

# BSBI NEWS

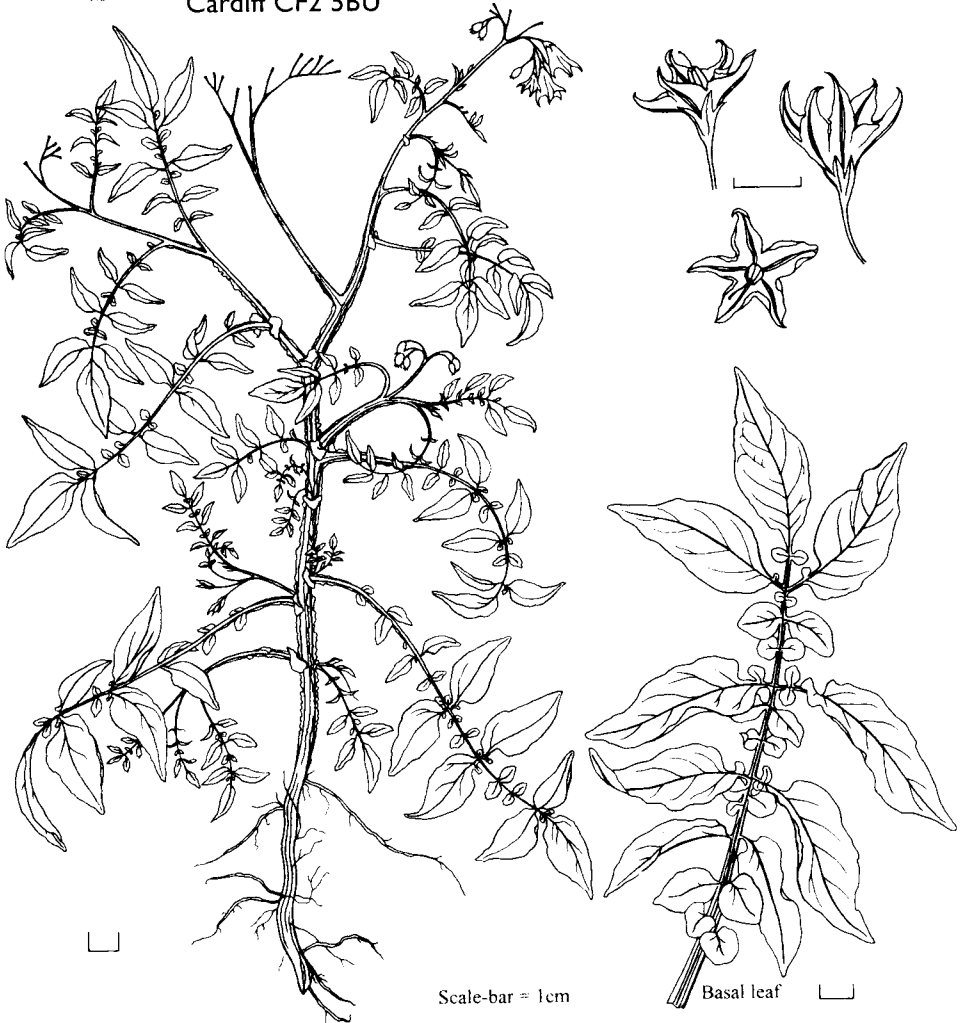
September 1996

Edited by R. Gwynn Ellis

No. 73

41 Marlborough Road, Roath

Cardiff CF2 5BU



Scale-bar = 1cm

Basal leaf

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## OFFICERS AND COUNCIL FROM MAY 1996

(Dates given are those of election for present service)

President:	Mr D.A. Pearman, 1995
President-elect	Mrs M. Briggs, 1996
Vice-Presidents:	Mr A.O. Chater, 1993
	Mr R.G. Ellis, 1995
	Mr C.D. Preston, 1995
	Mr R. Gornall, 1996
Honorary General Secretary:	Mr R.G. Ellis, 1996
Honorary Treasurer:	Mr M. Walpole, 1971

### COUNCIL

In order of seniority in accordance with Rule 11:

1993:	Mr B.A. Gale, Mr D.J. McCosh, Dr G. Wynne
1994:	Mrs M. Lindop, Prof. C.A. Stace, Mr R.M. Walls
1995:	Mr M.E. Braithwaite, Mr R.M. Burton, Mr D.E. Green
1996	Mrs P.P. Abbott, Dr F.J. Rumsey, Dr M.C. Sheahan

*Elected by Regions in accordance with Rule 12:*

1995: Ireland	Dr D.W. Nash
1993: Scotland	Dr P. Macpherson
1994: Wales	Mr P. Day

*Appointed by Council:*

Hon. Receiving Editor <i>Watsonia</i> :	Dr B S. Rushton, 1991
Hon. Editor <i>BSBI News</i> :	Mr R.G. Ellis, 1986

*ex officio:*

Chairman Meetings Committee:	Dr S.L. Jury, 1993
Hon. Secretary Publications Committee:	Mr C.R. Boon, 1993
Chairman Records Committee:	Dr G. Halliday, 1991
Chairman Conservation Committee:	Mr D.T. Streeter, 1994
Hon. Field Secretary:	Mrs M. Lindop, 1994
Hon. Minuting Secretary:	Mr P. Thomson, 1995

Contributions intended for *BSBI NEWS 74*  
should reach the Editor before  
**NOVEMBER 5th 1996**

**DIARY**

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

**1996**

October 31      Deadline for booking space at Annual Exhibition Meeting (see booking form)

**1997**

May 17 & 18      BSBI AGM, Dorchester and associated field meeting in Dorset (please note later date for 1997)

June 21-July 6      Azores Field Meeting (see page 55)

June / July      N E. Turkey Field Meeting (see page 55)

See also page 59 for dates of other 1996/1997 Conferences and Symposia

EDITOR

## EDITORIAL

### Thanks

The AGM last May was a memorable one for me. Not only did I have the privilege of being elected Hon. General Secretary but also the quite unexpected, and in my opinion undeserved, honour of being elected an Honorary member of the Society. I really was bowled over by the occasion. The thought of giving an impromptu speech about having nothing to offer but blood, etc. . . , flashed across the space between my ears some people call a mind, but, wisely, I just babbled something incoherent and sat down, just before my Welsh emotions got the better of me. However, I really do appreciate the tremendous honour bestowed on me, and will do my best to live up to the trust you have placed in me, thank you all very much. Mary tells me that she was Secretary of Meetings Committee for 6 years before her 24 years as Hon. Gen. Sec. and, as Secretaries sat on Council in those days, she has been on Council continuously for the last 30 years. This must be record and just shows what a glutton for punishment she is. It will be at least another 3 years before she retires as President and who knows what may be lined up for her then? I don't think we shall say farewell to Mary for many years yet, thank heavens!

### New Artist

I am very grateful to Annette Townsend for the superb drawing which graces our front cover this time. Annette was working in the Dept. of Botany, NMW, Cardiff on illustrations for the new edition of *Welsh Ferns* when the specimen of *Solanum verneti* arrived from Carol Hora. She readily agreed to draw the plant and would like members to know that she is a freelance wildlife artist, available to carry out any illustrative work. She can be contacted at 26 Eclipse Street, Adamsdown, Cardiff CF2 1JE.

### New Book

For those of you with an interest in the history of plant recording, especially of North Wales, a new book published this spring is a must. *The Botanists and Guides of Snowdonia* by Dewi Jones is a marvellous account of the botanists who visited Snowdonia and the locals who guided them in their searches for plants. This 170 page paperback, profusely illustrated with black and white photographs and line drawings and with 4 pages of colour, is available for £7.50 inclusive of p & p. from the publishers, Gwasg Carreg Gwalch, 12 Yard yr Orsaf, Llanrwst, Wales LL26 0EH. Tel : 01492 642031

### Contacting the Editor: by post, phone, fax or e-mail

Please note that I have now left the National Museum of Wales and all mail should be sent to my home address. I still visit NMW two to three times a month but there will be an inevitable delay in answering any letters sent there. Note also that my Fax number is now the same as my telephone number – 01222 496042. If I am not available please leave a brief message, your name and telephone number on the answering machine and I will get back to you as soon as possible. I can also be contacted by E-mail at [paellis@msn.com](mailto:paellis@msn.com)

### Inserts with this issue

**BSBI Notices:** *Annual Exhibition Meeting* notice and booking form; *The Scottish Annual Meeting* notice and booking form.

**Atlas 2000:** *Collecting and pressing plants* booklet by Arthur Chater.

**Special offers:** *Aquatic Plants of the British Isles* by Chris Preston & Jane Croft; *Flora of the Christchurch area* by Felicity Woodhead, *The Land Use, Conservation and Ecology of Broadland* by Martin George, *The Wild Flowers and Trees of the Langdon Hills* by Rodney L. Cole.

**Others:** *Botanical Books from Oundle* booklet from M.E. Perring; *Poisonous Plants* questionnaire from RBG Kew, advert for vacancy at the Natural History Museum; *British Wildlife* publicity leaflet; National Trust for Scotland, Tarmachan Appeal.

EDITOR

## A NOTE FROM THE PRESIDENT-ELECT

[Mary has very kindly prepared the following note to replace *Hon. General Secretary's Notes* for this issue. She may no longer be our HGS but she still has her finger very much on the pulse of the BSBI and is far better able to produce this sort of report than I. There is an awful lot to learn ...! Ed.]

### Our Congratulations to

Rev. Gordon G. Graham O.B.E., awarded this in the Birthday Honours in June for his services to botany. These culminated in the publication of his comprehensive *The Flora and Vegetation of County Durham*, and as joint author of the BSBI Handbook *Roses of Great Britain and Ireland*. Gordon is both a VC Recorder (66. Co. Durham) and a Referee (*Rosa*) for BSBI.

To Francis W. Simpson M.B.E., honoured for his services to nature conservation in Suffolk. Francis too has been VC Recorder for 25 & 26. E. & W. Suffolk, for many years, and is still joint Recorder for these vice-counties.

To Rev. Dr Tony Primavesi, awarded an honorary Doctor of Science degree by the De Montfort University. This was cited as, in recognition of his contribution to botany on a national level (as a *Rosa* Referee), and his work on the *Flora of Leicestershire*. Tony writes 'I honestly think that I owe it largely to the BSBI and that much of the honour should go to the Society'. He was joint author of *Roses of Great Britain and Ireland* (with Gordon Graham), and since his retirement from teaching Tony has worked through the specimens of *Rosa* checking identification and labelling in 9 Herbaria. He estimated that there are 20,000 specimens in the BM collection alone! So a considerable and worthwhile task.

Congratulations too to Adrian Darby, Chairman of Plantlife, awarded an O.B.E. in the Birthday Honours, to *The Cotteswold Naturalists' Field Club* which celebrates its 150th Anniversary this year, and to *The British Bryological Society* which celebrates its Centenary.

### In Memoriam

Since the Report of Council went to press for publication in the *BSBI 1996 Annual Report* we regret to report the loss of the following members: Mrs Violet V.C. Schwerdt, President of the Wild Flower Society for very many years and an Honorary member of BSBI, Edgar Milne-Redhead M.B.E., ISO, TD, also an Honorary member of BSBI, Past President and a member since 1929 who was at various times during 40 years on every BSBI Committee; John Trist (Mr P.J.O.) O.B.E., yet another Honorary member, a BSBI Grass Referee for 14 years and a member since 1956; Frank Brightman, a member since 1957, represented the British Lichen Society on the BSBI Conservation Committee for many years, and when in the B.M. Dept. of Education he produced the early information leaflets after the first legislation for wild plants; Dr Lawrence A. Storer MB, CHB, was an active field botanist, recording mainly in Derbyshire, and his plant records have been given to the BSBI by his son, John Fisher recorded and photographed plants in Sussex, and with a particular interest in rare plants he searched for these throughout the British Isles. Author of several books on wild and garden plants. As this goes to press we hear of the death of Miss D.S. Lambert M.B.E. – Doreen was VC Recorder for H36 Tyrone for 15 years. All will be sadly missed; there will be Obituaries of many of these in *Watsonia*.

### Giant Aroid

You could hear the excitement in Peter Boyce's voice when interviewed at Kew on the day that the giant aroid – *Amorphophallus titanum* – flowered. Describing the thousands of visitors queuing to see the flower, Peter agreed that it was a Red-letter-Day for Kew – and for botany. The last times that it flowered at Kew were in 1889, 1926 and 1963. Peter, who is the author of *The Genus Arum* (Peter Boyce 1993, Royal Botanic Gardens, Kew), assisted David Simpson with the arrangements for the BSBI AGM held at Kew on May 11th 1996. The New Naturalist Monograph *Lords and Ladies* (Cecil T. Prime 1960, Collins), includes a photo of *A. titanum* flowering in the Leyden Botanic Garden in 1954, it was recorded then in *The Times*, as this year's flower was also.

### Vascula appeal

From time to time we have requests from members for a vasculum, still useful at times in the field when collecting critical specimens – or occasionally for an exhibition. Recently one was sent to the Department of Botany, University of Otago, Dunedin, New Zealand. Members have donated to us assorted vascula which they no longer use but currently we have none in reserve, so if you have a spare vasculum and would like to pass it on, please let us know.

### Past Hon. Gen. Sec.'s Tail – P.S.

As the last *BSBI News* went to press before the AGM when the new Hon. General Secretary was officially elected, I did not then have the opportunity to warmly welcome Gwynn as my successor, to wish him very well and to hope that he will enjoy the post as much as I have done through the years. I am certain that the BSBI's secretarial affairs are now in very good hands – and as we all say 'For Gwynn's a jolly good fellow . . .'

MARY BRIGGS, President-elect.

## NEW HON. GEN. SEC. – MINI PROFILE

He's short  
He's fat  
He's Welsh  
Welcome  
Tweedle-dum



Tweedle-dum in a characteristic pose  
Yes – there are three glasses of Guinness in front of him – and a few more inside!  
Photo © M. Briggs 1995 (at last years AGM Dinner in Dublin)



# ATLAS 2000

## REPORT

### It's Full Steam Ahead!

Fieldwork and recording for the Atlas 2000 is now well under way following the successful launch of the scheme in April. The project has obviously grasped peoples imagination, and the level of enthusiasm which has been shown by members is really encouraging. After a late start to the season, everything seemed to burst into life in early June and recording cards have been rapidly filling up since then. The last few months have therefore been incredibly hectic, what with travelling up and down the country organising field meetings and workshops, **and** having to identify many species I've never seen before!

This and future reports give accounts of field meetings and recording workshops, discuss points made by members, pass on tips and advice, and generally keep you up to date with progress. So first, here's an important announcement . . .

### Atlas Organiser Change of Address

Please note that, by the time you read this, I will have moved house. My new address is:

Rhyd y Fuwch  
Bethel  
Nr Caernarfon  
Gwynedd  
LL55 3PS

and my new telephone number is 01248-670789

Moving house obviously causes a bit of disruption, so please bear with me if there are any problems! By the way, to save you asking, the name of the house 'Rhyd y Fuwch', means 'Ford of the Cattle' and is pronounced 'Rheed er viwch' (with the 'ch' as in 'loch').

### Some Thoughts on Recording

Having actually completed a fair amount of recording specifically for the Atlas, it's become apparent just how easy it is to record at the tetrad (2 km square) or site level while satisfying the requirement for hectad (10 km square) records. When arriving at an under-recorded hectad, select the potentially most species-rich area and begin recording. When you move to a new site or tetrad, start a new card and either cross off all species again, or, if time is limited, add only the new species you see. By covering the most diverse selection of habitats you can clock up very reasonable species totals for the hectad while retaining detailed site or tetrad information. Obviously, tetrad or site recording is not feasible in all areas and situations, but is to be encouraged wherever possible.

It's surprising how many interesting and less common species crop up when recording in this way. These include not only rare and scarce species (such as *Viola lactea* (Pale Dog-violet) in the Isle of White and *Orobancha alba* (Thyme Broomrape) in Mull), but also Vice-county firsts (such as *Juncus foliosus* (Leafy Rush) in Mull and *Stellaria pallida* (Lesser Chickweed) in Peeblesshire). I would, here, like to reiterate our desire for complete six figure grid references whenever such species are found, as these can easily and quickly be entered onto the front of the recording card.

The widespread distribution of alien species is also striking. Notable from earlier in the spring was the frequency of *Hyacinthoides hispanica* (Spanish Bluebell) and its hybrid with our native species (*H. non-scripta* - Bluebell). Care should be taken to identify such taxa, as they not covered in the original Atlas and we currently have no good national distribution maps. Chris Preston's 'Notes on Identification Works and Some Difficult and Under Recorded Taxa' (distributed with the last *BSBI News*) will help to alert you to these and other taxa requiring attention.

### The richest hectad?

Reports have come in from the remoter parts of Dorset of a hectad (10 km square) with well over 1000 species recorded from it. Details have yet to be confirmed, but a full statement will be made in the next **News**. Can anyone better this? (Or, alternatively, can the poorest square in the country be found?)

### Atlas 2000 Publicity

The Atlas 2000 publicity machine is gearing up with two recent articles – one in *British Wildlife*, and one in the Royal Horticultural Society Magazine (volume 121, part 6). This latter was written by Franklyn Perring and addressed the presence of aliens in the British and Irish floras, leading on to a discussion of the new Atlas and how this is mapping their distribution for the first time.

The *British Wildlife* article (volume 7, page 305) was another well presented piece by David Pearman and Chris Preston, outlining the project, why it's being done, and calling for volunteers. In this respect, the article was particularly successful – enquiries and offers of help really have been flooding in!

A similar article is being planned for *New Scientist* in the autumn. Has anyone else been involved in publicity?

### E-mail Users

Many thanks to those of you who have got touch by e-mail. It's been suggested that a BSBI register of these numbers could be useful – please get in touch if you agree and don't object to your number being published in a future issue of **News**.

### Field Meetings

At the time of writing, five of the Atlas 2000 field meetings advertised on the green flier have been held. All of these have been successful, and, in order to give you a flavour of recording meetings, a brief report on each follows.

#### **Framlingham, Suffolk (VC 25). 22-23rd May.**

A cool but bright morning greeted the fourteen members who assembled in Framlingham to look at the largely arable countryside in the area. Our hopes to find rare cornfield weeds were somewhat dampened by the lateness of the season, but this did not reduce our enthusiasm and we split up into pairs to cover the hectads (10 km squares) deserving attention. Two days of good recording were completed, with the huge village greens characteristic of this area providing the richest habitats. Finds included new sites for *Orchis morio* (Green-winged Orchid) and *Primula* × *polyantha* (*P. veris* × *P. vulgaris*). Unfortunately, recent reports of *Fritillaria meleagris* (Fritillary) in a lightly grazed meadow could not be confirmed. The potential richness of arable fields was indicated by the abundance of *Lamium hybridum* (Cut-leaved Deadnettle), *Anchusa arvensis* (Bugloss) and *Sherardia arvensis* (Field Madder) in many places. Wet ditches also proved productive, with several records for *Ranunculus sceleratus* (Celery-leaved Buttercup) and *Thalictrum flavum* (Common Meadow-rue), while wet woodland revealed *Stellaria neglecta* (Greater Stitchwort), *Adoxa moschatellina* (Moschatel) and *Ribes rubrum* (Red Currant). At the end of the second day, Chippenhall Green SSSI was the closing venue where members enjoyed carpets of *Orchis morio* (Green-winged Orchid), and *Trifolium ochroleucon* (Sulphur Clover) was found in its vegetative state.

#### **Newport, Isle of Wight (VC 10). 25th - 27th May.**

The promise of torrential rain was probably responsible for the poor turn out on this Bank Holiday meeting. However, the four 'mainland' members who did attend were joined by several members of the local Wildlife Trust, and a very keen party therefore tackled the island with vigour. A coastal path at Bouldner Cliff on the NW side of the island proved very rich, with much regenerating woodland over unstable clays and sands. One particularly nice patch included *Carex pulicaris* (Flea Sedge), *Viola lactea* (Pale Dog-violet) and *Cuscuta epithimum* (Dodder). Another surprise was a fine patch of *Convallaria majalis* (Lily-of-the-valley) in the wood – presumably introduced. The next day was,



meteorologically speaking, diabolical. The rain was so bad it got under the bonnet of the leaders' car and caused complete electrical failure, traumatising the passengers! After a dubious 'Heath Robinson' repair, we headed for a patch of wet woodland aptly named 'The Wilderness' (which at least seemed a better option than the alternative – 'Bleak Moor')! Extensive searching within the wood led to the identification of *Dryopteris carthusiana* (Narrow Buckler-fern) amongst widespread *D. dilatata* (Broad Buckler-fern), but the best find, however, was *D. × deweveri*, the hybrid between the two. The next day, the weather was back to glorious sunshine, so we tackled a small area around the Needles – conveniently divided off into its own hectad. This proved a remarkable area, complete with its own cliff top 'saltmarsh'. Seeing *Atriplex portulacoides* (Sea-purslane), and *Frankenia laevis* (Sea-heath) growing at 220ft on top of a chalk cliff is unforgettable. The surrounding cliff slopes also proved remarkably rich – both *Ranunculus parviflorus* (Small-flowered Buttercup) and *Poa bulbosa* (Bulbous Meadow-grass) were found and so we rewarded ourselves at the end of the meeting with National Trust tea and cakes!

### **Salen, Isle of Mull (VC 103). 22nd - 29th June.**

A total of seven intrepid members met in Salen for a week of superb botany in this incredibly beautiful island. We were extremely lucky with the weather, with only two wet days! Again, the group split into two to cover as much ground as possible. The first day was spent near Salen, with one group encountering large numbers of *Dactylorhiza incarnata* subsp. *incarnata* (Early Marsh-orchid) and *D. incarnata* subsp. *pulchella* in wet flushes. The others tackled Ben Talaida, finding typical upland species such as *Alchemilla alpina* (Alpine Lady's-mantle), *Thalictrum alpinum* (Alpine Meadow-rue) and *Luzula spicata* (Spiked Wood-rush). Day two concentrated on coastal cliffs at Carsaig that were remarkable for their diversity, probably a product of alternating base-rich and acid substrates. *Osmunda regalis* (Royal Fern) was seen on the cliff tops, with *Equisetum × litorale*, *Drosera intermedia* (Oblong-leaved Sundew), *Pinguicula lusitanica* (Pale Butterwort) and *Cystopteris fragilis* (Brittle Bladder-fern) being seen nearer sea level. On day three we headed for freshwater lochs and grassland near Lochbuie. *Ophioglossum vulgatum* (Adder's-tongue) was found in the latter, with surprising finds of *Geranium molle* (Dove's-foot Cranes-bill) and *Sherardia arvensis* (Field Madder) on the mortar-rich ramparts of Moy Castle. The lakes proved very productive, turning up *Carex vesicaria* (Bladder Sedge), *Drosera rotundifolia* (Round-leaved Sundew), *D. intermedia* (Oblong-leaved Sundew) and *D. longifolia* (Long-leaved Sundew) on their margins, while *Isoetes lacustris* (Common Quillwort), *Subularia aquatica* (Awlwort) and *Lobelia dormanna* (Water Lobelia) were found in the shallows. The fourth day was spent on the Isle of Ulva, which is said to be beautiful. The persistent rain, however, prevented us forming this opinion as we struggled over heathland and small bays, the latter often sheltering nice patches of *Blysmus rufus* (Saltmarsh Flat-sedge). Shelter from the weather came from attractive stands of *Corylus avellana* (Hazel), in which *Hymenophyllum wilsonii* (Wilson's Filmy-fern) was frequent on rocks. Grey Seals were also seen, boosting our morale considerably! On the next day, we tackled the steep rocky cliffs of the Ardmeanach Peninsular. The range of altitude, aspect and base-richness lead to stunningly diverse vegetation, with over 230 species recorded from one tetrad! Notable finds included *Vicia orobus* (Wood Bitter-vetch), *Rubus saxatilis* (Stone Bramble), *Sedum villosum* (Hairy Stonecrop) and *Orobanche alba* (Thyme Broomrape). *Koenigia islandica* (Iceland-purslane) was known to occur, and was eventually located after some judicious searching! A great day, despite the huge population of hungry Deer-ticks. The final full day was spent searching a coastal stretch of the Ross of Mull, again notable for its richness. Wet flushes revealed *Hypericum elodes* (Marsh St John's-wort) in quantity, along with *Osmunda regalis* (Royal Fern) and *Dryopteris aemula* (Hay-scented Buckler-fern) on the cliffs. Base rich patches over calcareous sand supported *Geranium pratense* (Meadow Crane's-bill), *Ophioglossum vulgatum* (Adder's-tongue) and occasional *Dactylorhiza incarnata* subsp. *coccinea* (the red form of Early Marsh-orchid). To end the trip a visit was made to Calgary sand dunes, but little was found because of the unrelenting downpour! However, *Juncus foliosus* (Leafy Rush) was found on the paths and *Geranium sanguineum* (Bloody Crane's-bill) brightened up surrounding cliffs. All in all, the Mull meeting was very successful, not only providing valuable updates

of existing records but turning up a few new ones as well. Much more will have to be done, but a great start has been made

### **Northallerton, North Yorks (VC 62). 29th - 30th June.**

Two days were spent examining some rather impoverished agricultural land around Northallerton. Ainderby Mires was visited on the first day, which proved to be intensively cultivated. A local railway, however, turned up *Vulpia bromoides* (Squirrel-tail Fescue) and *Chaenorhimum minus* (Small Toad-flax). More agricultural land was covered on the next day, notching up some useful records. Towards the River Tees, *Hesperis matronalis* (Dame's-violet) became frequent, with occasional clumps of *Rorippa sylvestris* (Creeping Yellow-cress). Both these, however, had to share their niches with a fair number of introduced species. These included *Mimulus guttatus* (Monkeyflower), *Impatiens glandulifera* (Indian Balsam) and depressingly large quantities of *Heracleum mantegazzianum* (Giant Hogweed).

### **Okehampton, North Devon (VC 4). 7th - 8th July.**

Five members assembled in the morning to comb the hectads (10 km squares) requiring attention. One group had a particularly fine start, with over 100 species recorded in a single lay-by! Again, the combination of base-rich and base-poor substrates, arable fields, woodlands, rivers and upland lead to some incredibly high species counts, with over 330 species recorded in one hectad (SX69) on the second day. *Aconitum napellus* (Monk's-hood) was found on the bank of a stream near North Lew, *Asplenium obovatum* subsp. *lanceolatum* (Lanceolate Spleenwort) on shaded walls in Belstone and *Veronica scutellata* var. *villosa* (Marsh Speedwell) and *Pinguicula lusitanica* (Pale Butterwort) in damp flushes around Belstone Cleave. The number of introduced species was surprising, including *Mimulus* × *robertsii* (Hybrid Monkeyflower), *Persicaria campanulata* (Lesser Knotweed), *Ranunculus lingua* (Greater Spearwort) and *Cephalaria gigantea* (Giant Scabious). A final surprise was *Vulpia myuros* (Rat's Tail Fescue) growing in the main Okehampton car park where we met!

### **Future Meetings**

Unfortunately, the turn out at meetings has proved somewhat variable. This is a great pity because, as you can see from the above accounts, they are very rewarding botanically. If you're put off by the thought of recording, please come along to a local meeting and have a go – there's no greater thrill than re-finding old records, finding new species for the Vice-county, or in finding new sites for known rare or scarce species. All of these are likely to occur in under-recorded areas. Also, the evening sessions, where the days difficult specimens are identified and interesting finds discussed, are both very instructive and enjoyable. Remember, too, that the meetings are open to all BSBI members and attract both experts and beginners (there's no better way to learn). Everyone is welcome, regardless of ability!

Many thanks to all those that have attended or help organise these meetings so far. Special thanks are also due to the staff of the Scottish Natural Heritage office in Barcaldine, near Oban, for the lift in their Land Rover to the Ardmeanach Peninsular on Mull.

