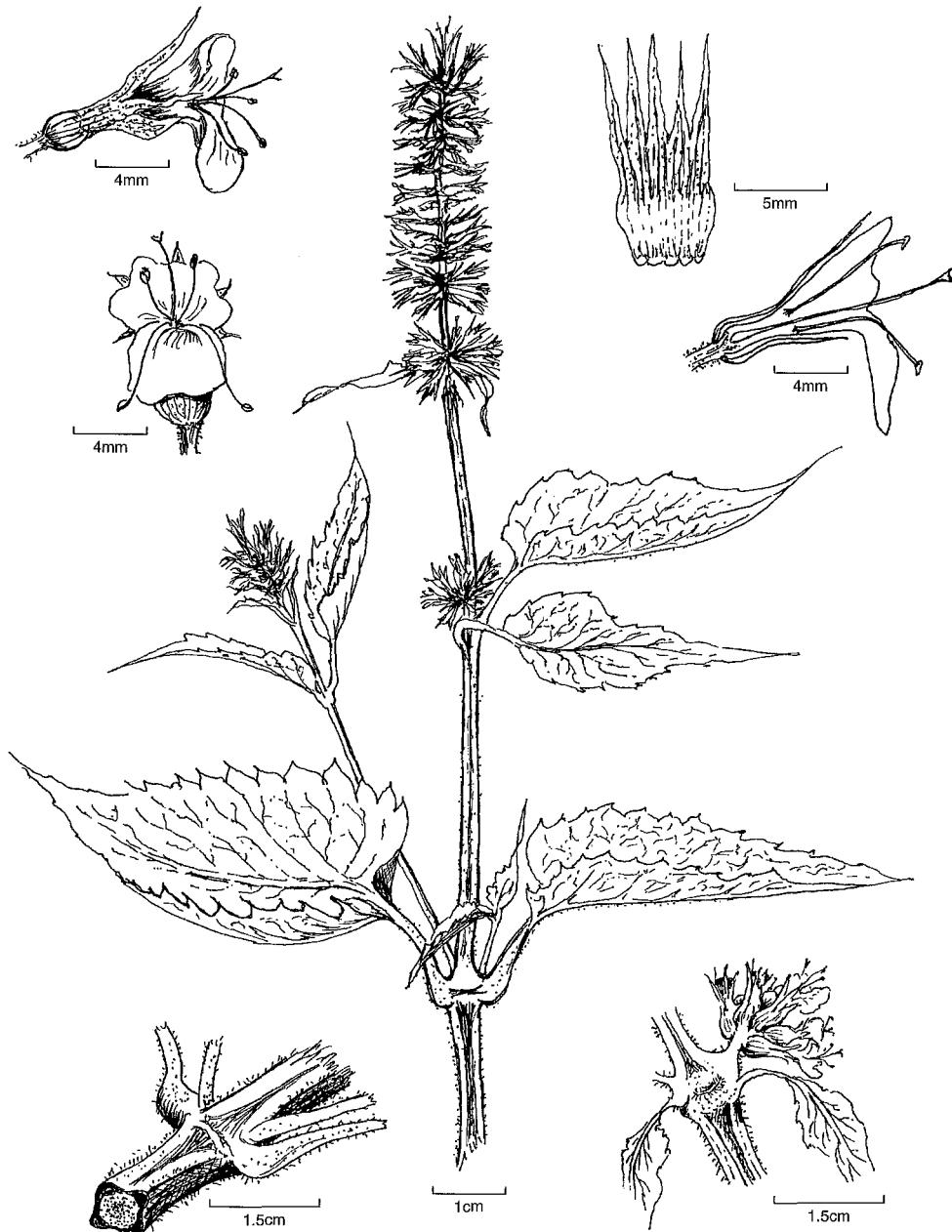


Edited by

Leander Wolstenholme & Gwynn Ellis

No. 99



Agastache rugosa, hort. Ware, seed ex Elgin (v.c. 95), del. Ruth Freeman © 2004 (see page 47)

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NOTES FROM THE OFFICERS

FROM THE PRESIDENT

This is the last time that I will be writing '*From the President*' as I will be handing over to Richard Gornall at the AGM in May. My three years in office seem to have flown by and in that time BSBI has achieved a great deal. Two of my first and most pleasurable tasks were to attend launches of the *New Atlas* at Kew and Dublin, the publication of which, of course, marked the most significant event for the Society for almost forty years and advertised the fact that the BSBI has an indispensable role to play in providing essential data to feed into the ever-increasingly regulated spheres of wildlife legislation, conservation and research. The Society's Leicester Database in conjunction with the Vascular Plant Database and the Threatened Plant Database provide the bases of the projected Rare Plants Unit and have enabled the BSBI to provide the most comprehensive and by far the largest dataset to the National Biodiversity Network, available on the web to all through the NBN Gateway.

We have also seen the publication of Clive Stace's *Vice-County Census Catalogue*, another benchmark work on which future botanical records will be based. Last year also saw the production of the DVD Rom version of Clive's *New Flora of the British Isles*, another 'first' in the botanical field in Britain and Ireland, and the September 2003 conference to commemorate his retirement will be marked by the publication of Conference Proceedings reflecting his work. The Proceedings of the Atlantic Arc Conference (held in Cornwall in May 2003) will be dedicated to the outstanding lifetime achievements of Franklyn Perring to whom we all owe so much and whose untimely death has robbed us of a botanical giant.

We have successfully completed the major part of the work for *Local Change* when a staggering 93% of records were submitted electronically, a testament to the adaptability of BSBI Recorders and the membership, the majority of whom were reliant upon card indexes and paper notes only a few years ago. We now all wait in eager anticipation for Bob Ellis to complete the data analysis. Incidentally, if you have any interesting anecdotes or case studies which came to light as a result of the Local Change recording, Bob would like to hear from you with a view to including them in the final report.

But the most recent and significant advances have been the appointment of Gabriel Hemery as Director of Development and Jim McIntosh as Scottish Officer, both of whom will be taking the Society forward by encouraging better co-ordination of Recorders and the membership, promoting research, survey and monitoring projects, developing data handling and dissemination, enhancing training and education and seeking further sources of funding. I would personally like to thank the Country Agencies for their generosity and assistance in the funding of these posts.

I was shocked when I was told that *nationally* there had been only 21 prospective student applications for university botanical courses in 2004. The BSBI has been aware of this alarming lack of interest and reduction in botanical education at all levels for some years and is taking steps to reverse the trend. Not only has the Society established a Training and Education Committee following the lead of the late Franklyn Perring, but BSBI Council recently supported the adoption by the Society of the Identification Courses run by Birmingham University in association with the Field Studies Council. At the March Council meeting, I had the pleasure of presenting the BSBI sponsored prize to the highest placed student of last year's course. Hannah Graves, currently employed by the Berks, Bucks and Oxon Naturalists' Trust, achieved between 84% and 100% in all six modules of the course, an unprecedented result and the top of a very talented class! Not only did she accomplish this outstanding result but she also found new sites for *Carex vulpina* (Fox Sedge) as a result!

We find ourselves at a time of rapid change. I hope that our incoming President receives the same high degree of support as I have benefited from and I wish him every success during his term of office and hope that he will find the task as rewarding and enjoyable as I have done.

RICHARD PRYCE, President

20th March 2005

FROM THE HON. GENERAL SECRETARY

There is very little new to report, since this spring has been taken up with the induction of the new Director of Development.

Species Status Assessment project

Following the note from Trevor Dines in *BSBI News* 98, the final report and new list will be published by JNCC at the end of April, and will be available from them both as a booklet and from their website (<http://www.jncc.gov.uk>). As previously outlined, by embracing the concept of threat, there will be many changes to the existing lists, with many additions (most of which were forecast by the *New Atlas*) and with many species previously classified as Rare or Scarce that will not be included. The position of these latter species, previously selected on the basis of rarity (1–15 10km squares or 16–100 10km squares), has still to be agreed, but will presumably still have a place through the concept of Rarity in local Floras and Registers, as well as in selection of SSSIs.

PlantNetwork (the national network of botanic gardens, arboreta etc) through the Royal Botanic Garden Edinburgh, is endeavouring to ascertain which British rarities are growing in which gardens, and their source. They aim to contact lead BAP partners and others working on their chosen species and offer advice on germination requirements, establishment and reproductive biology. This project is being co-ordinated by Natacha Frachon at RBGE. We welcome any initiative that brings more science to the tendentious matter of re-introductions and would like to be involved.

We are very pleased to note that our member, Dr Alan Showler, has been awarded this year's Marsh Christian award for services to botanical conservation.

DAVID PEARMAN, Hon. General Secretary, Algiers, Fock, Truro, Cornwall TR3 6RA; Tel: 01872 863388; email: DPearman4@aol.com

FROM THE DIRECTOR OF DEVELOPMENT — GABRIEL E. HEMERY

I am delighted to have joined BSBI during such an exciting time in its development. As BSBI's first non project-based employee, I recognise that this is a significant step for the society and I certainly feel the full weight of c.170 years of history behind me.

My principle role is to implement the *Development Plan*, which was approved by Council in November 2003. The plan, based on the published 'BSBI Strategy 2000', seeks to promote and enhance BSBI's ability to gather, interpret and publish botanical data, for the benefit of plant conservation. I recognise that the volunteer recording network and the membership lies at the heart of BSBI, and I look forward to working with as many of you as possible. At the same time there is exciting potential for developing and strengthening partnerships with others, and for promoting the activities of BSBI to a wider audience.



The development plan's main objectives, in collaboration with partners, are:

- strengthening our capacity to develop and implement programmes of botanical field survey, research and monitoring;
- developing our ability to manage botanical data information;
- developing activities in botanical education, training and outreach;
- improving central administration.

I am keen that members are fully informed about the plan and its progress, so I will ensure that I provide you with regular updates in *BSBI News* and elsewhere. Please contact me if you would like me to send you a copy of the Development Plan.

Finally, I hope to meet as many of you as possible over the coming months and years. Perhaps I will see you at the AGM in mid-May?

GABRIEL E. HEMERY, BSBI Director of Development, c/o Dept of Plant Sciences, University of Oxford, South Parks Road, OXFORD, OX1 3RB; Tel.: 07759 141438; BSBI@btinternet.com

FROM THE CO-ORDINATOR

New word competition

There were several good suggestions for a new word, following my request in the last issue of *News*. The aim is to coin a word that means ‘important plant’ – an indicator of good habitat. This is to allow conservationists to justify the selection of plants that make a nature reserve, or some other area of countryside, worthy of protection. If we can come with lists of plants that favour, say, soils with a low nutrient status, then these might be the ones chosen for a monitoring scheme where reducing nitrate pollution was an objective. There is no reason whatsoever why such indicator species should be rare or even native. They could even be planted in some habitat types, as long as their continued presence was indicative of the conditions that the conservationists desire.

The winner of the competition is Tom Whitehall, who suggested the word ‘axiophyte,’ from the Greek word αξιος, meaning ‘worthy.’ It seems entirely appropriate. Several others suggested something similar from the same root.

