Rosa rugosa
Habit	
Forms thickets of great density from 1ft (30cm) to head height.	Similar, possibly slower, less marked gradation from low to tall.
Leaves	
Light green, dull, not catching the light, soft-textured, narrowly elliptical-ovate.	Emerald, sparkling in sun, leathery, robust, broadly ovate.
Leaf margins	
Shallowly toothed, toothing scarcely visible, barely down-turned.	Boldly crenate with broad, blunt teeth with a blunt prickle, strongly down-turned.
Veins	
Not a feature, only the side ones slightly impressed.	Strongly marked, all strongly impressed, surfaces of the blades a little raised between. Every minor vein a feature.
Leaflets	
Excluding stalk, 6cm x 2.5cm wide, bases rather narrowly cuneate.	5cm x 3.5cm wide, bases rounded-cordate.
Leaf stem	
Comparatively slender, downy with double raised keel on upper side which is pinkish-red, a few not very sharp prickles on the lower side up to 7cm long	Very robust, silky hairs with a narrow slit on upper side, not usually tinted, but may be in some cultivars. Both small and large prickles on lower side, about 9cm long.

Stipules

Not a feature, pale green with soft reddish midrib 1.5cm across, or less.	Quite a strong feature, pale green with ivory midrib, up to 3.5cm across.

Young branches

Bark often tinted on upper surfaces	Usually not tinted, but may be due to a number of introductions in the last 100 years.
Clothed with fine spines and a few larger prickles of brownish-red.	Armed with dense-packed spines and prickles of golden-fawn, but some clones may differ.

Flowers

So similar that no differences have been noted - both pink-magenta with sweetly scented petals June - July, up to 8.5cm across.

Fruit

Globular, about the size of a large pea, or more, not a feature; clothed with glands all over, becoming almost bare and somewhat glossy with age	Fat, depressed-globose, a very distinct feature, 3cm+ in diameter; smooth, dull, becoming glossy as they ripen to brilliant tomato-red; some cultivars are grown for this feature alone.

Sepals

About 3cm long, mainly horizontal, once the hip begins to develop; the lower surfaces light brownish-red, more or less depending on the degree of sun. Covered evenly on the underside with glands.	About 5cm long or more, very large and prominent, held at about 45 degrees, robust, sometimes developing leaf-like tips the same texture and colour as the main foliage. Not opening flat when mature. Tinted slightly light brown-rose on outsides in full light. Glands smaller and fewer.

The next plant, if it has not been extirpated, will be **Crocosmia masonorum** and how to distinguish it from **C. paniculata**, the Aunt Eliza.

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NOTES AND ARTICLES

BIOLOGY OF THE HUMBLE CONKER

During the first world war, children were organized to collect conkers as 'part of the war effort', a somewhat mysterious part. The Imperial War Museum's Information Sheet No. 7 reveals that they were used in the production of acetone, which in turn was used to make cordite, the basic propellant for shells. The fact-sheet adds; "Nobody really knew why they were collecting horse-chestnuts. The Government was naturally reticent to reveal the motives behind the scheme since the Germans could very well copy this novel form of acetone production."

I am indebted to Mr Bevis Hillier's biography of Sir John Betjeman as the source of this odd bit of botanical knowledge.

JOHN OUNSTED, Apple Tree Cottage, Woodgreen Common, FORDINGBRIDGE SP6 2BD

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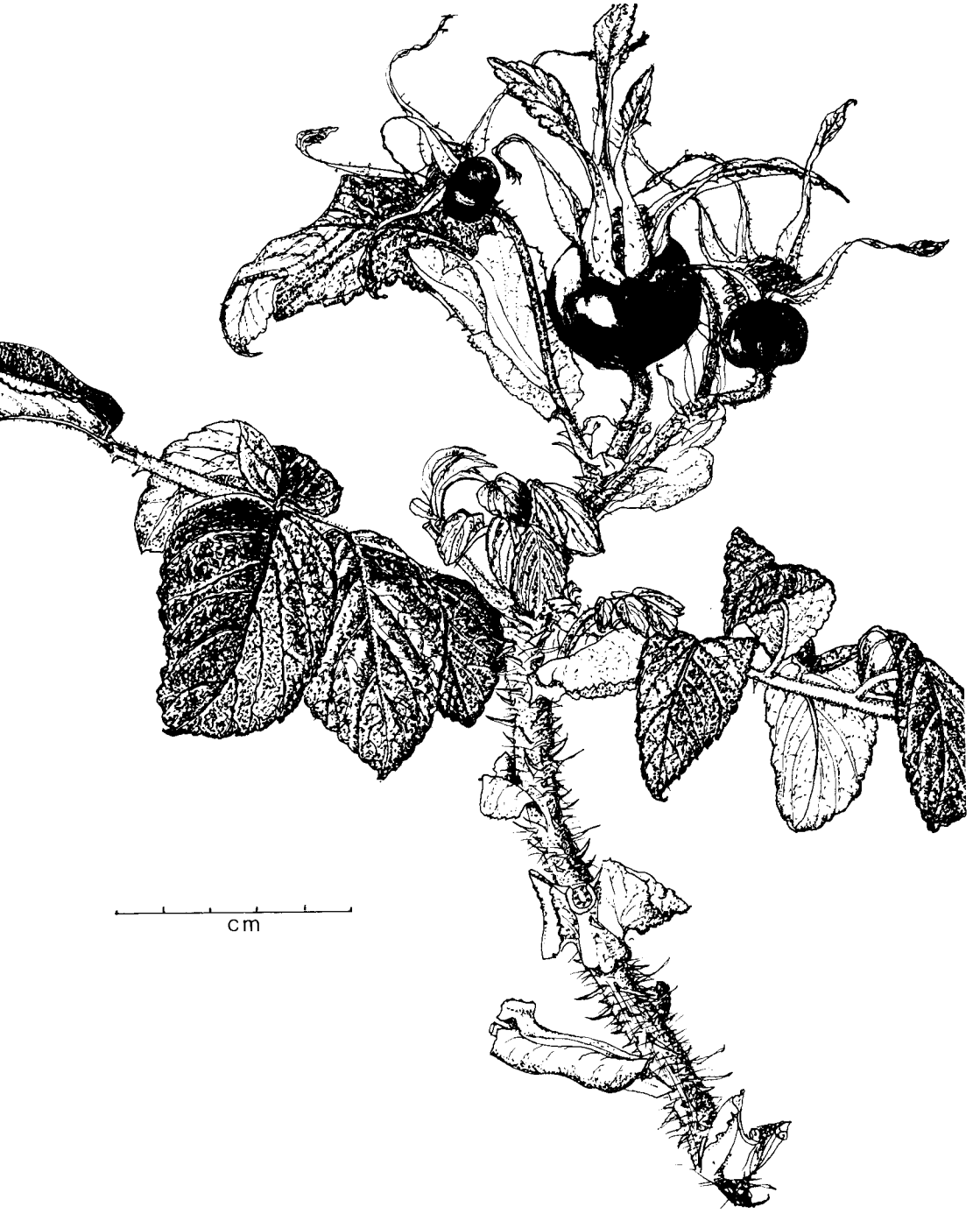

Rosa rugosa, del. A. Rutherford, © 1990.

Rosa 'Hollandica', del. A. Rutherford, © 1990.

ELEPHANTS AND CONKERS

I was fascinated by John Akeroyd's wide-ranging mini-saga in BSBI News **54**: 31. Rarely has the significance of Epirotic conkers been so well understood, and how seldom have the multifarious metaphors been mixed so magnificently (elephantine seed beds of mammoth proportions). Determine that elephants demonstrate a marked gut-reaction to the circus environment, that Epirotic conkers select only the digestive mechanisms of odd elephants, and it is at once clear that a 'scardic torrent' is, in reality, an Elysian spring known only on tap at The Royal Oak.

It is well-known that, during the northern Hemisphere Pleistocene cold periods, the thermophilous extinct elephant **Palaeoloxodon antiquus** Falconer & Cautley retired to southern Europe. Recently and for the first time, there has been a suggestion that **P. antiquus** occurred in the pre-Pleistocene of south-central Europe. This would support Akeroyd's hypothesis. Whether **P. antiquus** was in the right area at the right time is unknown.

There is probably also little knowledge of the total reaction of **Aesculus hippocastanum** L. to these recessions of climate, which took another extinct elephant, **Mammuthus primigenius** Blum., into Yugoslavia (collections at Prirodoslovni Muzej Slovenje, Ljubljana), but almost certainly not into **Aesculus** territory.

Elephants take 75%-85% of their food from ground level, and as Akeroyd predicts, they are the least efficient of all large herbivores in terms of their digestive ability; they are a major agent in the distribution of herbaceous vegetation throughout their ranges. They are, in general terms, unselective and palatability (seeds of **Aesculus** contain bitter tannins) is hardly a factor. Their appetite and throughput is legendary and well documented. An African Elephant (**Loxodonta africana** L.) that failed to defecate once each waking hour, would, for want of the best turn of phrase, be a disappointment. The exaggerated behaviour of Bertram Mill's animals in this respect, is no doubt a manifestation of their aberrational lifestyle.

There are two facts which may excite further cerebral activity at The Royal Oak and Conker. There is a record of charcoal of **Aesculus** in the British Neolithic long before Clusius' day, and recent evidence for the occurrence of Indian Elephant (**Elephas maximus** L.) in Britain. It appears to have been confined to what is now the settlement of Aston Somerville in Worcestershire, where an upper molar was dug up in March 1990.

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TRIPLE-WINGED ELM FRUITS

During March and April this year I have collected and pressed elm fruits from over 150 elm populations from Matlock to Wallingford and from Atherstone to Bury St. Edmunds, taking an average of about 35 samaras from each population, a total of perhaps 5500 fruits. Among these I have noticed 10 with three wings instead of the usual two, one from **Ulmus minor**, and the rest from **U. glabra** or **U. x hollandica**. A three winged samara is presumably developed from a flower with three stigmas and three carpels, which suggests that the chance that such flowers may occur may be in the region of 0.55%. Is any member interested in this kind of statistic? I have to confess that it does not greatly excite me! CTW 1st Edition says of the family Ulmaceae that the ovary is of 2 connate carpels, 1 or 2 celled.