### **Workshops**

The first Atlas 2000 Workshop was held at the Edinburgh Botanic Gardens on 15th June. The meeting was very well attended, despite the Euro 96 match between Scotland and England on the same day. Participants were treated to excellent talks from Clive Jermy (*Carex*), Cameron Crook (Conifers), Allan Silverside (*Mimulus*, *Spiraea* and *Lupinus*), Anthony Piggot (Ferns) and Richard Bateman (*Dactylorhiza*). Demonstrations were also given of *Oxalis* by Mark Watson and of the *Carex* Computer Key by Richard Pankhurst. Two 'hands-on sessions' allowed participants to exercise their newly found skills, which included thumping and sniffing conifers, and describing *Dactylorhiza* flower colours using the RHS Colour Key (which we were all keen to purchase at a cool £85). A tour of the garden by Richard Bateman to see living *Dactylorhiza* allowed us to get out into the sunshine and rounded of an extremely enjoyable day. Thanks to all those who attended and to the speakers. Particular thanks must also go to Mark Watson for his superb efforts in organising the venue.

The second Workshop was due to take place at the University of Reading on Saturday, September 7th. The speakers included: Clive Jermy (*Carex*), Tom Cope (*Agrostis*, *Poa* and *Bromus*), Jeannette Fryer (*Cotoneaster*), Clive Stace (*Juncus*), Cameron Crook (Conifers) and John Bowra (*Oenothera*). A report will appear in the next *News*.

### Next BSBI News

The next issue of *News* will include reports of the final field meetings I'll be leading this year and of the forthcoming Atlas 2000 Workshop. I also hope to include an article aimed as 'A Beginners Guide To Recording', giving full details of what's involved, how to decide where to go and how to actually record species. If you've never been recording before and aren't really sure what's involved, this will be essential reading!

I am working on a report on the state of recording in Britain and Ireland which should be ready in time. This will illustrate which areas are in most need of attention and therefore where we should be concentrating our efforts. As the project grows, I hope to provide you with more and more feedback so you can see how things are developing. In this way, our efforts can be co-ordinated to maximum effect.

Remember, if you have any thoughts, comments or suggestions, please let me know. Until next time, happy recording through the rest of the season!

TREVOR DINES, Rhyd y Fuwch, Bethel, Nr Caernarfon, Gwynedd LL55 3PS. Tel: 01248 670789.  
E-Mail: 101667.2317@compuserve.com

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## CO-ORDINATOR'S CORNER

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### Introduction

You may remember in my introduction in *BSBI News* 71, a long list of promises and intentions. And you are probably wondering what's been happening and have I managed to meet these goals (if any?). As it happens, bar a few hiccups here and there, I am more or less on schedule. In fact, not only that, I have embarked on one or two tasks which were not initially intended.

The main thrusts were (and still are) to improve the flow of data between BSBI and BRC and between BSBI and the Country Agencies and other organisations involved with botany. This will largely be achieved by making more use of computers to transfer information and by regular liaison with representatives of the Country Agencies and other bodies such as BRC the Wildlife Trusts, Local Record Centres and NGOs such as Plantlife.

### Computerisation

So far, on the computer front, there are six newly computerised vice county recorders. This resulted from a partially successful grant application to the Country Agencies. Originally, grant aid was sought for twelve computers to be distributed around England, Scotland and Wales (from the respective agencies CCW, EN and SNH). As it turned out, only CCW was able to contribute in the end which resulted in six computers being distributed to Welsh recorders (some only after a bit of coaxing!). Consequently, Wales is now almost totally computerised! As for the other countries, English recorders will receive another nine or ten computers since English Nature has now come up with the readies. Northern Irish recorders have good support from the DOE(NI) and most (if not all) botanical records are computerised through CEDAR, administered from the Museum of Ulster. But, to my knowledge there is no immediate source of funds for recorders in Scotland or the Republic of Ireland. This is where most effort will be concentrated for the next few months.

Nevertheless, throughout the British Isles, 47% of vice county recorders are now computerised with another 14% soon to be, or wanting to be computerised, and 13% wanting their records computerised by a third party. The remainder either don't want their records computerised for whatever reason, or didn't bother to return their questionnaires (no names, no pack drill - they know who they are!). With regard to those who want their records computerised by a third party, I have had a number of kind offers to help from BSBI members who are proficient with computers. However, one or two more would be useful, especially in Ireland or Scotland. If you can help, please let me know. Those of you who have already offered, I will be contacting soon and hopefully putting you in touch with a VC Recorder (or two!) who need your help, if I haven't already done so.

A list of BSBI Approved Software packages which are suitable for botanical recording has now been produced, details of which can be found elsewhere in this issue (see pages 52-54).

### **Networking**

The other main part of my role – to liaise with the Country Agencies and NGOs – has been a roaring success so far (well, at least I think so!). A recent claim in *BSBI News* that there were no botanists in English Nature can now be put to rest. There are quite a few! In fact a Botanical Service full (see page 25). I have had and will continue to have, productive meetings with two members of the Service in particular – both BSBI members and experienced botanists – Ian Taylor and Simon Leach. Wales has Ray Woods and Andy Jones and Scotland has Chris Sydes, all three full time botanists. Again, I have had several meetings (although perhaps not as many as I should) and this will hopefully help towards maintaining fairly close links between our organisations. Ireland is a bit more difficult (the Irish Sea can seem like the Atlantic!) but this will soon be remedied. There have been brief, informal meetings but it is my intention to liaise more closely with the respective Agencies before the end of the year.

As Co-ordinator I have been enlisted onto the Plantlife Link forum which caters for a wide number of conservation organisations who are involved with plants (in the broadest sense – i.e. including lichens and bryophytes) and has representatives from the Country Agencies, JNCC, WWF, NT, RSPB and a number of others. There has also been involvement in the Local Record Centre Millennium Bid and the National Biodiversity Network where the BSBI perspective has been put forward and exploratory discussions are underway regarding the Kew Millennium Seed Bank with a view to possible involvement of BSBI members in the collection of seeds (pending further approval by Council/Executive Committee of course). Involvement with the Red Data book project continues and of course, the Atlas Organiser and myself are in regular contact to ensure there is no duplication of effort and that both our quests are in harmony towards the common goal.

### **Some other things**

An even more recent development, again a lesser part of my role, is that I shall be acting as the Public Relations officer (for want of a better term) for BSBI. To that end, if members have any news items which they feel are worthy of more publicity, please could they forward them to me, and in conjunction with members of Executive Committee – consideration will be given to their release to the Media. The aim of course is to promote the BSBI, especially amongst professional botanists and statutory organisations. There is also talk of a World Wide Web page being posted on the Internet (the Botanical Society of Scotland and Linnean Society already have one!) . . . but that's another story.

Finally, partly relating to the last paragraph, I would like to hear from anyone who would like to assist with publicity work and anyone who has experience of producing web pages. I would also like to hear from more computer enthusiasts, any left-handed botanists, and, well, just about anyone really.

CAMERON S. CROOK, BSBI Co-ordinator, 8 Woodstock Close, Lostock Hall, Preston, Lancs PR5 5YY. Telephone and fax: (01772) 316717. e-mail: 101353.1757@compuserve.com

## RECORDERS AND RECORDING

### AMENDMENT No. 2 to *BSBI YEAR BOOK 1996*

#### VC Recorders

Changes since April 1996:

- |     |           |   |
|-----|-----------|---|
| 10  | Wight     | Dr C.R. Pope, 14 High Park Road, Ryde, Isle of Wight PO33 1BP   |
| 61  | S.E.Yorks | (as joint recorder with Dr F.E. Crackles)<br>Mr P.J. Cook, 15 Park Avenue, Withersea, Hull, East Yorks HU19 2JX |
| H36 | Tyrone    | We regret to announce the death of Miss D. Lambert  |

We welcome these two new recorders, and wish to record our grateful thanks to Mr B. Shepard, VC Recorder for Wight for 24 years.

DAVID PEARMAN, Records Committee

#### Panel of Referees

We were very sorry to hear of the death of John Trist, who was our referee for *Bromus* from 1979 to 1992. There will of course be a full obituary in *Watsonia*, but we should like to emphasise what a significant contribution he made as referee during that period, when he received a very large number of enquiries, and helped many members with their *Bromus* problems.

We welcome Allen J. Coombes as our new *Quercus* referee. Mr Coombes is extremely expert on oaks, which are his main taxonomic interest at present. He works at the Sir Harold Hillier Gardens and Arboretum which holds the National Collection of oaks, and furthermore is the European representative and Vice-President of the International Oak Society. His address is: The Sir Harold Hillier Gardens & Arboretum, Jermyns Lane, Ampfield, nr Romsey, Hants SO51 0QA. We are also pleased to welcome Dr Crinan Alexander of the Royal Botanic Garden Edinburgh as referee for *Senecio*, which has been without a referee since Charles Jeffrey went to Russia. Dr Alexander can be contacted at Royal Botanic Garden, 20A Inverleith Row, Edinburgh EH3 5LR.

Enclosed with this issue of *News* there is a booklet by Arthur Chater giving revised instructions for the preparation of plant material for identification and storage. We do strongly recommend everyone planning to send specimens to referees to read this carefully and keep it by them for future reference.

If any referees have changed address – or are going to in the next few months – please can they let me know so that we can be sure of having the correct addresses in the next *Yearbook*.

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

### COUNTY FLORAS and CHECKLISTS

Records Committee would be grateful if any member preparing such a publication would contact the Secretary, Mr David McCosh. Not only would the Committee like to know what work is in progress, but it feels it may be able to offer advice if it is needed.

DAVID PEARMAN, Records Committee

### NEW METHODS OF ASSESSING THREAT AND RARITY – A RESPONSE TO DAVID PEARMAN'S PRESIDENTIAL ADDRESS

Because I was unable to attend the AGM in May, I was very pleased when David Pearman sent me the text of his presidential address [to be published in the Feb. 1997 issue of *Watsonia*]. This raises issues about the evaluation of rarity, and I feel it may be useful to put David's ideas in context with those which have been evolving recently within the Joint Nature Conservation Committee, in consultation with the BSBI. Having just retired from the JNCC, I am able to write not as a representative of a statutory conservation agency but purely as a member of the BSBI.

At the end of November 1994, the IUCN (World Conservation Union) officially adopted radically revised Red List criteria (IUCN Species Survival Commission, 1994). This posed a problem for the JNCC, which was in the process of producing the first Red Data Books for lichens and bryophytes and the third edition of the vascular plants Red Data Book, to which many members of the BSBI had already contributed. A choice had to be made between basing the forthcoming Red Data Books on the original IUCN categories and the traditional ceiling of 15 hectad ( $10 \times 10$  km square) records in Britain, or becoming the first country in the world to use the new criteria for a national Red List.

The old IUCN Red List categories of Extinct, Endangered, Vulnerable and Rare are replaced in the new system by the categories Extinct, Extinct in the Wild, Critically Endangered, Endangered and Vulnerable. All other evaluated taxa are classified either as Lower Risk or Data Deficient. The new criteria assess the risk of extinction using largely quantitative methods and the system is less subjective and more rigorous than the original one. The scheme is based on specified threshold values of decline and/or small population size as well as on localised distribution and indicators such as habitat deterioration, and the IUCN requires the qualifying criteria to be stated for each assessment.

Guidelines for the use of the new criteria at a national rather than a global level have not yet been produced by the IUCN and there was no guarantee that the system could be applied to the data currently available for British plants and animals. So a programme of testing was carried out on lichens, bryophytes, fungi, vascular plants and some invertebrate groups, to find out whether the new criteria were suitable for use within Britain. Somewhat to our surprise, they seemed to work well, providing the data were reasonably adequate. The results, by and large, tended to back up 'gut reactions' that some of the species on previous Red Lists are not under significant threat. For vascular plants, about 30% of the species in the second edition of the Red Data Book do not qualify for the Red List under the new system, the rejected species being largely from the old Rare category. The revised system is complicated and takes effort to understand and apply. Nevertheless, I feel that it is an advance on the old system because it is more objective and can be applied to a wide range of taxonomic groups in a uniform way, with the results open to scrutiny. This means that Red Lists are likely to be taken even more seriously by the scientific community.

In September 1995 the Joint Committee adopted the revised IUCN system as the new standard for British Red Lists. It was recognised that for birds, but not for less mobile groups, some adjustments were needed to allow for emigration and immigration. The Government has subsequently acknowledged the use of the new IUCN system for the forthcoming plant Red Data Books (Department of the Environment, 1996).

Use of the revised system does not mean that localised species which do not qualify for the Red List are forgotten. These are accommodated in two sub-categories of the IUCN Lower Risk group designed specifically for Britain – Near Threatened and Nationally Scarce. Near Threatened species are defined as those which, although not qualifying for the Red List, occur in 15 or fewer hectads in Britain. Accounts for all these species are to be included in the forthcoming Red Data Book of vascular plants. Species occurring in 16 to 100 hectads are classified as Nationally Scarce unless they qualify for the Red List, for instance because of rapid decline.

A further dimension is applied by the statutory agencies when assessing the overall conservation value of a species. European and global status and the significance of Britain for the world population are considered, in addition to national status.

In his address, David Pearman used a most evocative expression for the national hectad picture of the rarer species – he says it 'increasingly represents a shroud because the dots are still there but the number of tetrads and populations inside each dot are diminishing'. This is just what the new IUCN system exposes. David suggests that assessments based on hectad distribution should be replaced by a Threat Index obtained by multiplying two factors – decline in the number of hectads occupied and frequency ratio. The latter is the ratio of the number of tetrad records to the number of hectad records, which gives an indication of population density.

I agree that both frequency ratio and decline are useful indicators of threat, but I would prefer a Threat Formula to a Threat Index, because the former is more transparent. An example of a Threat Formula for a particular species might be  $N22 / T40 / -35\%$ , where N is the number of recent hectad

records; T is the total number of recent tetrad records (or, when better data are available, the number of 1 km square records or the number of sites); -35% is decline in hectad records over a specified period (1 km square records could be used when sufficient data are available; an increase would be indicated as +35%). I find it difficult to decide whether equal weight should be given to decline, localisation and population density (or frequency ratio) as indicators of threat, but species could be ranked for any of these factors independently.

Because there are similarities in the criteria used, the revised IUCN scheme and a development of the Pearman scheme could, perhaps, be used in parallel. The new IUCN Red List system is undoubtedly here to stay, at least for the foreseeable future, because it is now the officially recognised international and national standard. But for species in the Near Threatened and Nationally Scarce categories a 'Pearman-type' scheme could come into its own as a method of ranking species according to conservation need and refining these categories.

One of the colours David nailed to the mast at the end of his address was a campaign to obtain six figure grid references, site data and population data for all our rarer plant species. This, surely, should be a priority for both BSBI and the conservation agencies. Perhaps one way of going about it would be to set up an adequately funded National Threatened Species Unit, charged with the task of co-ordinating the survey, monitoring and conservation of all our rarer animals and plants.

Methods of evaluating threat will continue to evolve, driven by fresh thinking from people such as David. Publication of the third edition of the Red Data Book of vascular plants will allow current methods to be examined and should encourage further debate.

## References

- Department of the Environment. (1996). *Government response to the UK Biodiversity Steering Group report on biodiversity*. HMSO, London.
- IUCN Species Survival Commission. (1994). *IUCN Red List Categories. As approved by the 40th meeting of the IUCN Council, Gland, Switzerland*. World Conservation Union, Gland.
- MARGARET PALMER, Apple Barn Cottage, Fotheringhay, Peterborough PE8 5JB.

## DESIGN OF FIELD RECORDING CARDS

Now that the Atlas 2000 instruction booklet has been published, it seems a good time to open a debate on the design of field recording cards. I want to explain why the London area should be graced with its own regional card, and discover how other people's experience compares with my own.

My view, which was what led me to make a successful case for a card with fewer names on, is very much based on my own experience managing the plant mapping scheme which resulted in the London Natural History Society's publication *Flora of the London area* (1983). The fieldwork for this used a card based heavily on that for the BSBI's first national survey. It had a thousand closely printed names on it, and no space for any additions or comments. I found that I had to undertake a lot of correspondence with field recorders, or, in the case of the dead ones, guess their intentions. Had they really, for instance, seen *Convallaria* but not *Convolvulus*? Was *Achillea ptarmica* a native occurrence or a double-flowered garden escape? Where had they found bee orchids?

Some of these needs have been met by doubling the size of the card. The modern cards have plenty of space for additional names and details, and could (but don't) say 'Continue on separate sheet if necessary'. However, I still think there are two reasons why it can be useful to have fewer names printed, which are, therefore, more widely spread:

1. The risk of accidentally recording the wrong plant is reduced.
2. There are more occasions when one of the less common species can only be recorded if the recorder takes the positive step of writing in the name for himself, when there is a reasonable chance that he might also supply the desired information about location, population size, etc.

RODNEY BURTON, Sparepenny Cottage, Sparepenny Lane, Eynsford, Dartford, Kent DA4 0JJ

## NOTES AND ARTICLES

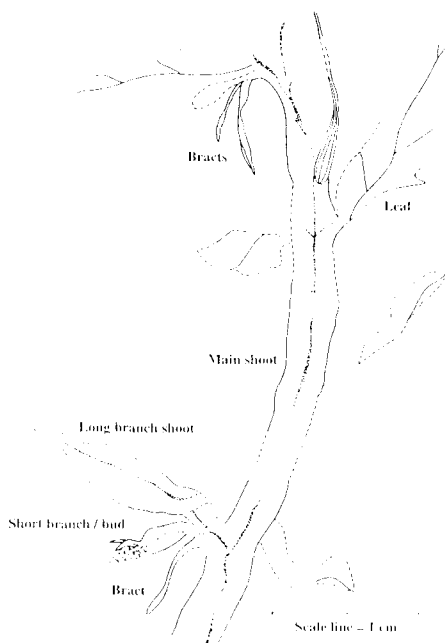
### A 'MISSING LINK' BETWEEN GNETALES AND ANGIOSPERMS?

The 130 million-year-old fossils of what could be the world's oldest angiospermous flowering plant with gnetalian branching have been found in the Weald Clay of Southern England. The plant, less than 25 cm in height, grew at the height of the age of dinosaurs in Early Cretaceous times and was contemporary with *Iguanodon*, *Baryonyx* ('claws') and '*Megalosaurus*'. The plant's fossil remains, in ironstone, include stems, leaves and flower-like organs. The find was made by a team co-ordinated by Dr Ed. Jarzembowski, Keeper of Natural History at Maidstone Museum, who says 'nobody expected to find a small, fragile, wetland herb which is probably why it has been overlooked for so long'.

Dr Una Smith, an American expert on Cretaceous angiosperms at Yale University, says 'this is potentially the most exciting fossil plant found in Southern England for nearly 200 years'. The new plant has been named *Bevhalstia pehja* by Dr Christopher Hill, formerly head of the fossil plants section at the Natural History Museum, London.

The find has prompted new field work in the Weald of Kent, Surrey and Sussex which will take place on October 5th.

A temporary exhibition is currently on display at the Maidstone Museum.



Main shoot showing various branches, 'bud' and bracts.

*Bevhalstia pehja* – a new flowering plant? del. Bidy Jarzembowski © 1996



## *URTICA GALEOPSIFOLIA*: AN EARLY NORFOLK RECORD?

Members may be interested to read the article reproduced below which was written by the Norfolk naturalist Ted Ellis (E.A.E.) in 1948 and published in his daily column for the *Eastern Daily Press*. I have no doubt that he is accurately describing *Urtica galeopsifolia*.

There are presently several colonies of the Fen Nettle at Wheatfen Broad, Surlingham which is adjacent to Rockland Broad. Wheatfen is now a nature reserve, established in memory of Ted, and members may like to know that the reserve is open throughout the year and that visitors are welcome at any time.

'Landing on the south shore of Rockland Broad today, we had to trudge across a stretch of somewhat quaggy ground in order to reach the wall which protects the grazing marshes beyond from flooding. Parts of the ground shaded by trees supported the growth of immense beds of nettles, some of which were nearly eight feet high, and displayed a peculiar slenderness in all their parts. The leaf-blades in some cases were six inches long, on three-inch stalks and the drooping green flower catkins had a loose, straggly appearance. I had come across these narrow-leaved nettles in damp, shady places before, but never in such a vast and distinct assemblage.

The most interesting thing about them here was their almost complete lack of the usual stinging hairs; the stems and the veins standing out on the lower surfaces of the leaves were very downy, but true poison hairs were hard to find and even these did not seem to function properly. The result was that we were able not only to push our way through the jungle without discomfort, but found we could handle and examine the plants as freely as if they had been deadnettles. Probably the whole colony was in reality a single distinctive plant which had spread by means of underground shoots.

E. A. E.

BOB ELLIS, 11 Havelock Road, Norwich NR2 3H0

## LEVELS OF REPRODUCTIVE ACTIVITY IN FERNS – AN UPDATE

In an article in *BSBI News* 71 (Rushton, B.S. Levels of reproductive activity in ferns. pp. 11-12) I drew attention to the poor sporangial production in a range of fern taxa, including *Dryopteris* spp. (Buckler-ferns), *Polystichum setiferum* (Soft Shield-fern), *Polypodium vulgare* (Polypody), *Phyllitis scolopendrium* (Hart's-tongue), *Osmunda regalis* (Royal Fern) and *Asplenium ruta-muraria* (Wall-rue) in various woodland sites in Northern Ireland at the end of the hot, dry summer of 1995. I asked if any other BSBI members had observed a similar reduction.

I received two replies which tell, more or less, the same story.

Tim Rich wrote: 'I have observed similar low levels of spore production in two species this year (the only two investigated):

1. *Hymenophyllum tunbrigense* [Tunbridge Filmy-fern] – very few sporangia produced in 1995 compared to 1994 in all populations examined in SE England (cf. *Fern Gazette* 15, 51-63). Many patches were severely droughted but none observed as yet were killed by the drought, they just curled and dried.

2. *Polypodium* spp. – 3/4 of specimens from the Ashdown Forest flora area examined to count annular cells in 1995 had aborted .... many patches were curled and dried during the summer but they all seem to have survived.'

Gordon Knight, commenting on his home patch in Haverfordwest, Dyfed noted: 'I had the "feeling" this autumn and winter [1995/6] that the abundant Common Polypody [*Polypodium vulgare*] didn't

look the same as usual. It grows not just epiphytically on trees here, but abundantly along hedgebanks, and the undersides are usually conspicuous and colourful, the sori being an eye-catching orange. And it wasn't until I read your article that I realised that my impressions were correct. .... I had a closer look at the many clumps of Polypody and yes, indeed, many of the fronds had none or only a few sori. I should add that areas of cliff where Heather [*Calluna vulgaris*] and/or Bracken [*Pteridium aquilinum*] grow, also suffered badly last summer where the soil was shallow: in the case of Heather, it became red/brown and brittle, Bracken went its autumn brown prematurely.'

Whilst this is a relatively small, though wide-spread sample, a common pattern is beginning to emerge. At the end of the next dry summer (writing in mid-June, 1996, it is clear that Northern Ireland is heading for a very wet time this year!) it might be worth trying to do a more structured survey. After all, it could be completed in the autumn when other field work is beginning to run down!

BRIAN S. RUSHTON, School of Applied Biological and Chemical Sciences, University of Ulster, Coleraine, Northern Ireland, BT52 1SA

### DISCRIMINATING MUNTJACS

During the spring of 1995 I received a letter from Mrs Norma Chapman who is in charge of Muntjac studies in Kings Forest, VC 26, West Suffolk, asking if I would visit the Forest at the appropriate season and meet with her helpers who had noticed that the Muntjac, whose main food during the winter months is bramble, appeared to eat the majority of the bushes present, whilst totally ignoring certain clumps. Somewhat sceptical, I duly met several members of the Muntjac team last July (1995) and went to the compartments under scrutiny. Sure enough, most of the clumps had been completely defoliated as high as the Muntjac were able to reach, but certain clumps were completely untouched. The eaten plants comprised mainly of an as yet unnamed member of the Group *Coryllifolii* plus small quantities of *Rubus lindleianus*, *R. dasyphyllus* and *R. polyanthemus*. All of the untouched bushes were of *R. ulmifolius*.

During the following winter, whilst walking round a forest block in Thetford Forest, near the Neolithic flint mines at Grimes Graves, I came upon several blocks with much evidence of Muntjac defoliation of bramble. Here, the eaten species consisted of *R. houdiecae*, *R. anglocandicans* and *R. septentrionalis*. One compartment with quantities of *Rubus vestitus* in had not been touched. Within a week, I received a package from Norma Chapman with a primocane and leaves of *R. vestitus* from a compartment in Kings which the Muntjac had not eaten, though everything else had been defoliated.

I wonder if any other BSBI member has noticed defoliation of brambles by Muntjac in their areas. If so, have they noticed any clumps NOT eaten? Could they watch out for Muntjac defoliation this coming winter, and if they spot any thickets which remain uneaten when everything else is defoliated, I would be interested to receive samples of the uneaten clumps. All that is needed is a length of stem with two or three mature leaves, preferably in a padded bag so as not to wound the postman!

ALEC BULL, Hillcrest, East Tuddenham, Dereham, Norfolk NR20 3JJ

### WHEN IS AN ARABLE WEED EXTINCT?

I read recently that *Bupleurum rotundifolium* (Thorow-wax) is now extinct in Britain. Is a plant that is an annual arable weed to be considered extinct because it has disappeared from its former haunts, presumably through changes in agricultural practice? Any annual arable weed is actually at the mercy of those upon whose land its hapless seed has landed, so, if it found an indulgent landowner, it might well still persist.

Between 1982 and 1985, I grew something like 15 species of rare arable weed for the Suffolk Wildlife Trust who were at that time intent on setting up rare arable weed plots on some of their reserves. The seed of most species had been obtained in small quantity from the Cambridge seed bank. Since 1985, I have shown admirable self-restraint and allowed as many of these plants as found the vegetable patch and it's environs to their liking to grow a few plants each to maturity each year, including a number of locally scarce species as well as the real rarities. Some have inevitably been lost, whilst one or two even failed to produce any viable seed in the first place. Now, when I hoe the vegetables, I have to also care for the several plants of *Bupleurum rotundifolium*, *Ranunculus arvensis* (Corn Buttercup), *Torilis arvensis* (Spreading Hedge-parsley), *Valerianella ramosa* (Broad-fruited Cornsalad), *Filago pyramidata* (Broad-leaved Cudweed), *Papaver argemone* (Prickly Poppy) and *P. hybridum* (Rough Poppy), *Galium tricornutum* (Corn Cleavers) and *Legousia hybrida* ( Venus's-looking-glass) to name but a few. If anybody would like a pinch of seed of any of the above, and it has not all dropped by the time this appears, send me an SAE and I will see what I can do. Please note that the plants have maintained themselves for more than 10 years with only minimal help, so there may still be other pockets of tolerant gardeners elsewhere in the country!

ALEC BULL, Hillcrest, East Tuddenham, Dereham, Norfolk NR20 3JJ

## DIALECT PLANT-NAMES

The following continues from *BSBI News* 71 a list of names collected since January 1992

Cuckoo – *Hyacinthoides hispanica*, Spanish Bluebell and *Hyacinthoides non-scripta*, Bluebell: 'by old Scillonians'. [St Mary's, Isles of Scilly, May 1993].

– ? *Oxalis acetosella*, Wood Sorrel: 'we chewed green leaves of a ground plant, we called it cuckoo or spearmint'. [Nuneaton, Warwickshire, June 1994].

Cuckoo spit – *Cardamine pratensis*, Cuckooflower. [Cinderford, Gloucestershire, November 1993].

Curly dodie – *Dactylorhiza* spp. and *Orchis mascula*, 'spotted orchis and purple orchis'. [Lerwick, Shetland, March 1994].

Cushion pink – *Silene acaulis*, Moss Champion. [Lerwick, Shetland, March 1994].

Cut-leaf – *Valeriana* sp., Valerian: 'grew in our vegetable garden – white-flowered valerian ... I well remember being told to rub the leaf into cuts and scratches, which I did'. [Chichester, West Sussex, July 1993].

Daddy drumsticks – *Armeria maritima* subsp. *elongata*, Long Thrift: 'Heading south down the A1 we diverted to see tall thrift at Ancaster ... a local resident assured us that the plants were known locally as daddy drumsticks'. [High Wycombe, Buckinghamshire, January 1995].

Dashels – thistles: 'Cut dashels in, June, it's a month too soon, cut in July, they are sure to die'. [St Ervan, Cornwall, January 1994].

Devil's mittens – *Dactylorhiza* spp. and *Orchis mascula*, 'spotted orchis and purple orchis'. [Lerwick, Shetland, March 1994].

Devil's tree – *Sambucus nigra*, Elder: 'flowers and wood of the elder bush not to be taken in the house, my grandmother always called it the devil's tree'. [Quinton, Warwickshire, October 1993].