A small number of counties already have lists of axiophytes. What you should do is choose the habitat types that are most desirable in the county – ancient woodland, unpolluted waters, and so forth. Then you decide which plants occur in such habitats but not in the habitats that are less desirable analogues, such as secondary woodland and polluted waterbodies. Do not worry at all whether such species are native or not; their origin is immaterial. Much more important are their Ellenberg Values and life cycle strategies. Once you have such a list, then you can use records of them to assess which are the most important sites for your habitat feature, and monitor how they are faring. One exciting possibility is that we could collect hundreds of thousands of records of these species, and devise really sensitive monitoring procedures for important sites and the countryside at large. It is very much the next logical step, as computer technology develops to the stage where this sort of thing is possible.

Atlas Updating Project

A new initiative from the BSBI is the Atlas Updating project, or AUP. This is essentially the Atlas 2000 project all over again, only this time we are using the latest technology to make it all much easier and quicker to do. The web site is already up and running, and you can see how our maps develop over the next few years. The aim is to cover all taxa throughout Britain, Ireland and the Channel Isles, using the time period 2000-2010.

This is a natural progression from Local Change, which comes to an end this year. Local Change has proven the power of our Mapmate network to accumulate huge amounts of data and put vice-county recorders in charge of keeping the records for their county. All the records for the AUP will come through county recorders and taxonomic specialists, and these people will have the ability to remove erroneous dots as well as add new ones. It should be great fun, and it provides an opportunity for all members to contribute. Please wait until your v.c. recorder has posted a substantial quantity of data, and then your services will be needed finding new plants for squares for which there is no current record. Watch the web site to keep up with developments – www.bsbi.org.uk.

Recorders' Conference

There is indeed going to be a recorders' conference this year, although I did not arrange it in time for it to appear in the Yearbook. It is taking place in Shrewsbury between the 16th and 18th September. The two themes are to be the launch of a new project on hybridisation and the results of Local Change. There will be formal conference proceedings on the afternoon of Friday 16th and on the morning of Saturday 17th which everyone is invited to attend, even if they do not come to the ‘retreat’ at Preston

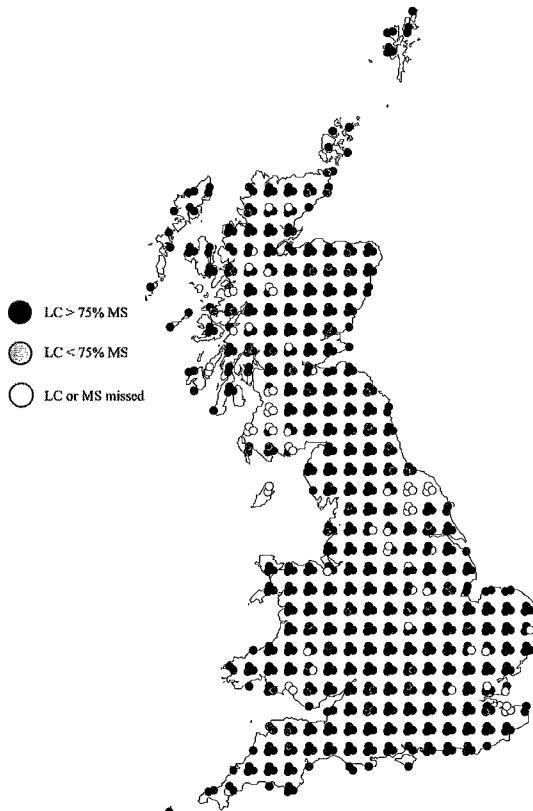
Montford Field Centre for the rest of the weekend. All county recorders and referees will receive details and, if there is anyone else who wishes to attend, please get in touch with me or keep an eye on the web site. Places are limited, so I have to offer it to recorders and referees first, but we would be delighted for other members to join us.

ALEX LOCKTON, 66 North Street, Shrewsbury, Shropshire, SY1 2JL Email: coordinator@bsbi.org.uk

FROM THE VOLUNTEERS OFFICER

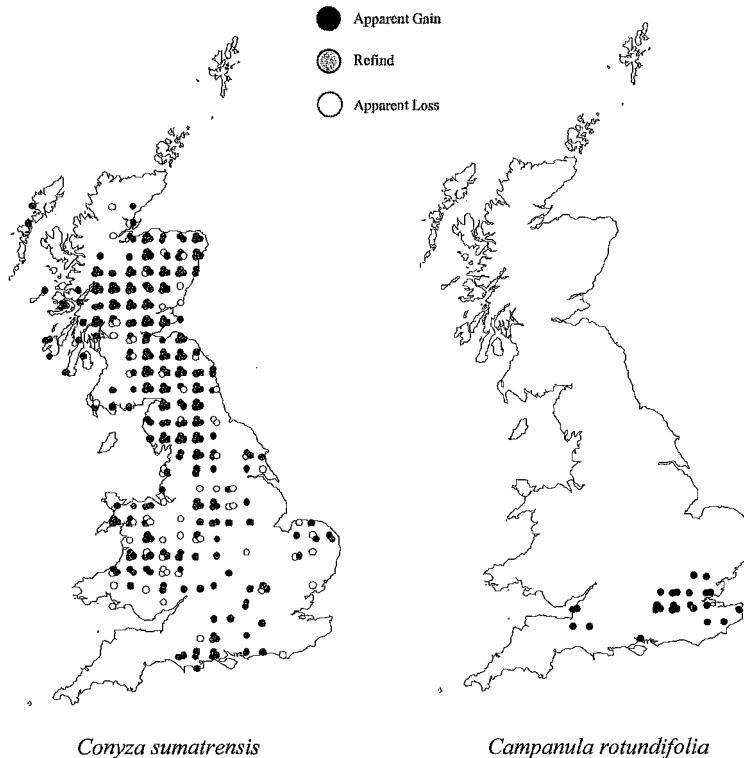
BSBI Local Change

Except for a small number of corrections and additions, the Local Change data are now safely gathered in. A staggering total of 311,846 records were collected representing over 190,000 tetrad taxa – compared to 174,000 in the Monitoring Scheme. 2,757 taxa are represented – an increase of 550, mostly neophytes. Of the 800 tetrads covered by the monitoring scheme, 760 were revisited (95%) and a further 8 tetrads, which were not visited in 1987/88, were covered in 2003/4 and this will be useful for a future repeat of the project. Most pleasing was the fact that 83% of the data arrived via the MapMate network and a further 10% by other electronic means.



Monitoring Scheme and Local Change coverage

Well done all! Now we have the fascinating task of analysing the data, with a view to producing a report before the end of the year. Just as a taste, here are a couple of provisional maps:



Although these maps exclude tetrads where little or no recording was undertaken in one or other of the surveys, several others may be less than significant and so no firm conclusions should be drawn from them at this stage.

BOB ELLIS, BSBI Volunteers Officer, 11 Havelock Road, Norwich, NR2 3HQ; 01603 662260;
VolunteersOfficer@bsbi.org.uk

FROM THE SCOTTISH OFFICER

Site Condition Monitoring of Scottish SSSIs

Last year BSBI volunteer surveyors were involved in Common Standard Monitoring (called Site Condition Monitoring in Scotland) of 12 SSSIs, designated to protect notable vascular plants. The work entailed trying to relocate previously recorded or new populations of Nationally Rare & Scarce species, and some UKBAP species such as Juniper, found in those SSSIs. No mean task when some of the sites extended to several thousand remote and mountainous hectares, as in the case of Ben Heasgarnich near Killin! However, details of all previous records of the 'target' species were supplied to surveyors to give them a starting point.

The surveyors noted details, drew maps, and took photographs of the relocated populations. Equally importantly, they also looked for new populations and noted were they had been unable to refind previous records.

Unfortunately the work did not get underway until rather late in the season, and then it was almost immediately delayed by wet weather. Consequently only seven of the sites were completed (Balnagrantach, Beauly Firth, Kyle of Sutherland Marshes, Raasay, River Thurso, Sligachan and Tulach

Hill). Reports for these sites from BSBI volunteer surveyors have been forwarded to a very grateful Scottish Natural Heritage. Many thanks to Barbara & Brian Ballinger, Barbara Hogarth, Clive Dixon, Ian Green, Ken Butler, Pat Batty, Richard Pankhurst, Stephen Bungard, and Tessa & Gus Jones who helped with this project in 2004 – all of whom said how much they had enjoyed the fieldwork, which had given them a new and very satisfying ‘focus’.

Consequently, there is some work left to do, and SNH has asked if I could complete the outstanding work in 2005, with the help of BSBI volunteers. In 2004, five sites were started but not finished. These were Abernethy Forest, Ben Heasgarnich, Kakra Bay, Minto Crags and Ulva, Danna and the McCormaig Isles. Other sites were not started: Ben Lomond and Bothwell Castle Grounds.

As a lower priority, SNH has also asked whether we could resurvey a number of sites where SNH or their contractors had completely failed to relocate species. Where this happens, the automatic result is that the site is classed as ‘unfavourable’. In many cases BSBI members will be more experienced than SNH, or perhaps even contract staff, and may succeed where they failed. I am still finalising the list of these sites with SNH.

Where BSBI volunteer surveyors have been involved with Site Condition Monitoring work in the past (either on completed or partially-completed sites), I’d be very grateful if they could continue to be involved in the project. I shall also be in touch with Vice-county recorders who have any of the sites on the finalised list in their areas; to let them know what’s going on, to find out whether they have any additional records to SNH’s and to ask whether they might like to help with the survey work themselves.

In general I would like to arrange for one botanist to lead on each site, but be helped by a small number of competent assistants. The lead would choose a small group of botanists to help, if help was required, arrange the fieldwork and be responsible for writing the reports. Guidance, and I hope training, will be provided on the various aspects of SCM fieldwork and reporting.

The work is particularly satisfying in that it makes a valuable contribution to our botanical knowledge of rare species and towards their conservation. It also takes you to some quite remote places you’ve probably never been before. And it’s fun! So, if you are a competent and physically-fit botanist, have a few days to spare in Scotland and would like to volunteer to get involved, please let me have a note of your interest, any areas of particular expertise and your time and geographic availability (by e-mail preferably). I will then circulate these details to lead surveyors, to let them choose their teams. If you have any queries, please don’t hesitate to contact me.

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PRESIDENTS' PRIZE 2004

The Presidents of the Botanical Society of the British Isles and the Wildflower Society award a prize annually, each in alternate years, to the authors, which in their opinions, have produced the best botanical publication of the year.

It is the turn of the President of the BSBI to choose the Prize for 2004 and after long consideration, I have come to the conclusion that of all the books, papers and other publications which have been brought to my attention, the work which stands out well above the considerable and stiff competition, and the one which I feel most closely reflects my own interests, is *An Illustrated Guide to British Upland Vegetation*, written by Dr Alison & Mr Ben Averis, Prof. John Birks, Dr David Horsfield, Prof. Des Thompson and Mr Marcus Yeo.

Prof. Sir Ghillean Prance, President of WFS, is equally enthusiastic that the prize should be awarded for this book. We both feel that it breaks new ground by taking the NVC to a much wider audience in a readable and exciting way which will potentially motivate students of botany and ecology, as well as those in other disciplines, to which the NVC may have been something of a closed book until now.

It is hoped that the presentation will be made to one or more of the authors at the BSBI Annual General Meeting in Ferryside, Carmarthenshire, on 14th May 2005.