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UNIDENTIFIED MEDICINAL PLANTS - 2

In response to David Allen's article in BSBI News **54** (April 1990) I trust the following suggestions may be of some interest:-

Sparrow-weed is **Asparagus officinalis.** In the 16th Century the wild Asparagus was known as Sparrow Grass. It was recommended for its diuretic property in dropsy (oedema), gout and rheumatism.

Crisp Thistle is probably the Welted Thistle - **Carduus crispus.**

Blue Mallow was a herbal name for Common Mallow - **Malva sylvestris** which has been used as a substitute for Marsh Mallow - **Althaea officinalis.** The latter is included in the British Herbal Pharmacopoeia 1983 (BHP 1983). Both are demulcent, mucilaginous and pectoral.

Herb Rue is almost certainly **Ruta graveolens** - the Common Rue or Herb of Grace. This is also in BHP 1983. Cautions include 'handling in sunlight', which may lead to photosensitisation. Not to be used in pregnancy as may lead to abortion.

Horse Pepper may be Alexanders - **Smyrnium olusatrum,** also called Horse Parsley. The seeds were once used in asthma and are antiscorbutic, bitter and promote appetite. Alternatively it could be **Mentha x piperita** - Peppermint.

Spear Point could be the Spear Thistle - **Cirsium vulgare.**

Stony-on-the-Wall is fairly certainly Pellitory-of-the-wall - **Parietaria judaica** (officinalis), BHP 1983. Dried aerial parts are used to treat cystitis, urinary stones and gravel.

Gravel Root (Wicklow) of the present day is **Eupatorium purpureum.** It is also known as Joe-Pye Weed or Queen of the Meadow. It was introduced from America in the 17th Century and is specifically indicated in BHP 1983 for Kidney or Bladder stones and gravel.
Another native possibility is Couch Grass - **Elymus** (Agropyron) **repens** which has similar properties. BHP 1983. Culpeper said 'although a gardener be of another opinion yet a physician holds half an acre of Couch Grass roots to be worth five acres of carrots.'
'Wick' is incidentally one of the common names of Couch Grass listed by Geoffrey Grigson in his 'Herbal of all Sorts'.

Black Peppermint is a variety of **Mentha x piperita** - Peppermint. There were said to be two varieties viz. Black Peppermint (forma **rubescens**) and White Peppermint (forma **pallescens**). The aerial parts are specifically indicated in BHP 1983 for flatulent digestive pains.

Yellow Fern may be meant for Yellow Furze and be intended for Broom - **Cytisus scoparius.** It was considered good against witches and was used as a cardiac medicine.

Bog Onion is probably the wild Angular Garlic - **Allium angulosum** which requires little Nitrogen and grows in marshes and wetlands.

Alexopane could be Alexanders or Black Lovage - **Smyrnium olusatrum.** It dates back to the 1st Century but seems to have been less medicinal than culinary.

Calf's Plant may be the common Toadflax - **Linaria vulgaris** which has been called Calves Snout. It is an astringent, Liver and Spleen herb and was known to Gerard who considered it 'singular good against jaundice, which is of long duration'.

Eagles Claw/Eagles Foot could relate to the shape of the flower, e.g. Larkspur - **Consolida regalis** (Delphinium consolida) which is also known as Larks Claw or Larks Heel.

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MEDICAGO TOURS

Medicago Tours is a new venture, an alternative to the standard holiday of here a monycot, there an endemic, everywhere an orchyawn. My tour consists of a strenuous morning followed by a bibulous lunch, and then an evening identification session becoming ever more

optimistic as the light fails and the glass empties (funny how accurate those hazed opinions often are!). The whole tour is based on legumes, (and their natural companions grasses and sedges) mainly because of their exquisite flowers and surreal pods, but not a little to do with the fact that they grow in olive groves near roads, shun mountains, and often line the dusty paths to local tavernas.

This years expedition was to Greece, where an early dry spring had fortunately put paid to the orchyawns - I managed two in 31/2 weeks - is this a record? Olympia first, and a welcome reunion with the first **Medicago** spp. which, by growing prostrate, had avoided the worst of the sprays, along with **Hymenocarpus** and other standards. The other gems, the grasses, were partially ignored because I'd forgotten to bring the indispensable Fl. Iraq, Vol. 9.

On to bemarqueed Bassae, untouched by spray, the morning made by possible **Carex liparocarpos**, south, true, of its Flora Europaea range, but a hopeful (or as a friend says, a probable possible). Next was a wonderful olive grove near Finikounda with 26 legumes and only a gross dead **Serapias** of the opposition. Then to Kardamili, apparently barren, but a magnificent dusty path to a beachside taverna produced **Astragalus hamosus** pods followed by the superb **Medicago disciformis** - the name fails to do justice to this flaming comet - it should be 'M. Hayleyensis!

The landscape was becoming drier, and more pods appeared through the Mani - **Biserrula pelecinus**, the overall prize winner, the Christmas tree-like **Ononis ornithopodioides**, the beautiful grass **Cynosurus elegans**, **Medicago praecox** and **M. rigidula** and **Ornithopus compressus** before Mistras and its gorge produced the new star - **Medicago rugosa** - the pictures (ex. Flora of Turkey) failed to do justice to its contorted Michelin-style geometry. Flowers and the landscape wound down at Monemvassia, where we spent four days south of the town immersed in **Aegilops** spp. - possibly **A. triuncialis**, **A. comosa**, **A. uniaristata** etc. - why do other tours ignore these extraordinary gems? Up to now **Trifolium** spp. had been treated warily, but here a totally distinctive woolly, spheroid annual caught the eye, **T. globosum** growing with another underrated, understated **Medicago, M. coronata.**

What more is there to say? The Parnon mountains produced spiny **Astragalus** spp. swamping Fritilleries. (Why doesn't somebody produce a Mediterranean Hedgehog flora?) Epidauros, Mycenae et al. were nicely sprayed and only produced the pleasant **Astragalus spruneri**, and all was drifting quietly to a close when a last pre-prandial evening stroll along the beach at Tolo produced what at first appeared to be variegated rabbit-droppings, but then turned out to be huge, interwoven cats cradles - yes, you have guessed it, **Medicago intertexta.** What a treasure, what a finale!

Next year Medicago tours will tackle S. Spain for its **Genista** spp. and their irresistible allies - book now.

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GERMINATION OF LONG BURIED SEED
(With a comment on Botanical Exactitude)

John Palmer's comments on the work of the Derelict Land Unit on the York University Campus (BSBI News 54: 34) and their possible bearing on the appearance of **Reseda luteola** at various locations on the campus were interesting, cautionary and poignant.

They were interesting, as a possible explanation of the observations, and cautionary in that they remind us that there must inevitably be gaps in our knowledge of the history of an area - even one as relatively small and short-lived as the University campus here! The transport of cut and dried vegetation across the campus might well account for the casual weld plants, both of which occurred by paths that might have been taken as a route between the Walled Garden and the Biology Department.

John Palmer's observations are poignant, because the Unit where I work is now located in the said Walled Garden, in the very Psychology Department 'pigeon' House (the animals having been moved elsewhere - animal rights activists please note!). In the three years that we have 'lived' there, I cannot recall seeing any unusual casuals, despite the fact that we have created several flower beds in order to grow ornamental and economic plants to hide the hideous buildings and provide live materials to show visitors - and in doing so we would surely have stirred up seed from the days when pigeons and rats were the

denizens of the Animal House. The dense cover of **Isatis tinctoria, Agrostemma githago** and **Rubia tinctorum** may have something to do with this, however!

I must also thank Jim Dickson for his reminder about the work of Ødum on buried **Hyoscyamus** seed from Danish excavations. I'm afraid I've never thought it worthwhile to try and repeat his experiments on material from excavations in York (mostly very much older than the 150-year-old deposits examined by Ødum), even though the question most often asked by visitors, apropos the fossil seeds on which I work is 'are they still viable'. Perhaps it's timely to put some energy in this direction?

My last comment links the discussion of **Reseda luteola** and **Genista tinctoria** that seems to have emanated from my original note in BSBI News **53**: 23, itself a response to a note by Larch Garrad (BSBI News **52**), with our Editor's plea for notification of corrections (BSBI News **54** : 3). Ms Garrad originally introduced **Genista tinctoria** as something of a red (yellow?) herring and this has no doubt led to the confusion of names in Peggie Pittkin's note (BSBI News **54**: 34): viz: 'Dyer's Greenweed, **Reseda luteola**'! For the record, **R. luteola** is, of course, Dyer's Rocket (perhaps better just called Weld) and **G. tinctoria** is Dyer's Greenweed or Dyer's Broom (or one of a handful of other names, fide Grigson). I note with some concern that this confusion extends into a recent popular photographic field-guide to British wild flowers by two of our most eminent field botanists (who shall remain nameless)! Confusion of the vernacular names for these two plants may also account for a record for large numbers of uncharred fossil seeds identified as **G. tinctoria** from medieval King's Lynn published nearly two decades ago (I hesitate to cite the reference). Given the propensity for **R. luteola** to produce huge quantities of seed which fossilises readily, and for **G. tinctoria**, along with legumes in general, to produce small numbers of seeds that are rarely preserved archaeologically except by charring, I feel certain that the find was of weld, not dyer's greenweed.

On the subject of nomenclature, I wonder why Dyer's Rocket and Dyer's Greenweed belong to only one Dyer, but Fullers' teasle (teazle) is apparently the property of more than one Fuller?

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WHY YORKSHIRE FOG? - BECAUSE - AGAIN!