Dobber – *Plantago lanceolata*, Ribwort Plantain flowerhead: 'plantain heads are picked and the stems twisted under the head, and a quick flick and the dobber flies off, the longest distance wins'. [Chesham, Buckinghamshire, September 1995].

Dog daisy – *Leucanthemum vulgare*, Oxeye Daisy: Somerset, 1950ish, 'pulling petals off a flower (e.g. dog daisy) and saying "She loves me, she loves me not", etc.'. [Leamington Spa, Warwickshire, January 1993].

'I was born in Lincolnshire 68 years ago ... big white daisies by the roadside [were called] dog daisies'. [Wheatley, Oxfordshire, June 1993].

Dog's dick – *Arum maculatum*, Lords-and-ladies: Outskirts of Leamington Spa, Warwickshire, 1940s and 50s, 'cuckoo pint in seed caused great mirth amongst children as this was nicknamed dog's dick and we thought it daring to look at one'. [Aldershot, Hampshire, April 1994].

Thanks to Mildred Adams, Evelyn Braughton, Rhoda Bulter, Cyril Champion, A.M. Clark, Margaret Lee, Elsie Olivey, Julia Ottery, James Partridge, Milly Pearson and Alan Showler for their contributions. Further contributions and comments would be appreciated.

ROY VICKERY, 9 Terrapin Court, Terrapin Road, London, SW17 8QW.

## FIVE TYPES OF BEECH SEEDLING

On May 22 1996, members of the Salisbury Plain (Military) Training Area Botany Group noted five distinct types of Beech (*Fagus sylvatica*) seedlings within the beech woods on Windmill Hill near Ludgershall. They were all quite common and some types were dispersed throughout the entire woodland. The types were as follows:

1. Albino seedlings without chlorophyll, cotyledons cream coloured.
2. Radial striations from cotyledon stalks outwards, alternating cream and green lines along veins.
3. Copper-beech coloration of upper surface of cotyledons.
4. Bright grass-green coloration of upper surface of cotyledons.
5. Glauous blue-green coloration of upper surface of cotyledons.

There were few intermediates between types 4 & 5. Types 3, 4 & 5 grew on to produce adult-type leaves commensurate in colour with the seed leaves, but with the colour differences between 4 & 5 somewhat attenuated.

I have noticed distinctive types of juvenile foliage in conifer seedlings, especially blue or green forms of Lawson's Cypress (*Chamaecyparis lawsoniana*) and Bhutan Cypress (*Cupressus torulosa*), seemingly due to genetic segregation. Genetic variety would also seem to be the cause of the variation between types 3-5 above. However, the albino beech seedlings (type 1) failed to produce shoots and the striated ones (type 2) only produced sickly shoots which soon turned brown and died. It is possible that types 1 & 2 resulted from the harsh prolonged cold North-easterly winds from Siberia in place of the moist Atlantic South-westerlies that we used to experience in May before 1993, rather than genetic influences which seem to account for the differences between types 3, 4 & 5.

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## DOG'S MERCURY WITH THE BLUES

During the spring of 1995 we noticed *Mercurialis perennis* (Dog's Mercury) patches which had individuals which were entirely or partially indigo blue. These plants gradually wilted. The attack was not consistently on leaves at any particular level on the plant, but always whole leaves became blue. The plants immediately alongside were not often affected, and those on the edges of the clumps then seemed to be rather more likely to show it than those in the centre. We assumed for some time that this was due to spray damage, as the plants were on ditch sides and verges round agricultural fields which were being sprayed at the time.

However, this year we noticed what we dub the 'permanent Quink' effect on young plants, still unfurling, and on those in woods far from fields. Far more individual shoots seem to be affected this spring, and also more stands have affected members.

In 1993 and 1994 we had carried out a short survey of Dog's Mercury in woods, but had not noticed any damage. Have we been unobservant, or is this a relatively new disease, perhaps bacterial or fungal? We looked for sporangia or lesions on the plants, but didn't find any using simple examination

of the leaf surfaces. We have not got the apparatus to section, stain and mount to see internal hyphae, if present, so we can only conjecture. The sporadic nature of the attack puzzles us, as we would have expected that a whole clone would have succumbed to a pathogen.

Can someone more familiar with the plant supply an answer?

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### BOTANISTS AND BOTANY IN LITERATURE – 3

Elizabeth Rich, of Mayfield, East Sussex, contributes a quotation from *The Journals of Dorothy Wordsworth* which shows that William's sister was aware of one kind of mistake of which botanists should beware. In June, 1802, she wrote:

'On Thursday morning Miss Hudson of Workington called. She said "O! I love flowers! I sow flowers in the Parks several miles from my home and my mother and I visit them and watch how they grow." This may show that Botanists may be often deceived when they find rare flowers growing far away from houses.'

In a very different journal I was delighted to discover a pleasant little scene over a hundred years earlier. Samuel Pepys quite often met 'Mr. Evelings' – the estimable fellow-diarist and tree enthusiast. John Evelyn. On November 5th, 1665 (at the time when the plague was increasing in many parts of London), Pepys visited Evelyn and they talked of many things, including botany:

'He (Evelyn) showed me his "Hortus hyemalis", leaves laid up in a book of several plants, kept dry, which preserve Colour however, and look very finely, better than any herball.'

Nothing, I suppose, like botany for taking one's mind off less pleasant things!

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### BOTANY IN MODERN LITERATURE

In Len Deighton's *Hope* one of the spy hero's contacts in East Germany was Sarah. 'She was studying plant biology and when she went off with her friends, tracking down specimens of rare weeds and wild flowers, I'd sometimes tag along with them. It gave me a chance to get into parts of the East Zone forbidden to foreigners.' One wonders what these 'rare weeds' were. No doubt some kind of state secret.

Mr. Deighton's botany, unfortunately, is rather suspect as a quote from his *Mamista* shows: 'Liana and matted creeper strangled the trees and turned green as other fungi [!] in turn devoured them. Three thousand species in one square mile: orchids, bananas, poison vines, and wild rubber. A botanical Junkyard.'

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### ROADSIDE COCHLEARIA

On non-motorway class roads and roundabouts, *Cochlearia* (Scurvygrass) can be found on either side of the road. Its confinement, on motorways, to the central reservation is easily explained: it needs the salt resulting from close proximity to speeding car wheels. There is no fast-moving traffic on the hard shoulder, so no salty spray zone. The same applies to lay-bys, infuriating for the botanist who wants to get a close look at the plant!

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## DANISH SCURVYGRASS

I have been following with interest the correspondence which has appeared from time to time in *BSBI News*, concerning the occurrence of *Cochlearia danica* along inland roadsides.

This spring, the plant has appeared on verges along the former section of the A5 (now re-classified as the B4380) where it passes through the southern outskirts of Shrewsbury. It also lines the verges of the A49 for several miles to the south of the town. In both localities the plant consists of almost continuous stretches forming a border of approximately 30 cm wide along the edges of verges adjoining the carriageway; both of these roads are single-carriageways in the area. This is the first time I have seen the plant on these roadsides, although I frequently travel along the A49 and regularly use the B4380 in Shrewsbury. W.A. Leighton (1841) in his *Flora of Shropshire*, described it as growing on old walls and buildings in Shrewsbury and Oswestry, but when the *Ecological Flora of the Shropshire Region* was published in 1985, *Cochlearia danica* was considered to be extinct in VC40.

Its present appearance following the prolonged icy conditions of last winter, lends support to the theory that the spread of the plant results from the use of salt and grit on the icy road surfaces, and the consequent spraying of the grass edges by the wheels of passing traffic. This does not, however, explain why the plant has never, as far as I am aware, made a previous appearance along these particular stretches of roads which are regularly salted and gritted each winter.

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### *COCHLEARIA DANICA* ON ROADSIDES

Much has now been written about the inland spread of *Cochlearia danica* (Danish Scurvygrass) and its restriction to the central reservation of motorways and dual carriageways. However, a simple ecological explanation for its distribution appears to have been neglected. With respect to environmental factors the central reservation provides a rather different habitat to that of the road verge beside the hard shoulder. Cars regularly pull off onto the hard shoulder and soft verges at the side of many major roads. The soil of the soft verges beside the road is therefore likely to show greater compaction and a greater tendency towards impaired drainage than will be evident in the central reservation. This difference will be amplified as on salted roadsides clay minerals become increasingly saturated with sodium ions from the road salt rather than the more customary calcium ions. Sodium ions have only a single charge while calcium ions have two. As a result, when clay minerals become saturated with sodium rather than calcium, the clay platelets cannot bond together. Instead they 'float about' separately not contributing to the crumb structure of the soil. Any compaction of the soil will tend to cause these loose platelets to progressively act as plugs blocking up drainage pores in the soil. Thus, while the central reservation may remain a freely draining saline habitat particularly where gravel is added (see *BSBI News* 69: 17-18), the verges at the edge of the road will resemble ever more closely a salt-marsh habitat. *Cochlearia* is typically associated with freely drained crevices in cliffs and gravelly and sandy maritime areas so its restriction to central reservations is not that surprising. Further weight can be given to this argument if we consider the other common maritime species of road verges, *Puccinellia distans* (Reflexed Saltmarsh-grass). *Puccinellia* frequently co-occurs with *Cochlearia* but is most abundant on the soft verges beside the road often in areas where the imprint of vehicular wheels are obvious. Since *Puccinellia* is essentially a plant of the upper reaches of salt marshes, particularly where these are disturbed, this distribution also is expected and emphasises possible differences between road verges and central reservations in terms of soil compaction. There may also be a seasonal dimension to these distribution patterns. Winter is generally wetter than summer and as a result vehicular damage to the verges may be greater at this time. This would affect *Cochlearia* most since it germinates in autumn and is dependant upon seed set in spring for survival. *Puccinellia* would be less physically damaged because it grows in the summer.

If my suggestions are true, *Cochlearia* should occur in less compacted places in addition to the central reservation, sites such as raised road verges with curb stones. My own general observations suggest that this is indeed the case but I lack quantitative data and have no inclination to seek proof of another kind by measuring soil compaction on the central reservation.

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### HYBRID SCURVYGRASS (*COCHLEARIA DANICA* × *C. OFFICINALIS*) BY SALT-TREATED ROAD

Both species were found on the side of a main road near Farningham, W. Kent on 29/4/94. In April this year I revisited the site and they appeared to have been largely replaced by a hybrid swarm with intermediate characters, as follows: height to 25 cm; flowers white 8 mm across; upper stem leaves ivy-shaped yet sessile and clasping the stem; basal leaves not ivy-shaped but reniform, stalked and cordate.

Another salt-derived species in the same area is *Spergularia marina* (Lesser Sea-spurrey), and a species of *Limonium* not far removed from *L. hyblaenum* (Rottingdean Sea-lavender) may also be from salt there.

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### WHY DOES WILD TEASEL TRAP WATER?

The leaf bases of Wild Teasel (*Dipsacus fullonum*) form cup-like structures which collect rainwater. The leaves are formed in such a way that when water overflows from higher leaves it is caught by a lower pair of leaves. This may be seen from the simple experiment of pouring water in the highest hollow and seeing it trickle down filling up the lower hollows one by one. This structure and mechanism presumably provides some evolutionary advantage to the plant.

Wild Teasel grows in a variety of habitats, but it does seem to prefer damp situations. The plant may simply gain some advantage in retaining its own supply of water. However, it has been suggested that the insects that drown in the water are broken down by bacteria and the teasel obtains benefits from the nutrients released. It has also been pointed out that the water forms impassible barriers which protect the plant from harmful visitors such as ants. (See Proctor & Yeo, *The Pollination of Flowers*, 1973, p. 145).

The teasel is by no means always successful in retaining water in the hollows. Water is lost due to the plant growing at an angle, windy conditions, hot and dry conditions or lack of effective leaf structure. In these cases the plants are sometimes invaded by ants.

Teasel may of course gain advantages from a combination of the ways described above. However, the evolutionary advantage of this structure does not seem so obvious as it does in the various structures that have evolved in many other species of plants. I would be interested to know if anyone has done any research into this area of study.

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### CONTAMINANTS IN GRASS SEED

Graeme Kay's note (*BSBI News* 72) on possible sources of non-native *Mentha pulegium* (Pennyroyal) was extremely well-timed. On 15 July Lyn White and I found this species in recently seeded grassland behind a seawall at Pawlett Hams, an area of coastal grazing marsh at the mouth of the River Parrett, Somerset (VC 6). The seawall in question was constructed in 1994 by the (then) National Rivers

Authority, an example of coastal 'realignment' carried out because the old seawall was eroding and in danger of being breached.

The new embankment was sown with a 'standard' grass seed mix, but less than two years later there are plenty of seawall species making an appearance, including abundant *Torilis nodosa* (Upright Hedge-parsley) and *Trifolium squamosum* (Sea Clover) and, along the seaward 'toe' of the embankment, *Parapholis strigosa* (Hard-grass), *Hordeum marinum* (Sea Barley), *Seriphidium maritimum* (Sea Wormwood) and one or two plants of *Limonium procerum* (a Rock Sea-lavender). We were a bit surprised to find a few plants of *Hordeum jubatum* (Foxtail Barley), *Trifolium hybridum* (Alsike Clover) and an (as yet) unidentified *Malva* (Mallow), and presume these came in as 'contaminants' in the seed mix. Imagine our disbelief, though, when on the landward side of the embankment we stumbled upon several plants of *Mentha pulegium*, looking a bit too robust and erect, and more than a little out of place in this two year-old reseed!

The next day we returned to the site to have another look. Unfortunately, the grassland strip containing *M. pulegium* had been hay-cut the previous evening; a pungent 'minty' smell was hanging in the air, suggesting there was more of it there than we had seen the day before. Along the inland edge of the sown grassland there was a drainage dyke, the banks of which had been left uncut; here we counted several hundred plants of *M. pulegium*, many growing low down the bank, and several rooted below the water line. We wondered whether the digging out of the dyke might have brought up buried seed and that that what we had found was truly 'native' *M. pulegium*. But there were no plants at all on the other (unsown) bank, and no sign of it alongside neighbouring ditches and in adjoining (unsown) grassland, so we suspect that this is another case of non-native *M. pulegium* being unwittingly introduced onto a site in contaminated grass seed. On the area that had been hay-cut we could still make out the tough stem-bases of *M. pulegium*, and from these we estimated a total population of 5,000-10,000 plants/patches. It will be interesting to see whether the species persists at this site – it's certainly got off to a good start!

The problem of 'non-natives' being introduced into reseeded areas was also brought to our attention in *BSBI News 72* by Olga Stewart, this time on road verges in Dumfries and Galloway. The reseeded 'business' is clearly becoming a major problem, and one which will, I suspect, become glaringly obvious during the course of Atlas 2000. We'll have non-native populations of native species cropping up all over the place and, as time goes on, the distinction between what's native and what's not will become ever more difficult to make.

Olga points us in the direction of the 'approved' list of seed merchants, which of course is a step in the right direction, except this still doesn't guarantee that the seed will be used in the appropriate place, nor that where it is used it will be of local provenance (it might be from native sources, but is it local?). For example, it is clearly of concern that non-native *Lotus corniculatus* (Bird's-foot-trefoil) is in the seed mix being used to revegetate road verges in south-west Scotland, but is it any better to use *L. corniculatus* originating from, say, Sussex? The 'foreign' *Lotus* seems worse because it's genetic differences are visible (to the extent that we call it var. *sativus*), but surely on Olga's road verges we should be using a seed mix harvested from local sources. There is still a problem, in that we can't be certain that the local *Lotus* is truly 'native' – might it already be 'contaminated' in some way? – but this is not, in my opinion, adequate reason for not endeavouring to use locally procured seed. Some seed sources are likely to be 'purer' than others – SSSIs, nature reserves and other protected areas might be the most reliable in this respect. But perhaps the best option, whenever feasible, is to look for other ways to provide initial stability (e.g., open-mesh netting), so that nature can then be allowed to do its own reseeded – at least then the species will be drawn from the immediate environment (perhaps including distinctive local ecotypes), and will be well-suited to the particularities of the area being revegetated. Better that the Pawlett Hams seawall is colonised by 'local' *Trifolium squamosum* than by the same species bought through a seed catalogue and originating somewhere in Essex!

This started as a note about non-native *M. pulegium* and has ended as a plea to public authorities and others to reseed – if they have to – not with just any old seed mix, not even with an 'approved British' seed mix, but instead with one drawn from sources local to the area being reseeded.



There's potential here for considerable expansion of the 'wild-seed' business, with a network of regional suppliers working in partnership with conservation organisations under an agreed 'code of practice'. This partnership already exists to some extent, but it needs to be all-embracing if we are to avoid unwitting introductions of the kind we read about in *BSBI News* – of which *M. pulegium* at Pawlett Hams is just the latest in a long line . . .

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## ENGLISH NATURE'S BOTANICAL SERVICE – UPDATE

Further to Phil Horton's note in *BSBI News* 71, we thought BSBI members would welcome an update on English Nature's Botanical Service (formerly the Botanical Network). Having been instrumental in getting the Service up and running, Phil 'retired' from his co-ordinating role in the spring, and has been replaced by Brian Johnson, based at our Taunton office. Brian is supported by a national network of advisers, as follows: flowering plants – Simon Leach, Ron Porley and Ian Taylor; conifers, ferns and fern allies – Rob Cooke; bryophytes – Ron Porley; lichens – Peter Lambley; fungi – Ted Green; fresh-water algae – George Hinton; marine algae (seaweeds) – Teresa Bennett; adviser on issues affecting aquatic plants – Chris Newbold. In addition, all our Local Teams have staff attached to the Service who can advise colleagues at a local level and assist with botanical species work (including casework, Species Recovery Projects and 'action plans')

The logistics of running the Service are far from straightforward, but by drawing on the expertise of a wide range of individuals we hope we can give a better service than would be achieved by one botanical 'specialist' working on their own.

Within the 'vascular plants' section we have divided up responsibilities as follows: Ian Taylor (at our Bakewell office) provides advice on licences affecting protected species, and represents EN on various committees, including the BSBI Conservation Committee and Plantlife. Simon Leach (working alongside Brian Johnson at Taunton) is involved in the development of EN's species monitoring strategy, provides information and advice on the status and conservation of nationally rare and scarce species, and represents EN on the Atlas 2000 Steering Group. Ron Porley (at our Newbury office) is the contact point for advice on plant translocations and (re)introductions, while over the coming months he will also be working on the botanical input to EN's 'Natural Areas' project. Rob Cooke (Peterborough), as well as managing the 'Natural Areas' project, is EN's representative on the British Pteridological Society. (All our vascular plants advisers are, incidentally, members of BSBI)

All four of us have inputs into EN's Species Recovery Programme, managed by Roger Mitchell (Peterborough), and we also get involved in site casework at the request of Local Teams. We try to limit our involvement to those cases requiring a 'national' perspective: we consider, for example, whether sites containing rare species should be notified as SSSIs; and, within areas already notified, we can advise on habitat and management requirements of key species. We also maintain links with the other country agencies, with JNCC and with various organisations and individuals concerned with the conservation of vascular plants.

Amongst these 'other organisations' the BSBI is of great significance. Our understanding and appreciation of the distribution of vascular plants in England relies almost entirely on local and national surveys carried out or supported by the BSBI, and on the vast quantities of field data gathered by BSBI members. The Atlas has been a cornerstone of botanical conservation for more than thirty years (roll on Atlas 2000!), while county Floras have provided much-needed 'regional' perspectives in helping us to define local conservation priorities. EN's work will continue to draw on the wealth of knowledge and experience that lies within the BSBI membership, and in future we will be seeking to develop and strengthen our links with BSBI at both local and national levels.

For further details of the Botanical Service please contact Brian Johnson at the address below, to whom all general enquiries should be directed. Specific enquiries can be sent to the relevant member of

staff. Details of EN's Species Recovery Programme are available from Roger Mitchell, English Nature, Northminster House, Peterborough, PE1 1UA.

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#### 4-WHORL 'POLYSTACHION' AND REBRANCHING IN *EQUISETUM PALUSTRE*

On July 14 1996, members of the Wilts. Botanical Society noted some unusual multi-coned stems of Marsh Horsetail (*Equisetum palustre*) in the Thatcham Reedbeds Reserve, W of Reading. Almost 20 stems in a 3 metre patch had extra cones to the normal apical ones, mostly in (1)2-4 symmetrical whorls beneath the apical cone, at the tips of (usually) 7 branches of equal length. The cones at the ends of the whorled branches were smaller than the terminal ones, mostly only 3-7 mm long. The stems were 30-60 cm high, and might possibly have derived from one rhizome which can, in this species, be more than 90 cm deep (Page 1982). Some fertile and some sterile stems had slightly rebranched green branches, but not regularly or radially symmetrically organised, as with the cones.

Marsh Horsetail is very variable, much of the variability, such as branching, being mainly environmentally induced (Page 1992). The Victorian naturalist Anne Pratt (1856? See also Freethy 1987) wrote as follows:

'There are some singular varieties of this plant which, however, appear to be dependent on soil and situation, and not to become permanent. One form has been termed *polystachion* [var. *polystachyum* Weigel]. Instead of the one cone usually placed, in the ordinary form of the Horsetail, on the central stem, several of the branches of the two upper whorls terminate in cones, which are usually darker coloured than the commoner cone, more compact in form, and appearing later in the season'.

Some of the Thatcham stems were therefore more extreme than the classical 'polystachion' description in three respects, which would have made them a unique find even for the most dedicated Victorian fern fanatic (see illustration page 27). Firstly, all the whorled branch tips were *symmetrically* coned; secondly, 3 or even 4 whorls could be involved; and thirdly, on some stems the large apical cone had just begun to form, being neither damaged, stunted, or over. One of us (JEO) has found single-whorl 'polystachion' at Warnborough Greens, S of Reading (*Hants. Flora Newsletter 1995*) but the Thatcham stems were more regular and impressive.

Before we found the 'polystachions' with the young healthy apical cones, we speculated along the accepted lines of reduction of apical growth dominance following environmental damage to the central cone, perhaps from the May frosts. However *E. palustre* as a species sometimes has a tendency to form lateral cones (Rose 1989, Grose 1957). Grose describes 'var. *polystachyum* Weigel' as occurring in 15 sites in Wiltshire over 100 years, and seemed sceptical about attributing the condition to damage because it recurs, sometimes plentifully, in the same localities. He also described compound rebranching in *E. palustre* and *E. arvense* (Common Horsetail), such plants now being common enough in Wiltshire to seriously undermine keys which use this feature: these plants keep keying out wrongly to *E. sylvaticum* (Wood Horsetail), especially when the rebranching is regular.

Avoiding an extreme stance, it seems probable from the above observation and records that there is a genetic propensity, in some colonies of Marsh Horsetail, towards 'polystachion', whatever the environmental triggers. The same may apply to compound rebranching in Common and Marsh Horsetail, although shelter and shading versus exposure also seem to influence branch formation. These remarkable plants grew only one mile from the Greenham Air Base!

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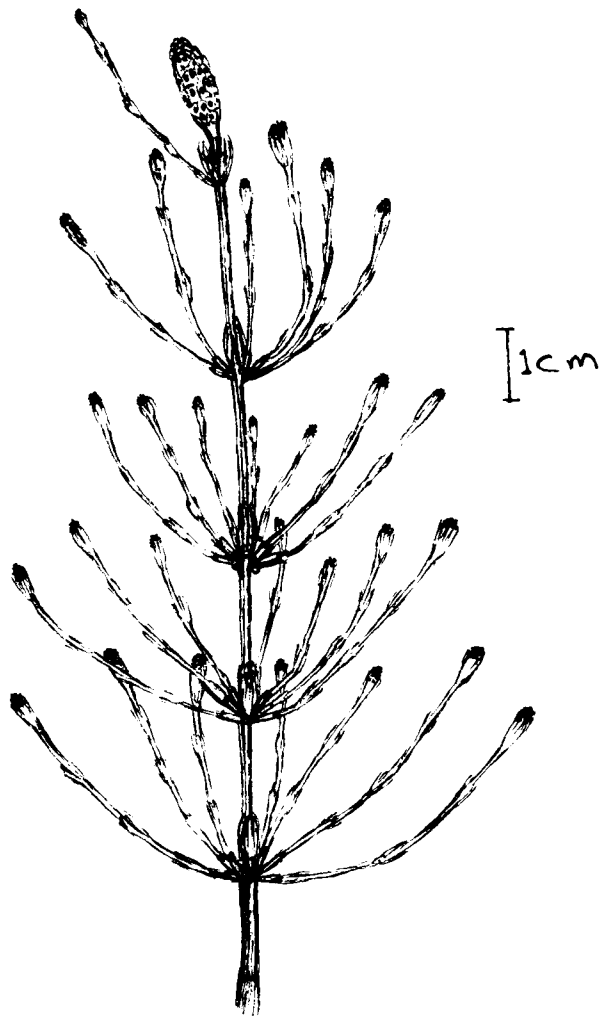
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The top 5 whorls of stem of *E. palustre*, all branch tips with cones ('polystachion'). Other stems sometimes had the apical cone younger than the radially arranged peripheral ones.

Drawing del. Katy J. Oliver © 1996.

## THE EARLIEST REFERENCE TO BLACK POPLAR IN ENGLAND?

Recently re-reading the Anglo-Saxon Runic Poem (Dickins 1915), originally written more than one thousand years ago, it occurred to me that one particular stanza probably contains a description of the native Black Poplar (*Populus nigra* subsp. *betulifolia*). The tree is described as fruitless but bearing offspring from shoots or suckers, with beautiful branches high at the top, laden with leaves close to the sky.

The poem names the tree as 'Beorc', which, according to old glossaries, can mean birch or poplar, but, as Dickins points out, the word 'fruitless' no doubt refers to the tree's inability to regenerate from seed, and he quotes Elwes (Elwes & Henry 1913) who says that he has '... never found in England a poplar grown from seed either naturally or by nurserymen'. This, together with the emphasis on height in the poem, leads Dickins to conclude that the poem refers to a species of poplar rather than birch.

Dickins identifies the tree described in the poem as Grey Poplar (*Populus canescens*) which he considers to be indigenous to England. However, there now seems to be general agreement that the Grey Poplar is not native to England but was introduced (presumably at a much later date than the poem), and/or is a hybrid between the Aspen (*Populus tremula*) and the White Poplar (*Populus alba*). Furthermore, the White Poplar is ruled out as a candidate since it is also regarded as an introduced species and in any case does not seem to meet the height requirements of the poem. According to W. J. Bean (Bean 1976) it is '... not seen much more than 50 feet high in Britain'.

Therefore there seems little doubt that the tree described in this old poem is the Black Poplar, which, following the research of E. Milne-Redhead and others, would seem most likely to be *Populus nigra* subsp. *betulifolia*. This very early reference must surely be of some interest to all those involved in the history, conservation and folklore of this splendid native tree.

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## MORE ACHLOROPHYLLOSE *EPIPACTIS* IN SCOTLAND

Further to the note on chlorotic *Epipactis helleborine* (Broad-leaved Helleborine) in *BSBI News* 72: 35 (April 1996), I have a similar story from the Glasgow side. Having read Jim Dickson's (no relation) marvellous book *The wild flowers of Glasgow*, I decided to follow up on one of his sites of *E. helleborine* at a railway embankment in the Maxwell Park area of the city. I visited in mid-August 1994 and found, as he suggested, several hundred along about 800 m and within 2 m of an iron railing fence, bordering the footpath.

Among them, I found two plants – one approximately 30 cm tall which, although still having purple coloration in stem and florets, appeared to have no chlorophyll. Tips of leaves and bracts were already shrivelling – and several florets had failed to open, which I assumed was due to the lateness in a very dry season. Close-up photographs of the one floret still open – though not fully so, revealed apparently normal structures. These plants were within 5 cm of the fence's concrete plinth. Approximately 200 m further along, I discovered a group of 3 variegated plants about 40 cm tall at most, chlorophyll being present mainly in the tips of leaves and bracts. One of the stems was only 20 cm tall and had one floret open – similarly without chlorophyll but flushed purple in the hypochile / epichile regions. The florets of the two larger plants had opened earlier and were now shrivelling *in situ*.