RICHARD PRYCE, President

29th March 2005

DIARY

N.B. These dates are often supplementary to those in the 2005 Calendar in *BSBI Year Book 2005* and include provisional dates of the BSBI's Permanent Working Committees.

Permanent Working Committees

14 May	Council Meeting, Ferryside	17/18 Sept	Training & Education Committee, Preston Montford
18 June	Committee for Wales, Lampeter	11 Oct	Records Committee, London
13 July	Executive Committee, London	19 Oct	Publications Committee, London
14 Sept	Meetings Committee, London	17 Nov	Council Meeting, London

23-25 June	<i>Loving the Aliens??</i> Conference, Sheffield (see p. 78)
21-26 August	IV th International Congress of Ethnobotany, Istanbul, Turkey (see <i>BSBI News 98</i> : 51)
9-10 September	A celebration of grasses Conference, Linnean Society of London and the Royal Botanic Gardens Kew (see p. 54)
14-16 September	Atlantic Oakwoods Symposium (BSS), Oban (see <i>BSBI News 98</i> : 50)
5 November	Scottish Annual Meeting, Perth 2006
March	Excursion to Western Portugal (see p. 53)
23-24 May	Conservation of Native Plants in Churchyards Conference (see p. 53)

EDITORS

EDITORIAL

Apologies to the several contributors whose articles have had to be held over until next time. The fact that they have a guaranteed place in the first of the 'new look' *News* may be some small consolation! It is gratifying to have so many quality articles to choose from and those that have been held over are in no way inferior, they merely have a less pressing need for Spring publication.

New format for BSBI News

This issue of *BSBI News* marks the end of an era. From the next issue, Number 100, the page size is to be increased from A5 to B5 (or *Watsonia* size). We will also be changing from a single column to a double column format. The reasoning behind the change is to produce a larger, less-cluttered, more attractive looking journal, with a larger and hopefully easier to read font. The front cover, too, will be redesigned, with a green border, but retaining the much loved and very useful line drawing.

Colour section (centre pages): Plate 1: *Houttuynia cordata* (p. 63), Spanish Bluebell (p. 51), *Reseda phytisma* (p. 50). Plate 2: *Fallopia dumetorum* (p. 21), *Polypodium* sp. and *Soleirolia soleirolii* on walls (p. 41), Hen-and-chickens daisy (p. 22), *Dryopteris × deweveri* (p. 61), *Campanula poscharskyana*, *Asplenium trichomanes*, *Cymbalaria muralis* and *Adiantum capillus-veneris* on walls (p. 41). Plate 3: *Salix caprea* × *S. cinerea* × *S. repens* (p. 16), *Elytrigia × drucei* (p. 19), *Mimulus × robertsii* (p. 61), Troodos mountains (p. 66). Plate 4: Endophytes in roots of *Azolla* (p. 31).

Members in Vice-counties: For some inexplicable reason the number of BSBI members in the Channel Islands was omitted from the list in *BSBI News 98*. They are as follows: CIA (Alderney) 2; CIG (Guernsey) 7; CIJ (Jersey) 5.

Illustrations of Alien Plants of the British Isles is now with the Printers and should be published in May

Update to members list in Year Book 2005: Sorry but no space for an update this time.

EDITORS

RECORDERS AND RECORDING

PANEL OF REFEREES AND SPECIALISTS

Max Walters wishes to retire from refereeing *Alchemilla*, *Eleocharis*, *Aphanes* and *Silene*. He's been a Referee since 1950 which must be something of a record, and we are grateful to him. Dr Margaret Bradshaw is already Referee for *Alchemilla*, but we would welcome suggestions or offers for the other three genera.

There is a new Referee for *Symplytum*: Clare Coleman, 60A Heathfield Road, Acton, London W3 8EJ; clare.coleman@ptyxis.com. She says specimens may be either fresh material in a sealed plastic bag (email or ring first to check whether she is at home), or pressed with one corolla slit open and a note of the colour of the buds, corolla tube and bell. Please include location details, including a grid reference and the date.

I'm afraid that a few errors crept in to the address list of Referees in the Yearbook:

- Paul Green's email address should be – paul@combegate.wanadoo.co.uk (only o in combegate)
- Dr Proctor's address should say . . . Washington Singer Laboratories, Perry Road, etc.
- and F.J. Roberts' email address should be fjr@edencroft2.demon.co.uk

Also in future Professor Richards would like specimens to be sent to his home address: High Trees, South Park, Hexham NE46 1BT; richards@hightrees60.fsnet.co.uk

MARY CLARE SHEAHAN, 61 Westmoreland Road, Barnes, London SW13 9RZ: m.sheahan@rbgkew.org.uk

PANEL OF VICE-COUNTY RECORDERS

Recent changes since Year Book 2005

V.c. 6 (N. Somerset)	Mr R.D. Randall to be joint recorder (all correspondence, as before, to Mr I.P. Green).
V.c. 61 (S.E. Yorks.)	Mr R. Middleton, 12 Meaux Rd, Wawne, East Yorks, HU7 5XD to be recorder in place of Mr P. Cook, who has acted with much efficiency since 1996.
V.c. 75 (Arys.)	Vacant, following the death, announced in <i>BSBI News</i> 98, of Mr A. McG. Stirling, our recorder since 1987.

DAVID PEARMAN, Algiers, Feock, Truro, Cornwall TR3 6RA; Tel: 01872 863388

HYBRIDIZATION AND THE FLORA OF THE BRITISH ISLES

A new edition of Clive Stace's 1975 work

Clive Stace's book *Hybridization and the flora of the British Isles* (1975) was a milestone in the study of the British flora. It provided a solid foundation to the study of hybrids in Britain and Ireland, and led many botanists to take an interest in them. It is out of print and second-hand copies are much sought after. Inevitably, it is now in need of revision, not least because of the field records and research that it stimulated. The BSBI Council has approved a proposal to produce a new edition of the work, updating the text and incorporating distribution maps of the hybrids covered. This will have the dual advantage of making an updated version of a standard work available to botanists, and significantly improving the Vascular Plant Database for many hybrid taxa. The time scale for the project will be two years – we hope to have a version ready for the printer in 2007.

Suggested format of the new edition

Except for the treatment of distribution, accepted hybrids will be treated in a text covering the same topics as in the first edition, *viz.* nomenclature, morphology, variation and identification, habitat, experimental studies, chromosome numbers and references. This information will be updated for hybrids treated in the first edition, and newly recognised hybrids will be added.

Distribution will be covered in a radically different manner. For hybrids which occur spontaneously in Britain (as opposed to those introduced directly as hybrids) we propose to superimpose a 10km square distribution map of the hybrid onto that of the parents, to show those squares where the hybrid occurs with the parents, those where it occurs in their absence and those squares where both parents are recorded but the hybrid is not. The accompanying text will comment on the map (mentioning, for example, the extent to which the taxon was believed to be under-recorded) and list the sites where the rarest hybrids are recorded.

The revised distributional treatment will use the data on the parental species collected for the *New Atlas* (Preston *et al.* 2002). It will also use the records collected on hybrids for the *New Atlas* project, many of which have not yet been published. However, it was clear to us when we were editing the *Atlas* that the data collected were inadequate for many hybrids, particularly as many records (including some cited in the 1975 *Hybridization* book) are based on specimens in the major national herbaria and are not known to vice-county recorders. We have therefore included in the following work programme a proposal for capturing many of these ‘missing’ records.

The 1975 edition included a relatively detailed treatment of hybrids that had been erroneously recorded from the British Isles. Clive Stace suggests that there is no need to repeat the reasons for dismissing these taxa, and the erroneously reported hybrids can simply be listed. It is impossible, within the scope of this project, to draw up an authoritative list of hybrids between ‘British’ parents which have been found abroad but not in the British Isles, but it will be possible to mention well-attested hybrids which ought to be looked for in the British Isles.

Work plan

There are approximately 700 spontaneously occurring hybrids in the British Isles, plus an additional 100 taxa that have been introduced as hybrids. Clive Stace has details of published work since the 1975 edition, and is happy to update the text of the book.

We plan to employ a part-time researcher (Alan Forrest) to work on the data collection tasks outlined above, working with Alex Lockton. Alan will be based at the Royal Botanic Garden, Edinburgh, and he plans to visit the other main herbaria, and to use Edinburgh as a ‘receiving herbarium’ for specimens. We are most grateful to the staff there for agreeing to assist this project.

Key Dates

April 2005. Launch the project in April with a note in *BSBI News*, and a circular to all Vice-county Recorders (VCRs) and to Referees. There is an *Atlas*-style ‘Green Book’ available, listing all the taxa to be covered. For this field season we intend to highlight some widespread hybrids which are patchily recorded and which should be within the powers of most keen botanists to record, and this list is printed below, together with sources of further information. Almost all of these taxa are mapped in the *New Atlas*, and gaps in their distribution can be readily ascertained. Both lists are available electronically from the BSBI website (www.bsbi.org.uk).

September 2005. A Recorders’ Conference has been organised for September 16th to 18th at two locations in and near Shrewsbury. This will have one day available for talks and discussions on hybrids, and another for practical workshops on particular genera. There is relatively limited overnight accommodation available at Preston Montford Field Centre, or alternatively there are plenty of B&Bs in the Shrewsbury area. The specific limited aim of this Conference is to encourage recorders to develop their ability to recognise the commonly occurring hybrids in a number of key genera where more records are required. Vice-county Recorders will be sent details of the Conference; other members are welcome to attend and should contact Alex Lockton for details or consult the BSBI website.

Autumn 2005. Contact the Referee network, to explore how we can assist them with the extra load that they might be involved in, and, perhaps, to supply them with existing known records for their editing and additions. We have funding to allow them to visit, if appropriate, the receiving herbarium, so they can see many specimens at the same time.

Identify experts to help with compilation of data on particular genera and identify genera where herbarium and literature searches are most likely to result in addition of a significant number of new

records which are unknown to VCRs, and extract data from these sources. Contact selected herbaria with a view to undertaking a trawl for potential hybrids.

2006. In this year most of the data compilation will take place, which will include: computerising records traced in herbaria and literature, and forwarding them as computer files to the Vascular Plant Database (VPD) at BRC; with the assistance of BRC, producing maps of many hybrids, with records overlaying the distribution of the parents; contacting all Vice-county Recorders and, if necessary, sending them the data on hybrids held in VPD, to ensure this is a complete record for their county; checking VPD against VCCC, and circulating taxa with 'missing' records in VPD to Vice-county Recorders, and checking the revised text, as it becomes available, against the VPD, to see where text identifies literature sources which may contain extra records.

Many of the records in the 1975 edition of *Hybridization* which are currently unsubstantiated ought to be traced as a result of this work.

How to contribute records

We would like all members to feel that they can contribute. We appreciate that it is difficult to say 'today I am going to record a hybrid' (though there is a lot to be said for making a little plan to go out and look at specific genera such as willows or willowherbs) and that many members might feel diffident about their abilities to identify a hybrid in the field. However the vast majority of the widespread but patchily recorded taxa referred to above are covered in the *Plant Crib 1998* and the exercise might be viewed as akin to learning grasses or pondweeds or some other group one might unconsciously ignore!