In response to the note by Mr R.M. Payne in BSBI News **52** members may be interested in the entries for 'fog' in H.C. Wyld's The Universal Dictionary of the English Language (Routledge). Mine is the sixth impression, 1946. It is a splendid etymological dictionary but unfortunately for the author, the Shorter Oxford English Dictionary was published, in fortnightly parts, just as his book was about to appear and so he never got the market he deserved.

> fog(I) n. M.E. fogge 'rank grass', of Scand. origin; cp Norw. fogg 'long straggling grass in a moist hollow', Dan. fugtig, Germ. feucht, 'damp'. Coarse, long grass which has not been grazed; new growth after mowing; aftergrass; aftermath.
>
> fog(II) n. vd. trans & intrans fr. prec. 1. trans a To leave (grass) standing until winter; b to feed (animals) on fog. 2. intrans. fog off (of plant) to die off from damp.
>
> fog(III) n. of Scand. origin; cp Dan (sene-)fog 'driving, thickly falling snow, Icela. fok, 'spray, snowdrift'. fjuk, 'snowstorm'. Perh. back formation fr. foggy in sense 'covered with rank grass, mossy, marshy, damp' 1. a Thick mist; water vapour or cloud resting on land ...
>
> foggage n. fog(I) and -age. a (chiefly Scots) Fog(I) b (Scots law) right of pasturing cattle on fog."

I have also heard foggage used locally for the sparse regrowth of grass that has not been grazed after mowing and that may rarely be used as for a late season light crop of hay.

The Random House Dictionary of English Usage 2nd Ed. 1983 includes:

> fog(2) n. U.S. & Brit. dial. 1. a second growth of grass, as after mowing. 2. long grass left standing in the fields in winter. [1300-50; ME fogge, fog < Scand; cf. Norw fogg long grass on damp ground.

'Webster's Third New International Dictionary (Merriam Webster, 1976) gives:

> fog(1) [ME fogge, fog rank grass, winter grass, perh. of Scand origin; akin to Norw. fogg tall, worthless grass, ON fugga mold] 1 dial. a: dead or decaying grass on land in winter b: a second growth of grass: aftermath 2 dial a: moss b: velvet grass.

This traces the lineage back to Old Norse which is somewhat earlier than its adoption as a vernacular name for **Holcus lanatus.**

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[This contribution was inadvertently omitted from the last two issues. Ed.]

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ALIENS AND ADVENTIVES

HIBISCUS TRIONUM - PUARANGI

In late September 1989, growing on recently disturbed calcareous soil in a Greater London suburb, I came upon an exquisite miniature flowering plant which seemed like an escape from an exclusive rock garden! It had a **Cistus**-like flower composed of white petals with purple honey-guides; the rosette of leaves was like that of Herb Robert - **Geranium robertianum** and the overall height was not above a few inches. It was dainty beyond measure and with a seed-capsule like a tiny filigree lantern. Mr J.M. Mullin of The Natural History Museum identified it as **Hibiscus trionum** L. - 'an occasional alien'. This left me wondering as to its origin.

By a strange coincidence, I have just received some back numbers of Newsletters of the Herb Federation of New Zealand, including the September 1989 issue. There, in the Otago Herb Society seed-list I found my answer, viz.

> "**Hibiscus trionum** - commonplace name - Puarangi - sometimes annual, more often biennial. Found throughout the Tropics but included in the New Zealand native flora. Rare in the wild."

I felt rather privileged.

IMOGEN H. YEOMANS, 1 Salisbury Court, 12 Salisbury Rd, Carshalton, Surrey. SM5 3HD

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IRIS SPURIA SUBSP. OCHROLEUCA ABUNDANTLY ESTABLISHED IN W. KENT

I first noticed clumps of **Iris spuria** L. subsp. **ochroleuca** (L.) Dykes in June 1984, near Springhead, on remote slopes on the east side of the road to Swanscombe. (With it were **Vicia bithynica, Trifolium medium, Lathyrus nissolia, L. sylvestris, Anacamptis pyramidalis** and **Ophrys apifera**). Despite subsequent tree-planting, the **Iris** has increased here by self-sowing in the subsequent six years.

About a mile further north it can also be seen in larger quantity, in dry and damp places, self-sown in open country all the way from the Ebbsfleet area of Northfleet to Swanscombe, a distance of at least one mile. Here it has begun to suffer the depredations of gardeners. Visitors to this second locality will be rewarded by the sight of many other interesting plants; although some have been lost by the infilling of chalk pits, and the whole area from Northfleet to Springhead is threatened with development.

Iris sibirica L. is also established in several places in grassy fields around Northfleet. Other Irises noted as escapes in N.W. Kent include **Iris variegata, I. danfordiae, I. latifolia, I. xiphium**, and of course the ubiquitous **I. germanica.** What seems to be **I. kaempferi** has been established for many years in a swamp on Dartford Heath.

JOHN R. PALMER, 19 Water Mill Way, South Darenth, DARTFORD, Kent DA4 9BB

A SECOND CORN COCKLE IN BRITAIN

In much of Europe Corn Cockle (**Agrostemma githago** L.) is an introduced annual weed of cultivation. Many of us, I suppose, have also noticed it from time to time in the wild as a garden escape where it can persist for a while.

In July 1990 on discovering a large relict colony of Corn Cockle near Swanley, W. Kent, it was noticed that the plants were obviously a different species, **Agrostemma gracilis** Boiss. The petals were shorter than the calyx, whose teeth were the same length as the tube, and the limb of each petal has lines of black spots.

The Swanley plants may seed themselves for a few years more, meanwhile other members may care to look out for this species, which may have been under-recorded in the past.

JOHN R. PALMER, 19 Water Mill Way, South Darenth, DARTFORD, Kent DA4 9BB

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CYTISUS BATTANDIERI NATURALIZING IN CHELTENHAM

On the first of May 1990, I found a healthy seedling of **Cytisus battandieri** Maire in gravel near the parent plant in Cheltenham Town.

Propogation by cuttings is frequently recommended for this species in Britain, the assumption being that viable seed may not be produced very often. For a North African species, seedlings germinating in Britain need to survive an increasingly unpredictable climate; the sheltered microclimate in Cheltenham enabled the seedling to survive the sharp frosts of early April 1990, when air temperatures locally dropped to -6°C.

P.F. WHITEHEAD, Moor Leys, Little Comberton, PERSHORE, Worcs. WR10 3EP

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CONSERVATION NEWS

GRASSLANDS ON THE MOVE

As many BSBI members will be aware, developers are increasingly suggesting that habitats of value to nature conservation (especially grasslands) should be moved if they are 'in the way' of proposed developments, either as turves or as mixtures of scraped topsoil and turf fragments. The assumption being made is that a grassland can be successfully 'dismantled', the pieces (soils, plant and animal populations) moved to a new location, and 'reassembled'. Such proposals are certainly technologically appealing, although they appear to underestimate an important ecological principle: that the way in which a grassland is constituted is very largely determined by the environmental context within which it is developed.

There have been many attempts at grassland transplantation (Prigmore, 1987; Buckley, 1989), yet the monitoring data available are rarely sufficient to indicate whether or not they have been 'successful' according to nature conservation criteria. In order to address this problem monitoring work is currently being done by NCC to establish the extent to which transplantation of a piece of grassland might represent a realistic alternative to its conservation in situ.

In 1987 NCC's England Field Unit commenced long-term botanical monitoring on eight grassland sites in England where transplantation was imminent. The sites chosen for study were generally of high (SSSI standard) nature conservation interest and covered a range of plant-communities, soil types and management regimes. They also varied in the transplantation techniques to be employed: transplantation by topsoil stripping was to be used on four sites, and at three of these some of the grassland was also to be moved as turves, thereby allowing us to investigate the relative merits of the two techniques. In addition, on three sites some grassland was to be left in situ, giving us 'controls' against which we could assess the transplanted swards. Our intention throughout this study

has been to produce an objective evaluation of the consequences of transplantation on these eight sites, rather than to influence or advise on the transplantation techniques employed.

Grassland from all but one of the eight sites has now been relocated, including Monkspath Meadow SSSI, West Midlands, part of which was moved to make way for a super-store and car park; two grasslands at Westhay, Somerset, which were shifted so that underlying peat could be extracted; and an area of acidic grassland in Cumbria which was transplanted because of open-cast coal developments.

The NCC study has highlighted a number of problems with habitat transplantations, including:-

1. **The proportion of a site transplanted**: this is dependent not so much on the conservation requirements but rather on the time and resources (money, machinery, manpower) available; indeed, in many cases only a small area is transplanted, with a considerable proportion of the original grassland being subsequently destroyed. This point tends to be ignored in the publicity given to transplantations, and is rarely taken into account when assessing the 'success' or 'failure' of a particular case.

2. **Plant-community pattern**: it is almost impossible to recreate the original positions of the turves in relation to each other, and therefore the pattern of plant-communities on the 'donor' site is invariably destroyed in the process of transplantation. This problem is exacerbated if topographical features such as ridge-and-furrow are involved.

3. **Changes in species composition**: most of the transplantations being monitored by NCC have been carried out within the last two years, and it is obviously too early to draw firm conclusions from the data gathered. However, our impression to date is that transplanted grasslands can undergo considerable changes in their botanical composition and in the relative abundance of species; some species (often the ones of greatest conservation interest) decline, while others (usually the more adaptable or 'opportunistic' species) increase. New species appear, presumably as a result of the disturbance, these often being 'weeds' (e.g. **Tussilago farfara, Cirsium arvense, Polygonum persicaria, Juncus conglomeratus, Juncus effusus**). At least initially there may be an increase in the frequency of annual species and a decrease in perennials. If turves are cut too thin there may be a (temporary?) decrease in the abundance of some deep-rooted species.