I counted over 300 apparently normal plants in the rest of this colony. Access to photograph was limited through the fence – being British Rail land and the only route in was along an electrified

suburban line. Permission to enter the site was sought for the 1995 season but a visit in early August found only a smaller population with no sign of any chlorotic variants.

Opinions sought locally concurred that these variants must have been a result of chemical spraying. However, if this is correct:

1. Why were no other *E. helleborine* plants, many growing as close to the fence, so affected?
2. Why were no other species along the fence affected?
3. Why were the variegated plants so far from the potential spray range and growing amongst apparently unaffected plants?

I finally wrote to Dr John Richards of Newcastle University and his reply is given below.

'Achlorophyllose *Epipactis*

... This is at least the fourth occasion on which I have been aware of achlorophyllose *E. helleborine*. The first report, of which I was also shown photos was in Shropshire. I have also been told of plants in Devon. I myself was fortunate to find several such plants on Olimbos in Greece (about 25% of the population were so affected). In addition, a local population of *E. phyllanthes* tends to be heavily variegated, and some individuals have few if any green parts.

I am sure that these plants result from mutations, probably under maternal (cytoplasmic) control. It is striking witness to the role played by the micorrhiza in such plants that they can reach flowering size and apparently suffer little disadvantage compared to photosynthetic plants while fully saprophytic (as of course *Neottia* or *Corallorhiza* always are).

Thank you for your interesting communication, providing yet more evidence of this interesting phenomenon.'



Achlorophyllose *Epipactis helleborine*, Maxwell Park, Glasgow. Photo R.D.B. Dickson © 1994.

## PERENNIAL FOXGLOVES

With reference to Martin Cragg-Barber's note in *BSBI News* 72: 33 (April 1996) on perennating foxgloves, I am indebted to Knut Fægri of Bergen University, Norway, for the following summary of his paper 'Flerårige revebjeller' [Perennial Foxgloves] published in *Blyttia* 38: 167-170 (1980).

'*Digitalis purpurea* is usually considered a biennial hapaxanth, even if florals are often rather vague about it. . . . two specimens [were] excavated in Bergen, Norway, in the spring of 1980. [One] specimen flowered in 1979 and is apparently preparing another flowering for 1980. The [other] specimen has flowered three times, and has developed a complicated caudex with many adventitious rosettes apparently capable of continuing life indefinitely. The early demise of hapaxanthic specimens may be more due to external competition than to internal factors – unlike e.g. *Angelica archangelica*. *Digitalis* seeds can lie in the soil for years without losing their power of germination, coming up only when the soil is disturbed so as to bring them into the light again.'

### EDITOR

## MORE 'BOTANIST LIVED HERE' PLAQUES

Following the notes on these in *BSBI News* 72: 16, Alec Bull writes to let us know of the plaque 'Sir J.E. Smith, Botanist and Founder of the Linnean Society was born in this house 1759-1828'. The house was the 'Sir Garnett Wolsley' 37 Market Place, Norwich, and the plaque was stated to be 'concealed at the back of the building'. The information is from *The Plaques of Norwich* by G. Solomon, Capricorn Books, 1981, but Alec says, in reply to Dr Alan Woods (see *BSBI News* 72), that he has found no reference to a plaque for Sir William Jackson Hooker, although he was born in Norwich in 1785. Coincidentally, Peter Lawson sent details of two plaques to the Hookers or Kew, he writes:

'Two plaques may be seen in Halesworth, Suffolk, mounted on either side of the main entrance to Hooker House, Quay Street, (now a dental practice). They are circular, green in colour and read as follows:

1785 – 1865

Curator and first Director of the  
Royal Botanic Gardens at Kew  
Sir William Jackson Hooker  
KH FRS LLD DCL  
The Great Botanist  
Lived here

1817 – 1911

Succeeded his father as Director of Kew 1965  
Sir Joseph Dalton Hooker  
OM CCSI CB FRS MD DCL LLD  
Botanist  
Born in this house'

Len Margetts writes with details of the plaque to John Goodyer, pioneer botanist, on the wall of a house in Petersfield. The plaque reads 'John Goodyer Botanist & Royalist 1592-1664 lived here.'

Len also mentions '... the beautiful stained glass window to William Curtis, the early Flora-writer. The church, St Mary's, is down near Battersea Bridge. There are also contemporary windows to William Blake and J.M.W. Turner. Blake was married in this church, and his entry in the marriage register is still kept in the vestry. His window contains the well-known lines of Blake's':

'To see a world in a grain of sand  
And heaven in a wild flower,  
Hold infinity in the palm of your hand  
And eternity in an hour.'

Mr B.E. Smythies writes with a correction to one of the entries in the last issue. 'On page 16, last two lines – WALLACE spelled his names Alfred Russel, not Russell' – and asks 'Is the name wrong on the plaque itself, or was it wrongly copied by the plaque recorder?'

Mr J.K. Jackson has also written to point out that:

'Unfortunately a bit was left out in 'Botanist Lived Here' in *BSBI News* 72, which had the effect of mixing Robert Brown with Charles Darwin. It should read:

**BROWN, Robert** 1773-1838 (on same plaque as Banks).

**DARWIN, Charles** . . .

Robert Brown wrote one of the earliest floras of Australia, together with many other botanical works. He also gave his name to the movements of microscopic particles, known as *Brownian movements*.

As David Allen points out, Sir John Lubbock dealt with plants as well as insects; I have recently come across references to botanical books written by him, including *British Wild Flowers* (1875). His plaque is at 29 Eaton Place, SW1, where he was born.'

In *BSBI News* 48: 29 Paddy Reilly recorded the commemorative plaque to honour Robert Lloyd Praeger at 19 Fitzwilliam Square, Dublin. A photograph shows the late Prof. David Webb unveiling the plaque on behalf of the Dublin Naturalist's Field Club in 1987.

MARY BRIGGS, President-elect

## ECOTYPIC DISTINCTION IN *HERNIARIA CILIOLATA*?

Four or five years ago, Brian Wurzell gave me a plant of *Herniaria ciliolata* (Fringed Rupturewort) from the Lizard. I collected another from the dunes of W Guernsey and grew the two side by side in my rockery. The Lizard plant flourished, but all along the Guernsey one languished. I put a bit of each on a herbarium sheet, noticing the differences, and deposited it at **BM**.

Since then the difference has increased. The Lizard plant is lush green, the Guernsey one dead. Both were subsp. *ciliolata* with the same chromosome number ( $2n=72$ ), unlike the Jersey polyploid, subsp. *subciliata*, which I think now may be lost. Is this an example of an ecotypic distinction?

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## MISTLETOE IN BERKSHIRE & BUCKINGHAMSHIRE

John Killick's note on mistletoe in Oxfordshire (*BSBI News* 72: 42) is interesting and on the whole agrees with my observations from the next-door counties. Though I do not have complete figures for the whole of Berks. (VC 23) and Bucks. (VC 24) I searched very hard for it in SU/8.9 (centred on High Wycombe, Bucks.) and in SU/8.8 (centred on Marlow, Bucks. with the Thames flowing through it and Berks. to the south of the river). In each of these 10 km squares I have recorded mistletoe (*Viscum album*) in 19 tetrads (and know of it in 29 more tetrads in Bucks.) so it is clearly more common than in Oxfordshire. It is to be found on the same host species and also, in Bucks. as a whole, on *Aesculus hippocastanum*, *Carpinus betulus* and various species of *Acer*, *Salix* and *Sorbus*. It is particularly abundant on the hybrid lime (*Tilia × europaea*).

Looking at the two 10 km squares in question the data suggest similarities to those identified by John but the likes and dislikes of mistletoe are so odd that I would hesitate to draw too many conclusions. However, my comments on his proposed factors are:-

- (1) Chalk. There appears to be some correlation but the chalk is absent from my areas of high ground. Thus it may be that altitude rather than soil type is the key factor.
- (2) Towns. Mistletoe is definitely associated with the town of High Wycombe but this is because a lot of written appeals have produced records of plants deliberately planted on apple trees in gardens

where they are not visible to the passer-by. Many of the owners are very proud of them. Some such tetrads have only one record, whilst another may have 500 or more plants on *Tilia*, which is a distorted form of recording. It is absent from several (high) villages where one might have expected to find it; indeed there are still 4 pots of honey on offer for anyone reporting it from the village of Lane End!

- (3) The Thames. I would alter this to 'water' since *Viscum album* is clearly associated with streams, rivers and lakes in this area. However, this could be, as in (1), linked to the milder conditions in the valleys where the water is found. It is common by the Thames at Marlow, yet suddenly stops as one heads west into the country, before turning up again at Henley.

Finally, I would add one more factor to those of the previous article:-

- (4) Old Estates. There seems a distinct association with the parkland of old estates, where these have been planted with lime, as many have. They are frequently near water or have water as a feature, but not always. Some examples from the three counties under discussion are Stonor Park, Bisham Abbey, Cliveden, Huntercombe Manor (Slough), West Wycombe Park, Hall Place (Beaconsfield), The Rye (High Wycombe) and Shardeloes (Amersham). Where did the young lime trees come from? Were they deliberately 'seeded' with mistletoe? They often seem to be the centres from which mistletoe has expanded into adjacent tetrads. Can anyone throw light on the introduction of these trees into Britain?

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## **SORBUS DOMESTICA L. – COMPARATIVE MORPHOLOGY AND HABITATS**

### **MORPHOLOGY**

There is more morphological variation between the three extant sites of *Sorbus domestica* in Britain than the range found in Herbarium examples of continental material, though this may partly be attributed to collectors' traditional selection of flowering or fruiting stems rather than the short-shoot leaves used primarily in the genus *Sorbus*.

Short-shoot (ss) leaves were collected from the three native sites, from known and alleged descendants of the single tree in the Wyre forest (considered an old tree when described in 1678, destroyed by fire in 1862) and from a variety of cultivated plants. Fruit, when produced, was also collected. The characteristic bifid stipules (Gerstberger 1980) were found to be too inconsistent for use. The 'wild' plants (here referred to from west to east as phenotype (a) 14 plants; phenotype (b) 90 plants, and phenotype (c) 5-6 plants) differ in leaf size, leaflet number and the scale and degree of serration (below). Phenotype (a) is distinct from (b) and (c) by the narrow, finely serrated leaflets. Phenotypes (b) and (c) are more alike – larger leaves with broad leaflets and fewer, distinct serrations – but show differing leaflet shape and spacing along the rachis. Phenotype (c) is distinguished by the presence of a soft mucro at the base of one or both of the lower leaflets in approximately 20% of ss leaves and a greater proportion of long-shoot leaves.

Comparison of the native phenotypes with an alleged descendant of the Wyre forest tree was made, the magnificent pyriform tree at the Oxford Botanical Garden. Although the Wyre plant, the 'Whitty Pear', was unlikely to have been a wild plant, it may have been brought into cultivation from some lost British population, rather than introduced from the continent as has been suggested in the past. According to Lees (1858) the Whitty Pear grew close to a ruined tower or hermitage and was enclosed by the remains of a bank or wall. His list of associated species includes *Vaccinium myrtillus* (Bilberry) and *Pyrola rotundifolia* (Round-leaved Wintergreen), not the expected associates of a calcicole tree. Only a few miles downstream, however, the Severn passes high cliffs 'Bathed by the water, and except on its most precipitous face, covered with wood.' (Lees 1858). This sounds more like the native habitat for *Sorbus domestica*, and here also, the remains of a celebrated hermitage.

The Oxford pyriform tree has no morphological match amongst the native phenotypes. Leaf form and particularly serration are different and high lenticel density of the fruit is unlike the fruits from phenotype (a), the only population regularly forming fruit thus far. What is a surprise is the comparison with another Whitty Pear descendant at Arley House, also mentioned Bean (1980), only a few kilometres across the Severn from the Wyre forest. The plant grown from seed by Lord Mountnorris in the 1820s was wind rocked in the late 1980s and later cut down. The extant tree was grown from seed about seventy years ago and has the precise leaf morphology of the latter and of herbarium material taken from the original Whitty Pear, but is unlike the Oxford pyriform tree. Compared with the wild plants a very close morphological match, though not exact, was found with phenotype



(a). Leaflet form and serration are remarkably close while both samples differ from all other vegetative material available for study. Fruit are also alike in the very few lenticels, but no closer comparison is possible until fully ripe fertile fruit are obtained from plants of phenotype (a).

The single mature fruit collected from phenotype (a) in 1991 was roughly pyriform and seedless. *Sorbus domestica* regularly produces fertile and infertile fruit in cultivation, the proportion apparently not wholly related to fertilisation, but also temperature related. In cold years, or on plants in cold, shaded situations such as the large tree at Croome Perry Wood, Defford (VC 36), the majority of fruit are seedless and uncharacteristic.

To compare trees growing on highly calcareous sea cliffs subject to environmental extremes with a cultivated arboretum tree may be unwise. Leaf morphology would be affected by a variety of other influences in both cases. No relationship can be proven without bringing the two taxa into the same environment. This is currently in hand. Further biochemical comparison may prove the suspicion of a close relationship, but this may be more of interest to the historian than the botanist.

Further botanical or historical work, particularly in the vicinity of the Wyre forest, may explain why there are differences in fruit and leaf-form between the two descendants of the isolated Wyre tree, as the Oxford plant is also apparently of proven descent (Morrison 1982).

## HISTORY

It is not beyond the realms of possibility that the Wyre tree or its forbears originated in South Wales. The Monastic Colleges of Llanilltud Fawr and Nant Carban flourished for centuries, the coming and going of saints, missionaries and the learned of the Dark Age world connected Ireland, Wales, Cornwall, Brittany and the Welsh Marches via the only local natural harbour – the locality of Phenotype (a). With the arrival of De Clare and the Normans in 1090 the cloisters of Llanilltud were placed under the authority of the new abbey on the Severn at Tewkesbury. It is unlikely that a missionary Celtic monk settled in the Wyre Forest, planted a tree from fruit from the apothecary garden of his beloved College and that the tree survived to the 19th century, and that the runs of his cell could still be discerned by Edwin Lees in 1852. However, the long monastic history could have carried the cultivation of wild derived *Sorbus domestica* temporarily and geographically to within modern times and to the centre of an area of ancient woodland providing, perhaps, a spiritual refuge, as well as a botanical one, remembering that individual trees may live to 1000 years or more (Loudon, in Lindley & Moore, 1884: R. Klumpp, pers. comm.). The affinity for herbal knowledge among learned monks is well known, but is further illustrated by this astonishing short entry in *The History of the Britons* compiled by the Welsh monk Nennius (M. Kitchen pers. comm.):

By the river which is called Guoy (Wye), apples are found on an ashtree on the declivity of the wood which is near the mouth of the river.

Written about 829, this long mythological tree can only be *Sorbus domestica*, the combination of pinnate leaves and apple- or pear-like fruit is unique. This is a very early plant record, and 'the declivity of the wood near the mouth of the river' is not only precisely the habitat for the species, but is very close to the locality for present phenotype (c), if it is reasonable to suppose that the plant grew on the low Triassic shore rather than the carboniferous limestone cliffs upstream. Alternatively it could be quite acceptable to amend the translation to: 'Near the river . . . entrance to the river,' thereby implying an external locality with the river name used simply to provide a locale on an otherwise anonymous Severn shore, in which case we may be looking today at Nennius' tree (see *Habitu*, page 34). Another translation of the above finds the plant 'upon the high shore'. The single tree (plus suckers) in VC 34 hangs from a cliff of only 4 m and is the only plant so far found in an obvious place of easy access. Nennius' note indicates firstly that the plant was sufficiently rare even then to warrant a place among 'the marvels of Britain', and secondly that if the monks of Glamorgan cultivated *Sorbus domestica*, this was not known to Nennius or his informers. If he collected his information from afar he would no doubt have been unaware of finer details; it would be most surprising if lowlier monks did not take seeds or suckers from this marvellous, fruit giving tree.

The other two sites were also noted in the past by another learned Welshman, Iolo Morgannwg (Edward Williams, 1746-1826), poet, antiquarian and enthusiast. This eccentric and generally unreliable witness to the past virtually reinvented druidism and dabbled in all sciences. He strove to paint his little corner of Wales as a haven of culture and natural wonder far beyond the truth. In a survey of his local parish undertaken in about 1793 and never published appears the following:

'Out of the rocks of the sea cliffs . . . we find the Mountain Ash or Service Tree, with pinnate leaves like those of the Ash tree, growing in the fullest exposure to the sea air; it is remarkable that this variety of service tree is not found . . . anywhere else in the Vale of Glamorgan . . . tho' in the hilly or northern part of the county the woods in most places abound with this tree'.

He is probably referring to *Sorbus domestica* in the first part of this paragraph – he describes one native locality. His later confusion with *S. aucuparia* is understandable given that the latter does not occur on Glamorgan Lias limestone soils and the species would have been unfamiliar. After his death many of Iolo's botanical observations were mercilessly discredited, the above particularly so, and by some eminent scientist of the last century. It is gratifying that he may have been correct on this occasion. The timely discovery of this extract by a local historian in 1993 further supported the growing evidence that *S. domestica* was far from being a recent introduction.

There is also a possible old Welsh name for the fruit elsewhere in the writings of Iolo Morgannwg. He describes a locally known orchard tree which was clearly a type of Wild Plum or Bullace, known as the Cregull or

Crengle, which grew close to *S. domestica* at site 2. An English origin for this name is not apparent, but Welsh 'craig' – rock, crag, and 'Le' – place, is quite acceptable. The name can also be genitive by position suggesting a fruit 'of a rocky place'. Welsh died out before Lolo's day in this part of the Vale of Glamorgan, so it is quite possible that with the loss of meaning the name, aptly appropriate for *S. domestica*, became transferred to another fruit tree partly as a result of increasing inaccessibility of the former. Another example of this tendency is readily seen in the several rivers in England known as 'Avon', simply Celtic (and modern Welsh) for 'river', the actual names lost in the doublet 'River Avon'.

## HABITATS

The three habitats of *Sorbus domestica* presently known are highly specific and analogous. Lias Limestone is a hard rock bedded with soft Rhaetic-type saline siltstone (Neville George, 1970) which allows rapid erosion. Any gorges or inland crags formed during the last Glacial period would have rapidly degraded to a characteristic steep slope (Small, 1978), unlike the usually Carboniferous Limestone refuge habitats of *Sorbus aria* s.l. microspecies that have endured. The *Sorbus domestica* habitats of phenotypes (a) and (b) are post-glacial sea cliffs protected from marine erosion by alluvial riverine deposits formed after land and sea levels reached approximate equilibrium in the Neolithic period (North, 1955). The degraded, wooded cliff west of the present sites points to a gradually increasing alluvial foreshore deposited over a long period which, in historical times, has been more or less continually eroding. The endurance of these foreshores is indicated, at site 1, by the presence of an apparently Bronze Age barrow in the final meander of the river, and at site 2 by the almost completely entire Iron Age promontory fort above. These Hillforts, frequent from Sudbrook in the east to Dunraven in the west show the rapid erosion of Mesozoic cliffs in their incompleteness. About half of the original form generally remains. The rapid cliff-ward advance of the protective pebble banks and their age is particularly well indicated west of site 1 where soft peaty early post-glacial deposits are being so rapidly eroded by burrowing invertebrates and wave action that they must have been uncovered by the retreating alluvium in recent modern times. These deposits contain the leaves of *Typha* (Bulrush), roots of *Quercus* (Oak) and needles of *Pinus* (Pines), though conspicuously few of the latter, and extend from about 4 m below H.W.M.T. down to the lowest tide level, where only vestiges remain.

Site 3 (VC 34) is also a sea cliff protected from erosion at present by alluvial saltmarsh. The single tree is here rooted into a low cliff of red Triassic 'Keuper Marl'. It is, however, at the far east end of a long, 30 m high cliff capped by white lias and the lowest levels of the Lias series. That this cliff, now eroding rapidly, once was defended from erosion is indicated by massive blocks of calcareous tufa lying in the mud up to 15 m from the cliff base. Erosion at the cliff-top has also accelerated as a result of invasion by *Quercus ilex*. It seems likely that the single tree is all that remains of a population formerly extending along this cliff, which would approach the locality described by Nennius (Wade-Evans 1938).

These habitats have provided *Sorbus domestica* with the ability to remain a coloniser of soft impermanent rock faces as fresh cliff became available by the continued deposition of alluvial foreshore. The rarity of this precise formation is perhaps indicated by some of the associated species. *Schoenus nigricans* (Black Bog-rush) occurs close to the tree described above, its only locality in VC 34, and also occurs with phenotype (b), one of only two localities in VC 41. *Lithospermum purpurocaeruleum* (Purple Gromwell), very closely associated with *Sorbus domestica* on the continent (Ellenberg, 1988), is present with phenotypes (a) and (b), and only in these and a few similar habitats on the same coast is it frequent.

The friable nature of the habitats not only holds lesser colonisers at bay, but seems to be physically important to the long term survival of *Sorbus domestica*. Examination of a variety of trees in areas of differing rates of sub-aerial weathering shows that the plant does not so much produce suckers but 'climbs back up its roots'. Old plants are gradually unearthed until they tip over. With the loss of meristematic dominance suckers are produced from the higher rootstock, growing rapidly while the bulk of the plant gradually wanes. By the time the new growth reaches average stature it is already partly exhumed and bears a more or less right angled 'knee' as evidence of the decayed former trunk. These 'knees' are found on the majority of plants, large and small and the process is easily observable at site 3.

In each site every individual is morphologically identical, while suckering is so dense that determination of 'individuals' is usually difficult. In the surveys every stem from ground level is counted, regardless of likely origin. Perhaps each population should be counted as one clonal plant. Only in site 2 are there isolated plants which could have originated from seed. In long isolated populations of any organism the trend will be towards genetic and morphological uniformity. (Briggs and Walters, 1984), so perhaps this is not simply the result of vegetative reproduction from a single survivor. The wide variation in leaf form between the sites suggests that if there were genetic and morphological differences between the populations at the point of isolation this has subsequently become greater as mutations would be different in each population and newly established alleles would not be transferred. (Alcock 1974). This suggests that though the plant may be maintaining vegetatively at present it must have been sexual in the past over a long period. The present habitats may be the remnants of larger but still isolated populations in the steep limestone woodlands immediately inland.

*S. domestica* is taken on the continent as an indicator of relict sub-mediterranean thermophilous scrubland (Ellenberg 1988) especially when associated with *Quercus pubescens* (Downy Oak) often considered in habitats not significantly maintained by human activity, to have endured since the climatic optimum. Northernmost populations occur on steep south-facing slopes held open by piecemeal scree fall and are apparently vegetative and non-fruiting (Gerstberger 1980).

In order to test the hypothesis that the apparent lack of fruit may be due to 'genetic wasting', self-incompatibility among a clonal population, or simply the lack of a suitable pollinator, pollen was taken from plants of phenotype (a) to phenotype (c) and both groups selectively cross-pollinated. The results showed that fruit formation is partly temperature related. Self fertilised and cross fertilised inflorescences suffered the same fate as control material, no fruit has formed at site 3, while the few fruit formed at site 1 were in the hottest positions on unfertilised and unreachable inflorescences.

A secondary control of fruiting is the annual appearance of the fungal disease *Venturia aucupariae*, which is known to overwinter in leaf-litter (D. Rose, pers. comm.) and infects emerging shoots and inflorescences, particularly in damp springs. The disease is rare on *Sorbus aucuparia*, despite the density of some populations, and the frequent ornamental use of this species, yet is present in all three sites of *S. domestica* and has been observed at site 1 for over a decade. Shaded plants or those on wetter, gentler slopes are badly affected, while plants in the hot, rain shadowed, and perhaps litter-free vertical areas grow well and do produce fruit. Significantly, *V. aucupariae* has been seen on the Arley tree, while investigations by David Rose showed no disease on other cultivated trees. If wild *S. domestica* is particularly susceptible to *Venturia* in our maritime climate then this would represent an effective edge-of-range control, and a further factor limiting the species to hot open habitats. In the continental summer of 1995 the plants were notably disease free in sites 1 and 2, and the fruits produced were fertile.

The green, hard fruits of *Sorbus domestica*, unpalatable until shed, are adapted for dispersal by larger herbivorous mammals (Kay, in Marshall and Grace, 1992). To survey the responses of domesticated mammals, ripe unbletted and bletted fruit were offered to a selection of available, well fed, farm animals. Given the likelihood of acquired food preferences in a regular diet the results only show basic like or dislike. Enough fruit was provided to test rejection after initial acceptance and retrieval by scent from a distance of 3 m.

Unbletted fruit was initially accepted by horses (Welsh cob cross), sheep, cattle and Spanish feral goats, but rejected after a further quantity by the horses and cattle. Bletted fruit offered to the same animals was rejected by all except the goats. The strong scent of the bletted fruit scattered on the ground was recognised by the horses, considered at some length, but no fruits were eaten. Sheep and cattle seemed to be completely indifferent to the presence of the scattered fruit. Bletted fruit continually offered to the goats resulted in rejection by some (four animals were used for each sample). When offered to omnivorous pigs the ripe unbletted and bletted fruit were both accepted, as might be expected. Pigs (English and Vietnamese Pot-bellied) were able to detect the scent of the bletted fruit at some distance, and an irregular trail was followed by one animal across open ground.

Though an admittedly limited trial, the results showed that the pungent bletted fruit, which would be deposited on the ground beneath a tree, was unacceptably mawkish to most animals, but was accepted and sought out by the omnivorous pigs. Seeds are likely to be destroyed by herbivores chewing a hard fruit, whereas the soft fruit, where accepted was seen to be clamped by the tongue and sucked down, probably leaving many seeds unharmed. Ridley (1930) states that pigs destroy the great majority of seeds during digestion, but the remainder could represent a reasonable agency of dispersal. Seeds could also be trapped in the bristle of the jaw or legs. The feasibility of faecal dissection to determine the proportion of viable seed was considered but rejected!

That the Wild Pig is the primary dispersal agent for *Sorbus domestica* in eastern Austria was confirmed in April 1996 (R. Klumpp, pers. comm.).

Fradrich (1974) states that the European Wild Pig, *Sus scrofa*, favours woodland and woodland borders, and will establish an occasional refuge in secluded woodland borders particularly if there is a potential wallow present. They are not averse to a saline wallow such as may be provided by a saltmarsh. They are also willing swimmers and have been known to cross up to 3 km of fresh or sea water (in the Baltic). If *Sorbus domestica* did arrive in Britain during the climatic optimum, after the loss of the continental landbridge, by a mammal agent rather than an avian one then the pig may be the only contender. It is possible that wild pigs did disperse the species within Britain. Present sites are all connected with steep wooded wild places providing ranging territory and the agility of the pig, and its ability to maintain an open habitat could have been vital to the survival of the species within closed woodland. In Europe the present reduced range of the pig usually separates it from *Sorbus domestica*, while in Britain, by 1600, there were very few south of the Trent (Dent, 1974). The climatic history of southern Britain suggests that even with an effective dispersal agent the species is unlikely to have maintained itself away from microclimatic refuges after the general cooling of the Neolithic period, and certainly not after the further cooling of around 2500 b.p. The present True Service Trees, morphologically and genetically distinct from one population to the next, are unlikely to have been the subject of attention from a hungry wild boar for a considerable time!

It is therefore suggested that the current sites are habitats which became available for colonisation a considerable time ago and that for such a dynamic formation to have provided continuous open habitat and remain today in three cases, is the result of a precise combination of ecological factors which is of very rare occurrence and astonishing good fortune. In seeking other potential coastal habitats for *S. domestica* the differing isostatic history, long-shore drift, early deforestation patterns and population densities, recent coastal erosion and the distribution of rocks strongly basic, friable enough to permit vegetative regeneration yet not subject to major falls, local climate, aspect and competition (particularly from continental aliens), all have to be taken into consideration. Careful research and fieldwork over the last few years has suggested that *S. domestica* is unlikely to be found in habitats where these factors are not present.

Finally, while associated species like *Lithospermum purpurocaeruleum* (Blue Gromwell) and *Buxus sempervirens* (Box) are found inland in usually refuge habitats, neither carboniferous limestone nor cretaceous rocks seem to offer the same potential for vegetative endurance present on lias sea cliffs. The powerful and acetic smell of the fruit, which one would expect to be readily formed inland, would also draw attention from some distance. That all three present sites and the Wyre tree were all noted in the past would indicate that though it would be thrilling to find new sites, records are unlikely to be arriving in droves.