We suggest that members contact their VCRs to see how they can best contribute, and to see if together they can deal with identification of some of the commoner hybrids. All records should be forwarded to Mr Alan Forrest (Royal Botanic Garden, Inverleith Row, Edinburgh, EH3 5LR; a.forrest@rbge.ac.uk), either on cards or on the model electronic submission form available from Alex Lockton at coordinator@bsbi.org.uk. Specimens requiring expert determination or confirmation should also be sent to Alan. **All such specimens should be accompanied by full supporting details (location, grid reference, vice-county, collector, date). This is essential, and specimens will not be accepted without these details.** An appropriate s.a.e. should also be provided if you would like the material returned. The BSBI encourages the collection of voucher specimens for identification and research purposes, subject to common-sense conservation caveats (i.e. for families such as ferns). You do not need to contact referees directly unless there are special circumstances (e.g. unless fresh material is required).

David Pearman (Algiers, Feock, Truro, Cornwall, TR3 6RA, DPearman4@aol.com) will be happy to answer any queries on the project.

Some relatively frequent hybrids on which to cut your teeth

The following list includes a selection of hybrids which are widespread in the British Isles. Interested botanists should be able to see some of these hybrids, and make useful records, wherever they live. The current edition of Stace's *Hybridization* (1975) includes diagnostic notes of most of these hybrids. Those keyed out and described in Stace's *New Flora* (1997) are marked with an asterisk (*). Many hybrids are treated in some detail in *Plant Crib 1998* (Rich & Jermy 1998) and these are noted below. References to some other accounts are included, but we have tried to restrict these to a few, accessible sources rather than construct a full bibliography. Nomenclature follows Stace (1997) with a few exceptions (e.g. for taxa subsequently added to the British flora).

***Apium inundatum* × *A. nodiflorum* (*A. × moorei*)** – This was mapped as widespread in Ireland in the *Critical Supplement to the Atlas of the British Flora* (Perring & Sell 1968) but it is difficult to find anyone in Ireland who knows it. It needs searching for in Ireland, and in areas such as the Outer Hebrides. See the account in *Plant Crib 1998*.

Aster – In addition to the account in *Plant Crib 1998*, the account of *Aster* in volume 6 of the *European Garden Flora* is also worth consulting.

Aster laevis* × *A. novi-belgii* (*A. × versicolor*)

Aster lanceolatus* × *A. novi-belgii* (*A. × salignus*)

Atriplex longipes × *A. prostrata* (*A. × gustafssoniana*)* is the most frequent of a number of *Atriplex* hybrids.

Plant Crib 1998 says 'look for plants with bracteole blades and petioles varying markedly on the same plant'. For a detailed account of the *Atriplex* hybrids, see Taschereau (1989).

Calystegia sepium × *C. silvatica* (*C. × lucana*) – see *Plant Crib 1998*.

Carex – A detailed treatment of all British and Irish *Carex* hybrids will be included in the forthcoming third edition of the BSBI Handbook. The most frequent are listed below.

Carex hostiana × *C. viridula* (*C. × fulva*) – this is much the most frequent hybrid in the genus. See brief notes in *Plant Crib 1998*.

Carex otrubae × *C. remota* (*C. × pseudoaxillaris*) – this was formerly widespread, but it appears to have decreased in SE England.

Carex paniculata × *C. remota* (*C. × boenninghausiana*)

Carex rostrata × *C. vesicaria* (*C. × involuta*)

Crataegus laevigata × *C. monogyna* (*C. × media*) – see *Plant Crib 1998*. Note that *C. × media* may occur planted in hedgerows outside the native range of *C. laevigata*.

Dactylorhiza – There are surprisingly few descriptions of the hybrids in this much-studied genus, although the accounts in Stace's (1975) *Hybridization* are detailed. For references to other literature on the genus, see *Plant Crib 1998*. A search on the web might reveal more images of hybrids than there are in books: <http://fp.orchidmagic.f9.co.uk/> has some, for example.

Dactylorhiza fuchsii × *D. incarnata* (*D. × kernerianum*)

Dactylorhiza fuchsii × *D. maculata* (*D. × transiens*)

Dactylorhiza fuchsii × *D. praetermissa* (*D. × grandis*)

Dactylorhiza fuchsii × *D. purpurella* (*D. × venusta*)

Dactylorhiza maculata × *D. praetermissa* (*D. × hallii*)

Dactylorhiza maculata × *D. purpurella* (*D. × formosa*)

Drosera anglica × *D. rotundifolia* (*D. × obovata*) – see *Plant Crib 1998*.

Dryopteris carthusiana × *D. dilatata* (*D. × deweveri*) – see Page (1997).

Elytrigia atherica × *E. juncea* (*E. × obtusiuscula*) – see Hubbard (1954) and *Plant Crib 1998*.

Elytrigia juncea × *E. repens* (*E. × laxa*) – see *Plant Crib 1998*.

Epilobium – There is no detailed account of the commoner *Epilobium* hybrids, but useful notes on the identification of hybrids in the genus are provided in *Plant Crib 1998*. This account also includes a key to the hybrids of *E. brunnescens*, which are uncommon but have been the subject of detailed study. (As with *Rumex*, detailed descriptions and illustrations are easier to find for some rare, recently described hybrids than for the commonest hybrids.) The following hybrids are frequent or common, according to *Plant Crib 1998*; the hybrids marked NA have sufficient records to be mapped in the *New Atlas*.

Epilobium ciliatum × *E. montanum* NA

Epilobium ciliatum × *E. obscurum* NA

Epilobium ciliatum × *E. parviflorum* NA

Epilobium ciliatum × *E. tetragonum*

Epilobium hirsutum × *E. montanum*

Epilobium hirsutum × *E. parviflorum*

Epilobium montanum × *E. obscurum* (*E. × aggregatum*) NA

Epilobium montanum × *E. parviflorum* (*E. × limosum*) NA

Epilobium montanum × *E. roseum*

Epilobium obscurum × *E. palustre*

Epilobium obscurum × *E. parviflorum*

Epilobium palustre × *E. parviflorum*

Epilobium parviflorum × *E. roseum*

Epilobium parviflorum × *E. tetragonum*

In addition, *Epilobium ciliatum* × *E. hirsutum* (*E. × novae-civitatis*), although rare according to the table in *Plant Crib 1998*, also qualified for mapping in the *New Atlas*.

Equisetum arvense × *E. fluviatile* (*E. × litorale*)* – see Page (1997) and *Plant Crib 1998*.

Fallopia japonica × *F. sachalinensis* (*F. × bohemica*) – see *Plant Crib 1998*.

Festuca pratensis × *Lolium perenne* (*×Festulolium loliumaceum*)* – see Hubbard (1954).

Galium mollugo × *G. verum* (*G. × pomeranicum*) – see brief notes in *Plant Crib 1998*.

Geranium – For descriptions and photographs of the following hybrids, see *Hardy Geraniums* (Yeo 1992).

Geranium endressii* × *G. versicolor* (*G. × oxonianum*)

Geranium ibericum* × *G. platypetalum* (*G. × magnificum*)

Glyceria fluitans* × *G. notata* (*G. × pedicellata*) – see *Plant Crib* 1998.

Hyacinthoides hispanica* × *H. non-scripta – see Sell & Murrell (1996) and *Plant Crib* 1998.

Hypericum maculatum* × *H. perforatum* (*H. × desetangsi*) – see *Plant Crib* 1998.

***Juncus acutiflorus* × *J. articulatus* (*J. × surrejanus*)** – see *Plant Crib* 1998.

***Juncus effusus* × *J. inflexus* (*J. × diffusus*)** – see *Plant Crib* 1998.

Larix decidua* × *L. kaempferi* (*L. × marschlinsii*) – see *Plant Crib* 1998.

Leucanthemum lacustre* × *L. maximum* (*L. × superbum*)

***Lolium multiflorum* × *L. perenne* (*L. × boucheanum*)** – see *Plant Crib* 1998.

***Luzula forsteri* × *L. pilosa* (*L. × borrei*)** – see *Plant Crib* 1998.

Mentha – The genus has been rather neglected recently, but fortunately the most frequent hybrids are treated in full by Stace (1997).

Mentha aquatica* × *M. arvensis* (*M. × verticillata*)

Mentha aquatica* × *M. arvensis* × *M. spicata* (*M. × smithiana*)

Mentha aquatica* × *M. spicata* (*M. × piperita*)

Mentha arvensis* × *M. spicata* (*M. × gracilis*)

Mentha longifolia* × *M. spicata* (*M. × villosonervata*)

Mentha longifolia* × *M. suaveolens* (*M. × rotundifolia*)

Mentha spicata* × *M. suaveolens* (*M. × villosa*)

Mimulus – The distribution of *Mimulus* hybrids is still poorly known in many areas, as their taxonomy was clarified only recently. In addition to the account in *Plant Crib* 1998, see Alan Silverside's lavishly illustrated account on the University of Paisley website: <http://www-biol.paisley.ac.uk/bioref/Plantae/Mimulus/Mimulus2.html>

The two most frequent hybrids are:

Mimulus cupreus* × *M. guttatus* (*M. × burnetii*)

Mimulus guttatus* × *M. luteus* (*M. × robertsii*)

***Polypodium interjectum* × *P. vulgare* (*P. × mantoniae*)** – see *Plant Crib* 1998 for an illustrated account of the species; both the parents and their hybrid (records of which need to be confirmed microscopically) are described by Page (1997).

***Polystichum aculeatum* × *P. setiferum* (*P. × bicknellii*)** – see Page (1997) and *Plant Crib* 1998.

***Potentilla anglica* × *P. erecta* (*P. × suberecta*)** – see *Plant Crib* 1998.

Potentilla* × *mixta* sens. lat. (*P. anglica* or *P. erecta* × *P. reptans*) – see *Plant Crib* 1998.

***Primula veris* × *P. vulgaris* (*P. × polyantha*)**

***Prunus domestica* × *P. spinosa* (*P. × fruticans*)**

***Quercus petraea* × *Q. robur* (*Q. × rosacea*)** – see *Plant Crib* 1998.

Rorippa microphylla* × *R. nasturtium-aquaticum* (*R. × sterilis*) – see Rich (1991).

Rosa – A detailed treatment of *Rosa* hybrids is provided in the BSBI Handbook (Graham & Primavesi 1993).

In many areas a few hybrids are frequent. Although our knowledge of their distribution is still patchy, the published maps indicate the hybrids which are likely to be frequent in under-worked areas. Expert confirmation of hybrids is desirable, but one soon begins to get a feel for those species which are worth collecting and submitting to the experts for confirmation. The more widespread hybrids include:

***Rosa arvensis* × *R. canina* (*R. × verticillacantha*)**

***Rosa caesia* × *R. canina* (*R. × dumalis*)**

***Rosa canina* × *R. obtusifolia* (*R. × dumetorum*)**

***Rosa canina* × *R. sherardii* (*R. × rothschildii*)**

***Rosa canina* × *R. stylosa* (*R. × andegavensis*)**

***Rosa canina* × *R. tomentosa* (*R. × scabriuscula*)**

Rumex – There is no detailed account of the commoner *Rumex* hybrids, but useful notes on the identification of hybrids in the genus are provided in *Plant Crib* 1998. The maps of the following hybrids in the *New Atlas* show how frequent *Rumex* hybrids are in those areas where recorders have got to grips with them.