4. **Differences between 'donor' and 'receptor' sites**: if the 'receptor' site differs from the 'donor' site in its soils/drainage/slope/aspect/management etc. then this can give rise to changes in the vegetation. At one site the post-transplant sward has already altered markedly, with a gross change from a species-rich **Centaurea nigra - Cynosurus cristatus** community - with an abundance of such species as **Cirsium dissectum, Potentilla erecta, Sanguisorba officinalis** and **Succisa pratensis** - to a community dominated by **Holcus lanatus** and **Deschampsia caespitosa**, and with lower species diversity (number of species per unit area). The main reason for this change appears to have been the pronounced differences in hydrological conditions between the 'donor' and 'receptor' sites. The nature of the ground surface has also changed, so that the farmer considers it too uneven to graze stock and consequently the regular management it once received has now ceased.

While turf-stripping is a well-tried horticultural technique, the transplantation (whether by turf or topsoil stripping) of floristically complex non-amenity grasslands can never be totally predictable in its consequences. Given the results of the work so far our interim conclusion is that habitat transplantation should be viewed with considerable scepticism, especially if such an operation is being proposed as a means of safeguarding the ecological characteristics of a site already deemed to hold significant interest from a nature conservation standpoint.

Reports and papers summarizing the results of the first three years of this work are unlikely to be published until early next year; if in the meantime anyone requires further information please write to the address below. Anybody involved in (or hearing of) transplantation proposals for a specific site is asked to let NCC regional staff know. In addition, we would be grateful to have details of such proposals here as we are in the process of updating and computerising our register of transplantation sites in England.

References

Buckley, J.P. ed. (1989). Biological Habitat Reconstruction. Belhaven Press.
Prigmore, D.S. (1987). The Role Of Habitat Transplanting in the Conservation of Semi-natural Communities. (Unpublished M.Sc. thesis), Imperial College of Science and Technology, University of London.

SIMON J. LEACH, SUSAN A. BYRNE & CAROL P. BLAKE, England Field Unit, NCC, Northminster House, PETERBOROUGH PE1 1UA.

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CARMEL WOODS, DYFED
Interim Development Order Threatens Nationally Important SSSI

There is - as any observant naturalist knows - a world of difference between a plantation of trees, whether conifers or deciduous, and a stand of woodland, bearing native species, that has existed since at least the Middle Ages. The latter are termed 'ancient semi-natural woodlands' and they hold a rich array of woodland wildlife as well as being places of great beauty. The native woodlands of Britain range from the indigenous pinewoods of Scotland to a series of differing deciduous woodlands further south; the trees, shrubs and understories found in these woodlands vary considerably, some types being commonplace, others distinctly rare.

One stand-type that is of particular importance is ash woodland on limestone, a community that is apparently very rare in such situations on the continent, due probably to their lower levels of precipitation and other climactic factors. In Britain, such woods adorn parts of the Carboniferous Limestone outcrop in the Mendips, in south and NE Wales, the Peak and Lake Districts and small areas of western Scotland.

Carmel Woods, situated on the narrow band of limestone that surrounds the South Wales coalfield in SE Dyfed is such a wood, or rather woods, for Carmel comprises a series of some forty linear blocks of woodland growing on hard upstanding beds of limestone; these ashwoods are considered to be of national importance and accordingly have been given 'Nature Conservation Review' SSSI status by the Nature Conservancy Council, an accolade reserved for the very best of Britain's wildlife sites.

Over one hundred species of indigenous woodland plants have been recorded including the rare mezereon (**Daphne mezereum**) and uncommon species such as Herb-Paris (**Paris quadrifolia**), lily-of-the-valley (**Convallaria majalis**) and toothwort (**Lathraea squamaria**). Again, over a hundred species of mosses have been noted. Under the canopy of ash (**Fraxinus excelsior**) a large range of shrubs occur, including dogwood (**Cornus sanguinea**), spindle (**Euonymus europaeus**) and buckthorn (**Rhamnus catharticus**), the latter being a food plant of the brimstone butterfly (**Gonepteryx rhamni**) which flies here in spring and late summer. Pearl-bordered fritllaries (**Boloria euphrosyne**) occur in sunny clearings whilst in deep shade, the very rare harvest-spider (**Sabacon viscayanum**) lives in wet leaf litter and moss; it is only known from a small handful of South Wales localities and the Pyrenees. The snail **Acicula fusca** and the distinctive slug **Limax cinereoniger** - species known as 'ancient woodland indicators' provide evidence of the venerability of these woods. In the same humus-rich areas the saprophyte yellow bird's-nest (**Monotropa hypopitys**) grows under shade of old hazel coppice.

These woods have been subject to detailed historical research and records date back to at least the 18th Century, and woodland ecologists have been able to relate the diversity and structure of the woodland compartments for past usage such as felling for use in the old lime kilns that dot the area; these woods are, therefore, a living laboratory of immense value for ecological study.

At both ends of Carmel Woods are caves which hold the much-declined greater horseshoe bat (**Rhinolophus ferrumequinum**) whilst further interest is provided by the presence of a summer-ephemeral lake (akin to the 'turloughs' of Eire) and flower-rich unimproved pastures at the eastern end.

Yet, in spite of the outstanding importance of Carmel Woods and its SSSI status, the area is under severe threat of destruction by an extension of quarrying activities by the

firm Alfred McAlpine PLC. Carmel Woods is subject to an Interim Development Order (IDO) issued in the late 1940s and which pre-dates - and therefore overrules - the SSSI notification - indeed it even pre-dates the formation of the then Nature Conservancy. Details of the Carmel IDO are being contested in the High Court on technical grounds, but it has been of concern to many, that now is the time to review these IDOs which threaten extremely important SSSIs, including habitats such as peat bogs and woodlands, throughout the UK.

The local mineral planning authority under the 1981 Town and Country Planning Act has the power to revoke such IDO's but - importantly - not the monies to pay for compensation when such old standing consents are nullified. Consequently - and not surprisingly - no IDO has been revoked under that Act, as the Government has not provided any money to local authority's to pay for compensation.

But as concerned individuals have commented - why should there be any compensation when areas of national importance are threatened by these anachronous and clumsy IDOs?

Surely, the inadequacy of IDOs within the sophistication of modern-day planning is now apparent and the time has come for fresh legislation to deal with these so-called 'Interim' Development Orders before more important British wildlife localities are irretrievably damaged or destroyed.

NIGEL STRINGER, 20 Cleviston Park, Llangennech, LLANELLI, Dyfed SA14 9UW
RICHARD DAVIES, 27 Brettenham Street, LLANELLI, Dyfed

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THE NCC CYPRIPEDIUM COMMITTEE

Origin

Edgar Milne Redhead, when President of the BSBI (1970) achieved the convening of the Committee for the Conservation of **Cypripedium.** Before the formation of the Committee local and national potential guardians of the orchid had been resistant to meeting to discuss a conservation policy, but at the first meeting - held in a Grassington Pub after a good lunch - two aims were agreed:

1) to try to save the single remaining plant
2) to promote natural seed set and germination to raise seedlings from the native plant to re-establish at the site.

Edgar has been BSBI Representative on this Committee, which through the years has worked, often in secret, on these difficult projects. "M.R." has now retired and we send him our thanks for the long years of service to this and to other conservation projects.

Margaret Lindop has now been appointed as BSBI Representative and sends this encouraging report; publication is sanctioned by the Chairperson of the Committee, Lynne Farrell, now that a successful outcome is more hopeful.

MARY BRIGGS

1989 - 1990 Report

The NCC **Cypripedium** Committee met on two occasions during the year.

The wild native plant is healthy and produced seven flowers during 1989. Some natural seedlings have been observed in the vicinity and the Sainsbury Orchid Conservation Project has had some success in propagating plants from seed collected from the wild native plant; these are growing in greenhouses at Kew.

R.B. Mitchell has published a paper in The Plantsman 11(3): 152-169 entitled 'Raising Terrestrial Orchids from seeds at Kew' which describes the techniques of **Cypripedium calceolus** propagation.

The NCC report that the habitat at the wild site is still very fragile and members are again urged **NOT** to try and see the plant.

The number of visitors has declined in recent years and the Committee wishes to thank members of the BSBI for their co-operation in staying away.

MARGARET LINDOP, 36 Woodland Hill, WHITKIRK, Leeds, W. Yorks. LS15 7DG

NOTICES (OTHERS)

E.C. WALLACE MEMORIAL FUND

The British Bryological Society launched an appeal 3 years ago for a fund in memory of E.C. ('Ted') Wallace, who died in 1986. The intention was to acquire a small area of land in S. England to be managed as a Wallace Reserve.

It has not proved possible to purchase any land but it is now proposed to utilise the fund for the maintenance of a 'Ted Wallace Memorial Reserve' at Greywell Fen in North Hampshire. This has recently been purchased by the Hampshire and Isle of Wight Naturalists' Trust, which has readily agreed to the proposals.

BSBI members were not invited to contribute to the appeal initially, but now there are definite proposals for utilising the fund, it is thought that a number of members would like to make a donation. Details will be circulated with the next BSBI News.

Incidentally, Greywell Fen has an exceptionally rich vascular plant flora and was one of Ted's favourite sites.

ROD STERN, Botany Bay, Main Road, FISHBOURNE, Chichester PO18 8AX

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THE OLEG POLUNIN MEMORIAL FUND

The Oleg Polunin Memorial Fund was established by the family and friends of Oleg Polunin, to give assistance to those wishing to undertake botanical or biological fieldwork either abroad or in the U.K., and awards can be made to an individual or a member of an organised expedition.

Applicants should normally have Charterhouse School connections but other persons with strong botanical or biological interests will also be considered, and awards will normally be for amounts of up to £1,000.

Applications should be made in writing to the address below, giving a clear statement about the proposed field studies, where they will be undertaken and when, the extent to which they will be supervised, and the amount of grant requested. The closing date for applications for the 1991 award is 1st February 1991.

PETER ATTENBOROUGH, Headmaster, Charterhouse, GODALMING, Surrey GU7 2DJ

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FESTIVAL OF ART IN THE GARDEN
Andy Goldsworthy Sculpture 1976 - 1990
Royal Botanic Garden Edinburgh
11 August - 28 October 1990

The Royal Botanic Garden Edinburgh is delighted to present the first retrospective exhibition in the remarkable 14 year career of natural artist Andy Goldsworthy.