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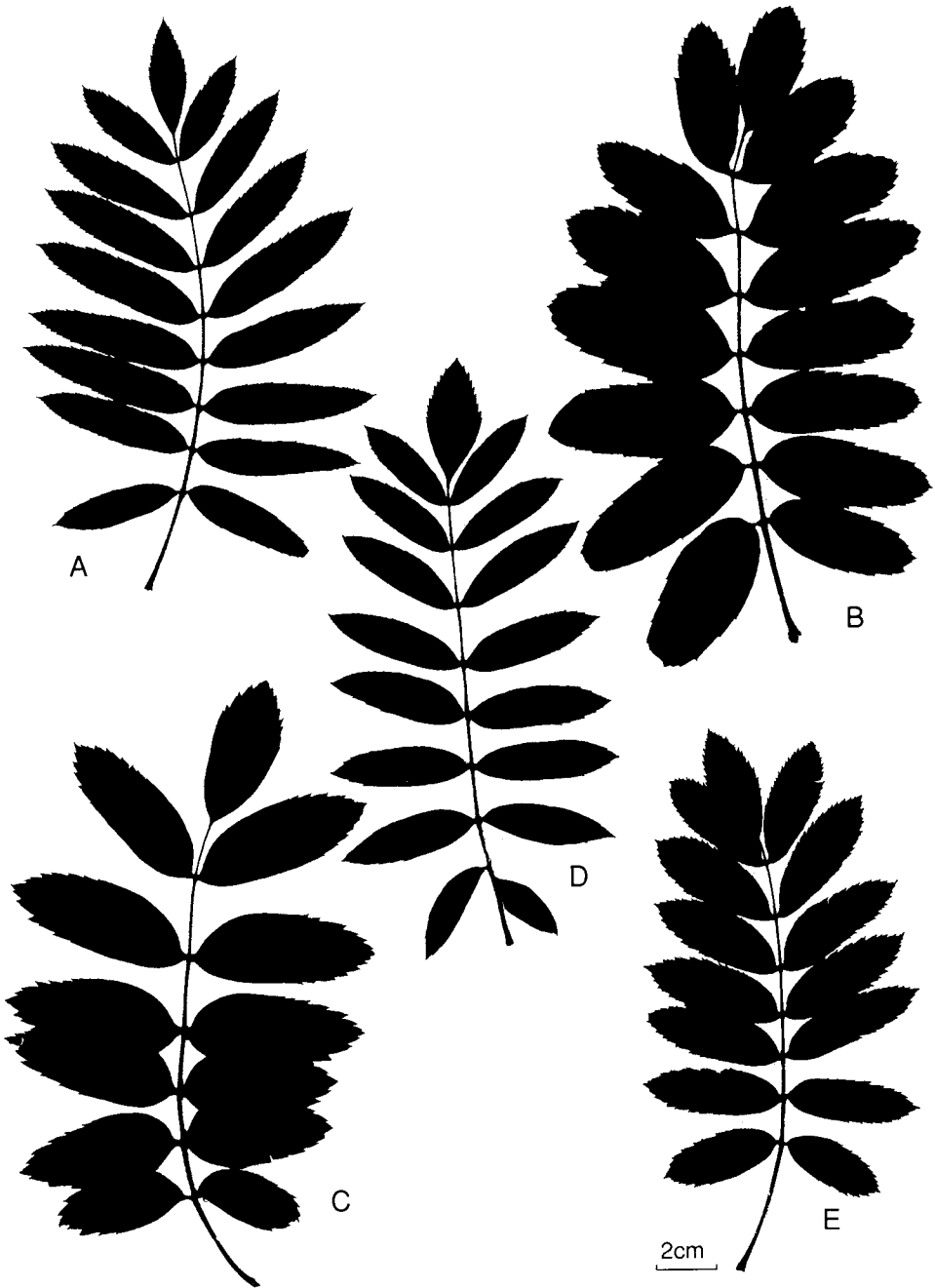
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## CONSERVATION NEWS

### ALIENS ARE NOT AGGRESSIVE

On behalf of Conservation Committee I have begun collecting from vice-county recorders the information they hold on potentially aggressive alien species and genotypes. This is one of the actions from BSBI's *The Strategy and Action Plan for the Conservation of Vascular Plants*. So far I have received replies covering 36 vice-counties and they make very interesting reading. The information, although incomplete, is already being used by JNCC. They were delighted to hear of our initiative coming at just the right time to assist in formulating their ideas on how to tackle the problems posed by alien species.

As we thought, the data are patchy and may be unreliable owing to less thorough recording, making it difficult to decide if and where aliens pose a threat to our native flora. I have not fully analysed the information, but my initial impression is that there is very little to worry us! That is not to say that aliens are not widespread and in some cases forming substantial stands, but very few are reported as threatening scarce, native species or valued habitats. The following comments illustrate some examples of the inference from the replies to data.



*Sorbus domestica* leaf silhouettes: A – Site 1 (VC 41 West); B – Site 2 (VC 41 East); C – Site 3 (VC 34); D – Arley House; E – Oxford Botanic Garden

*Elodea canadensis* (Canadian Pondweed) seems to have settled into a niche, but *E. nuttallii* (Nuttall's Pondweed) is increasing generally. Only three replies mentioned species threatened as a result of spread of these two aquatic weeds. *Crassula helmsii* (New Zealand Pigmyweed), on the other hand, is of concern in a number of counties, threatening populations of the plants of shallow margins and seasonally wet mud. *Lemna minuta* (Least Duckweed) is being found in many English and Welsh vice-counties, but so far does not seem to be a problem.

*Fallopia japonica* (Japanese Knotweed), *Impatiens glandulifera* (Indian Balsam) and *Heracleum mantegazzianum* (Giant Hogweed) are widespread and apparently static but not threatening anything other than the scenery with the exception of the last. This is causing concern on the banks of large rivers in N. England and Scotland and, as one recorder remarked, to the silly people who walk into it.

*Rhododendron ponticum* (Rhododendron) and *Gaultheria shallon* (Shallon) seem to be fairly static. They are either being controlled on reserves or invaded areas have been written off as the damage is already done. (NB. I have had no replies from N. Wales and some other areas with large stands).

A tangential problem is posed by *Spartina anglica* (Common Cord-grass) which is spreading in five vice-counties and may be a threat to *Zostera* (Eelgrass), *Salicornia* (Glasswort) and *Cochlearia anglica* (English Scurvygrass). Is this an alien species, or a native which was a British endemic not very long ago?

We are very grateful to those recorders who have already responded to our request and I look forward to more replies as winter approaches. If any member would like to send information I will add it to the database. We would particularly like to know of instances where alien species are actually posing a threat, to what and how rapidly. The objectives are to answer two questions:

- are the well known invaders actually causing significant damage to our flora?
- are there other species, not generally noticed, posing a potential problem nationally?

If we are to make the best uses of our resources for conservation, we should not over-react to anecdotes. On the other hand, we must not be complacent and only substantiated information (in contrast to opinion) will enable us to steer the right course.

ROBIN WALLS, 16 Leigham Vale Road, Bournemouth BH6 3LR

## ALIENS

### ALIEN RECORDS

No authority is given if the taxon is mentioned in Stace's *New Flora of the British Isles*, Clement & Foster's *Alien Plants of the British Isles* or Ryves, Clement & Foster's *Alien Grasses of the British Isles*. Arrangement is alphabetical; an \* following the Latin name indicates a taxon new to Clement & Foster or Ryves, Clement & Foster. I would be delighted to receive any alien records for inclusion in future issues. In general all taxa not included in Kent's *List of Vascular Plants of the British Isles* are eligible for inclusion but other more widespread aliens listed in that work may be included at the discretion of the VC recorder and the editor. Please ensure that all records include the details as set out below, especially a map reference, even if only to a hectad (10 km square).

My thanks to Mrs O. Linford, John Palmer and A. Underhill for supplying the following records.

*Acroptilon repens* (Russian Knapweed). Still well naturalised on a railway bank adjacent to a minor road, SO/51.40, Herefs. (VC 36), Aug 1995, A. Underhill.

*Aesculus parviflora* (Bottlebrush Buck-eye). Several good patches on churned-up waste ground, Bow Arrow Lane, Stone, TQ/5.7, W. Kent (VC 16), 7/10/90, J.R. Palmer.

*Aethionema saxatile*. Weed on paving stones, edge of the heath, Blackheath, TQ/3.7, W. Kent (VC 16) 5/6/84, J.R. Palmer, det. E.J. Clement. Pre-1930 only in Clement and Foster.

*Aichrysom laxum* (Haw.) Bramw.\*. Many plants on high Abbey wall adjacent to road, Tresco, SV/89.14, Isles of Scilly (VC 1b), Oct. 1993, A. Underhill, det. E.J. Clements.

- Brunnera macrophylla* (Great Forget-me-not). One plant on a streamside bank near the mill E of Loudham Hall, TM/31.54, E. Suffolk (VC 25), April 1994, A. Underhill.
- Buddleja* × *weyeriana*. One well established bush adjacent to the main road by Stratton, SY/65.93, Dorset (VC 9), Aug 1995, A. Underhill
- Buddleja alternifolia* (Alternate-leaved Butterfly-bush). Very large quantity in natural woodland, Dartford Marshes, TQ/5.6, W. Kent (VC 16), 29/10/1995, J.R. Palmer. Formerly remote situation, difficult of access. only revealed, and partially destroyed, by construction of a new road
- Chenopodium hircinum* (Foetid Goosefoot). Rubbish tip in the Atlas Stone Company pit at Horns Cross, TQ/5.7, W. Kent (VC 16), 7/10/90, J.R. Palmer, det. E.J. Clement. First Kent record for 29 years, with *Capsicum annuum*, *Carthamus tinctorius*, *Tagetes patula* and *Limonium sinuatum*.
- Convolvulus sabatius* (Ground Blue-convolvulus). Large patch on old garden bank. St Martins, SV/91.26, Isles of Scilly (VC 1b), Oct. 1994, A. Underhill, det. E.J. Clement.
- Cotoneaster lacteus* (Late Cotoneaster). One bush on the roadside bank by the island at the junction of the A45/B1106, TL/82.65, W Suffolk (VC 26), May 1994, A. Underhill.
- Cotoneaster zabelii* (Pear-fruit Cotoneaster). Abundantly established on very old walls and banks, Gravesend, TQ/6.7, W. Kent (VC 16), 24/5/79, J.R. Palmer. Tidying-up by the local council reduced its numbers considerably but it is now on the increase again.
- Francoa ramosa* (Bridal Wreath). One plant in dunes on Tresco, SV/89.14, Isles of Scilly (VC 1b), Oct. 1993, A. Underhill. But not found since.
- Fritillaria imperialis* L. 'lutea'\*. One plant probably planted but seemingly well established on side of minor road S of Chillesford, TM/38.51, E. Suffolk (VC 25), April 1994.
- Gaillardia* × *grandiflora* (Blanket-flower). Many plants in a sandy grassy area at the back of a fenced building by the dunes at Brean village, ST/29.55, N. Somerset. (VC 6), Aug. 1995, A. Underhill
- Hepatica transsilvanica* Fuss\* (Rumanian Liverleaf). Appeared spontaneously in several places in newly spread topsoil, then persistent until now, at S. Darenth, TQ/5.6, W. Kent (VC 16) 1971-3, J.R. Palmer.
- Isatis tinctoria* (Woad). Abundant on spoil heaps at archaeological dig, near Sixpenny Handley, ST/999.148, Dorset (VC 9), June 1996, Mrs O. Linford. Appeared every year since 1992. Woad had been grown as crop around Bridport in 17th & 18th centuries but has since disappeared except as a casual garden weed (H.J.M. Bowen pers. com.)
- Jasminum humile* f. *humile* (Italian Yellow Jasmine). Waste ground near Swanley, TQ/5.6, W. Kent (VC 16), 15/6/95, J.R. Palmer. Difficult of access in brambles and nettles, if a relic it is long-standing. Pre-1930 only in Clement and Foster, as var. *revolutum*.
- Lepidium sativum* (Garden Cress). Six plants in car park at Shoreham by sea, TQ/23.04, W. Sussex, (VC 13), June 1995, A. Underhill, det. E.J. Clements.
- Limonium latifolium* (Broad-leaved Statice). Widely naturalised in grassland below Darenth Wood (in the general area of Varo House), TQ/5.7, W. Kent (VC 16), 2/8/89, J.R. Palmer.
- Lonicera involucrata* (Californian Honeysuckle). Shrubs growing at edge of woodland, 400 m from road, near Drumsleet, NX/94.72, Kirkcudbrights. (VC 73), July 1995, A. Underhill. With *Berberis gagnepainii* (Gagnepain's Barberry). Though probably originally planted both species are well established.
- Mimulus* × *burnettii* (Coppery Monkeyflower). 'Hose in hose' variety, well naturalised on a wet roadside near the road junction at Tushielaw, NT/30.18, Dumfries (VC 72), July 1995, A. Underhill.
- Nolana prostrata* (Trailing Chilean-bellflower). Grassy verge outside houses, Tresco, SV/88.15, Isles of Scilly (VC 1b), Oct. 1995, A. Underhill. Probably planted but spreading rapidly, E.J. Clement
- Olearia solandri* (Coastal Daisybush). Probably planted at edge of coastal copse of *Olearia traversii* (Chatham Island Daisybush), St Mary's, SV/91.10, Isles of Scilly, (VC 1b), Oct. 1995, A. Underhill, Known here for at least 12yrs, det. E.J. Clement.
- Osteospermum jucundum* (Cape Daisy). Quantity in long rough grass and nettles by footpath, Hawley, TQ/5.7, W. Kent (VC 16), 2/6/96, J.R. Palmer. Perhaps sown originally, or garden throw-out but looks established.

- Photinia davidiana* (Stranvaesia). On ruins of Collegiate Chapel of St John the Baptist, Chester, SJ/4.6, Cheshire (VC 58), 26/8/89, J.R. Palmer (as var. *undulata*).
- Primula alpicola* Stapf\*. On W bank of stream a little N of the road, at Moulin, NN/944.593, Perth, 14/7/68, J.R. Palmer, det. D McClintock.
- Pteris multifida* Poir. (Spider Fern)\*. plants smother the top of a well in a public house near Beauworth, SU/57.24, S. Hants. (VC 11), Nov. 1995, A. Underhill, det. E.J. Clements.
- Rosmarinus officinalis* (Rosemary). Abundant seedlings in gratings round trees, by the river near the Chester Boat Centre. SJ/4.6, Cheshire (VC 58), 26/8/89, J.R. Palmer. *Cotoneaster hjelmquistii* on rocks by the river nearby.
- Sempervivum andreanum*. On overgrown remains of old walls, Hextable, TQ/5.7, W. Kent, (VC 16), 13/7/89, J.R. Palmer. Anthers yellow, leaves glaucous green with no markings. Together with *S. tectorum* var. *alpinum* in more abundance, which was also in long grass nearby.
- Silene coeli-rosea* (Rose-of-Heaven). Remote plantation of new small trees east of Swanley, TQ/5.6 W. Kent (VC 16), 26/9/90, J.R. Palmer, det. E.J. Clement; as was *Phacelia campanularia* (California-bluebell) found there on 1/10/90, and *Cyperus alba-striatus* found 21/8/90. Introduced with top soil from Surrey. The long mixed list of interesting aliens which occurred at this site, some new to Kent, is worthy of a separate article.
- Solanum diflorum* (Winter-cherry). Several plants growing in the General Hospital grounds in the centre of Birmingham, SP/07.87, Warks. (VC 38), Dec. 1995, A. Underhill. With *Helichrysum petiolare* (Silver-bush Everlastingflower). Due to major reconstruction these plants are probably lost.
- Sorbaria sorbifolia* (Sorbaria). One bush with many seedlings on the N side of the road by a minor road junction, TM/34.46, E. Suffolk (VC 25), July 1995, A. Underhill.
- Sorbus croceocarpa* (Orange-berried Whitebeam). Regenerating to some extent on road embankments near Lane End, TQ/5.7, W. Kent (VC 16), 2/8/89, J.R. Palmer.
- Spiraea* × *foxii* K. Koch ex Zab.\*. Relic for 15-20 years near long-defunct nurseries, Swanley TQ/5.6, W. Kent (VC 16), 1996, J.R. Palmer.
- Tetragonia tetragonoides* (New Zealand Spinach). Large patch by pathside hedge adjacent to crop fields, Tresco, SV/89.14, Isles of Scilly (VC 1b), Oct. 1995, A. Underhill, det. E.J. Clements.
- Urospermum dalechampii*. Many plants growing on top of old walls in the Abbey gardens on Tresco, SV/89.14, Isles of Scilly (VC 1), Oct. 1993, '94 & '95, A. Underhill, det. E.J. Clements.
- Campanula alliarifolia* (Cornish Bellflower), *Hieracium waldsteinii* Tausch\*, *Hypericum coris* L. \*, *H. olympicum*, *Paeonia mlkosewitschii* Lom.\*. Near Stow in the Wold, SP/19.27, E. Glouc. (VC 33), 22/4/95 & 30/6/95, A. Underhill. The plants grow on a roadside bank on the side of a main road, they originate from an ex-nurseryman who used to throw any spare seeds from the nursery onto this bank at the end of the season 15-20 yrs ago. Also 100+ *Digitalis lutea* and three other species not yet identified, det. E.J. Clements.
- Acacia saligna* (Labill.) H. Wendl. (Blue-leaved Wattle)\*, *Elaeagnus glabra*, *Erica arborea* (Tree Heath), *Kunzea ambigua* (Sm.) Druce\*, *Oxylobium lanceolatum* (Vent.) Druce\*, *Pittosporum ralphii*, *Senecio glastifolius* (Holly-leaved Groundsel), *Ugni molinae* (Chilean Guava), *Zenobia pulverulenta* (Zenobia). Plants well naturalised in the woodlands on Tresco, SV/89.14, Isles of Scilly, (VC1b), Oct. 1995, A. Underhill. With many other naturalised species, all det. E.J. Clement.

EDITOR

### SOLANUM VERNEI

The superb illustration of *Solanum vernei* by Annette Townsend on the front cover was originally intended to accompany my note *An invasive alien plant from South America in Whiteknights Park, Campus of the University of Reading*, which was published in *BSBI News* 68: 36-37, but, although a herbarium specimen was despatched from Reading University at that time, it inexplicably failed to reach the Editor in Cardiff – presumably lost in the post! However, this handsome immigrant is still with us in



large numbers all over the Park and seems quite happy to remain; it is even now (mid-July) putting on a grand floral display. For more details of the plant and the circumstances surrounding its initial invasion, see the above article.

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## A RATHER DIFFERENT (AND OVERLOOKED?) ROCK-ROSE

Any Common Rock-rose with larger than normal flowers is worth a second look, even if in natural vegetation, as it may be *Helianthemum nummularium* subsp. *grandiflorum* (Scop.) Schinz & Thell. This year I noticed a colony well established in an attractively vegetated glade deep in Darenth Wood, TQ/5.6, W. Kent (VC 16), 29/5/96.

Flowers 15 mm, leaves green on both surfaces, (long) hairs on upper leaf surfaces and margins, sepals glabrous between the ribs. Although a European native, it is likely to be a garden escape in the British Isles. A clue to the Darenth Wood colony was that the soil contained a quantity of white sharp sand. (Refer *Flora Europaea* and gardening books).

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## ESTABLISHED ALIEN PERENNIALS AND BIENNIALS IN A CHILTERN TETRAD

Following on my note on alien shrubs and trees in the Chiltern tetrad SU/74.98 and its neighbours (*BSBI News* 67: 54-5), I thought it might be of interest to record the much larger number of alien perennials and biennials that I have noted in the same area here during the past 40 years.

### Perennials

*Aconitum napellus* (Monkshood): In Icknield Way hedge, Chinnor, since 1988.

*Allium paradoxum* (Few-flowered Leek): In abandoned pleasance, Adwell, Oxon. since 1953.

*Armoracia rusticana* (Horseradish): Well established patch, road verge near Saunderton church. Druce in his Bucks Flora (1926) mentions Bledlow, but I have not seen it there.

*Calystegia pulchra* (Hairy Bindweed): By Henton Wainhill Halt since 1981.

*Calystegia silvatica* (Large Bindweed): Chinnor, since 1954.

*Centranthus ruber* (Red Valerian): On walls, High Street, Chinnor, and Princes Risborough Manor

*Cicerbita macrophylla* (Blue Sow-thistle): Chinnor churchyard since 1968; road verge, Sydenham, since 1980.

*Cotula squalida* (Leptinella): Lawn weed at Drifts, Chinnor Hill, since 1954.

*Cymbalaria muralis* (Ivy-leaved Toadflax): Not specially recorded, but occurs Oakley (1954), Priestend, Thame, and Princes Risborough.

*Doronicum pardalianches* (Leopard's-bane): In Bledlow by stream off West Street and by Icknield Way near a house, Chinnor Hill NR, by a house; Hempton Wainhill, opposite a house.

*Eranthis hyemalis* (Winter Aconite): In shelter belt by B4009, Aston Rowant, only discovered in 1994.

*Erimus alpinus* (Fairy Foxglove): External wall, Princes Risborough Manor House, since 1966.

*Erysimum cheiri* (Wallflower): Walls in Tetsworth and Priestend, Thame, since 1950s.

*Euphorbia cyparissias* (Cypress Spurge): Rough ground adjacent to school garden, well established in 1993.

*Euphorbia × pseudovirgata* (Twiggy Spurge): Railway bank E of Princes Risborough, since 1977.

*Galanthus nivalis* (Snowdrop): Along footpath between Bledlow church and the Lyde, since 1960s.

*Galanthus plicatus* (Pleated Snowdrop): In abandoned pleasance. Adwell, Oxon., since 1975.

*Geranium endressii* (French Crane's-bill) (pure, not the hybrid): a clump at Gipsies' Corner, Crowell Hill, since at least 1964.

- Hemerocallis fulva* (Orange Day-lily): In hedge between Icknield Way and disused railway line, Kingston Blount, since 1980s.
- Lamiastrum galeobdolon* subsp. *argentatum* (Yellow Archangel): by Icknield Way at Chinnor cricket field since 1977 and just over the Bucks border by a house in Bledlow since 1988; also on roadside, Kingston Hill, since 1987
- Lathyrus latifolius* (Broad-leaved Everlasting-pea): Railway bank, Chinnor, since 1955, but apparently destroyed when station reconstructed, 1994.
- Lepidium draba* (Hoary Cress): Two sites in Chinnor since 1954; another by disused railway line close to station. Also by A40, Aston Rowant to Postcombe.
- Mentha × villosa* nothomorph *alopecuroides* (Apple-mint): Well established clump on roadside hedge-bank, Andridge Common, Radnage, 1993.
- Pentaglottis sempervirens* (Green Alkanet): Road verge, Henton Wainhill halt, since 1992; also by Icknield Way, Chinnor and Henton Wainhill; on road bank, Hill Road, Chinnor; and in approach to disused Chinnor railway station. In Bucks, by-road near Saunderton church, and hedge-bank of disused road near Thame by-pass in Long Crendon parish.
- Pilosella praealta* subsp. *thamasia* (Tall Mouse-ear-hawkweed): Site of former Aston Rowant railway station, 1960, but no longer there.
- Pseudofumaria lutea* (Yellow Corydalis): Walls in Chinnor since 1954.
- Pulmonaria officinalis* (Lungwort): Road verge, Oakley Hill, since 1958.
- Sedum album* (White Stonecrop): By railway track, Wainhill Halt, Chinnor, since 1979, but recently 'tidied away'.
- Sedum dasyphyllum* (Thick-leaved Stonecrop): old wall near the Prebendal, Thame, since 1985.
- Senecio squalidus* (Oxford Ragwort): Chinnor cement workings since 1954
- Solidago canadensis* (Canadian Goldenrod): Chinnor Hill, 1954; Upper Icknield Way, Chinnor, not far from houses, 1993. Callow Down, Bledlow Ridge, Bucks, in hedge bank near former refuse dump.
- Symphytum × uplandicum* (Russian Comfrey): In quantity, roadsides W of Sydenham for many years; also on triangle at Towersey turn off Chinnor to Thame road, B4445, and a clump in Church Lane, Chinnor.
- Tetragonolobus maritimus* (Dragon's-teeth): Roadside bank, Fingest, Bucks, since 1962.
- Veronica filiformis* (Slender Speedwell): Lawn weed at Drifts, Chinnor Hill, since 1954.
- Veronica persica* (Common Field Speedwell): Occurs but not specially recorded.
- Vinca major* (Greater Periwinkle): Verge of Icknield Way outside house, since 1954; and roadside outside house near Radnage church, Bucks, since 1954.
- Vinca minor* (Lesser Periwinkle): Extensive colony in road hedge near Saunderton church, Bucks, since 1969; Icknield Way verge above Chinnor cement works, since 1980s; purple-flowered var., extensive colony on road bank by house near Radnage church, Bucks, since 1954.

### Biennials

- Linaria purpurea* (Purple Toadflax): Chinnor cement works, since 1959, also in Church Lane, Chinnor.
- Linaria annua* (Honesty): Roadside bank of wood below Bledlow Ridge, Bucks, since 1985.
- Myosotis sylvatica* CV (Garden Forget-me-not): Well established, Stepping Hill Field, Chinnor Hill NR and elsewhere along Icknield Way, Chinnor, also in setaside field, Crowell Hill, far from houses.

### Shrubs Omitted from Previous Note

- Mahonia aquifolia* (Oregon Grape): In hedge opposite demolished house, Icknield Way, Chinnor, since 1950s; and by footpath outside garden, Chinnor Hill, since 1960s but recently 'tidied away'; one stunted plant on old railway track by Chinnor cement works.
- Ribes alpinum* (Alpine Currant): Road verge, Crowell Scrubs since 1980.
- Rubus armeniacus* (Himalayan Giant Blackberry): Chinnor, by pathway to allotments, first noted 1994.
- Symphoricarpos rivularis* (Snowberry): Large thicket, Chinnor Hill NR, originating in neighbouring garden, since 1965.

## NOTES ON SOME ALIEN PLANTS AT THE TOWANS, WEST CORNWALL

New finds and changes in the status of several alien plants in the Hayle-Gwithian area over the past few years necessitate revision of information given in the valuable reviews by Stace (1992) and Clement & Foster (1994). Confusion has also arisen in the literature over the place names 'Upton Towans' and 'Phillack Towans', possibly because the latter name appears on the 1:25,000 Ordnance Survey map but not the 1:50,000 sheet.

*Vinca difformis* (Intermediate Periwinkle) was found to be well established at the edge of Gwithian Towans (SW/580.411) on 15th October 1993. The plant is white-flowered and forms a patch about 15 m across on rough ground beside a track, not far outside a garden. The only other record of this species 'in the wild' in the British Isles appears to be from W. Kent.

*Dichondra micrantha* (Kidney-weed) has been recorded as a wool casual, but the only British locality at which it was persistently recorded 'in the wild' was on Phillack Towans (not 'Hayle Towans'). However, the last report of it here that we have traced was in 1979, since when the habitat has been radically disturbed, so it is probably now extinct.

*Anchusa azurea* (Garden Anchusa) was established on disturbed areas in the dunes at Phillack Towans (not Upton Towans) since the 1914-18 war. The last certain record was made sometime before 1976 and it now appears to be extinct.

*Anchusa officinalis* (Alkanet) has also been established on disturbed areas in the dunes at Phillack Towans (not Upton Towans) (SW/56-.39-) since the 1914-18 war. Fears that it is now extinct there are unfounded since at least ten plants were found in both 1994 and 1995.

*Anchusa* × *baumgartneri* (*A. officinalis* × *A. ochroleuca*) (Yellow Alkanet) is well known at the Towans (Russell & Garratt 1976, Margetts & David 1981, Stace 1992, Clement & Foster 1994), although it occurs at Phillack Towans not Upton Towans as reported in most of the literature. It was still present in 1995, forming two substantial clumps on a sandy bank near to plants of *A. ochroleuca*. The hybrids are probably fertile since they form some well developed nutlets.

*Anchusa azurea* × *A. ochroleuca* was also listed for Upton Towans by Clement & Foster (1994: 248-9) but it was not seen during 1994-5. This record was based on an unconfirmed report, which was most probably an error for *A.* × *baumgartneri*. Hence *A. azurea* × *A. ochroleuca* should be deleted from the British flora unless clear evidence of its former occurrence exists.