Rumex crispus × *R. longifolius* (*R.* × *propinquus*)

Rumex crispus × *R. obtusifolius* (*R.* × *pratensis*)

Rumex longifolius × *R. obtusifolius* (*R.* × *hybridus*)

Rumex obtusifolius × *R. sanguineus* (*R.* × *duffitii*)

Lowland Salix hybrids – Many willow hybrids have been spread by clonal propagation, and typical shoots can be recognised fairly readily. The following are sufficiently widespread to be mapped in the *New Atlas* (as was the ornamental tree *Salix alba* × *S. babylonica*). Unless stated, they are treated in the BSBI Handbook (Meikle 1984).

Salix alba × *S. fragilis* (*S.* × *rubens*)*

Salix aurita × *S. caprea* (*S.* × *capreola*) – not in the Handbook, but illustrated in *Plant Crib 1998*.

Salix aurita × *S. caprea* × *S. viminalis* (*S.* × *stipularis*)* – not in the Handbook, and little recorded except in N. Ireland.

Salix aurita × *S. cinerea* (*S.* × *multinervis*) – also illustrated in *Plant Crib 1998*.

Salix aurita × *S. repens* (*S.* × *ambigua*)

Salix aurita × *S. viminalis* (*S.* × *fruticosa*)*

Salix caprea × *S. cinerea* (*S.* × *reichardtii*) – also illustrated in *Plant Crib 1998*.

Salix caprea × *S. cinerea* × *S. viminalis* (*S.* × *calodendron*)*

Salix caprea × *S. viminalis* (*S.* × *sericans*)*

Salix cinerea × *S. phyllicifolia* (*S.* × *laurina*)*

Salix cinerea × *S. purpurea* × *S. viminalis* (*S.* × *forbyana*)*

Salix cinerea × *S. viminalis* (*S.* × *smithiana*)*

Salix fragilis × *S. pentandra* (*S.* × *meyeri*ana)*

Salix myrsinifolia × *S. phyllicifolia* (*S.* × *tetrapala*) – not in the Handbook.

Salix purpurea × *S. viminalis* (*S.* × *rubra*)*

Salix triandra × *S. viminalis* (*S.* × *mollissima*)*

Scutellaria galericulata × *S. minor* (*S.* × *hybrida*) – see *Plant Crib 1998*.

Senecio aquaticus × *S. jacobaea* (*S.* × *ostenfeldii*)

Senecio cineraria × *S. jacobaea* (*S.* × *albescens*)

Senecio squalidus × *S. viscosus* (*S.* × *subnebrodensis*)

Silene dioica × *S. latifolia* (*S.* × *hampeana*)

Spartina alterniflora × *S. maritima* (*S.* × *townsendii*)* – see *Plant Crib 1998*.

Spiraea – See *Plant Crib 1998* for a key to the British taxa, including the following three widespread hybrids and the rarer *S.* × *brachybotrys*.

Spiraea alba × *S. douglasii* (*S.* × *billardii*)*

Spiraea alba × *S. salicifolia* (*S.* × *rosalba*)*

Spiraea douglasii × *S. salicifolia* (*S.* × *pseudosalicifolia*)*

Stachys palustris × *S. sylvatica* (*S.* × *ambigua*)* – see *Plant Crib 1998*.

Trichophorum cespitosum nothosubsp. *foersteri* – see Swan (1999).

Typha angustifolia × *T. latifolia* (*T.* × *glauca*) – see *Plant Crib 1998*.

Veronica anagallis-aquatica × *V. catenata* (*V.* × *lackschewitzii*) – see *Plant Crib 1998*.

Viola canina × *V. riviniana* (*V.* × *intersita*) – see *Plant Crib 1998*.

Viola hirta × *V. odorata* (*V.* × *scabra*) – see *Plant Crib 1998* (as *V.* × *permixta*).

Viola lactea × *V. riviniana* – the characters of the parents and brief notes on their hybrid are included in *Plant Crib 1998*.

Viola reichenbachiana × *V. riviniana* (*V.* × *bavarica*) – see *Plant Crib 1998*.

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NOTES AND ARTICLES

NEW WILLOW HYBRID

A visit to Devon (v.c. 4) was made to look at *Salix* species at Braunton Burrows on 5th June, 2004, with Desmond Meikle and Tim Webb. The Burrows cover an area of 970 hectares with an extensive dune and wet slack habitat offering numerous possibilities for hybridisation of the willow population.

On the eastward margins of the dune system *Salix repens* (Creeping Willow) carpets the sandy slacks whilst tall scrub and small trees of *S. caprea* (Goat Willow) and *S. cinerea* (Grey Willow) extend westwards from Sandy Lane car park. Where *S. caprea* and *S. cinerea* co-exist, the hybrid between the two species, *S. ×reichardtii*, is common and a whole range of intermediates is found. Whilst in one such area, we came across a patch of willow we could not immediately identify.

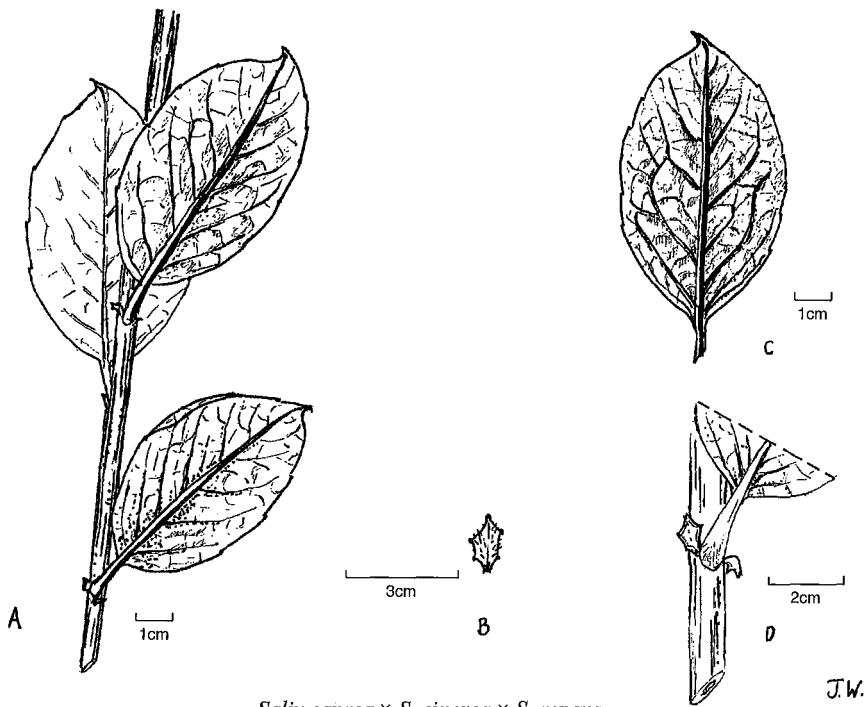
The upright stems measured a maximum height of two feet and were relatively polished and glabrous. The leaves were broadly ovate/oblong, mid to dark green and distinctly softly pubescent. The underside of the leaf demonstrated the reticulate venation of *S. caprea* and the oblique twist at the leaf point was characteristic of *S. repens*.

Although there was one example of *S. aurita* (Eared Willow) nearby, the stipules of the unidentified specimen were small, not at all resembling the large conspicuous stipules of the hybrid between *S. aurita* and *S. repens*. *S. caprea × S. repens* and *S. cinerea × S. repens* are both known to Desmond Meikle and the willow in question did not answer to either.

We have come to the conclusion that we have identified a triple hybrid; *S. caprea × S. cinerea × S. repens*, it being quite reasonable to expect that *S. ×reichardtii* might hybridise with *S. repens*.

Following the identification, herbarium specimens were prepared and photographs taken (see Colour Section, plate 3). Contact was made with those responsible for the management of the dunes and GPS readings taken in order that the site might be conserved. It was hoped that the triple hybrid would produce catkins in the spring and these might confirm the identification. However, on a visit on New Year's Day we found that during the extensive mowing of the dune habitat the triple hybrid had not escaped the cutters and had been cropped to the ground. It is expected that the willow will survive but unfortunately it will not be producing catkins this year.

At some point in the future, and after further study, we will be naming and describing this willow – this note is simply to record the initial discovery. Further data relating to the site will be included in this later publication.



Salix caprea × S. cinerea × S. repens

A: leaves; B: stipule; C: underside of leaf; D: leaf base
del. J. Webb © 2005

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CAREX SALINA – A NEW SPECIES OF SEDGE FOR BRITAIN

The important discovery of a new species of sedge for the British flora was made by Keith Hutcheon while undertaking a National Vegetation Classification (NVC) survey of the Kintail Estate for the National Trust for Scotland. The population was discovered on the saltmarsh at Morvich, at the head of Loch Duich (v.c. 105 Wester Ross) on 2nd July 2004. Flowering specimens were scarce, and those collected by KH for identification did not contain any fertile nuts. Despite extensive searching, only a few flowering culms were found on a later visit on 10th August 2004 by Brian and Barbara Ballinger and MD. These were also infertile.

Very few sedges in our flora can withstand regular inundation by salt water and our first thoughts turned to the Estuarine Sedge, *Carex recta* Boott or closely related species found in similar habitats either in northern Europe, Asia or North America. It was quickly realised that it was not *C. recta* but, on consulting *Flora Europaea* (Chater, in Tutin *et al.*, 1980) it was recognised that the species was similar in morphology to *C. salina* Wahlenb. (Salt-marsh Sedge). It also had some features of *C. vacillans* Drej. These taxa are morphologically variable and identification is difficult. On analysis, (by MD, ACJ and Arthur Chater) we considered the morphology to fit *C. salina*, but being a new species to our flora, we felt we should seek the opinion of JC who had written the account of the group for the *Flora of North America* (Standley, Cayouette & Bruederle, 2002). He confirmed that the species is *C. salina*.

C. salina was present in creek channels, but not in the main river channel, and along the low banks of the creeks, growing in the mid-marsh part of the saltmarsh zonation. Associated plant species on the saltmarsh included *Puccinellia maritima* (Common Saltmarsh-grass), *Festuca rubra* (Red Fescue), *Juncus gerardii* (Saltmarsh Rush), *Aster tripolium* (Sea Aster), *Glaux maritima* (Sea-milkwort), *Armeria maritima* (Thrift), *Plantago maritima* (Sea Plantain), *Triglochin maritimum* (Sea Arrow-grass), *Blysmus rufus* (Saltmarsh Flat-sedge), *Agrostis stolonifera* (Creeping Bent), *Eleocharis palustris* (Common Spike-rush) and *E. uniglumis* (Slender Spike-rush).

Within the British flora *C. salina* is close in appearance to *C. recta*. Within the same section (*Phacocystis*), *C. paleacea* Schreber ex Wahlenb., *C. subspathacea* Wormsk. and *C. vacillans* are broadly similar although these three species have not been recorded from Britain. *C. recta* has a different niche to *C. salina* being located in tall vegetation along the edges of the higher reaches of estuaries. By contrast *C. salina* is a denizen of salt marshes. To date the two species are also geographically separate in Britain, *C. recta* being located on the North East coast of Scotland, *C. salina* on the west. Morphologically the two species are separated by the female spike length (1-3cm in *C. salina* vs. 2-8cm in *C. recta*), longer and typically narrower female glumes (4-5mm long in *C. salina* vs. 3-7mm in *C. recta*). In addition *C. recta* is a much larger plant typically up to 1m tall with vegetative leaves up to 130cm, whereas *C. salina* grows up to 30cm with vegetative leaves up to 30cm unless the plant is sheltered, when they can be longer.