The main exhibition is located in the refurbished galleries of Inverleith House. Marvellous leaf sculptures and work in slate and stone from the artist's studio in Dumfriesshire, together with ephemeral works captured as photographs in Scotland, Cumbria, France, Japan, America and the North Pole will be exhibited. In the Caledonian Hall works include an impressive 100m long serpent, made from bracken fronds pinned together with thorns, which snakes its way across the wall.

Andy Goldsworthy has created new works in other locations throughout the Garden, including a sculpture in the south-west corner specially commissioned by the Royal Botanic Garden (his first public commission in Scotland). A circular slate wall (made from 40 tons of Cumbrian slate) encloses a low dome of concentrically arranged slates fringed by willow trees. Their fallen leaves will form a constantly changing mosaic of shape and colour, giving pleasure to Garden visitors throughout the seasons for many years to come.

Of the sculpture, Andy Goldsworthy says:

> 'I have made a work that I hope will root deeply into the Botanic Garden. At present it looks like a newly planted tree. In time the surrounding trees will

grow over it, shedding their leaves upon the work. Growth and seasonal change is part of its nature. I look forward to seeing the work covered in snow and with the slates edged white with frost.'

Visitors of all ages can enjoy the delights of the Royal Botanic Garden and the exhibition free of charge. Inverleith House and Caledonian Hall open: 10am - 5pm (11am Sundays). Garden open: 9am (11am Sundays) to one hour before sunset.

The exhibition is organised by the Henry Moore Centre for the Study of Sculpture in association with the Royal Botanic Garden Edinburgh and the Fabian Carlsson Gallery, London.

JACKIE ROBERTS, Press Officer, Royal Botanic Garden Edinburgh, Inverleith Row, EDINBURGH EH3 5LR

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FORTHCOMING MEETINGS OF THE BRITISH BRYOLOGICAL SOCIETY

1990

21 - 23 September. Annual General Meeting and Symposium Meeting, Cambridge. A special meeting in honour of Professor Paul Richards and Dr Eustace Jones. Full details from the local secretary: Dr Philip Stanley, 48 Glisson Road, Cambridge CB1 2HF

9 - 11 November. Weekend Workshop on Bryophyte Photography, Manchester. Full details from the local secretary: Dr Sean Edwards, Manchester Museum, The University, Manchester M13 9PL

1991

3 - 10 April. Spring Field Meeting, Clevedon, North Somerset (v.c. 6). Full details from the local secretary: Mr Peter Martin, 37 Hughenden Road, Horfield, Bristol BS7 8SF (tel. 0272 240355)

12 - 24 July. IAB/BBS International Symposium on the Biology of Sphagnum (July 12-18), followed by IAB Biennial Meeting - Experimental Bryology, organised jointly with the BBS (July 19-24), Exeter.

Further details and booking forms from Dr Royce Longton, Dept. of Botany, Plant Science Laboratories, University of Reading, Whiteknights, READING RG6 2AS, **before October 1st.**

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

PHILIP LIGHTOWLERS, 38A Lockhurst Street, LONDON E5 0AP

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AN INTERNATIONAL SYMPOSIUM ON PROPAGATION AND CULTURE OF PTERIDOPHYTES 8-11 July 1991

The British Pteridological Society is organising the above symposium which will be based at Imperial College, London.

Sessions will centre upon the diversity of ferns and their allies in the wild, and their potential for horticulture; the role of living collections in education, horticulture and conservation; the application of applied research (including micropropagation) to commercial growing.

For further information contact:

JENNIFER IDE, Roehampton Institute of Higher Education, Whitelands College, West Hill, PUTNEY SW15 3SN (tel. 081-788 8268)

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CENTENARY NATIONAL TOUR OF BRITISH GARDENS WITH HARDY FERN COLLECTIONS 13-19 JULY 1991

The British Pteridological Society is organising a conducted tour of about fifteen British gardens, both public and private, holding national and international living collections of ferns. Starting from London, travelling by coach to gardens in South Wales, Devon, West Midlands and the English Lake District. The tour will be of special interest to taxonomists, growers and gardeners.

For further details please contact:

MARTIN RICKARD, The Old Rectory, Leinthall Starkes, near LUDLOW, Shropshire SY8 2HP

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COURSES IN BIOLOGY 1990-1991

Birkbeck College, University of London, Centre for Extra-Mural Studies are offering a wide range of courses in biology for the coming academic year. These range from short evening courses on identification, ecology, taxonomy, etc., to two year, part time Certificate and Diploma courses on Field Biology, Countryside Management etc.

For full details and copies of the relevant literature please contact:

JOSIE CHARLTON, Information Officer, Birkbeck College, University of London, Centre for Extra-Mural Studies, 26 Russell Square, LONDON WC1B 5DQ (tel. 071-636 8000 ext. 3854)

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REQUESTS

ENGLISH HERITAGE GOES GREEN

An NCC Officer has been seconded to English Heritage for two years to assist in developing a greater concern for nature conservation in the protection of ancient monuments and historic buildings. John Thompson joined NCC in 1960 as a Warden Naturalist in East Anglia and has until recently been NCC's Regional Officer for the West Midlands. John will be developing methods for evaluating the nature conservation importance of English Heritage sites, advising on management, organising staff training and developing greater links between the two organisations.

Any member who has records for properties in the care of English Heritage is invited to contact me at the address below.

JOHN THOMPSON Nature Conservancy Council, Attingham Park, SHREWSBURY, SY4 4TW (tel. 0743-77611).

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IS TURKEY OAK REGENERATING?

Pat Walker who is researching Oak Galls at Imperial College is interested to know if Turkey Oak is regenerating naturally? Although there are reports that **Quercus cerris** is 'now regarded by many in the South [of England] to be a weed', I have not personally seen self-sown seedlings in Sussex (although it is very widely planted). If any member has recorded seedlings of **Q. cerris**, or hybrids of **Q. cerris** with **Q. petraea** these records would be gratefully received by:

Miss P. Walker, Dept. of Biology, Silwood Park, Imperial College, ASCOT, Berks. SL5 7PY.

MARY BRIGGS, Hon. General Secretary

BRITISH CONTACTS WANTED FOR CZECHOSLOVAK BOTANISTS

Please, give me your advice and help. I write to you as an ordinary member of the Czechoslovak Botanical Society.

My country opens now to Europe and to the World. The professional botanists publish in Preslia and they can travel to Botanical Congresses. But amateur members want contact with fellow botanists from other countries as well. We have a branch of the Czechoslovak Botanical Society in Northern Bohemia. Every year we make several field meetings and we have our regional periodical. I am a teacher as are a majority of our members. Our Chairman is a professional botanist. I am interested in lichens and we have a professional bryologist too.

Please, if you would, give my letter to a group of amateur botanists of a similar activity in Great Britain.

Excuse me my imperfect English language.

BOHDAN WAGNER, Družstevní 31, 412 01 LITOMĚŘICE, Czechoslovakia

[I trust more than one member will reply to this request for a British correspondent from Bohdan Wagner. Ed.]

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BOOK NOTES

Reviews of the following books will be included in the February 1991 issue of Watsonia vol. **18**(3):

Flora of the East Riding of Yorkshire by Eva Crackles, edited by Roger Arnott. Hull University Press & Humberside County Council.

The Herbarium Handbook, edited by Leonard Forman & Diane Bridson. Royal Botanic Gardens, Kew.

Spartina anglica - a research review, edited by A.J. Gray & P.E.M. Benham. Institute of Terrestrial Ecology & H.M.S.O.

Plant Names of Medieval England and Popular Medicine in 13th Century England, both by Tony Hunt. Boydell & Brewer Ltd.

Atlas Florae Europaeae vol. 8, edited by Jaako Jalas & Juha Suominen. Committee for Mapping the Flora of Europe and Societas Biologica Fennica Vanamo.

Plants of Upper Teesdale, by Christopher Lowe, with contributions by Mary Lowe & Gayle Ward. Illustrations by Jane Fielding. Privately published, Boxford, Essex.

Flora of New Zealand, vol. 4. Naturalised Pteridophytes, Gymnosperms, Dicotyledons, by C.J. Webb, W.R. Sykes & P.J. Garnock-Jones. Department of Scientific and Industrial Research (New Zealand).

The following books have been received recently. Those that will not be reviewed in Watsonia are marked with an asterisk; unsigned notes are by J.E.

*Vascular epiphytes, by David H. Benzing. Cambridge University Press, 1990. Pp. xvii + 354. Price £40 h/b (ISBN 0-521-26630-0). [Reviews epiphytism in its systematic and ecological context, with chapters on photosynthesis, water and mineral relations, reproductive strategies and ecology; there is a separate chapter on Mistletoes. This is a rapidly burgeoning field of scientific investigation; the review argues that epiphytes have many unique combinations of novel characteristics which make them particularly apt for experimental study.]

*The greenhouse effect and terrestrial ecosystems of the U.K., edited by M.G.R. Cannell & M.D. Hooper. I.T.E. research publication no. 4. H.M.S.O., 1990. Price £4.95 p/b (ISBN 0-11-701488-5). [From the Preface: 'Most scientists accept that some warming will probably occur. Of course, it is uncertain how much warmer the earth will be, how regional climates will be affected, and how soon an effect will be observed, but these uncertainties are no reason to ignore the probability. By the time we are certain, it will be too late to stop considerable further warming, and we shall have to respond all the faster to the impacts.' Of particular interest to BSBI members will be Chapter 6, 'Effects on plants: natural vegetation' by G.A.F. Hendry & J.P.

Grime. They predict an extension of lowland species to higher altitudes; an expansion of 'Mediterranean' species beyond their present limits in southern Britain also seems likely, along with a further retreat of remnants of the native upland floras.]

Mediterranean Orchids by J.D. Lepper. Stockwell, 1990. Pp. 86, with many colour photographs. Price £4.99 p/b (ISBN 0-7223-2450-2).