### Acknowledgement

We are grateful to Eric Clement for helpful comments and encouragement to publish these notes.

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## NOTES ON *PODOPHYLLUM* (BERBERIDACEAE) AS POTENTIAL BRITISH ALIENS

To date there is but one record of a *Podophyllum*, *P. hexandrum*, under its synonym *P. emodi*, as an alien; 'constant for sometime at Charmouth though never flowering' (Meggison, 1958). This sounds like a garden throw-out – rather like a large clump of *Dracunculus vulgaris* (Dragon Arum) that appeared in a roadside hedgerow along Queen's road, Beeston, some years ago. After producing its

spectacular foliage for two years, it disappeared as suddenly as it had arrived, leaving only a hole in the ground – presumably repatriated to cultivated status!

When in cultivation, *P. hexandrum* flowers freely and, being for the most part both self-pollinated and self-compatible in the frequently cultivated forms, produces seed in quantity – the decorative interest provided by the large red lemon-shaped fruit being one reason for its cultivation. If left to ripen and fall the fruit gradually decays, eventually releasing the seeds which germinate easily in the spring, thus producing seedlings that require at least four years to reach maturity. Germination is of interest in itself. It is of the pseudomonocotyledonous type, in which the two cotyledons are fused along much of their length, forming a tube which the plumule ruptures laterally in order to make an appearance. At Nottingham such seedlings are regularly seen each spring in the Pharmacy garden on the University Campus. The plants are long-lived and can produce clonal colonies of considerable size after many years. The rhizome continues to grow for about six years, after which the oldest part begins to decay. Amongst the cultivated plants at Nottingham there appears to be a low degree of out-crossing, which is probably effected by flies, since the flowers do not smell very pleasant. Artificial crosses between dissimilar lines can produce plants with aborted anthers and very low fertility.

*Podophyllum peltatum*, the North American Mayapple or Wild Mandrake, does not seem to have been recorded as an escape or alien in the British Isles. I find this surprising, since its thin freely branching rhizome rapidly spreads and builds up large clonal colonies. In the wild, examples with over 1,000 shoots are often encountered. The plant is capable of regeneration from small rhizome fragments and also reproduces by seed. However, seed production both in the wild and in cultivation is uncommon. Many clones are self-incompatible but a few are partially self-compatible and may set some seed. Whenever two or more clones are grown in close proximity, such as at Nottingham, the frequency of seed production increases due to cross-pollination and consequently some self-sown seedlings occur. Various bees, mainly *Bombus* spp. (Bumble bees), have been seen occasionally visiting the flowers. Recent studies in North America have shown that *P. peltatum* relies on other proximate nectar-rich flowering species, notably *Pedicularis canadensis* (Canadian Lousewort) to attract pollinators, which then apparently are fooled into visiting *P. peltatum* flowers (Lavery & Plowright, 1988). These pollinator attracting plants have been described as magnet species. Lavery (1992) comments 'Though rarely documented, this type of facilitative interaction between plants that are highly attractive to pollinators (magnet species), and co-flowering species that are rarely visited by pollinators, may be widespread in plant communities.' Do we have any examples in the British flora? The seeds produced by *P. peltatum* are extremely sensitive to desiccation and can not survive storage in a paper packet for more than a few days. Since usually only one clone is grown in a garden, and the odds are that it will be self-incompatible, seed is rarely produced. These factors may help to explain why *P. peltatum* is not an established alien in Britain.

In the Netherlands, the cultivation of *P. peltatum* has led to the inadvertent introduction of a North American fungus, *Septotinia podophyllina* which causes leaf blotch in *P. peltatum* and now infects a number of other plants in Europe including, *Populus* spp., *Salix* spp. and *Prunus serotina* (Gremmen, 1987). It is not known if *P. peltatum* is naturalised there.

Two other *Podophyllum* species, both from China, are occasionally cultivated – *P. pleianthum* and *P. mairei* Gagnepain, which the *European Garden Flora* (3: 396) lists as '*P. versipelle* misapplied, not Hance'. It seems worth commenting on the statement made under this entry that 'It may be the same as the Chinese species named *Dysosma tsayuensis* Ying'. An examination of representative material from the whole genus in the Sino-Himalayan region reveals that both *D. tsayuensis* Ying, described from S.E. Tibet, and *P. sikkimense* Chattenee & Mukerjee, described from Sikkim, are synonyms of *P. aurantiocaulae* Hand.-Mazz., described from Yunnan, China, which belongs to a different section of the genus from *P. versipelle* and its allies. This statement also appears to be the basis for the entry in the *Index of Garden Plants* (Griffiths, 1994: 913) attributing a Tibetan distribution to *P. versipelle*. Note too, that in this publication the species has become '*P. versipelle* Hance', although the intended plant is still the 'misapplied, not Hance' taxon of the *European Garden Flora*, for which the earliest valid name is *P. mairei* Gagnepain. (Confusion between *P. versipelle* and *P. aurantiocaulae* has a historical precedent *vide* Fischer, *Kew Bull.* 1929: 249 & 1937: 474.) Typical *P. versipelle* Hance is a rare

plant of montane forest in southern China which is unlikely to have ever been in cultivation. Similarly, *P. aurantiocaulis* is very rare in cultivation at present, despite a possible attempted introduction by Kingdon Ward, who probably collected seed from the Delei valley. Mishmi (now Arunachal Pradesh) in 1928. Also in Griffiths (1994) on page 372, the entry under *Diphylleia*, '*D. pleiantha* = *Podophyllum pleianthum*' should be under a separate generic entry, *Dysosma* as *Dysosma pleiantha* is obviously intended.

Although frost hardy, *P. pleianthum* and *P. versipelle* are so rarely cultivated, slow growing and also self-incompatible, that they are never likely to become naturalised. However, for *P. hexandrum* and *P. peltatum* there remains a chance.

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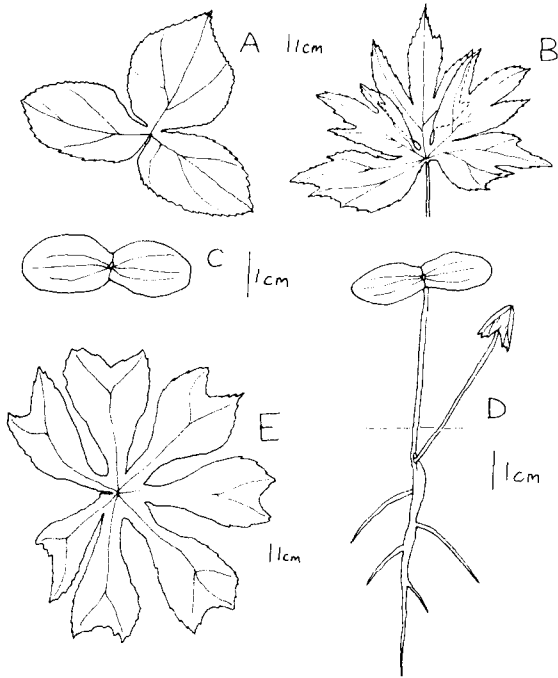
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*Podophyllum*: A-D – *P. hexandrum*, A & B, two adult leaf forms. C, cotyledon shape. D, seedling. E – *P. peltatum*, adult leaf. Del. J.M.H. Shaw © 1996

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## CYCLAMEN REPANDUM IN ENGLAND

*Cyclamen repandum* Sibth. & Smith is not included in the *List of Vascular Plants of the British Isles* (Kent 1992), but is noted as a 'new' name in the flora of the British Isles in *B.S.B.I. Abstracts*, part 25 (Kent 1995), based on records from Surrey. This would seem to be an appropriate place to list other sites, some of them recorded earlier.

This Mediterranean species is on the borderline of hardiness in much of Britain, but thrives in many gardens in the South, where milder winter conditions prevail. In a few localities, it has escaped into the wild, and naturalised colonies may be found in South Devon, maintaining themselves in native vegetation, and spreading by seed. Indeed, in one location – Berry Head, near Brixham – where it is completely established, many hundreds of plants occur, scattered amongst quarried limestone rock. Here it grows under young trees with associated *Helleborus foetidus* (Stinking Hellebore) in a site that echoes its natural habitat.

*C. repandum* may be told at once by its flowering-time – from the end of March to the end of May. There is a slight overlap with the flowering period of *C. coum* – from January to April – but that species is distinguished by its round leaves. Both *C. repandum* and *C. coum* have corolla-lobes that lack the basal auricles that are characteristic of the more familiar *C. hederifolium*; moreover, the lobes of *C. repandum* are longer and narrower than in the other species, and the flowers are often said to be slightly fragrant (rarely detectable, in my experience).

### Distribution

**VC1, West Cornwall:** several plants in Tehidy Woods, Camborne (SW/64), L.J. Hill, 1978; in woods, Trelowarren (SW/72), L.J. Margetts, 1982.

**VC3, South Devon:** an escape outside gardens, Sharpitor, Salcombe (SX/73), L.J. Margetts & L.M. Spalton, 1994; abundantly naturalised in light woodland, Berry Head, Brixham (SX/95), N. Smallbones, 1993, known here for several years; above Meadfoot Beach, Torquay (SX/96), G.F. & M. Hawkins, 1988; several plants in woodland near Ansteys Cove, Torquay (SX/96), field meeting, Devonshire Association, Botanical Section, 1995.

**VC5, South Somerset:** well-naturalised in woods above West Porlock (SS/84), I.P. Green, 1993; on wall and roadside, Stawley (ST/O2), M. Holmes, 1993.

**VC17, Surrey:** well-naturalised on roadside bank, Ewhurst (TQ/O4), R. & N.E. Sherlock, 1992; one plant in woodland, Walton-on-Thames (TQ/O6), J.E. Smith *et al.*, 1994.

- Key:**
- |   |                        |
|---|------------------------|
| 1. Flowers with auricles at base of corolla-lobes, flowering from August – November | <i>C. hederifolium</i> |
| 1. Flowers without auricles   | 2                      |
| 2. Leaves suborbicular, flowering January – April                                   | <i>C. coum</i>         |
| 2. Leaves angled, flowering March – May   | <i>C. repandum</i>     |

A fourth species, *C. purpurascens*, is also hardy in Southern Britain, but is rarely grown, and has not been reported as a garden escape.

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## ALIEN PLANTS FROM YORKSHIRE

An unprecated number of alien plants turned up in my part of Yorkshire in 1995 and the following lists are from two of the more interesting sites

### Tip near Esholt Sewage Works SE/169.398

This tip, was discovered by B. A. (Jesse) Tregale when he was recording that tetrad and a number of botanists went along to see what was there. It is composed of plastic rubbish and gravel from the drains of Bradford dumped by Yorkshire Water – the only praiseworthy thing they've done this year! One might expect Asian weeds in Bradford but these were mostly Mediterranean.

Alien plants found in 1995: *Coriandrum sativum*, *Erodium botrys*, *Melilotus indicus*, *Legousia* sp., *Phalaris canariensis*, *Trifolium cernuum*, *T. resupinatum*, *Viola* × *witrockiana*. August 24, 1995. *Amaranthus cruentus*, *Avena sativa*, *Cannabis sativa*, *Carthamus tinctorius*, *Cassia* sp., *Citrullus lanatus*, *Cuscuta campestris*, *Helianthus annuus*, *H. petiolaris*, *Linum usitatissimum*, *Lycopersicon esculentum*, *Panicum miliaceum*, *Phoenix dactylifera*, *Physalis peruviana*, *Raphanus sativus*, *Sisymbrium altissimum*, *Solanum tuberosum*, *Xanthium spinosum*. Unlikely native plants also present. *Galium tricoratum*, *Medicago arabica*, *M. minima*, *Ranunculus arvensis*, *Trifolium glomeratum*, *T. striatum*, *T. subterraneum*, *T. suffocatum*.

1996 update: On 10th July *Galium tricoratum* was still on the tip along with 13 species of native and alien clovers. These included *Trifolium angustifolium*, *T. echinatum*, *T. incarnatum* and *T. tomentosum*.

**Ingleborough Hall, Clapham SD/748.695** (Ingleborough Hall was Reginald Farrer's home and we presume the plants are remnants of his introductions).

Limestone scar July 16 1995: *Alchemilla conjuncta*, *Arenaria balearica*, *Erimis alpinus*, *Geranium* sp., *Iberis sempervirens*, *Moltkia suffruticosa* (probably), *Primula* sp., *Ranonda myconi*, *Saxifraga* sp., *Silene alpestris*.

Woodland July 16 1995: *Aruncus dioicus*, *Petasites japonicus*, *Rhododendron* spp., *Senecio fluviatilis*.

1996 update. Dr Farrar, the present owner of Ingleborough Hall, kindly allowed a few of us to revisit on 6th June. The *Primula* on the scar was *P. marginata*. *Arabis alpina* and *Thalictrum aquilegifolium* were also present. Additional plants found in woodland were *Nectaroscordum siculum*, *Meibanthemum kamschaticum*, *Gunnera tinctoria*, *Rogersia aesculifolia*, *Sinarundinaria anceps*, *Sassa palmata* and *Acer cappadocicum*. *Darmera palmata* was beside the lake

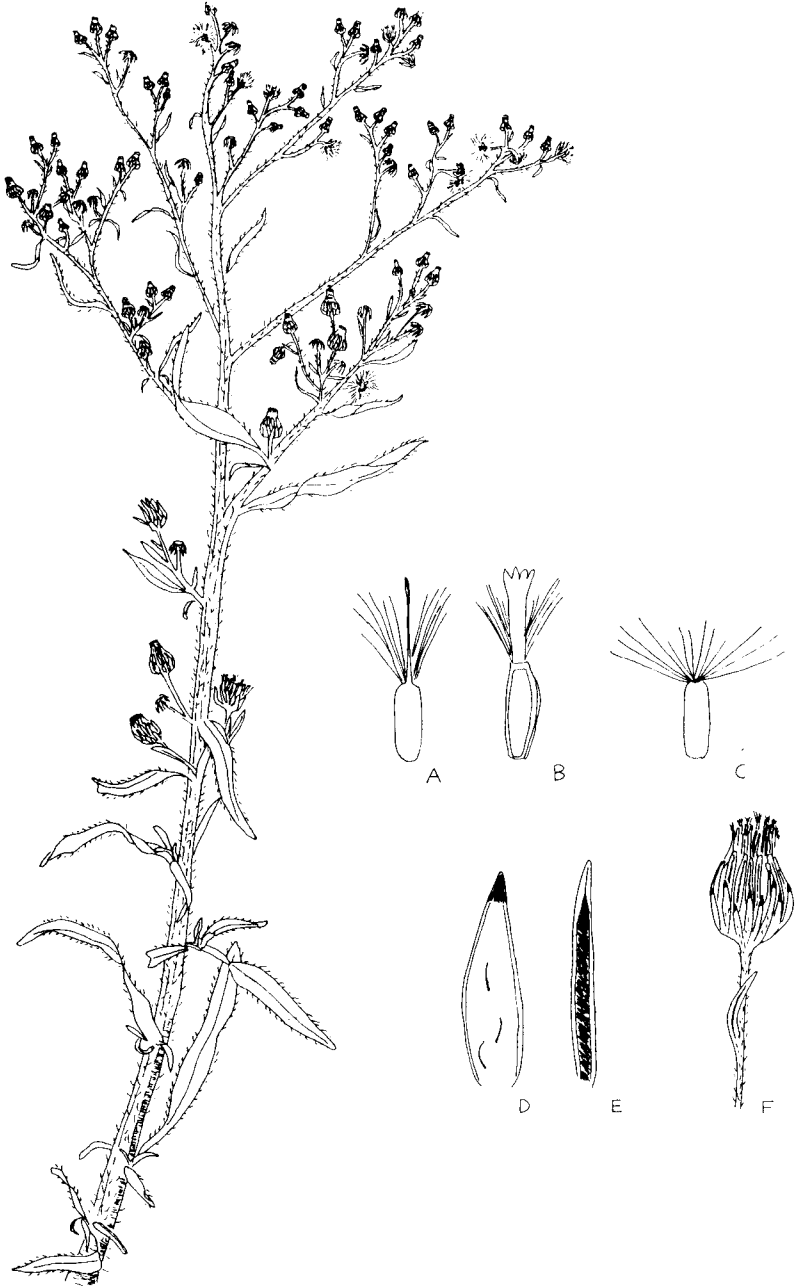
In addition to the plants listed, I was amazed to discover *Cotula squalida* well established on the edge of a moorland track north of Pateley Bridge at SE/192.691 and *Barbarea verna* and *Tulipa gesneriana* on a roadside at Gisburn, SD/830.495 on May 5 1995, but a year later the roadside had been taken over by native docks and thistles and there was no sign of the aliens

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## CONYZA BILBAOANA J. Rémy – NEW TO SOUTH HAMPSHIRE (VC 11) AND TO BRITAIN

In September 1992 a population numbering several hundred plants of mixed *Conyza* species was discovered on urban waste ground off Keswick Road in the Woolston area of Southampton. One of the species present was clearly *C. canadensis* (Canadian Fleabane), however, a second more robust species was definable. On the basis of a poor knowledge of the genus an initial identification was made of *C. sumatrensis* (Guernsey Fleabane), which could not be confirmed by matching against pressed material.

The species remained unidentified until September 1994 when the original locality was shown to Eric Clement. An identification at the site was not possible, but it was clearly not *C. sumatrensis*, although, ironically, one plant of that taxon was found at the same site that day. From later literature



*Conyza bilbaoana* del. P. Stanley © 1996

A – Female floret; B – Hermaphrodite floret, C – Achene, D – Outer involucre bract; E – Inner involucre bract; F – Capitulum



investigation the species was found to match most closely *C. bilbaoana* (*Flora of New Zealand*, Vol. 4, C.J. Webb, *et al.*, 1988)

Since this original discovery the species has been found in a large number of localities within Southampton and as a single plant at a marina at Hythe on the opposite side of Southampton Water by Paul Bowman. *C. bilbaoana* has invaded a wide range of habitats, and appears to be somewhat more thermophilous than *C. sumatrensis* and *C. canadensis*. The origin of this fleabane is open to conjecture; possible sources of introduction include the cross channel ferries, the container terminal or the round the world yacht race. Although apparently unrecorded within Europe it is conceivable that the species has been overlooked, especially in view of the superficial similarity to *C. canadensis*, but the two species show no signs of hybridising in Britain. As this species has spread widely within the Southampton area, it is almost certain to have a meteoric spread in southern Britain, parallel to that of *C. sumatrensis* (more of which was found in this area in 1994), but searches by local botanists in nearby Portsmouth have, so far, only revealed colonies of *C. sumatrensis*.

The following description is based solely on the colony at Southampton, as is the accompanying drawing. Other populations may deviate in some details. Voucher specimens have been deposited at **RNG**.

**Stem:** 75 cm tall although usually much shorter; either single-stemmed or branched from the base; woody, ridged, becoming dark brown with red coloration at the axils of inflorescence branches; hispid, hairs 1 mm with obvious bulbous bases, channelled on one side, moderately dense but sparser towards base.

**Foliage:** Stem leaves lanceolate, pinnate or more often serrate, up to 8 cm × 1.5 cm; coarse forward-pointing hairs mostly confined to margin of leaves and to midrib. Upper stem leaves and bracts similar but with fewer or no serrations.

**Inflorescence:** Inflorescence branches at angles between 70° and 45° arising from top 1/3 of stem. Basal flowering branches longest, but not overtopping main axis. Florets situated rather loosely on top 1/3 of branches.

**Capitula:** Larger than *C. canadensis* about 2 mm wide. Basal involucre bracts triangular-lanceolate with rather sparse short hispid hairs (scabrous), with broad pale margin and dark centre. Upper involucre bracts oblanceolate with prominent pale margins, often with a reddish tip.

**Florets:** Outer florets female, initially off-white becoming red to purple later with ligule very inconspicuous or virtually absent (<0.5 mm). Central florets hermaphrodite (or functionally male?), five-lobed, yellow.

**Achenes:** Oblong-cylindrical with sparse short hairs, pappus creamy-white.

With familiarity, this species can be identified at a distance of many metres, and this can always be confirmed by careful examination of the florets. A careful search for 'intermediate' plants on several occasions has, to-date, proved fruitless. It is difficult to believe that J.C. Baker was correct in *Flora Brasiliensis* where he sinks *C. bilbaoana* into a very variable, widely circumscribed, *C. canadensis*. In New Zealand, true *C. canadensis* is a rare plant and it is the abundant *C. bilbaoana* that is known there as 'Canadian Fleabane'; it occurs throughout the South Island and was first recorded in 1855.

This South American species was originally described by E.J. Rémy in C. Gay 'Historia fisica de Chile', *Botanica* 4: 76 (1849) from near Valdivia in Chile and was named to honour a much talented young Chilean called Biblao. I also occurs in Argentina, Brazil and probably elsewhere and is now a well established alien weed in SE Australia, New Zealand and California. Most N American literature curiously misspells the specific epithet as 'bilboana'.

I am indebted to E.J. Clement for both advice and information, and for encouraging the writing of this account

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## COMPUTER BYTES

### BSBI RECORDER USERS

The latest Recorder Newsletter from JNCC provides a fascinating read. Apparently, there are 2,302,645 vascular plant records held amongst Recorder users in Britain – an incredible number when compared to the 3,493,824 records for vascular plants held by BRC (as of November 1995). What is not known though is how many of these records are held by BSBI members nor indeed how many Recorder users there are in BSBI (although I do know which Vice-county recorders and one or two other members who are).

Due to the Data Protection Act, JNCC have been unable to provide a list of Recorder users so it would be very useful if members who use the package were to contact me. Perhaps it would be a good idea to set up a BSBI Recorder Users Group which would cater for the needs of the computerised botanist. What do you think?

A further bit of interesting news from JNCC is that a Windows version of Recorder is expected in the next two years or so. I'm sure many current users will be looking forward to this with great anticipation – I know I will!

#### Data Export

In the meantime, I have been fiddling about with exporting data from Recorder and would recommend that the following procedure is followed for Atlas Records.

1. Create an Active Select List in the normal way
2. Looking in the Reports pull-down menu, select Special Reports & Maps
3. In the next menu, scroll to the bottom and select Export ASCII text
4. In the Window LRC Export, fill in the box as follows:

Table Name:	RECORDS
Columns:	Choose from a pop-up list by pressing F2 and selecting the fields you want by pressing return then F9. (you may need to select '**Choose from the Full Dictionary**', as not all data columns will be listed at first. Pressing F9 after selecting this option you will get the full list of available columns in the Records table)
DOS File Name:	A:\EXPORT (or whatever you choose)
Format:	Choose SPECIAL CHARACTER DELINEATED (or alternately, GENERIC SPREADSHEET FORMAT)
Delineator:	Choose the # symbol (the default is \). This isn't required for Spreadsheet format.
Multivalues:	Choose FIRST VALUE ONLY

5. Finally press F9 to start the process. With large files this may take quite a few minutes.

The data will be saved to the floppy disc.

#### Plant Status Codes

With regard to the new Plant Status codes as published in the Atlas Instruction Booklet which went out with the last mailing, it will be necessary to modify the Recorder Codes Table. To do this:

1. From the main Add/Edit Data menu, select Codes.

2. Add the following new Codes to the edit window:

Code: G/ALIEN  
 Label: Alien  
 Explanation: Type in an explanation from the Atlas Instruction Booklet then F9 to save

Code: G/CASU  
 Label: Casual  
 Explanation: as above  
 F9 to save

Code: G/ESTAB  
 Label: Established  
 Explanation: as above  
 F9 to Save

Code: G/SURV  
 Label: Surviving  
 Explanation: as above  
 F9 to save

Code: G/PLANT  
 Label: Planted  
 Explanation: as above  
 F9 to save

NB. The Indexes will need updating before these can be used, i.e. Utilities/Indexes/Update Indexes/Codes (option2).

3. These codes are then added to records in the Sex/Stage field of the Records window.

Any members who want to do a trial export and send it to me for checking are very welcome to do so. I would be very happy to act as an intermediary for any Recorder output, prior to sending it on to BRC. Any other suggestions regarding Recorder especially tips relating to Plant Recording, will also be very welcome.

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## COMPUTER SPELL CHECKERS

Computer users like myself – educated in the arty, laid-back 60s and 70s and who consequently have absolutely no confidence in their own spelling – will resort to the use of a Spell Checker which comes supplied with a number of popular word processing packages. A number of alternatives to spellings are offered for words which are not already in the computer's dictionary – with some very interesting results!

For example:

Pearman	= Permian (I've often thought of him as a bit of a fossil)
JNCC	= DUNCE
CCW	= COW (thanks to Trevor Dines for this one)
Walpole	= Wallop, Walloped (with all due respect, of course!)
Ellis	= Ellipse, Elvis (will this one be edited out? [not likely])
BRC	= BRUCE, BBC or BRA
NGOs	= Egos

Anyone got any others?

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## BSBI APPROVED SOFTWARE

We are now in a position to recommend software for use in plant recording. This has boiled down to three recording packages and one mapping programme and I have tried to summarise their capabilities, based on information sent to me by the developers, below. The recording packages are listed in alphabetical order with no preferential treatment intentionally given to any of them.

### 1. ADITSITE Version 3.0

Aditsite is a sophisticated but easy to use Wildlife Recording System that runs under all versions of Windows and uses MS Access as its database. Sightings of species from many groups (including birds, insects, mammals, and all vascular plants) can be recorded with a simple click of the mouse using one of the built-in species lists. A facility to view CD-ROM images (e.g. birds) is available to aid identification.

British and Irish Grid References can be entered at resolutions from 10 figure to 4 figure, DINTY and Quadrant, either directly or by clicking on a locality map displayed on the screen. Other fields include Locality, Vice-county, Date (in any format plus T for Today, T-1 for Yesterday, etc.), Recorder, Frequency (individual count, DAFOR, DOMIN), and user-defined fields (including 7 recommended for BSBI users).

Reports can be produced according to Species, Species Group, Date, Recorder and Locality. You can define your own Report Group to include species of special interest, and smaller localities can be linked together to create larger reporting areas. Select the Report Design from a variety of options, or build your own style using the report generator. You can view reports on screen before printing them, and advanced users can even build and use their own SQL queries.

Records and sightings can also be mapped and printed using the built-in Plotting facility, which allows the production of dot maps with either exact or grid-centred positioning of dots. Maps can also be created using a direct data link from Aditsite to DMAP. Sightings can also be displayed as Graphs in a variety of styles, with various data comparison facilities and comprehensive statistical analysis.

*For more information*, please contact: Adit Ltd, Tyn Radd, Dwyran, Anglesey, LL61 6AJ  
Tel : 01248 430075 Fax : 01248 430771 E-Mail : 100102.753@compuserve.com

### 2. ERICA

ERICA is a biological recording computer database for both species and site based information. The emphasis is towards the storage of species records and the database is designed to deal with all taxonomic groups whether land, freshwater or marine. ERICA was written by Colin French and has been used for the past 8 years by the Cornish Biological Records Unit which now has in excess of 1 million records covering 22,000 species on computer of which half a million are vascular plant records. It has now been modified for use by BSBI.

This database is designed for easy use, to ensure accurate and efficient data entry, to be capable of dealing with plants records no matter how complex and have tremendous flexibility in the way the records can be retrieved, manipulated and printed out. Furthermore, records can be exchanged between different users of ERICA and can be exported as delimited ASCII files.

ERICA can store a great deal of information additional to the minimum of: what, when, where and by whom. Information such as habitat, frequency, number of specimens, source of record (i.e. literature), status, stage, size of flower parts, habit and general remarks. To this end there are a number of data entry programs available to deal with the multitude of types of record.

The retrieval of information is simple and rapid through the use of a number of indexes including grid references, species, person, source and site. Once a set of records has been selected they can then be used to generate a wide variety of reports, species lists or maps using DMAP for instance.

*For more information* contact the Co-ordinator, Cameron Crook.

### 3. RECORDER

Recorder is a powerful, complex, biological recording tool developed by JNCC and supported by English Nature, Scottish Natural Heritage, DOE (Northern Ireland), Countryside Council for Wales and the Wildlife Trusts. It is based on Advanced Revelation, a commercial database management package which provides a full range of database querying and reporting tools.

Recorder contains an extensive list of British species (the full Kent List of Vascular Plants plus a number of Aliens), including status (RDB, Schedule 8 etc.), biology and distribution and taxonomic relationships.