Compared to the other members of the group *C. salina* is a larger plant than *C. subspathacea*, which is a short stemmed, narrow leaved, low growing early flowering species of salt marshes. *C. paleacea* is a larger species than *C. salina*, but smaller in stature than *C. recta*, and is distinct in possessing pendent female spikes and female glumes with very long awns. Similarly *C. vacillans* is usually larger than *C. salina*, typically being the same size of *C. paleacea*, and sometimes reaching the size of *C. recta*. *C. vacillans* frequently shares the habitat of *C. recta* being primarily found in the upper parts of salt-marshes (medium to tall vegetation, sometimes dried pools, rocky areas, etc). *C. vacillans* and *C. salina* are also distinguished by utricle appearance (nerved and densely papillose in *C. vacillans*, few nerves and slightly papillose in *C. salina*). The utricles of *C. recta* are similar to those of *C. salina*.

C. salina is considered to have evolved as a result of hybridisation between two other members of *Carex* section *Phacocystis*, *C. paleacea* and *C. subspathacea* (Cayouette and Morisset, 1985; Cayouette and Morisset, 1986a; Cayouette and Morisset, 1986b; Standley, 1990). The three species, *C. salina*, *C. paleacea* and *C. subspathacea*, inhabit saline and brackish seashore and estuarine habitats. Comparison by JC between the habitats and associated species between the Scottish location for *C. salina* at Morvich and St Lawrence River populations (eastern Québec, Canada) indicates similarities. Species in common include *Puccinellia* spp., *Festuca rubra*, *Juncus gerardii*, *Eleocharis palustris* group, *Plantago maritima*, *Glaux maritima*, *Triglochin maritimum* group, *Blysmus rufus* and *Agrostis stolonifera*.

The distribution of *C. salina* and its parental species coincides in parts of the northern latitudes of western Europe and eastern North America. All three are recorded from western and northern coasts of Norway and northwestern Russia, and from Hudson Bay and St Lawrence River and eastern coastal area of Canada (Chater, in Tutin *et al.*, 1980, Hultén and Fries, 1986, Standley, Cayouette & Brüderle, 2002). The Scottish location is probably the first area in the world where *C. salina* is apparently growing outside the ranges of the parental species. Hence *C. salina* may have originated in Scotland by long distance dispersal. Alternatively it may have arisen *in situ*, the parents now extinct or are still present in the UK but are currently undetected due to a combination of the geographic location, unrepresenting habitat and predominantly vegetative growth form. The absence of *C. subspathacea* from the British flora might be artificial as the species is not well known and mostly overlooked by botanists. Thus *C. subspathacea*, and additional populations of *C. salina*, may be awaiting discovery on other Scottish salt marshes.

Acknowledgement:

Thanks to Arthur Chater for help in identification.

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THE INTERSPECIFIC GRASS HYBRID *ELYTRIGIA ATERICA* × *E. REPENS* ON THE EAST COAST OF IRELAND

The article on coastal *Elytrigia* in *BSBI News* (Greenwood 2004) has prompted me to give details for the recent record of the hybrid *E. ×oliveri* (*E. atherica* × *E. repens*) on the east coast of Ireland. The hybrid is best known as *E. ×oliveri*, but the correct name is now *E. ×drucei* (Stace 2001).

While recording for the *New Atlas* (Preston *et al.* 2002) in a coastal square of Co. Wicklow (v.c. H20) in early September 1999, I investigated a large pure stand of *Elytrigia*. It was growing with *Atriplex portulacoides* (Sea-purslane) in an ungrazed area of upper saltmarsh in an inlet, just north of the railway bridge at The Breaches, south of Kilcoole station (O314.062). The erect growth (nearly 80cm tall) and retention of spiky-looking inflorescences made this grass conspicuous in the field (see photo, Colour Section, plate 3).

Specimens were collected for further examination. Although quite brown, the spikelets were still attached to their axes; there did not appear to be any seeds and any remaining anthers had not dehisced. Two other characters were the very rough inflorescence axes and the acute glumes. Using the *Plant Crib* 1998 (Rich & Jermy 1998), the grass keyed out straightforwardly as *E. ×drucei*, and the identification was confirmed by Dr T.A. Cope. Specimens collected on 5th September and 7th October 1999 are lodged in the National Herbarium, National Botanic Gardens, Glasnevin, Dublin (DBN), and details were submitted for the *New Atlas*.

The Wicklow site was revisited on 2nd February 2005. Even after the winter, the bleached stems of *E. ×drucei* were still erect, many with inflorescences. There were numerous new leafy shoots of the hybrid, up to 25cm tall, among the old stems. *Atriplex portulacoides* and new season leaves of *Cochlearia* sp. (Scurvygrass) grew in and at the edge of the hybrid stand, while *Puccinellia maritima* (Common Saltmarsh-grass), *Triglochin maritimum* (Sea Arrowgrass), *Armeria maritima* (Thrift), *Aster tripolium* (Sea Aster), *Limonium* sp. (Sea-lavender) and *Juncus gerardii* (Saltmarsh Rush) grew in adjacent parts of the saltmarsh.

E. ×drucei appears to be rare in Ireland, known mainly on the south coast. It occurs in Mid and East Cork (H4 and H5) around Cork Harbour and has been found at Youghal in East Cork, but never in West Cork (H3); vice-county H3 is an error in the *Census Catalogue* (Scannell & Synnott 1987) and *Sources for the Census Catalogue* (Scannell & Synnott 1989) (T. O'Mahony *pers. comm.*). More recently, in 1998-1999, Tony O'Mahony found it to be abundant in a couple of places by the Blackwater estuary in Co. Waterford (H6), above and below Youghal (T. O'Mahony and P. Green

pers. comm.). Paul Green found it again in the Monatray area below Youghal in 2002. There is also a late 19th century record from Co. Down (H38) (Hackney 1992).

This hybrid was not mapped in the *New Atlas*, but the Wicklow record detailed here was included on the map in Greenwood (2004) as were the Cork and Waterford records. The current distribution of *E. ×drucei* in Ireland is H4-6 and H20. Following the recent findings in north-western England and northern Wales, it would be interesting to examine other *Elytrigia* (particularly *E. atherica* (Sea Couch)) populations in estuaries and around the coast of Ireland to see if this or other *Elytrigia* hybrids are more widespread.

Acknowledgements:

I would like to thank Dr T.A. Cope for confirming the *Elytrigia ×drucei* specimens, Tony O'Mahony for information about the hybrid in Co Cork and Co Waterford, and Paul Green for details of the Waterford records.

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FLUCTUATING INTEREST IN THE HISTORY OF THE SOCIETY?

Since *The Botanists...*, my sesquicentenary history of the BSBI, was published back in 1986 I have been receiving yearly reports of its 'score' in the annual survey of book borrowings from U.K. public library branches that is carried out as the basis for payments under the national Public Lending Right scheme. These surveys are based on a random sample of branches designed to be proportionally representative of every region. A third of the library authorities in the sample are changed each year, to ensure that books of merely local or regional interest are picked up periodically. In the last three or four years the total number of branches covered has been more than doubled, to 856, in order to heighten the statistical accuracy.

A book like *The Botanists...* can hardly be expected to enjoy the popularity of the fiction titles that predictably form the perennial staple of public library borrowings. But I have been pleasantly surprised to find that in most years its 'scores' suggest that it has rather more than held its own in comparison with other non-fiction titles of a roughly similar character – and certainly done much better than the one county Flora for which I have figures.

An intriguing feature, though, is the relatively huge fluctuation in its 'scores' from one year to the next. As one would expect, the highest one (90 estimated borrowings nationally) was in the year immediately following the publication. Unfortunately I failed to keep my copies of the next few years' figures, but a score of nil by 1999-01 might reasonably have been interpreted as the steep falling-off in interest that presumably happens to many titles on minority subjects. However, the following year the 'score' recovered to 21 and since then it has bounced up and down quite remarkably: 39, 36, 16, 8, 17, 11, 42, 22. Assuming these figures reasonably reflect reality and are not mere statistical artefacts, they suggest a secondary peak of interest in 1992-95 (why?) and then, all of a

sudden, a further secondary peak since 2002-03. The figure for 2002-03 (42) was in fact the single highest one since the immediate post-publication period.

What can be the explanation for this apparently late flurry of interest again? Has the BSBI's history suddenly become fashionable as a hunting-ground for school projects or academic theses? Has the Society turned more nostalgic or begun acquiring more historically-minded members? Is it just part of the current history boom stimulated by television? Might the time even have come when a reissue of the book would be worthwhile financially?

All theories welcome...

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FALLOPIA DUMETORUM – IN HEREFORDSHIRE

On 30th May 2004 Herefordshire Botanical Society were recording in woodland in the Woolhope Dome area. The woodland is underlain with Silurian Limestone and has areas of derelict coppice. Current management by a young man called Mark O'Brien has included bringing back some of the coupes into a coppicing regime. We were surprised, and dare I say it somewhat sceptical, when Mark mentioned that in the first spring after coppicing the coupes had abundant *Fallopia dumetorum* (Copse-bindweed). He also claimed that the same thing happened in another wood that he managed some 10 miles away; this wood being underlain with Bishops Frome Limestone. Personally I thought the plant was more likely to be *F. convolvulus* (Black-bindweed). The woodland has a history of quarrying so there are old quarries, spoilheaps and tracks. There are also boundary banks within the wood which hint at different land uses in the past. It would have been strange if this Nationally Scarce plant, which as far I knew had not previously been recorded in Herefordshire and with only scattered historical records in the nearby counties, occurred in the two woodlands which Mark happened to manage. Mark took us to the coupes where it had appeared and there was no sign of it, dead or alive. He assured us this was normal. Plants came up seeded and died in a short time – so we remained sceptical.

I noticed some magnificent docks on newly scarped ground nearby and arranged with Mark that he would allow me to collect these in August for a workshop on the family Polygonaceae. When I went back to collect the docks I again looked for *F. dumetorum* but could not find it, and no-one brought a specimen to the workshop. However by now I had come to realise that Mark knew his woodland plants and when he mentioned that he could easily spot the plant (when it was there!) because of its pink colouration, I began to get a little tingle.

When Mark told me in September that the plant had appeared alongside a track I gathered up my camera. Well, the plant certainly looked more 'butch' than any *F. convolvulus* I had seen and the fruits had prominent wings. I took some photographs and picked a small piece of the plant to examine the fruits at home (see photos, Colour Section, plate 2). It agreed with all the descriptions I had for *F. dumetorum*, but I still thought it was too good to be true and would turn out to be *F. dumetorum* var.*subulatum*, a robust variant that occurs on rich soils. It wasn't until the referee Dr J.R. Akeroyd returned my specimen with the comment 'perfectly good *F. dumetorum*' that I could really believe it.