*The End of Nature, by Bill McKibben. Penguin Books, 1990. Pp. xi + 212. Price £4.99 p/b (ISBN 0-14-012306-7). [Warns of the irrevocable changes in the earth's environment which result from industrialization and over-population.]

Lebensgeschichte der Gold- und Silberdisteln. Monographie der mediterran-mitteleuropäischen Compositen-Gattung Carlina, by H. Meusel & A. Kästner. [Life-history of Carline Thistles: a monograph of the Mediterranean to Central European genus **Carlina** (Compositae), publ. by Springer Verlag. The first part of a projected two-volume monograph of the genus **Carlina** contains details of vegetative structure, taxonomic character states, geographical distribution and floral biology. The second volume, not yet published, will present a taxonomic account of the 28 species. It is planned to review the two volumes together in Watsonia.]

*The Greatest Glass House: the Rainforests Recreated, by Sue Minter. H.M.S.O., 1990. Pp. xii + 216, with many coloured and b/w illustrations. Price £25 (ISBN 0-11-250035-8). [This is a most unusual book, being partly a history of the famous Palm House at Kew; partly an account of the collections of palms, cycads, screwpines, tropical climbers and economically important plants which are housed therein; and partly a fascinating narrative of the massive project to refurbish and rebuild the structure, which is a Grade 1 listed building and the largest glasshouse of its kind in Britain. The principal author, Sue Minter, is currently Supervisor of the Palm House and was a member of the team which oversaw its restoration. The other contributors - Chris Jones, Peter Morris and Peter Riddington - provided chapters on the restoration work and the design of the basement's marine displays. There are some 450 scientific names of plants in the Index.

In recent years the Royal Botanic Gardens at Kew have made great strides towards developing a list of highly marketable publications which blend high-quality illustrations, intelligently written text and a subtle appeal to the public to support the aims of the Gardens. Susan Minter's book consolidates this trend, and will appeal to garden historians and lovers of Victorian architecture as well as to botanists who are specially interested in palms, cycads or other tropical glasshouse plants.]

Atlas of the British Flora, edited by Frank Perring & Max Walters. Reprinted 3rd (1982) edition, in a smaller size, with a new index and bibliography to distribution maps published between 1962 and 1989, by Chris Preston. BSBI, 1990. Pp. xxiii + 443, p/b (ISBN 0-90115-819-4). (See advert page 2).

*The Bromeliad Lexicon, by Werner Rauh, edited by Peter Temple. Blandford, 1990. [A second edition of the English edition of 'Bromelien', by W. Rauh, first published in 1970-72 in German and in English in 1979. Contains detailed comparative descriptions as well as line drawings and black & white and colour photographs. An essential reference book for the Bromeliad enthusiast.]

*The British Museum Book of Flowers, by Anne Scott-James, Ray Desmond & Frances Wood. British Museum Publications, 1989. Price £9.95 h/b (ISBN 0-7141-1700-5). [This lavishly illustrated and beautifully written book is the latest word on floral decoration in the decorative arts. Almost all the photographs are of specimens in the collections of the British Museum. It would be an ideal present for someone with a love of flowers who is interested in the way they have inspired artists and craft workers down the ages.]

*Seed Dormancy in Grasses, by G.M. Simpson. C.U.P., 1990. Pp. ix + 297. Price £35 (ISBN 0-521-37288-7). [A review of germination physiology which concentrates on the phenomenon of dormancy in grasses.]

*The Liverworts of Britain and Ireland, by A.J.E. Smith. C.U.P., 1990. Pp. ix + 362. Price £45 h/b (ISBN 0-521-23834-X). [Never let it be said that we ignore important books on non-vascular Cryptogams! This handbook is a companion volume to the author's 'The Moss Flora of Britain and Ireland' (1979), and completes his coverage of the bryophytes. Generously illustrated with line-drawings by the author, this book with its keys and descriptions will be a boon to field naturalists as well as to curators of herbarium collections of liverworts.]

*In the Field of Naturalists, edited by Peter Wyse Jackson, Christopher Moriarty & John Akeroyd. Dublin Naturalists' Field Club, 1988. Pp. viii + 71. [These are the proceedings of a seminar at Glasnevin on 'The role of field clubs in modern times' which marked the 100th anniversary of the D.N.F.C. It includes papers by the editors and by David Allen, Sylvia Reynolds, James O'Connor and Declan Doogue together with an account of the events held in the Centenary year (1986) by Catriona Brady, Hon. Secretary of the Club.]

*Reflections and recollections. 100 years of the Dublin Naturalists' Field Club, edited by Gerard Sharkey. D.N.F.C., c. 1989. Pp. 92. [A brief history of the Club, founded in 1886, with lists of its Officers. An interesting 'social history' of this now busy and productive Club.]

[The above two books, priced £5 each, are available from Patrick Wyse Jackson, Dept. Geology, Trinity College, DUBLIN 2.]

*The Flora of the United Arab Emirates - an introduction, by R.A. Western [A.R. Western on t.p.], with a Foreword by Sheikh Nahyan bin Mubarak al Nahyan. Published by the U.A.E. University, Al 'Ain. 1989. Pp. (vii) + 188. Available gratis from the Vice-Chancellor's Office, P.O. Box 15551, Al 'Ain, U.A.E. [This is the first definitive account of the flora of one of the most topographically diverse countries in the Arabian peninsula. It contains brief descriptions, colour photographs and distribution maps, as well as a concise and very readable introduction covering features of the desert environment and vegetation and outlining the plant communities of the different ecogeographical zones within the Emirates. An Appendix lists the species which have been recorded from the U.A.E. and adjacent parts of Oman. This book will be of great value to visitors and residents alike.]

Distribution of vascular plants in Denmark, edited by Peter Vestergaard & Kjeld Hansen. Opera Botanica 96, Copenhagen, 1989. Pp. 163. Price £40. [Deals with the native and fully naturalised species including maps of the 563 species which are not found throughout the country based on records from 1931-1980. Includes survey of climate, geology and soil conditions and assessment of patterns of species of habitats: aquatic, fens and wet meadows, coast, grassland, heath, forest and scrub etc.] Franklyn Perring.

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

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OVERLAYS IN THE FLORA OF THE EAST RIDING OF YORKSHIRE

The original overlays in the Flora were found to be unsatisfactory so that Hull University Press had replacement overlays produced. BSBI members should have received the new overlays either in their copies or later by post. If for any reason anyone has not received replacement overlays, recognisable in red, they should write to Miss J.M. Smith, Hull University Press, University of Hull HU6 7RX

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

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REPORTS OF FIELD MEETINGS - 1989/1990

Reports of Field Meetings are edited by, and should be sent to, Dr B.S. Rushton, Biology Department, The University of Ulster, COLERAINE, Co. Londonderry, N. Ireland BT52 1SA.

The map on page 43 shows the approximate locations of the field meetings reported below (except Spain).

1989

ENGLAND

WEST CORNWALL (v.cc. 1 & 2). 27th-28th MAY (1989) (1)

This meeting was planned to help the leader look at the distribution of some Red Data Book species which are locally abundant in this area, and to enjoy botanising along the spectacular coastline between St Ives and Padstow. For once the weather was superlative, and 38 members and guests managed to attend. The friendly Hillside Hotel at Angarrack made an excellent base for a social introduction on Friday night, though some intrepid botanists then tramped off to tents on Phillack Towans.

Saturday was spent divided into small 'teams' chasing old and new records for species such as **Allium ampeloprasum** subsp. **babingtonii, Fumaria occidentalis, Geranium purpureum** and **Scrophularia scorodonia.** Fumitories of course commanded a great deal of attention, and **F. occidentalis, F. bastardii** and **F. purpurea** were successfully identified, as well as commoner species.

On Sunday the whole group gathered at Porthtowan to examine the famous **Hypochoeris maculata** site before dividing into two parties, one walking north from Porthtowan, the other going up to St Agnes Head and starting south. A fairly good shot was made at meeting in the middle to lunch together at Chapel Porth, where ices were much needed after energetic scrambles on the cliffs, mapping the very extensive populations of flowering **Genista pilosa** and a fine colony of **Asparagus officinalis** subsp. **prostratus.** In the afternoon some members scattered to go sightseeing, or to visit the Lizard while so close,

while those with stamina remaining had a lesson on **Euphrasia vigursii** from Len Margetts to round off this splendid weekend. My thanks go to all members for their most useful records, their hard work on very hot days, and for their good temper when I loaded them with endless maps and lists.

ROSEMARY FITZGERALD

SCOTLAND

ISLE OF COLL, MID EBUDES (v.c. 103) 3rd-10th JULY (2)

The number officially attending this meeting was eleven but we had other visitors including local NCC officers. Most days the party divided into small groups so that we would get maximum coverage. The weather being excellent meant that we were often able to do recording in the long summer evenings. Some of the more interesting plants were:-

1. New to v.c.103: **Carduus nutans, Alchemilla mollis, Juncus ambiguus, Agrostis vinealis** and **Silene latifolia** subsp. **alba.**
2. New to Coll: **Potamogeton rutilus, P. pectinatus, Sisymbrium orientale, Thlaspi arvense, Sagina maritima, Atriplex prostrata, Beta vulgaris** subsp. **maritima** and **Anthyllis vulneraria** subsp. **lapponica.**
3. New to one of the 10km squares: **Najas flexilis, Potamogeton perfoliatus, Lythrum portula, Equisetum sylvaticum, Carex extensa, Euphrasia heslop-harrisonii, Scutellaria galericulata, Deschampsia setacea, Lysimachia nemorum, Utricularia vulgaris** and **Epilobium parviflorum.**
4. Species recorded in Heslop-Harrison's Flora (and Atlas) and refound: **Deschampsia setacea, Lysimachia nemorum, Arenaria serpyllifolia, Lycopus europaeus, Dryopteris aemula, Drosera anglica, Fragaria vesca, Dactylorhiza purpurella, Blysmus rufus** and **Myriophyllum spicatum.**

Every loch and lochan on the island was visited - no mean feat - and new sites were found for **Eriocaulon aquaticum, Potamogeton coloratus, Najas flexilis, Ruppia maritima** and **Spiranthes romanzoffiana.**

We were fortunate to have with us Chris Preston who was looking particularly at Pondweeds and Nick Stewart who made a special study of Charophytes. Salt-marsh communities were very thoroughly investigated by Simon Leach. All this information will be published separately at a later date.