It has full look-up facilities for vice-county names and numbers, habitats (including NVC and Corinne), abundance (DAFOR, DOMIN Braun-Blanquet etc.), full grid referencing (from 6 figure down to tetrad and 10 km square).

There are full referencing facilities and an extensive bibliography.

Species entry is via a number of different screens: species can be entered as single records, as a list of species from a field card or a multiple records of a single species. Lookup tables provide information on synonyms and vernacular names and abbreviated species names can be used for quick entry. There is also the facility to add species using a record card type checklist which can be modified to region or county.

Reports can be produced in various formats from simple checklists to tables and graphs of occurrences etc. and can be arranged by species, by site, by date or by recorder for example. Data can also be sent to the built in mapping tool, Plot5 or, via linking software, to DMAP.

*For further details contact:* Mrs Eva Leck, JNCC, Monkstone House, City Road, Peterborough PE1 1JY

**All three of the above recording packages are available from the BSBI at the much reduced price of £50. To qualify for this special price, which is for BSBI members only, they MUST be ordered through Cameron Crook. Please quote your membership number when ordering.**

### 4. DMAP for Windows

Software for Distribution and Coincidence Mapping. This is the standard mapping tool currently used by many BSBI members.

#### System Requirements:

IBM-compatible PC with 386 processor or better, running Windows 3.x, Windows NT or Windows 95

#### General Description:

DMAP is a computer program which produces Distribution Maps or Coincidence Maps based on data files containing the digitised features of the areas to be mapped and also the distribution data for the species to be mapped. The data files can contain co-ordinates as Grid References (kilometres and metres) or as Latitude+Longitude (degrees and minutes).

DMAP can be used as a stand-alone mapping package or can be linked to a general database or biological recording package which generates some or all of the required data files. Full details about the data file requirements and how to create the data files are given within the DMAP Help system.

#### Main Features:

Can be used at any scale of mapping.

Offers a wide range of symbol types for display of distributions.

Boundaries supplied for the British Isles, north-west Europe, and the World (low resolution).

Additional boundaries available, including lat/long boundaries for most parts of the World.

British, Irish, and UTM Grid References supported.

User-supplied text can be displayed on maps.

Multiple zoom facility.

Can display distributions at re-sampled scales.

High resolution vector-drawn maps on high resolution screens and printers.

Colour supported on colour screens and printers.

Maps can be exported as WMF, EPS and BMP files, or via the clipboard (Edit/Copy)

Simple database program supplied with DMAP.

Utility program supplied for use with graphics (digitising) tablets.

Cost: £70 (A DOS version is available for £45 but has only a few of the features listed above)

*For further details and availability, contact:* Dr Alan Morton, Blackthorn Cottage, Chawridge Lane, Winkfield, Windsor, Berkshire, SL4 4QR, UK. E-mail: [ajmorton@dmapp.compulink.co.uk](mailto:ajmorton@dmapp.compulink.co.uk)

Internet Web pages: <http://www.compulink.co.uk/~dmapp/>

CAMERON S. CROOK, BSBI Co-ordinator, 8 Woodstock Close, Lostock Hall, Preston, Lancs PR5 5YY. Telephone and fax: (01772) 316717 e-mail: [101353.1757@compuserve.com](mailto:101353.1757@compuserve.com)

## USING RECORDER FOR HECTADS, TETRADS – AND MANY OTHER THINGS

In *BSBI News* No 72 Alex Lockton recommended an effective way for new users of RECORDER to establish a system to store and quickly retrieve plant records on a hectad basis by establishing each hectad as a separate 'Site'. His suggestion would be very efficient in retrieving records, providing that you are never likely to want to enter data from any other type of site, such as a local nature reserve or SSSI. If you do, you might find yourself having to make them all into sub-sites of a hectad to avoid the records being overlooked when you attempt to retrieve data from your special 'hectad site'.

Unfortunately his tip is of little use for those of us who have tens of thousands of records already on RECORDER; many from local wildlife sites, others from 1 km squares or corners of fields. Retrieving data held in this way on RECORDER can be a lengthy process; it used to take me about four hours to produce a hectad checklist of plants for my county plant recorder.

This time period has now been shortened to half an hour by creating extra indexes on the fields I want to select on, in this case, grid references. For every map reference you enter, RECORDER automatically calculates which hectad, tetrad or 1 km square it falls into. This information is stored in the fields GET\_10K, GET\_TETRAD and GET\_1KM. By indexing one or more of these fields it is possible to speed up data retrieval considerably.

The steps to follow to build an index on GET\_10K are as follows:

Firstly, it is always a good idea to do a complete system back-up before making changes to your programme.

Then within RECORDER go to AREV's main menu by typing [F5] then [F10]

Follow the route **DB Admin-Indexes-Btree**

At the Btree window select table name: RECORDS

At Column Name press [F2] to list all Columns available for indexing.

Select the column you want to index, i.e. GET\_10K.

At Indexing On select 'Yes'

Keep case sensitivity at 'No'

[F9] saves the changes, and a prompt asks if you want to build the new index now, or later. With a database of some 85,000 records on a slow 486, this takes about 30 minutes.

So far I have established indexes on both GET\_10K and GET\_TETRAD, but have not felt the need to index the GET\_1KM field. Also, the more indexes you create, the more disk space you need. Retrieving records is now much quicker than before, with a search for plant data from a single tetrad taking just a few minutes. I hope this tip may be of use to anyone who already has data on RECORDER, or feels disinclined to make a site for each hectad.

NICK MOYES, Derbyshire Biological Records Centre, Derby City Museum, The Strand, Derby, DE1 1BS

## NOTICES (BSBI)

### AZORES FIELD MEETING

June 21 to July 6 1997

Leader: Arthur Copping

Three of the nine volcanic islands are to be visited during this BSBI field meeting: São Miguel (7 nights), the precipitous São Jorge (4 nights) and Faial (4 nights), where a visit will be made to the Botanic Garden. The total cost will be £843, including flights to and from London (via Lisbon), B & B in modest hotels and inter-island transfers. The single room supplement is £282.

Bookings may be made immediately to the leader at the address below on a first come, first served basis, with waiting list. Maximum group size 12. Further details will be sent with the acknowledgement of booking(s), or on request, following the receipt of a SAE.

ARTHUR COPPING, The Nook, Brewers Green, Roydon, Diss, Norfolk IP22 3SD

### BSBI TRIP TO N.E. TURKEY

June/July 1997

Leader: David Pearman

**Advance notice.** I hope to take a **small** group to N.E. Turkey for two weeks during June or July next year at an approximate cost of £830. Several people have already expressed an interest but there might be a very few places. If interested please write or telephone immediately.

DAVID PEARMAN, The Old Rectory, Frome St Quinton, Dorchester, Dorset DT2 0HF.  
Tel. & Fax: 01935 83702

## REPORTS OF RECENT CONFERENCES AND MEETINGS

### ORCHID POPULATION BIOLOGY: CONSERVATION AND CHALLENGES CONFERENCE

23 November 1995

This conference, held in the Linnean Society's meeting room, attracted over eighty delegates, some contributors coming from as far afield as Canada and Estonia. The conference focused on the biology and ecology of temperate orchid species. Contributors addressed two major themes, long term trends in population dynamics and orchid conservation, and particular problems associated with the successful reintroduction of species. Many temperate orchid populations demonstrate marked fluctuations in size. Part of this variation appears to be related to their peculiar ecology, which involves an often prolonged initial subterranean phase during which the germinating seed develops a symbiotic fungal relationship. Several contributors stressed the importance of this subterranean phase of the orchid life cycle. The effects of this long pre-recruitment phase are compounded by the apparently capricious behaviour of adult plants which may flower some years, remain vegetative in others or simply not appear above ground at all for several years. Interestingly, among many species the patterns of behaviour shown by the individuals of a population are extremely variable. For example, in populations of *Ophrys sphegodes* (Early Spider-orchid) and *Orchis militaris* (Military Orchid) some individuals can be extremely fecundate, flowering virtually every year, while others may survive for many years but never flower. Exactly why some individuals demonstrate such a range of behaviour is as yet largely unknown. Other papers addressed issues of species distribution and factors affecting the pollination and reproductive success of plants. One contributor drew attention to the fact that while not particularly scarce in

Britain, *Epipactis helleborine* (Broad-leaved Helleborine) would not be considered a common invasive weedy species. In Canada this species is considerably more abundant, occurring in similar sites as it does in the British Isles, yet it can also occur as a troublesome weed of garden lawns! During a very lively concluding discussion, the contentious issue of defining species rarity was raised along with the related issues of targeting limited resources on the conservation and possible re-introduction of species. Should we as botanists be overly concerned about the fate of species which at the limits of their distribution in Britain are rare or endangered, but common elsewhere? What did emerge clearly from the meeting was how little we understand about the ecology of this fascinating group of plants.

STEPHEN WAITE, Dept. of Pharmacy, University of Brighton, Cockcroft Building, Moulsecoomb, Brighton BN2 4GJ

## MEDITERRANEAN PLANTS

9th March 1996

About eighty members convened in the Plant Science Department of Reading University, where Dr Stephen Jury was, once again, our host and organiser. Lectures were given by Stephen and his colleague, Dr Jim D. Ross (both of whom have led Mediterranean field-work as part of undergraduate courses), and Dr John Akeroyd, a free-lance botanist, who is also very familiar with the Mediterranean flora.

Stephen set the scene by describing the natural environment and climate of the Mediterranean regions, and the main plant-communities in order of their altitude (as classified by the Spanish under the Montpellier School): Thermo-Mediterranean – the lowest zone, frost-free, characterised by *Quercus coccifera*, *Pinus halapensis*, *Chamaerops humilis*, etc.; Mezo-Mediterranean – the evergreen oak zone, with *Quercus ilex* and *Q. suber*; and Supra-Mediterranean – dominated by pine and prostrate juniper, with no trees or shrubs at the very top.

Jim Ross (who introduced himself as a physiologist – a ‘mechanic’, rather than a field-botanist) raised two very interesting points regarding Mediterranean plants: firstly, why are evergreen sclerophytes the dominant vegetational feature in the landscape? One thought currently being developed is that nitrogen-availability is the prime determinant of the type of leaf produced. Plants grown with diminishing quantities of nitrogen have been found to develop fewer/smaller/tougher leaves.

Jim explained this in simple terms, comparing fixed carbon to currency, and the building of a leaf to investment in a small company, which, after paying its building and maintenance costs, has a profit to invest in further growth. The cost to a plant depends upon ease of acquisition of the raw materials. In Mediterranean soils (subject to frequent fires in summer and heavy rains in winter) nitrogen is scarce, and so the cost of building a leaf is high. This expensive leaf, therefore, must be long-living in order that the plant may recoup its investment. And to live a long time it needs to be sclerophyllous in order to withstand wind, rain, heat, and drought. Hence the preponderance of evergreens in regions with nitrogen-poor soils.

The second point concerned the number of aromatic plants encountered in these regions. The leaves of these plants contain essential oils that are very expensive to produce – so why produce them? The cost was compared to a life-insurance policy – the protection necessary for the leaf’s long life. In the hot dry summers no water is available for growth, and so more carbon is produced than can be used. The extra energy is diverted and used to produce oils, and these have two advantages: they make the leaf unpalatable to herbivores, and also form a protective coating round the leaf.

Experiments have shown that the more a plant’s growth is repressed (by reducing water, phosphates, nitrogen, etc.), the more oil is made. The amount of oil in the leaf varies with the amount of nitrogen. Oil, therefore, protects the initial expenditure.

The morning session ended here, and everyone proceeded to the dining hall where an excellent repast had been prepared for us. When the meeting reconvened, Jim Ross took the floor once more to discuss the pressures on the natural Mediterranean vegetation from fires, deforestation, grazing, and development. He pointed out that deforestation (carried out in order to plant pine or other crops)



removes the natural vegetation, which is well-adapted to fire. In a fire the alien plants are destroyed, thus leaving bare soil that is soon eroded, giving indigenous species no chance to recover.

Grazing and fire need to be considered together. Although grazing controls the vegetation (maintaining scrub rather than forest), it does not destroy it – many plant species withstand grazing. Development of camp-sites in valleys means less grazing there and, therefore, loss of control over the vegetation. If too much fuel builds up, the burning is more intense; and the more fuel is consumed, the more nitrogen is lost to the system.

Stephen Jury then took us on a pleasant tour of the peninsula in southern Spain where the field-meetings are held, with a look at the habitats and flowering plants there. He also touched on the problems of the vast areas of land now cultivated under plastic cover, e.g.: they require such large amounts of water that the water tables are sinking fast; also, there is inadequate control of pests and diseases, and so plants are drenched with chemicals long banned in the UK.

Finally, John Akeroyd spoke of the new Habitat Directive under the EU, and the hope that it offers for the future. Once again, our thanks are due to Stephen Jury for organising another most-interesting conference.

ANNE P. DALY, 69B Vicarage Road, Wollaston, Stourbridge, West Midlands DY8 4NP

## GEORGE CLARIDGE DRUCE MEMORIAL DAY

18th May 1996

The George Claridge Druce Memorial Day was held in Oxford on Saturday 18th May 1996 to celebrate the life of a distinguished field botanist and Fellow of the Royal Society, and to mark the official unveiling of a new headstone in Holywell Cemetery. The original monument was lost in the 1970's leaving the former Oxford Mayor's grave unmarked. The new stone was purchased by BSBI, the cost of erection met by subscription, and the day organised by collaboration between The Ashmolean Natural History Society of Oxfordshire, Oxford University Plant Sciences Department and Oxford University Botanic Gardens.

The day began in the Plant Sciences Department, where Druce artefacts were on display in the Fielding-Druce Herbarium. These included Druce's own copies of his Floras of Oxfordshire, Berkshire, Buckinghamshire and Northamptonshire, letters relating to his change of The Botanical Exchange Club's name, copies of his will, one of the ten volumes of the *Flora Graeca* he acquired, and the album produced by his friends after his eightieth birthday. These were complemented by Harvey Dunkley's gift to the collection: a penknife and hand-lens given to him by Druce.

The Curator of The Herbaria, Stephen Harris, gave a welcome on behalf of the Plant Sciences Department, a major benefactor of Druce's bequest. Camilla Huxley-Lambrick then introduced the lecturers. The first was Serena Marner, manager of The Fielding-Druce Herbarium and librarian of The Ashmolean Natural History Society of Oxfordshire, who spoke on *Druce and The Ashmolean Natural History Society*. She described how Druce and Professor Lawson initiated The Oxfordshire Natural History Society and Field Club in 1880, and the great extent to which Druce contributed to it: writing minutes and reports, organising lectures and exhibits and dealing with correspondence. Whilst he was Mayor in 1901 this society was formally joined with the Ashmolean Society in the Town Hall at 'The Mayor's Conversazione'. In addition to his work as Secretary, Treasurer and President, he gave 73 lectures to the society including Christmas lectures for children most years.

The key speaker, historian of science, David Allen, gave a lecture entitled *Druce and the biodiversity of the British flora*. Dr Allen was intrigued by two aspects of Druce's life which remain enigmatic. How did the illegitimate son of a housekeeper rise so high in Oxford society and how was he able to bequeath a fortune worth (in modern terms) over a million pounds? Dr Allen then discussed variation in the British flora and posed some questions: Why are some variants clustered in particular areas? How do their characteristics effect their distribution?

The company then repaired to Holywell Cemetery, Druce's final resting place. The site is managed by The Friends of Holywell Cemetery with wildlife conservation advice from the local wildlife trust,

BBONT. Amongst the vetches, crane's-bills, grasses and daisies are the graves of several other Oxford notables, including the author of *Wind in the Willows*, Kenneth Grahame. Druce's grave is in a tranquil spot at the south eastern corner of the cemetery, adjacent to the enclosing wall and trees which provide afternoon shade. Druce's mother, Jane, is also buried in the cemetery.

Making the unveiling speech, David Pearman, the President of BSBI, said he found it difficult to believe he was stood by the grave of a man who had inspired him in his formative years. He recalled collecting floras, following Druce's tours through the Botanical Exchange Club and yearning to be a botanist who had 'seen everything; every variety'. He expressed his 'enormous pleasure' in unveiling the new headstone and thanked 'all those who had made it possible'.

Sylvia Chandler, the granddaughter of a cousin of Druce, made an eloquent speech to the company gathered around the grave. As a ten year-old her involvement with plants prompted her mother to tell her of Druce. Throughout her life he knitted together her interests in botany and family history. She visited Oxford last year but was dismayed to find the grave unmarked and lost beneath hogweed. She concluded by quoting a student rhyme: 'If a plant be ne'er so abstruse, send it along to Dr Druce'.

The stone, fashioned from Jurassic limestone from Druce's native Northamptonshire, stands between plants of *Geranium x oxonianum* 'Claridge Druce', and bears the inscription:

GEORGE CLARIDGE  
DRUCE

1850 – 1932

FLOREAT FLORA

The Sherardian Professor, Hugh Dickinson, then gave a guided tour of Magdalen (the Oxford college where Druce was a fellow; the University having given him an honorary MA and a DSc) including a view of the deer park, the fritillaries, the cloister and the interior of the chapel. The day concluded in the Oxford University Botanic Garden where tea was kindly provided by the Horti Praefectus, Timothy Walker. This provided an opportunity for conversation and inspection of the gardens. Prints of the painting *Geranium x oxonianum* 'Claridge Druce' by Rosemary Wise were on sale to raise funds for The Friends of The Botanic Garden.

The subscription raised on the day covered the cost of erecting the stone, leaving £84 in excess, which will be put towards further memorials to Druce. These may take the form of more Druce days and the commissioning of a custom-made box to hold his penknife and hand-lens.

A booklet commemorating the day is under publication, price £2.50. Contact Dr Camilla Huxley-Lambrick, Picketts Heath, Ridgeway, Boars Hill, Oxford OX1 5EZ.

CHRISTOPHER HOSKIN, 21 Holly Court, Frome, Somerset BA11 2SQ

**PAUL WESTMACOTT RICHARDS 1908-1995**  
**A Memorial Meeting, 14th July 1996**

A gathering of some 150 friends met in Newnham College, Cambridge on a sunny 14 July to remember and honour the life and achievements of Paul W. Richards (1908-1995).

We heard contributions covering many aspects of Paul's expertise: as Professor of Botany at Bangor (UCNW), as an eminent Bryologist, as a world authority on tropical rain-forest, and as a writer of great clarity of so many publications. Piano quartets and a piano solo by a nephew provided musical interludes.

From Max Nicholson (former Director General Nature Conservancy) we heard of Paul as an intrepid undergraduate explorer in British Guiana on his first encounter with tropical rain-forest.

The importance of the non-academic side of student life was illustrated by Hugh Gilson (former Director of the Freshwater Biological Station, Windermere) with an account of his lifelong friendship with Paul and his botanist contemporaries.

Derek Ratcliffe (former Scientific Director Nature Conservancy) recalled his early days of Research in Bangor when Paul introduced him to the Snowdonian alpine flora

Roy Perry (President of the British Bryological Society) outlined Prof. Richards' life-long study of bryophytes: he was a member of what is now the British Bryological Society for 75 years, and his first paper on mosses published whilst he was still a schoolboy. His early ecological accounts of bryophyte communities were innovative for the time.

George Argent (Edinburgh R.B.G.) recounted his initiation into research under Prof. Richards at Bangor, and his recall of Paul in tropical rain-forest (at 100° Temp. and 100% humidity) calmly writing reports whilst drinking hot tea.

Lastly Paul's grandson, Adam Whittle, gave us family reminiscences.

Paul Richards was primarily an ecologist, he had helped start the Biological Flora of the British Isles, with accounts of *Juncus* species. He was perhaps best known world-wide for his book *The Tropical Rain Forest*, the completely revised 2nd edition (published that day) was on display, alongside an exhibit of his cherished Korup Reserve and Education Centre in Cameroon.

We remember Paul for his lack of self-importance, for his kindness to student and staff, and for his encouragement and hospitality – we were acutely aware of what we owed Paul and Anne over the years – for myself I looked back to that first invitation given me nearly 60 years ago, on my first day as a student here at Newnham College.

ANN CONOLLY, 25 Brocks Hill Drive, Oadby, Leicester LE2 5RE

## FUTURE CONFERENCES AND SYMPOSIA

### **BIODIVERSITY IN SCOTLAND: status, trends and initiatives**

**30 September – 1 October 1996**

**Royal College of Physicians, Edinburgh**

This conference will bring together researchers, practitioners and policy makers in a common forum. Presentations will provide an overview of Scotland's biodiversity, highlighting what is special about native Scottish wildlife in a national and international context. Speakers will also address the impacts of management and detail current conservation action.

To obtain a booking form and further information please contact:

SHIELA WILSON, The Biodiversity Unit, Institute of Ecology and Resource Management, The University of Edinburgh, Darwin Building, Mayfield Road, Edinburgh EH9 3JU. Fax 0131-662-0478; e-mail: shiela.wilson @ed.ac.uk. For info: <http://www.ed.ac.uk/~ebfs69/biodiv.html>

### **JOURNÉES-DÉBATS PAUL JOVET:**

**Inventaires naturalistes dans la ville**

**21 - 22 October 1996**

**Muséum National d'Histoire Naturelle, Paris**

This conference has been organised to honour the memory of Paul Jovet, in the year of his centenary. He was a great friend and supporter of the BSBI and was for many years an honorary member of this Society.

For further details please contact:

ANNE-ELIZABETH WOLF, Phanérogamie-MNHN, 16 rue Buffon F-75005 Paris. Tel. (1) 40.79.33.60 + 33.61. Fax: (1) 40 79.33.42

## REQUESTS

### FLORA WANTED

To help with my work for Atlas 2000, I am very anxious to obtain a copy of Hart's *Flora of Donegal* either by sale or on loan. If any member can help please contact:

SEAN O GAOITHIN, Glenveagh Castle, Churchill, Co. Donegal, Eire

### CALL FOR INFORMATION ABOUT CASES OF PLANT POISONING

The purpose of this call for information is to improve medical and scientific knowledge about adverse health effects occurring after poisonings by plants, and to assist in the development of better strategies for patient care. We are collecting information on incidents of poisoning caused by any plants found growing in Britain and Ireland, including native, introduced, ornamental, etc. We are interested in receiving any information concerning plant poisoning episodes, whether or not advice or treatment was received from a medical practitioner (GP, Casualty (Accident & Emergency) Department, etc.). If you have suffered from poisoning or suspected poisoning caused by a plant we would be grateful if you would respond by completing the questionnaire enclosed with this issue of *BSBI News* and returning it to Dr Elizabeth Dauncey. In addition, if you know of anyone who has been poisoned please either send them a copy of the questionnaire or provide us with their name and a contact address or telephone number. Please provide as much information as you can. Any information we receive will be treated in total confidence.

Poisonous plants are here defined as those causing deleterious effects on human health. Included are plants poisonous by ingestion or causing contact reactions such as skin irritation, phototoxicity or allergic contact dermatitis.

The information that we receive will be used in two ways. Firstly, the results will be collated and published in a future edition of *BSBI News*. Secondly, we intend to use any information obtained to help us produce a revised edition of *Poisonous Plants in Britain and Ireland* on CD-ROM, a user-friendly computer method of identifying over two hundred plant groups. This database has been produced and developed at Kew in collaboration with the Medical Toxicology Unit of Guy's & St Thomas' Hospital Trust.

ELIZABETH A. DAUNCEY and TIM G.J. RAYNER, Medical Botany and Mycology Unit, Centre for Economic Botany, Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3AE.

## BOOK NOTES

### NEWS FROM OUNDLE BOOKS

We were asked by the husband of a deceased member to dispose of her botanical books at modest prices to members. The collection was taken to the AGM at Kew but a number of out-of-print local Floras are still available. If you are interested in any of the following please let us know.

*The Flora of Sussex* – Wolley-Dod [Reprint] (£20); *West Norfolk Plants Today* (£2); *Flora of Northamptonshire* – Druce (£20); *Flora of Staffordshire* (£10); *A Flora of Shropshire* – Leighton [Reprint]

(£7.50); *A List of the Flowering Plants and Ferns of Carmarthenshire* (£3); *List of Pembrokeshire Plants* – Rees (£3); *Plants of Montgomeryshire* – Hignett & Lacey (£2); *The Flora of West Lancashire* [Reprint] (£7.50); *The Flora of West Yorkshire* – Lees [Reprint] (£10); *The Flora of Perthshire* – White [Reprint] (£7.50); *The Botanist in Skye* [Duplicated 1974] (£2). **Prices do not include postage.**

MARGARET PERRING, Green Acre, Wood Lane, Oundle, Peterborough PE8 5TP

### ***THE BYGONE BOTANISTS OF HEREFORDSHIRE***

*The Bygone Botanists* describes the exploration of Herefordshire's flora during the last 200 years. Each botanist's interests and discoveries are discussed in the context of social and botanical history, from the rise of the Woolhope Naturalists' Field Club, the famous 'forays among the funguses', the fieldwork for Purchas and Ley's Flora of 1889, to the time of the Herefordshire Botanical Society since the Second World War.

The article costs £3.75 (incl. p. & p.) from the Hon. Treasurer, Herefordshire Botanical Society, Mrs Patricia Orme, The Green, Almeley, Herefordshire HR3 6PY. Please make your cheque payable to the 'Herefordshire Botanical Society'. All proceeds will help defray costs of the projected *Herefordshire Plant Atlas*.

MARK LAWLEY, 12A Castlevew Terrace, Ludlow SY8 2NG

### **NEW NATURALISTS FOR SALE**

NEW Naturalist first editions, good condition in original wrappers: 9 – *A Country Parish*, 37 – *Open sea* - 2; 36 – *Insect Migration*, 39 – *Folklore of Birds*; 41 – *Dragonflies*

Best offer for each volume secures when received by Sept, 30th 1996.

ALAN NEWTON, 10 The Fairways, Leamington Spa, Warwickshire CV32 6PR. Tel 01926 426790

### ***FLORA BRITANNICA: SPECIAL OFFER***

I am writing to thank members of the BSBI for all the help they gave in the compilation of *Flora Britannica*, which is now well into production, and is due to be published by Sinclair Stevenson on October 7th.

The public contributions far exceeded our expectations in numbers, expertise and originality, and have made the finished book a much richer (and bigger!) volume in the process. We hope it will be a landmark in the understanding of human relationship with nature in this country. Those individuals whose contributions are quoted are acknowledged in the notes.

*Flora Britannica* is now being published at £30.00, but we are able to offer members of the BSBI a £5.00 discount. To take advantage of this offer, please call 01733 371999 **after October 7th** quoting FLOR to order your copy of *Flora Britannica* at £25.00 with free postage & packing. If you have any queries, please contact Emma O'Brien, Publicity, on 0171 619 0098.

RICHARD MABEY, c/o Reed Consumer Books Ltd., Michelin House, 81 Fulham Road, London SW3 6RB

## **WELSH FERNS 7th EDITION – DELAY**

This book, which was due for publication in July, will now be published some time in the autumn. The delay has been caused by various ongoing factors which have arisen since the pre-publication offer went out, and which are out of the control of the primary compiler. Sincere apologies to all those who have ordered the book.

GEORGE HUTCHINSON (& p.p. B.A. THOMAS), Dept. of Botany, National Museum & Gallery of Wales, Cathays Park, Cardiff CF1 3NP

### **BOOK OFFERS FROM DEPT OF BOTANY, NMW, CARDIFF**

Due to priority for storage, the following books are being offered at reduced price, which includes p&p. Cheques should be made payable to National Museums and Galleries of Wales and sent to Book Offers, Department of Botany, National Museum & Gallery of Wales, Cardiff CF1 3NP [**not to the bookshop**].

*Natural History of Bardsey*. Peter Hope Jones. Pp. 149. inc. illus. & photos. 1988. £2.00 (hardback).

*Wild Flowers - a photographic guide*. D. & M. Parish. Pp. 168. all colour photos. 1989. £2.00 (paperback).

*Flowering Plants of Wales*. R G. Ellis. Pp. 338. including 1028 10 km square distribution maps. 1983. £5.00 (hardback).

*Index to Clive Stace's New Flora of the British Isles*. R. G. Ellis. Pp. 110. 1993. £1.00 (paperback).