The occurrence of this plant in the two woodlands of different geology that happen to be managed by Mark is surely too much of a coincidence, and suggests that the plant may be quite common at the moment in Herefordshire.

Is it a recent introduction? Has it suddenly become more common? Has it been there all along but confused with *F. convolvulus*? It may be worth looking in similar habitats elsewhere.

Extract from *The Botany of the Malvern Hills* by Edwin Lees 3rd edition 1868 in which he refers to a site in Worcestershire.

'*P. dumetorum* (?) Stem twining, striated, segments of perianth winged, nut triquetrous, very smooth and shining. Stem twining several feet in height. I found either this or a very tall variety of the preceding [*F. convolvulus*], in a hedge bounding Sarn Hill Wood, Bushley, some years ago, when residing at Forthampton.'

Acknowledgement: My thanks to Dr J.R.Akeroyd, BSBI referee.

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HEN-AND-CHICKENS DAISY

This unusual form (see photo, Colour Section, plate 2), with a normal Daisy *Bellis perennis* alongside it) has been recorded occasionally since the time of Gerard (Martin Cragg-Barber, *pers. comm.*).

It occurred on National trust heathland restoration fields at Studland, Dorset, (v.c. 9) last summer. It started and flowered like a normal daisy, and then, after it went to seed, produced stalks from under the seed head each bearing a small daisy flower at their end, nine in this case.

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GERANIUM PURPUREUM IN NORTH NOTTINGHAMSHIRE

On the 9th June last summer I needed to do some fieldwork in Nottinghamshire and, as a non-driver, had arranged to be picked up by a colleague at Worksop Station. My colleague was late and, while waiting, I passed my time dodging between the two car parks that he might have been in and looking for plants. The former activity was not immediately successful but the latter was. On the ballast of the railway line and beside the pavement was a large colony of what from a distance looked like *Geranium lucidum* (Shining Crane's-bill) but on closer inspection resembled a diminutive *G. robertianum* (Herb-Robert). I took it to be *G. purpureum* (Little-Robin) and sent fruits to Dr P.F. Yeo, who kindly confirmed the identification. He also noted that my small sample contained two genotypes, one with glabrous and one with pubescent mericarps. The plant had the growth habit of subsp. *purpureum* (see Yeo 2003).

The habitat did not appear in any way unusual: the plant was growing on ballast beside the line and in cracks at the edge of the pavement with typical railway plants such as *Senecio squalidus* (Oxford Ragwort) and *Vulpia myuros* (Rat's-tail Fescue). The population was large (over one hundred plants) and had, I suspect, been present for several years. Direct dispersal from existing known localities appears improbable. The Nottinghamshire site is over 150 miles from other known English sites and much further north. Moreover, Worksop is not on a main through route from the south but on an east to west branch line. *G. purpureum* has recently been found inland on railway ballast in East Sussex but it has only been reported as spreading southwards in this habitat (see Yeo 2003). I suspect that *G. purpureum* has been overlooked elsewhere on England's railway network, where *G. robertianum* is already a common plant. BSBI commuters should be encouraged to look for *G. purpureum* while waiting for, or staring out of the window of, delayed trains.

Reference:

YEO, P.F. 2003. The taxonomic and conservation status of *Geranium purpureum* (Little Robin) subsp. *forsteri*. *BSBI News* 93: 30-33.

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VEGETATIVE IDENTIFICATION OF SMALL GERANIUM SPECIES

Whilst out tetrad recording or doing other survey work it is common to have to try and identify geranium species that are not in flower. The leaves of *Geranium robertianum* (Herb-Robert) are nearly always unmistakable and poorly grown specimens can easily be confirmed by the typical musky smell. All the other small lowland species can be confused. Of the seven commonly encountered, only one (*G. pyrenaicum* (Hedgerow Crane's-bill)) is perennial, but the six annual species (*G. rotundifolium* (Round-leaved Crane's-bill), *G. columbinum* (Long-stalked Crane's-bill), *G. dissectum* (Cut-leaved Crane's-bill), *G. pyrenaicum*, *G. molle* (Dove's-foot Crane's-bill) & *G. lucidum* (Shining Crane's-bill)), all produce overwintering basal leaves and flower mainly between May and July. Furthermore 'next seasons' rosettes of leaves can already be well developed by August, so that vegetative identification is possible for nine months of the year.

Good illustrations of the basal leaves of these species are widely available, notably in Clapham, Tutin and Warburg, the *BSBI Plant Crib* 1998, and in Stella Ross-Craig. However, leaf shape and dissection are the only features illustrated in line drawings and are very variable. I have become convinced over the last few seasons of taking an interest in his matter that the petiole hairs should virtually always be used in

addition to leaf shape to achieve a reliable identification – even then, and with extra features like leaf size, texture and colour, there are perhaps around 5% of individuals that cannot be identified.

Although *G. dissectum* can be distinct in leaf shape when leaves are typical, with narrow divergent segments and dissection to about 7/8th, such leaves should only be assumed to be of this species on arable, garden, or waste ground sites – on chalky soils *G. columbinum* should be checked for by looking at petiole hairs.

Furthermore, basal leaves of *G. dissectum* early in their growth may have wide, more contiguous segments with dissection only to around 2/3rd and can look like several other species, especially *G. pusillum*. *G. lucidum* can also be quite distinct on leaf characters, but it is usually a scarce species and it only takes a second or two to check that the petioles are glabrous or near-glabrous – all other species have profuse hairs of some sort or other.

Basically it makes sense to check petiole hairs in every case. The problem is that there seem to be no good illustrations readily available. Those in Stella Ross-Craig are entirely misleading and should be disregarded. Good descriptions are found in Clapham, Tutin and Warburg and in the *Plant Crib*, but descriptions do not ‘stick in the mind’ like illustrations, while just using the terms ‘short medium and long’, or ‘glandular’ and ‘eglandular’, does not adequately define the different hair types – even with some simplification eight types can be described (see below).

Over the last two seasons I have drawn the petiole hairs of all the species above. All drawings were done with a dissecting microscope using 10-20× power, and at least ten of most species were drawn, selecting any obvious variants as well as typical specimens. In the case of *G. columbinum* and *G. lucidum* only two colonies were found. Those petioles chosen for illustration were often from colonies well known to me and identified using floral characters, or from colonies with very typical leaf characters, and all were from basal leaves before flowering or very early in the flowering period. The hairs on petioles of stem leaves, or on flowering stems, are often very different, and floral characters should chiefly be relied on when available.

Hopefully these illustrations will prove useful in the field, perhaps photocopied and pasted into the favourite field flora. For completeness I include some observations on other vegetative characters I have noted, and some general points on vegetative identification.

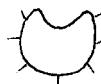
General points on vegetative identification of *Geranium* species

Identification to family and genus usually presents no problems with *Geranium*, but occasional difficulties might occur. Perhaps most commonly the larger geranium species (not dealt with here otherwise) might be confused at the rosette stage with *Ranunculus acris* (Meadow Buttercup) – *G. pratense* (Meadow Crane’s-bill), *G. sylvaticum* (Wood Crane’s-bill) and *G. endressii* (French Crane’s-bill) especially can look like this species. *Ranunculus acris*, however, has characteristic expanded flattened bases to its basal petioles, and these like all *Ranunculus* petioles have a single groove along their upper side not present in *Geranium* species. *G. columbinum* might be mistaken early in the season for *Malva moschata* (Musk Mallow), which often grows on similar calcareous soils, and which is a very variable plant, sometimes producing leaves similar to *G. columbinum* even early in the rosette stage. The mallow is usually, however, a more robust plant with patent rather than appressed hairs on the petioles and especially on the basal stems, and there are always likely to be a few of the typical simple reniform basal leaves low down. The petioles of *Malva moschata* are also deeply channelled above, and the basal stems ridged or furrowed. *Geranium* stems and petioles are always perfectly circular in cross-section.

Basal petiole cross sections



Ranunculus sp



Malva moschata



Geranium sp.

With identification to species the illustrations of leaf characters mentioned above can be used, but various other leaf characters not shown in line drawings can also be useful. Leaf colour and

texture can be especially helpful, for instance the dull, dark green and rather leathery leaves of *G. pyrenaicum*, the fresh pale-green delicately textured leaves of *G. pusillum*, the thick shiny late leaves of *G. dissectum*, and the rather pale grey-green leaves of *G. rotundifolium*. However, these characters can vary with season and age, as well as with soil type and light conditions – the leaves of *G. rotundifolium* might for instance be more dark green in shade. Number and size of leaves is also useful, as is ‘habit’. Overwintering plants of *G. pyrenaicum* in spring tends to produce just a few large sprawling leaves, in contrast to the similar sized but greyer leaves of *G. rotundifolium* which tend to be more profuse and more often held up on ascending petioles. The other species usually have smaller leaves on average than these two, but very tiny procumbent rosettes of leaves with deep wine-red petioles, on poor soils, usually turn out to be *G. molle*.

These leaf features are best used as ‘spotting characters’ during survey work, identification being confirmed by leaf dissection and petiole hairs. Over the last two years I have looked at the leaf characters and basal petiole hairs of plants in flower, to try and see which better correlated with the floral identification, and there can be no doubt that petiole hairs are more reliable if properly used. Leaf characters fairly frequently do not distinguish *G. pusillum* from *G. molle* or *G. dissectum* early in the year, and less often there can be overlap in characters between *G. pyrenaicum*, *G. rotundifolium* and (large) *G. molle*. Plainly there is a possibility also of mistaking late deeply dissected basal leaves of *G. dissectum* for those of *G. columbinum*.

On the other hand petiole hairs, though quite variable, rarely show overlap of features as long as one is quite clear about what types of hairs are present in any one specimen. Each species has anything from 1 to 4 types of hairs which vary greatly in proportion, but the types of hairs present in any one species are almost invariable. Eight hair types can be defined:

(1)	2	3	4	5	6	7	8
Can be present in all species except <i>G. columbinum</i>	Present in <i>G. pusillum</i> and <i>G. pyrenaicum</i>	Present only in <i>G. molle</i>				Present in <i>G. pyrenaicum</i> and <i>G. molle</i>	
Diagnostic of <i>G. lucidum</i> if sole hair type (post-front)	Diagnostic of <i>G. pusillum</i> if sole hair type (post-front)	Diagnostic in absence of very long wispy hairs (type 8)	Diagnostic of <i>G. dissectum</i>	Diagnostic of <i>G. columbinum</i>	Diagnostic of <i>G. rotundifolium</i>	Diagnostic of <i>G. pyrenaicum</i> if only with hair type 2(81)	Diagnostic of <i>G. molle</i>

Type 6 hairs can be glandular or eglandular

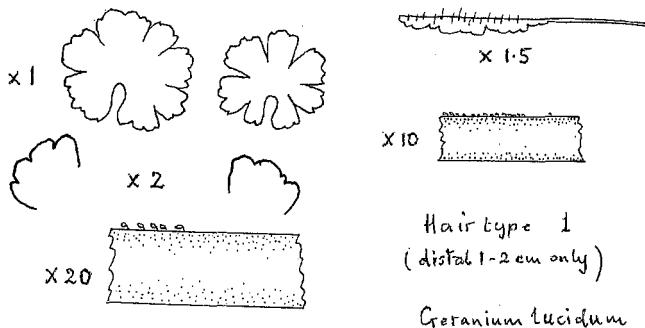
The very short glandular hairs (1) are never diagnostic unless on their own, can be very sparse, and are often very difficult to spot even with a $\times 20$ lens, so are usually best ignored. When looking at petiole hairs it is best, anyway, to use a $\times 10$ lens, otherwise one of the hair types may be missed by looking at too short a length of stem – for instance the long bristly hairs (7) of *G. pyrenaicum* can be very sparse, but seem always to be present if one looks at a sufficient length of stem. Again a $\times 10$ lens enables the length of the hairs relative to the stem width to be ascertained, a very important feature – however, it should be realised that the relative length of the hairs gets greater as petiole width decreases – so that the short eglandular hairs (2) of *G. pusillum* might be mistaken for the medium long eglandular hairs of *G. dissectum* (4) on a very narrow petiole.