We spent one day on the island of Gunna and hoped to re-find **Mertensia maritima** (recorded by Heslop-Harrison) but did not find any. However this little grazed island shows just how many more flowers would grow on Coll if the grazing pressure was reduced.

The island of Coll is very varied with wonderful sandy beaches - some very extensive and others small with rocky headlands and small islands off-shore. There are huge sand-dune systems covered in places with flowers - the most noticeable in July being **Geranium sanguineum.** The north-east of the island is mainly moorland dotted with many lochs and lochans - some with **Eriocaulon** and many with masses of white water-lilies. The lochs on the western side of the island have a richer and more varied flora, being influenced by the wind-blown shell sand. Loch Ballyhaugh, the richest of these, had **Najas flexilis, Potamogeton rutilus, P. gramineus, P. perfoliatus** and Charophyte beds.

Much of the island has been over-grazed by sheep but there were signs of reduced grazing pressure to be seen in the variety of flowers on the dunes. The bird-life was also of interest. Red-throated Divers appeared to be breeding on two of the larger lochs and Corncrakes were said to be heard (late at night after the pub closed!).

A good time was had by all.

AGNES WALKER

WALES

LLYN GYNON AND LLYN GORAST, CARDS. (v.c. 46). 15th JULY (3)

18 members and friends met at Strata Florida and, after parking at Tyncwm, walked in hot sunshine up to Llyn Gynon, the largest natural lake in the vice-county, at 425m. **Luronium natans, Subularia aquatica** and **Lobelia dortmanna** were seen in flower, and **Elatine hexandra**

was found on a gravelly islet, new for this lake. **Isoetes echinospora** and **Littorella uniflora** were abundant. The meeting was enlivened for most of the party, but made a burden for the Secretary of the Committee for Wales and his stalwart co-porters, by an inflatable boat which was used to grapple from in the centre of the lake in the vain hope of refinding **Pilularia globulifera** collected here by Brian Seddon from a boat in 1964. Instead a mystery plant, somewhat like **Littorella uniflora,** was found in several places; it remained unidentified for some days until it was found to be a deep water form of **Luronium natans.**

Llyn Gorast, a smaller natural lake 1.5km to the south, was then visited. This was so overgrown that the boat could not be launched, **Carex rostrata** dominating half and **Equisetum fluviatile** a quarter of the area, with smaller colonies of **Phragmites australis, Nuphar lutea** and **Juncus bulbosus.** One member of the party remembered the lake from 30 years ago when he had been able to fish in open water from several places around the margin. **Nymphaea alba** and **Carex vesicaria,** recorded here pre-war, were not refound, but **Carex limosa** and **Utricularia minor** were found in the marginal swamp. On the return walk down the headwaters of the Afon Mwyro another site for **Carex limosa** was found, as well as a colony of **C. lasiocarpa,** only the third known in the vice-county.

A.O. CHATER

FERRYSIDE, DYFED (v.c. 44). 21st-23rd JULY (4)

This meeting was held in conjunction with the BSBI Wales AGM and Exhibition Meeting. Participants were welcomed at the Ferryside Education Centre on the Friday evening and after dinner a short stroll was made to view the coastal flora nearby (G.R. 22/367.107). Low cliffs adjacent to the estuary supported a remnant dune flora including **Sedum acre, Raphanus maritimus,** etc., together with species associated with disturbed ground e.g. **Hirschfeldia incana, Papaver dubium** and **Aethusa cynapium.** The small area of dune ridge and meadow had several dry-ground calcicoles including **Anacamptis pyramidalis** and **Centaurea scabiosa** and the large colony of **Orobanche hederae** was noted on the landward dune face. Discussion continued as the sun set over Llanstephan Castle across the estuary and as the light began to fade the small party made its way back to the centre.

Several more members swelled numbers at the Saturday morning rendezvous at Glyn-yr-Henllan (G.R. 22/592.157) where R.D.P. introduced I.K. Morgan who was to lead the day's field meeting. The flora growing on the intensely acid Millstone Grit and shales was contrasted with that of the adjacent calcareous Carboniferous Limestone from a viewpoint atop the Grit ridge. The party then descended to examine the rich bog flora which included **Rhynchospora alba** and **Osmunda regalis** as well as the more familiar **Narthecium ossifragum, Drosera rotundifolia, Calluna vulgaris** and **Erica tetralix** in a habitat dominated by tussocky **Molinia caerulea,** with frequent bog pools. In an adjacent damp rushy meadow numerous plants of **Carum verticillatum** were seen together with one of **Salix repens.**

After lunch the party moved a few kms to the opposite slopes of the Llwchwr valley above Llandybie to Maes-y-meillion Farm (G.R. 22/632.155) where unimproved species-rich grassland was representative of typical 'coalfield rhos-meadow habitat' for which Carmarthenshire is particularly noted. Despite the recent drought and the heat of the day (from which most members of the party were by now suffering), the dampness of these meadows had ensured that the flora remained in good condition. **Carum verticillatum** was, as expected, abundant, though variable in frequency, being a constituent of the habitat mosaic: the wetter rushy areas being divided to some extent by slightly raised, more heathy, drier ground dominated by **Molinia caerulea.** Diversity was enhanced by the adjacent unmanaged woodland and scrub and the old hedgerows, many now grown-up into lines of mature oaks.

By mid-afternoon the heat had beaten most members and the return was made to Ferryside for tea followed by the Annual General Meeting and illustrated talk on 'Progress in the Recording of the Carmarthenshire Flora', given by R.D.P. After dinner there was time to peruse the exhibits and several participants showed slides.

The following morning again dawned hot and sunny in readiness for the day's proceedings at Pembrey Forest and Tywyn Burrows. Mr Alan Enoch of the Forestry Commission had been kind enough to sacrifice his Sunday to conduct the party through the forest.

The first stop was to view the patch of **Pyrola minor** near the junction of the main ride from the Country Park end with the Concrete Road (G.R. 22/386.031). This colony appears to have decreased in extent somewhat, with the marked encroachment of **Salix repens** and could

benefit from some light brush cutting to increase the light reaching the site.

The second stop was near the R.A.F. range gate when the party walked along a side ride to view the large stand of **Calamagrostis epigejos** which appears to be doing very well and has now spread over 70m from its original ride-junction location (G.R. 22/371.047). **Senecio erucifolius** and **Juncus tenuis** were both much in evidence and a previously unrecorded stand of at least a square metre of **Pyrola rotundifolia** was seen, in full flower on the verge of the ride about 50m from the **Calamagrostis.**

A brief stop for lunch was made outside the R.A.F. gates when the birthday of one of the participants, Ann Conolly, was celebrated with the distribution of chocolate cake to all present! The R.A.F. fence was then negotiated and some of the extensive dune slacks examined (G.R. 22/37.05). Although the ground was extremely desiccated, **Dactylorhiza praetermissa, D. purpurella, Epipactis palustris** and **Gymnadenia conopsea** subsp. **densiflora** were all seen in flower. Both **Centaurium erythraea** and **C. pulchellum** were located and compared but **C. littorale** was not refound. From the site of the now demolished, inland control tower, the party walked along the 'fire break' towards the targets. This area of dune/saltmarsh interface was regularly mown but has been neglected in recent years, which if allowed to continue will, no doubt, be to the detriment of the short-sward flora. Apart from the orchids, the main interest is the occurrence of a few plants of **Carex punctata.** This species, here at its only Carmarthenshire station, was first discovered in 1982 by Roger Meade and R.D.P. and confirmed in 1985 by R.W. David and A.O. Chater. A comparison was made between **C. punctata** and **C. distans** which grows here in abundance. The pools bulldozed a few years ago at the western end of the fire break were dry but both **Isolepis cernua** and **I. setacea** were seen though **Chara** was not in evidence. The slack near the targets which held over 50 plants of **Gentianella amarella** and five of **G. uliginosa** last year was searched but not one plant found, presumably another consequence of the drought. A brisk walk back to the range gates was interrupted at intervals by the occasional sighting of **Anacamptis pyramidalis** plants in flower on the dry dunes by the track.

Returning to the forest the party motored to an open area near the old airfield (G.R. 22/390.027). Here Mr Enoch located two plants of **Geranium sanguineum,** one in abundant flower in the shade of a small **Populus x canadensis** tree and the other nearby in the open but devoid of flower. Continuing a short distance along the grassy ride, two plants of **Parentucellia viscosa** were seen, one in seed, the other still retaining a few flowers.

The party then moved to the end of the Butterfly ride (G.R. 22/393.015) and was shown another colony of **Pyrola minor,** apparently doing well at the edge of the plantation.

The motorcade continued to the end of the track at The Glade and a short walk was taken eastwards along the bridleway from the country park (G.R. 22/392.010). On the left, in an old, dried-out dune-slack hollow, under thinly growing **Pinus nigra** var. **maritima,** our guide pointed out a very large stand of **Pyrola minor.** This colony, growing in the carpet of pine needles, is probably the largest so-far discovered in the forest and is dominant over an area of at least 10m by 10m and also more thinly over an adjacent, larger area to the east. Several plants were still in flower, though the majority, in common with the other stands studied that day, were well in seed.

The final stop within the forest was to study the **Verbascum virgatum** plants growing on the edge of the main ride near the Caravan Club site (G.R. 22/410.009). Vigorous discussion ensued as to their identity: the floras did not give adequate descriptions and the close affinity to **V. nigrum** was argued by some members. Hybridity with **V. thapsus,** which grew nearby, was also mentioned.