*The Common Ground of Wild and Cultivated Plants*. Edited by A. Roy Perry & R. Gwynn Ellis. Pp. 166. figs and 4 colour plates. £10.00 (from £25, paperback).

GEORGE HUTCHINSON, Dept. of Botany, National Museum & Gallery of Wales, Cathays Park, Cardiff CF1 3NP

### **JAPANESE KNOTWEED CONTROL MANUAL**

A comprehensive manual dealing with the management of Japanese knotweed is in preparation and should be available in late 1996 for approx. £15. For further details and order forms please contact:

GILL GILES, ICOLE, Department of Geography, Loughborough University of Technology, Loughborough, Leics. LE11 3TU. Tel: 01509 223030; Fax: 01509 260753; e-mail: G.Giles@lut.ac.uk

### **THE FLORA OF THE EAST RIDING OF YORKSHIRE: SPECIAL OFFER**

Due to storage problems, The University of Hull Press is reducing the price of certain of its publications including *The Flora of the East Riding of Yorkshire* by Dr Eva Crackles, first published in 1990. This 271 page hardback Flora, with 8 pages of colour plates, is now available for £15 plus £2.50 p & p. (half the original price of £30). Please send orders to:

Miss J.M. SMITH, Assistant Registrar, The University of Hull Press, Hull HU6 7RX.  
Tel.: 01482 465322, Fax: 01482 465936

## REPORTS OF FIELD MEETINGS — 1995

Due to pressure of work, Dr B.S. Rushton has resigned as editor of Reports of Field Meetings and the following Reports will be the last under his editorship. Brian will continue to act as Receiving Editor for *Watsonia* and I thank him for his valuable contribution to *BSBI News*. Until a successor is appointed Reports should be sent to the Editor of *BSBI News*.

TISBURY, WILTSHIRE (VC 8). 1st APRIL

Some 40 members and friends met at Tisbury BR station at 11.00 a.m. for a spring wildflower walk. The weather was 'cloudy with sunny intervals', but became warmer and sunnier throughout the day. After admiring Common Whitlowgrass (*Erophila verna*) on ballast in the station forecourt, we headed cross-country to Castle Ditches, an Iron Age hill-fort. On a roadside we saw the woodland ecotypic variant of Ivy-leaved Speedwell (*Veronica hederifolia* subsp. *lucorum*), with more toothed leaves and darker lilac-blue flowers. The sunken lane up the slopes towards the fort yielded a good show of Common Dog-violet (*Viola riviniana*), Primrose (*Primula vulgaris*) and Wood Anemone (*Anemone nemorosa*), and fine patches of Moschatel (*Adoxa moschatellina*).

On the slopes of the hill-fort we saw the first Greater Stitowort (*Stellaria holostea*) and even the odd Bluebell (*Hyacinthoides non-scripta*). We descended a steep valley to Swallowcliff, where we ate our picnics or took refreshment in the garden of 'The Royal Oak'. Opposite-leaved Golden-saxifrage (*Chrysosplenium oppositifolium*) grew in damp grassland in the village. After lunch we admired a healthy stand of Barren Strawberry (*Potentilla sterilis*) in the plant-rich churchyard. Then we proceeded over the hill, descending by a precipitous slope, to Ansty, the banks bright with celandines.

Beside a lane in Ansty we found a good population of Lesser Celandine (*Ranunculus ficaria* subsp. *crisocephalus*), the eastern Mediterranean variant of this polymorphic species, described by Peter Sell only in 1991. This robust variant has flowers 3-5 cm across, fertile fruits and no axillary bulbils. We then crossed an interesting area of unimproved meadow, with Marsh Marigold (*Callitha palustris*) coming into flower; thence through heathy scrubland and down a sunken lane, where we saw more Barren Strawberry and the white variant of Sweet Violet (*Viola odorata* var. *dumetorum*).

The final walk back to the station was, alas, beside improved agricultural land with few flowers. At the station, many of the party dispersed, a hard core, after refreshment at 'The South Western' continued in cars to West Tisbury.

The day closed with a visit to the garden where I have my office, by kind permission of Mr and Mrs M.J. Hodges. An adjacent copse holds a thriving population of at least 15 plants of Green Hellebore (*Helleborus viridis*). While we were photographing this, and also observing a bat flying in the warm evening sunshine, the party was joined by Abby the Tabby – who loves company and does not like to miss out on anything! All admired both bat and cat. We finished with a look at a south-facing bank of unimproved pasture behind my office, where we found leaf rosettes of Meadow Saxifrage (*Saxifraga granulata*) – which flowers here in May. We admired the view of unspoilt valley and woodland before the party broke up to go home. A few diehards retired for further refreshment at 'The Beckford Arms'.

J. AKEROYD

GLOUCESTERSHIRE COTSWOLDS (VCC 33 & 34) 7th MAY

That Gloucestershire is most fortunate in having the country's largest population of *Pulsatilla vulgaris* (Pasqueflower) at Barnsley Warren cannot be denied. It would have been all too easy to take the party to the honey pot but what would have been the use? Where would have been the sense of achievement? We wanted to compare the county's most southern and northern sites particularly as there was a lack of

recent information on the southernmost locality and we had available 25 or so keen pairs of eyes. It was arranged for the party to meet at Rodborough Common (VC 34). This is part of a large complex of Jurassic limestone grasslands overlooking the five valleys that make up Stroud. It is under the care of the National Trust and was at the time of the meeting being proposed as a Special Area of Conservation.

The canary yellows and electric blues of vast mats of *Hippocrepis comosa* (Horseshoe Vetch) and *Polygala calcarea* (Chalk Milkwort) drew the party on to the valley sides, there to find a few stunted bushes of *Juniperus communis* (Common Juniper) of a size you might just turn your foot on and wonder, when you looked back, what might have been the cause. *Orchis mascula* (Early-purple Orchid), in great abundance, hardly got a look in as the party had got on to its collective knees in the great Pasqueflower hunt. It should be explained that Rodborough's hillsides were at the time ungrazed and in danger of becoming completely engulfed by that botanists bogey grass *Brachypodium pinnatum* (Torgrass). At first nothing was seen. Then, at last, a non-flowering rosette was found. Could it be? Could it possibly be? Yes! Then another and at length a total of 47 plants of which only three had, or had had flowers. The action required was obvious and it is encouraging to hear that the National Trust now have it in hand to give the area of the colony a good hard graze. A lot more ground was then covered in not finding the two other historic colonies on the common. Still it was encouraging to see that the Pasqueflower maintains a toe-hold in this its most westerly site in Europe, and, yes, you can all now shade in the open circle in your copies of *Scarce Plants in Britain*.

The weather being hot (well it was 1995 after all), most of the party appreciated the rest that the 50 km drive north to the second site allowed. With the exception of a couple who had succumbed to the siren call of the honeypot site – we learnt later that even there the flowering had been poor – the group reassembled by Hornsleasow Roughs (VC 33), an area of oolitic grassland in private ownership. It is an unusual site in the Cotswolds in so much that it is flat. In the past the area had been worked for limestone but this industry had long since ceased and the surface was well-vegetated and now grazed by sheep. It quickly became obvious that the season was generally poor for Pasqueflowers as few blooms were to be seen where there had been many the previous year. Diligent searching did however locate a colony of *Tephrosia integrifolia* (Field Fleawort) which had not been seen recently. Many species including *Polygala calcarea* were common to both sites. There were here however a number of taxa not previously observed in the south. It was of special interest to see the snow white carpets of *Saxifraga granulata* (Meadow Saxifrage) which is entirely absent from the central section of the Cotswolds. The late discovery of the nationally scarce *Mimartia hybrida* (Fine-leaved Sandwort) provided a last sublime delight and then we were away to the four corners of the Kingdom and home.

Our thanks go to co-leader Mike Wilkinson of English Nature for his assistance and support and for arranging access to Hornsleasow Roughs.

M.A.R. & Mrs C. KITCHEN

#### THE BURREN, CO. CLARE (VC H9). 15th - 17th MAY

Leaders: Sylvia Reynolds and Charles Nelson

The Burren field meeting was arranged at the request of the then Hon. General Secretary of the BSBI, Mary Briggs, who felt that BSBI members in Britain should be given an added attractive incentive to attend the Dublin AGM on 13th-14th May 1995. Following the successful and enjoyable AGM and associated field meeting led by Declan Doogue to Malahide Castle and the north Dublin coast, approximately 50 members headed west. Since the field meeting was held during the working week, only 10 Irish members were able to attend. However, we were very pleased that about 40 British and one Swedish member came to the Burren; the Hon. Treasurer, Mike Walpole, and his wife Ann visiting the area for the first time. On Monday and Tuesday, members were taken to the site of the controversial interpretive centre, the turlough and limestone pavement at Mullaghmore, the coast at Poulsallagh, and walked the 'green roads' on Black Head and above Fanore. On the final day, we visited the cliffs at Slievacarran, and then the lake in Coole Park and Garryland Wood in south-east Galway. More detailed



accounts of this field meeting have already been published in *Irish Botanical News* (1996, No. 6: 47-50) and *Watsonia* (1996, 21: 153-154).

Chris Preston brought the new field cards to the AGM, and *Atlas 2000* was given a double launch in Ireland – first in a Dublin saltmarsh by the outgoing President, Franklyn Perring, and then at Coole Park by Mary Briggs.

Apart from the people whose help has been acknowledged in the other accounts, I would like to thank Micheline Sheehy Skeffington, Chair of the Committee for Ireland at that time, for co-leading on the final day after so ably organizing the AGM in Dublin



The Hon. Treasurer paying homage to the Irish Orchid (*Neotinea maculata*).  
 Photo © S Reynolds 1995

SYLVIA REYNOLDS

THE CHEVIOT AND NORTHUMBERLAND COAST (VC 68). 24th - 25th JUNE

The thick cold mist gave a disappointing start to this meeting where 16 members and guests met to see some of the more interesting plants of the Cheviot SSSI. Maps and site descriptions for the meetings on both days had been provided by English Nature and parking permits and permission for the Cheviot visit had been granted by College Valley Estates. The Warden, Mr L. Hardy, was one of the party. We were fortunate in having the Northumberland county recorder Professor G A. Swann to lead us to the most botanically interesting part of the Bizzle. From Dunsdale we walked up the Bizzle Burn which had cut a narrow grassy valley through the blanket peat and the sandy soil overlying the Andesite.

Two small flushes at the foot of the valley had *Narthecium ossifragum* (Bog Asphodel), *Drosera rotundifolia* (Round-leaved Sundew), *Dactylorhiza fuchsii* (Common Spotted-orchid), *Pedicularis palustris* (Marsh Lousewort) and *Caltha palustris* (Marsh-marigold).

In the blanket peat on the way up the hill we saw *Melampyrum pratense* (Common Cow-wheat), *Eriophorum angustifolium* (Common Cottongrass), *Vaccinium myrtillus* (Bilberry), *Polygala vulgaris* (Common Milkwort) and *Galium saxatile* (Heath Bedstraw).

In the tiny valley we found *Thymus polytrichus* (Wild Thyme), *Saxifraga stellaris* (Starry Saxifrage), *Chrysosplenium oppositifolium* (Opposite-leaved Golden-saxifrage), *Viola riviniana* (Common Dog-violet), *Veronica heccabunga* (Brooklime), *Cystopteris fragilis* (Brittle Bladder-fern) and *Cryptogramma crispa* (Parsley Fern).

On reaching the Bizzle we climbed up the steep sides and on small ledges found an enormous variety of plants from *Pinguicula vulgaris* (Common Butterwort), *Epilobium brunnescens* (New Zealand Willowherb), *Valeriana dioica* (Marsh Valerian) and *Saxifraga hypnoides* (Mossy Saxifrage) in the flushes to the indicators that the area had once been wooded such as *Anemone nemorosa* (Wood Anemone), *Angelica sylvestris* (Wild Angelica), *Mercurialis perennis* (Dog's Mercury), *Primula vulgaris* (Primrose), *Phegopteris comectilis* (Beech Fern) and *Gymnocarpium dryopteris* (Oak Fern). We also saw some attractive clumps of *Trollius europaeus* (Globeflower), *Sedum villosum* (Hairy Stonecrop) and *Myosotis stolonifera* (Pale Forget-me-not) and the shrubs *Rosa pimpinellifolia* (Burnet Rose), *R. mollis* (Downy Rose) and *Salix myrsinifolia* (Dark-leaved Willow).

Due to the poor visibility the party returned early and several people went to botanise at Hethpool Linn, where, in the dry rocky areas *Helianthemum nummularium* (Common Rock-rose), *Scleranthus annuus* (Annual Knawel), *Aphanes arvensis* (Parsley-piert) and *Thymus polytrichus* were found. In the wet stream bed *Myosotis secunda* (Creeping Forget-me-not), *M. scorpioides* (Water Forget-me-not) and *M. laxa* (Tufted Forget-me-not) were found growing in close proximity with *Montia fontana* (Blinks), *Mentha aquatica* (Water Mint), *Veronica catenata* (Pink Water-speedwell) and *Ranunculus hederaceus* (Ivy-leaved Crowfoot) close by.

On the Sunday, twelve people gathered to look at the rich dune vegetation at Cocklawburn Dunes. At this point on the coast the limestone outcrops and there is the ruin of the old lime kiln with the old waste heaps still present. Many of the plants were in flower and this SSSI was probably seen at its best botanically. *Anchusa arvensis* (Bugloss), *Geranium sanguineum* (Bloody Crane's-bill) and *Lotus corniculatus* (Common Bird's-foot-trefoil) provided bright colour. Amongst the many plants seen were *Anthyllis vulneraria* (Kidney Vetch), *Catapodium rigidum* (Fern-grass), *Ononis repens* (Common Restharrow), *Leontodon hispidus* (Rough Hawkbit), *Gentianella amarella* (Autumn Gentian), *Thalictrum minus* (Lesser Meadow-rue), *Astragalus danicus* (Purple Milk-vetch), *Echium vulgare* (Viper's-bugloss), *Honckenya peploides* (Sea Sandwort), *Atriplex prostrata* (Spear-leaved Orache), *Tripleurospermum maritimum* (Sea Mayweed) and *Ligusticum scoticum* (Scots Lovage). In the waste pool was *Potamogeton pectinatus* (Fennel Pondweed) whilst in the grassland were some fine *Listera cordata* (Lesser Twayblade) and *Ophioglossum vulgatum* (Adder's-tongue) and by the path side we saw *Lycium barbarum* (Duke of Argyll's Teaplant) and *Conium maculatum* (Hemlock). We ended the day by examining the edge of an adlacent cultivated field for arable weeds finding *Papaver dubium* (Long-headed Poppy), *Geranium pusillum* (Small-flowered Crane's-bill), *Anisantha sterilis* (Barren Brome), *Carduus tenuiflorus* (Slender Thistle), *Anthriscus caucalis* (Bur Parsley) and *Arctium minus* (Lesser Burdock).

ANNE PICKERING

#### APPLEBY, WESTMORELAND (VC 69) 17th - 18th JUNE

Ten members met in good weather in Appleby on 17th June to explore the hawkweed flora of the surrounding area. The plan was to concentrate on the low ground on the Saturday and to set aside Sunday for investigation of the upland limestone. Our first visit was to a railway bank near Appleby where there was a large colony of *Hieracium scotostictum*, an introduced hawkweed which had formerly been reported from this site as *H. maculatum*. From there we explored a series of railway banks and roadside walls towards Long Marton finding *H. diaphanum* and *H. acuminatum* in several places and, on one wall only, a few plants of *H. diaphanoides*. A further colony of *H. scotostictum* was seen at Long

Marion, where there was a good stand of *Bromopsis erecta* (Upright Brome) on a railway bank. We then moved south of Appleby and examination of various railway bridges and embankments, interspersed with picnic lunch in full sun, produced several sites for *H. sublepidoides*. This is a member of Section *Vulgata* with multiple, very glandular small heads and hitherto has had relatively few northern records. By now it was mid-afternoon and it was decided to round off the day by visiting a known site of *H. hypochaeroides*, a most attractive plant of limestone rocks. This involved an approach over some uninspiring moorland to the head of a steep gill south of Kirkby Stephen, which was lined with a promising assemblage of calcicolous species such as *Primula farinosa* (Bird's-eye Primrose). Unfortunately the late season meant that no plants of *Hieracium* were visible even in bud.

On Sunday we met in idyllic conditions at Dufton a few kms north of Appleby where a track goes off to join the Pennine Way. There was much evidence of other hikers as our party set off up the hill towards the main limestone scar. We were soon well strung out and while the rest were catching up a splinter group inspected a small crag at the entrance to High Cup Nick. We had had some concern that at this height the hawkweeds might not yet be in flower but were delighted to find several plants in peak condition, which were later identified as *H. glanduliceps*, a local species of the northern limestones. The party had now regrouped and moved off along the scar towards the west, finding scattered plants of *H. pellucidum* and *H. decolor*, the latter in an alarming range of leaf forms as well as a good show of *Thalictrum minus* (Lesser Meadow-rue) in one spot. One shady crevice yielded a plant with leaf shape typical of *H. auratiflorum*, but having pale yellow flowers and untypical hair covering on the involucre, which raises doubts about earlier reports of that species from this locality. An interesting fern collected above Great Rundale Beck later proved to be *Polypodium* × *mantoniae*, the hybrid between *P. vulgare* (Polypody) and *P. interjectum* (Intermediate Polypody). A successful day was rounded off by finding in a lane on the walk back to the cars from Knock *Campanula rhomboidalis* (Broad-leaved Harebell) which had been reported previously from the area. The meeting achieved its main aims of offering an introduction to some of the typical hawkweeds of the area at the same time as giving members a chance to meet others sharing an interest in the genus and we were fortunate in having ideal conditions in which to do it.

G. HALLIDAY & D.J. McCOSH

#### NORTH EAST GALWAY (VC H17). 16th JULY

In the *Botanist in Ireland* Praeger dismissed a large swathe of territory in east Galway and Roscommon as 'indeed the least interesting region and most monotonous, in the whole of Ireland'. It was the fate of this vice-county recorder and six other botanists from Galway, Belfast and Dublin to confirm the truth of this sweeping assertion in the course of perhaps the only wet day of last summer. Despite a small and diminishing human population, drainage, the use of artificial fertilizers and the replanting of old estate woodlands with sitka spruce, have greatly reduced the extent of natural or semi-natural habitats in north east Galway. Previous field work in 1994 had shown however that some eskers or ridges of glacial gravel still retained an interesting flora including *Equisetum hyemale* (Rough Horsetail), *Plantago maritima* (Sea Plantain), *Antennaria dioica* (Mountain Everlasting) and *Sesleria caerulea* (Blue Moor-grass). The intention of the field trip was to examine further eskers in the country south of Ballygar, having assembled at that village on Sunday morning, July 16th.

The day started with a short visit to the banks of the river Suck, where *Lysimachia nummularia* (Creeping-Jenny) was found. The record was of interest as the species is rarely seen in the better known western part of the vice-county. Three esker sites were visited, but unfortunately all were very disappointing. Dense brambles or the all too familiar emerald green of heavily fertilized pasture showed that the sites retained little of interest. Some consolation for a dull day was the finding of *Vaccinium oxycoccos* (Cranberry) in a roadside cut-away bog. The group broke up around 4 o'clock, their respect for Praeger's intimate knowledge of the Irish countryside even greater than it was at 10 o'clock that morning.

C. RODEN

## ADVERTISEMENTS

### BOTANY TOURS OVERSEAS

(Led by BSBI Members)

Date	Destination	Leader
March 13 - 22	Rhodes	Tony & Sylvia Kemp
March 22 - 31	Southern Cyprus	Mary Briggs
April 2 - 12	Crete	Mary Briggs
April 8 - 23	Southern Turkey	Tony & Sylvia Kemp
April 26 - May 10	Dominica	Mary Briggs
May 24 - June 7	Romania	Tony & Sylvia Kemp
May 25 - June 3	Slovenia	Mary Briggs
June 9 - 23	Wengen, Switzerland	Mary Briggs
June 26 - July 8	Eastern Pyrenees	Peter Jepson
July 8 - 22	Western Pyrenees	Allan Coombes
July 24 - August 3	Obergurgl, Austria	Mary Briggs
January 1988	Malaysia	John Richards

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CAROLINE COTTON, Cox & Kings Travel Ltd., Gordon House, 10 Greencoat Place, London SW1P 1PH. Tel.: 0171 873 5002

Date	Destination	Leader
January 19 - Feb. 5	Mount Kenya	Michael Jones

For further details please contact:

MICHAEL D. JONES, 30B Springfield Road, Stoneygate, Leicester LE2 3BA

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## CORRECTIVE CENTRE

### CORRECT NAME OF WILLOW

In my note on 'Some Willows from a Leicestershire Quarry, VC 55, 1993-1995' in *BSBI News* 72: 63, the *Salix pentandra* mentioned should have been given as a queried identification. Catkins have now been collected and the willow identified by R.D. Meikle as the hybrid *Salix - laurina* (*S. cmerea* - *S. phylicifolia*). *S. pentandra* should therefore be removed from the list.

EDITH HESSELGREAVES, 28 Woodlands Drive, Groby, Leicester LE6 0BQ

### 'DUEL' CARRIAGEWAYS

In *BSBI News* 71: 25 (January 1996) there is a gem of a misprint which leads me to ask:

Are 'duel' carriageways where 'road rage' antagonists fight it out?

DUGGIE KENT, 75 Adelaide Road, West Ealing, London W13 9ED

## STOP PRESS

### ANNUAL EXHIBITION MEETING, LONDON 1996

Your notice and booking form for the Exhibition Meeting is enclosed in this mailing, and the Meetings Committee has asked me to send a special welcome to first time exhibitors. We would like to encourage any member who has not before brought an exhibit, but who has during the year found or noted plants, or comments on plants, of interest to consider an exhibit. You will see from the notice that Roy Vickery can arrange for specimens to be borrowed from the herbaria of the Natural History Museum for an exhibit if this is helpful. Reference to the Report of the 1995 Annual Exhibition Meeting in *BSBI News* 72: 60-73 (April 1996) will show the variety of subjects chosen for the 1995 meeting.

We hope too for exhibits on any significant plant projects currently in progress, and we also welcome recent publications by members; we are of course counting on our regular exhibitors and look forward to seeing them again this year on November 30th.

MARY BRIGGS, President-elect

### NOTES TO CONTRIBUTORS

My thanks to all who send in typed copy, but don't forget that hand-written copy is still accepted. If you do type future contributions it will be a great help if you follow some standard conventions by looking at past numbers of *News*. For instance, titles of papers and author's names are always in CAPITALS and English names are always given (except sometimes in long lists). If sending hard-copy (i.e. a computer printout or typescript) keep your formatting to a minimum, **don't** put Latin names in *italics* or underline them (they are more difficult to scan successfully). If sending a computer disk, please do include all formatting and state clearly on the disk label what word-processing package you are using and enclose hard-copy as well. If sending a fax, please post the original as well, faxes are very difficult to scan correctly. Articles can also be sent by E-mail at [paellis@msn.com](mailto:paellis@msn.com)

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**Continued** from back cover

## NOTES AND ARTICLES (continued)

Ecotypic distinction in <i>Hiermaria ciliolata</i> ?	31
Mistletoe in Berkshire & Buckinghamshire	31
<i>Sorbus domestica</i> L. – Comparative morphology and habitats	32
Morphology	32
History	33
Habitats	34
CONSERVATION NEWS	35
Aliens are not aggressive	35
ALIENS	38
Alien Records	38
<i>Solanum vernerii</i>	40
A rather different (and overlooked?) Rock-rose	41
Established alien perennials and biennials in Chiltern tetrad	41
Notes on some alien plants at the Towans, West Cornwall	43
Notes on <i>Podophyllum</i> (Berberidaceae) as potential British aliens	43
<i>Cyclamen repandum</i> in England	46
Alien plants from Yorkshire	47
<i>Conyza bilbaoana</i> J. Rémy – new to South Hampshire (VC 11) and to Britain	47
COMPUTER BYTES	50
BSBI Recorder users	50
Computer Spell Checkers	51
BSBI approved software	52
ADITSITE Version 3.0	52
ERICA	52
RECORDER	53
DMAP for Windows	53
Using Recorder for Hectads, Tetrads – and many other things	54
NOTICES (BSBI)	55
Azores Field Meeting	55
BSBI trip to N.E. Turkey	55
REPORTS OF RECENT CONFERENCES AND MEETINGS	55
Orchid Population Biology: Conservation and challenges	55
Mediterranean plants	56
George Claridge Druce Memorial Day	57
Paul Westmacott Richards 1908-1995	58
FUTURE CONFERENCES AND SYMPOSIA	59
Biodiversity in Scotland: status, trends and initiatives	59
Journées-Débats Paul Jovet: Inventaires naturalistes dans la ville	59
REQUESTS	60
Flora wanted	60
Call for information about cases of plant poisoning	60
BOOK NOTES	60
News from Oundle Books	60
<i>The Bygone Botanists of Herefordshire</i>	61
New Naturalists for Sale	61
<i>Flora Britannica</i> : Special Offer	61
<i>Welsh Ferns</i> 7th Edition – delay	62
Book offers from Dept of Botany, NMW, Cardiff	62
Japanese Knotweed control manual	62
<i>The Flora of the East Riding of Yorkshire</i> : Special Offer	62
REPORTS OF FIELD MEETINGS — 1995	63
Tisbury, Wiltshire (VC 8)	63
Gloucestershire Cotswolds (VCC 33 & 34)	63
The Burren, Co. Clare (VC H9)	64
The Cheviot and Northumberland Coast (VC 68)	65
Appleby, Westmoreland (VC 69)	66
North East Galway (VC H17)	67
ADVERTISEMENTS	68
Botany Tours Overseas	68
CORRECTIVE CENTRE	69
Correct name of Willow	69
'Duel' Carriageways	69
STOP PRESS	70
Annual Exhibition Meeting, London 1996	70
NOTES TO CONTRIBUTORS	70

## CONTENTS

ADMINISTRATION	2
Officers and Council from May 1996	2
Deadline for contributions for <i>BSBI News</i> 74	3
DIARY	3
EDITORIAL	4
Thanks	4
New Artist	4
New Book	4
Contacting the Editor	4
Inserts with this issue	4
A NOTE FROM THE PRESIDENT-ELECT	5
Congratulations	5
In Memoriam	5
Giant Aroid	5
Vascula appeal	6
Past Hon. Gen. Sec.'s Tail – P.S.	6
NEW HON. GEN. SEC. – MINI PROFILE	6
ATLAS 2000	7
Report	7
It's Full Steam Ahead!	7
Atlas Organiser Change of Address	7
Some Thoughts on Recording	7
The richest hectad?	8
Atlas 2000 Publicity	8
E-mail Users	8
Atlas 2000 Field Meetings	8
Future Meetings	10
Workshops	10
Next BSBI News	11
CO-ORDINATOR'S CORNER	11
Introduction	11
Computerisation	11
Networking	12
Some other things	12
RECORDERS AND RECORDING	13
Amendment No. 2 to <i>BSBI Year Book 1996</i>	13
VC Recorders	12
Panel of Referees	12
County Floras and Checklists	12
New methods of assessing threat and rarity – A response to David Pearman's Presidential Address	12
Design of field recording cards	15
NOTES AND ARTICLES	16
A 'Missing Link' between Gnetales and Angiosperms?	16
<i>Urtica galeopsifolia</i> : an early Norfolk record?	17
Levels of reproductive activity in ferns – an update	17
Discriminating Muntjacs	18
When is an arable weed extinct?	18
Dialect plant-names	19
Five types of beech seedling	20
Dog's Mercury with the blues	20
Botanists and Botany in literature – 3	21
Botany in modern literature	21
Roadside <i>Cochlearia</i>	21
Danish Scurvygrass	22
<i>Cochlearia danica</i> on roadsides	22
Hybrid Scurvygrass ( <i>Cochlearia danica</i> × <i>C. officinalis</i> ) by salt-treated road	23
Why does wild Teasel trap water?	23
Contaminants in grass seed	23
English Nature's Botanical Service – update	25
4-whorl 'polystachion' and rebranching in <i>Equisetum palustre</i>	26
The earliest reference to Black Poplar in England?	28
More achlorophyllous <i>Epipactis</i> in Scotland	28
Perennial Foxgloves	30
More 'Botanist lived here' plaques	31

Continued on inside back cover