The time was now nearing 5pm and the promised visit to Ffrwd Farm Mire was still outstanding (G.R. 22/419.022) Several participants from far away thought it prudent to leave at this point but the remainder travelled the four kms to the reserve. R.D.P. was sceptical as to the likelihood of finding **Lathyrus palustris** still in flower, bearing in mind the very dry season. However, the plant was very soon found and several good flower clusters seen and photographed. **Oenanthe fistulosa** was also abundantly in flower, but as the evening was fast approaching, further study was impossible and the party returned to their cars.

Mr Enoch was warmly thanked for his time and interest and was also asked to convey the Society's gratitude to the District Forestry Officer for allowing access to Pembrey Forest. Farewells were then exchanged and the meeting broke-up after a most rewarding and enjoyable day with just a few hardy recorders returning to Ferryside in anticipation of a hot day's recording on the following day!

R.D. PRYCE

1990

ENGLAND

ST MARGARET'S AT CLIFFE, DOVER, KENT (v.c. 15). 3rd JUNE (5)

Some 17 members met at the War Memorial and then proceeded eastwards along the top of the chalk cliffs. Here was found a typical chalk flora with species such as **Hippocrepis comosa, Onobrychis viciifolia, Briza media, Bromus erectus** and both **Avenula pubescens** and **A. pratensis.** The wild cabbage, **Brassica oleracea** kept itself very much to the cliffs whilst the small colonies of **Ophrys sphegodes,** although setting seed quite well, were in danger of being lost in any future cliff falls.

On the land side of the wide coastal track was a cornfield which apart from an abundance of both **Legousia hybrida** and **Anthemis cotula** also produced many other interesting plants such as **Papaver rhoeas, P. argemone, P. hybridum, Fumaria densiflora, F. officinalis, Kickxia spuria** and **Valerianella dentata.** Such was the diversity of wild flowers in the area that after some two hours the party was still within sight of the starting place.

Lunch was taken at Kingsdown beach where a whole range of different plants was found. Seven species of **Trifolium** including **T. striatum** and **T. scabrum,** three species of **Medicago** including **M. polymorpha** and **Vulpia ciliata** subsp. **ambigua** were among the numerous species found by searching on hands and knees, whilst at the other end of the scale a wonderful old oak, **Quercus robur,** only 3m tall but at least 16m wide was admired. Other highlights on this beach included **Sedum forsteranum** and **Allium roseum.** With the rain then starting to fall the party made its way back to the cars well satisfied with the days walk.

The glaucous grass that the leader was rather reluctant to name was **Festuca rubra** subsp. **pruinosa,** correctly named in the Kent Atlas!

E.G. PHILP

CHOLLERFORD, NORTHUMBERLAND (v.c.67). 9th JUNE (6)

Eleven members met at Haughton Castle in a cold haar and coffee was needed before venturing out to see **Ophioglossum vulgatum** in quantity on the lawn. At The Scroggs, **Malus sylvestris** was indeed the first species recorded at a lush roadside with a calcicole flora before proceeding to a closely sheep-grazed pasture with outcrops of both basalt and limestone where **Alchemilla gracilis** was studied in association with both **Koeleria macrantha** and **Pteridium aquilinum.** Adjacent communities were rich in annuals with much **Geranium columbinum** and a little **Scleranthus annuus.** At lunch by the North Tyne attention was divided between the avifauna and the Carboniferous coral fauna. Those with long wellies then enjoyed an island rich with **Trollius europaeus** and **Galium boreale** while the remainder found similar communities on the bank with much **Geranium sylvaticum** and the addition of **Blysmus compressus.** Varied habitats along the river yielded **Campanula latifolia, Clinopodium vulgare, Carex spicata, C. remota, Artemisia verlotiorum** and a spectacular swarm of bees to welcome the arrival of warm sunshine. The enthusiasm of a number of new members had contributed to a happy day, for which thanks are also due to my father and Major Benson.

M.E. BRAITHWAITE

IRELAND

WEST TYRONE (v.c. H36). 16th JUNE (7)

The purpose of this field meeting was to record in an almost un-worked area of County Tyrone.

A party of eight assembled at Killeter Bridge and, splitting into two groups, worked their way westwards into such picturesquely-named spots as Golandun, Altamullan, Mullyfamore and Sheskinawaddy.

This is mostly poor botanizing country, twixt lowland and mountain, given over to rough

grazing. Ungrazed land quickly goes to **Nardus stricta, Molinia caerulea** and **Calluna vulgaris.** It was not therefore expected to be an 'exciting' day but, nevertheless, the wild bleakness of the landscape was attractive. Among the very few interesting plants found were **Dactylorhiza purpurella, Carex limosa** and **Juncus tenuis.** We also noted with interest that on Sheskinawaddy Bog **Drosera anglica** was more abundant than **D. rotundifolia.**

The meeting was a joint one with the Belfast Naturalists' Field Club and we are grateful to them for doubling our numbers.

I. McNEILL

WALES

OGOF FFYNNON DDU NNR, BRECONSHIRE (v.c. 42). 7th JULY (8)

The 25 brave members on this field meeting were carefully counted out of the car park at Penwyllt and with some relief to the leader counted safely back later. Thick mist, horizontal drizzle and a site notorious for hidden pot holes and a complex topography of sink holes, limestone pavement and gritstone block scree caused the concern.

Undaunted as ever by such minor problems, glasses and hand lenses were wiped to examine **Galium sterneri, G. saxatile** and plants very intermediate in character. **Carex montana** was one of the commonest sedges around the edge of the limestone pavements, forming distinctive soft, yellow-green patches. **Genista pilosa** also occupied this niche in one of its few inland Welsh sites.

The grykes or crevices in the pavement housed **Convallaria majalis** and **Melica nutans** amongst more widespread woodland species. Ten years ago a part of the pavement was fenced against grazing stock by the NCC. Quadrats established at that time have been regularly monitored. The changes which had taken place in that period were noted. **Antennaria dioica** had been squeezed out in some places but had survived well in others. **Convallaria** had significantly extended its range. The experiment was generally concluded to be a success with regular grazing of these very fragmented pavements being botanically undesirable.

R.G. WOODS

SPAIN

CATALONIA, NORTH-EASTERN SPAIN. 14th - 26th MAY

The 17 participants who travelled by air and/or road using five vehicles are shown in the photograph on page 49.

The meeting was planned and led by John Topp. He, John Ounstead and Roger Hawkins carried out a pre-meeting reconnaissance from 2-10 May during which hotel bookings and previews of several of the planned day trips were made and this was most valuable to the leader and beneficial to all who took part in the subsequent meeting.

The first six nights were based in Figueras to provide five full days of the Mediterranean flora which was roughly at its peak, and covering an area from the coast to the foothills of the East Pyrenees. The team then moved to Ribes de Freser for three nights to cover the higher mountain flora to a little over 2,000m and finally to the Sierra del Cadi for the remaining days.

The weather was on the whole favourable with five hot sunny days in the Mediterranean climate and only one very wet day in the mountain climate although it was cold and sometimes wet high up in the mountains. It was difficult to avoid Nightingales, Golden Orioles, Hoopooes and Bee Eaters at lower levels and there was also a good range of butterflies.

A list of the species noted is under preparation and the number already exceeds 600. Much of the Mediterranean flora was seen including **Dianthus pyrenaicus** subsp. **catalaunica, Asarina procumbens** and, among some 40 orchids, **Epipactis microphylla,** while higher up **Tulipa sylvestris** subsp. **australis, Androsace carnea, A. vandelli, A. villosa, Crocus vernus** subsp. **albiflorus,** five species of **Primula** and four of **Gentiana, Ramonda myconi, Saxifraga longifolia, Orthilia secunda, Moneses uniflora, Narcissus pseudonarcissus** subsp. **moschatus, Orchis pallens, Ophrys catalaunica, Ranunculus parnassifolius, Vitaliana**

primuliflora, Pulsatilla alpina, P. alba, Onosma bubanii, Fritillaria lusitanica and several plants of **Pedicularis foliosa** with calyces so woolly as to resemble **P. hacquetii.** The complete list will be available at the Exhibition Meeting in November.

Altogether a most successful and enjoyable foreign field meeting which kept well within budget and demonstrated once again that the BSBI is perfectly capable of making such arrangements without outside commercial assistance.

From left to right: Tony Mundell, Margaret Lindop, Phyl Abbot, Ann Karley, Shirley Hornsey, Ian Lawrence, Marjorie Sergeant, Joan Foster, John Blackburn, Agnes Walker, Ron Payne, John Topp, Trevor Evans, Paul Bartlett, Sean Karley, Andrew Gagg and Olive Chamberlain. Photo Andrew N. Gagg © 1990.

J.M.W. TOPP

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BOOKS FOR SALE OR WANTED

BOOKS FOR SALE

Flora Europaea Volume 1 - (Lycopodiaceae to Platanaceae) - duplicate copy with dust cover - good condition - £35 including P.& P.

GEOFFREY WILMORE, 53 Frizinghall Road, BRADFORD BD9 4LA (tel. 0274-493682 (evenings)).

BOOKS WANTED

I am trying to complete a working collection of Collins New Naturalists and if anyone is willing to part with any of the following: 23, 39, 43, 46, 56, 59, 69, 70, 71, I would be only too pleased to hear from them.

FRED RUMSEY, 85 Woodhouse Lane East, TIMPERLEY, Cheshire WA15 6AN

FROM THE ARCHIVES

HAVE *YOU* SENT YOUR GIANT HOGWEED?

Mrs. G. Long with *H.mantegazzianum*, Horsham, West Sussex

Photograph: The Late R.M. Long.

THE GREAT HERACLEUM MANTEGAZZIANUM COMPETITION

What is the maximum height to which *H. mantegazzianum* grows (without manuring) ? Can you beat 4 metres ?

A small prize, which will grow into a large, handsome, but not very tall plant, is offered for the largest measurement - not the tallest story.

T.G. TUTIN, The University, Leicester LE1 7RH.

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The Editor, Gwynn Ellis can be contacted by phone at 0222-397951 ext. 218 (NMW) or 0222-496042 (home).

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