In around 5% of cases variants occur which can make identification difficult or impossible. The very long wispy hairs (8) diagnostic of *G. molle* can be absent, and on occasions the short ‘brush-like’ hairs of uniform length (2) found in *G. pusillum* can be of irregular length or mixed with an occasional single medium short hair. Even here identification might be possible, especially if leaf characters are very typical. More frequently variations just involve the proportion of the various hair types. All these varieties are illustrated below.

When a lens is available, petiole hairs are best examined in the field. After only an hour or two glands can shrivel and longer, patent hairs can become curved and deflexed causing problems with identification. Specimens can be kept longer in a sealed bag, but longer hairs on one side of the petiole can become broken off to a uniformly shorter length, which can also happen on occasions with unbagged specimens where the petiole has been rubbing on the ground.

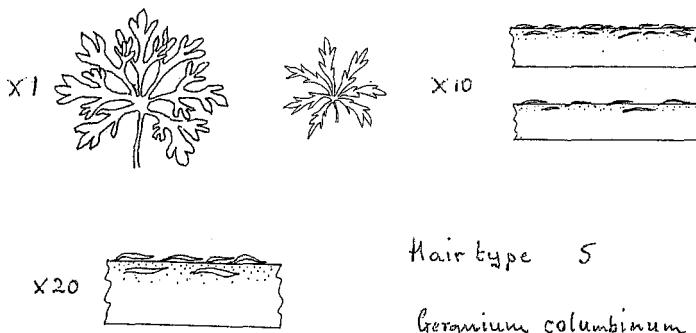
Vegetative characters of each species

In the following descriptions 'spotting features' are given first, then leaf characters, and finally petiole hairs are described. Drawings of some of the common leaf variants are given, but it is vital to realise that a guess as to the species based on spotting characters and leaf features turns out to be wrong on checking petiole hairs in around a third of cases. The drawings in the *Plant Crib* give an idea of just how variable leaf shape can be. [NB: the magnifications refer to the scale of the various drawings for each species.]



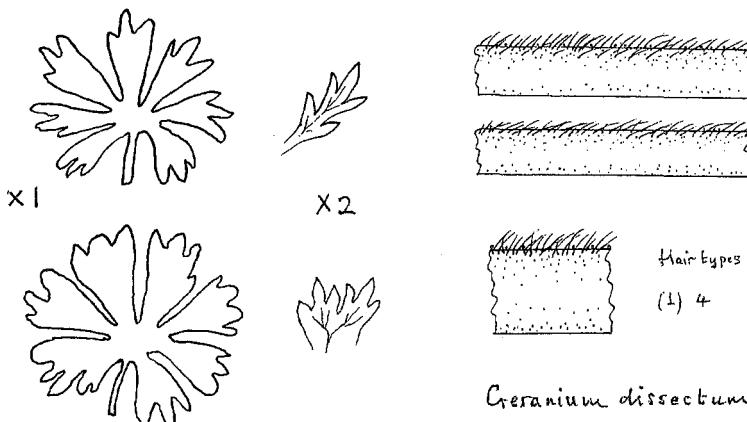
1. *Geranium lucidum* leaves are usually characteristically shiny, bright green and rather simple in shape, each lobe being only shallowly dissected and rather square-looking in outline. The petioles and leaves sometimes develop a crimson colour later in growth. Dissection is usually to $\frac{1}{2}$ - $\frac{1}{4}$. The petioles are glabrous or very sparsely pubescent, whereas in all other species they are closely covered with one sort of hair or another. It appears that there are always some very short glandular hairs on the distal centimetre or so of the petiole.

There are two diagnostic features which have perhaps not been noted before — a markedly rounded leaf sinus present in many but not all cases, and long patent bristly hairs on the shiny upper leaf surface, with the under surface glabrous and mat greyish-green. Other species have appressed hairs on both surfaces.

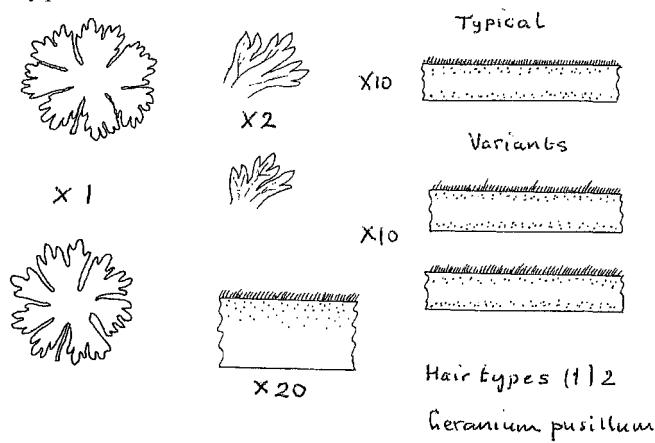


2. *Geranium columbinum*: should be looked out for on calcareous soils. The leaves are readily spotted because of their very deep dissection to at least $\frac{1}{8}$ of their lengths, with very narrow and

divergent segments even early in their growth. The petiole hairs seem always to be appressed (on the basis of the two colonies examined, and descriptions in CTW, Stace, and the *Plant Crib*), and a very characteristic shape – medium long, swollen and abruptly tapering. No other types of hair are present.

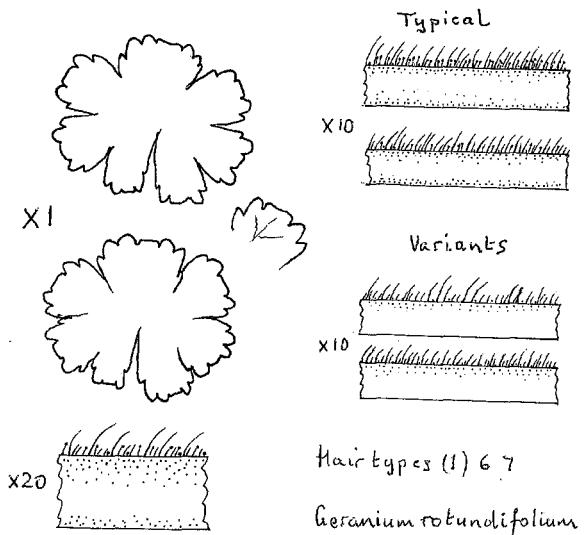


3. *Geranium dissectum* is usually spotted by its deeply dissected leaves with fairly narrow and divergent segments, more dark green and leathery looking than *G. pusillum*, where the segments are usually also wider and more contiguous. However, early in growth the leaf segments of *G. dissectum* can be wider and more contiguous, approaching *G. pusillum* or *G. molle* in appearance. Leaf dissection is usually to $\frac{1}{4}$ - $\frac{1}{2}$, sometimes to only $\frac{1}{3}$ or so early on. The main petiole hairs are medium long, variable in length and irregularly deflexed giving an untidy 'shaggy' look. Very short glandular hairs are also usually present.

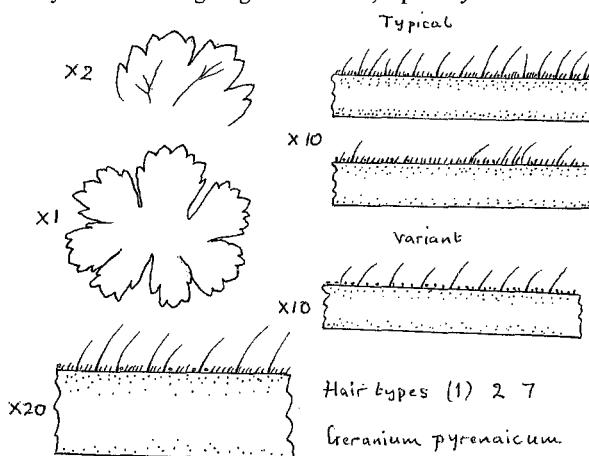


4. *Geranium pusillum* leaves can often be suspected by their fresh pale-green colour, delicate texture and 'frilly' edge. The leaf blades are usually dissected to around $\frac{1}{3}$, with lobes fairly contiguous to their ends and themselves deeply dissected, often with characteristic long 'pointed club' lobules, giving the 'frilly' look. The main petiole hairs are usually very characteristic – 'brush like', very short, closely spaced, eglandular hairs which are of uniform length and very evenly deflexed to patent. On occasions, however, the short eglandular hairs are interspersed with an occasional patent medium length eglandular hair, or the short eglandular hairs are all slightly irregular in length. This latter variant can suggest the shaggy medium length hairs of *G. dissectum* on a narrow petiole, but if wider petioles are examined the

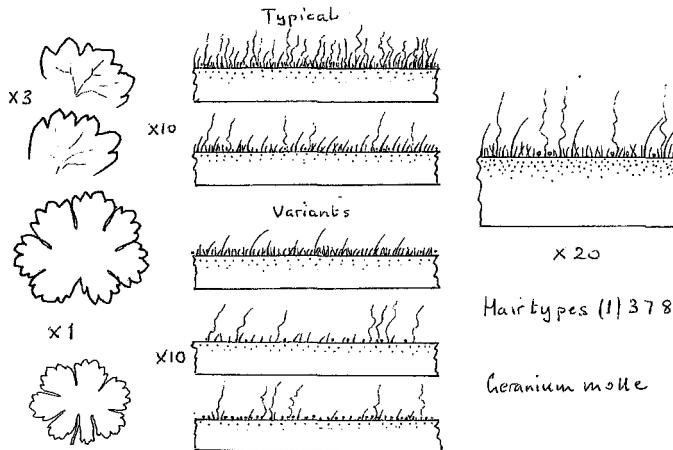
extreme shortness of the hairs should be apparent. Very short glandular hairs are nearly always present but very difficult to see. I have never seen the rare glabrous petioles mentioned in the *Plant Crib*.



5. *Geranium rotundifolium* leaves usually catch the eye because of their large size much like *G. pyrenaicum*, but with a paler grey-green colour, and often held aloft on more or less vertical petioles which have a characteristic 'powdery pink' appearance (due to the red stems being seen through a 'frost' of dense medium long glandular hairs). Leaf dissection is usually to around or just less than $\frac{1}{2}$, but with some dissections only to around $\frac{1}{3}$, and with the lobes only shallowly dissected, giving a more entire, reniform look. As described in the *Plant Crib* and originally by Philip Oswald the central lobule of each lobe tends to be square – this is only occasionally seen in *G. pyrenaicum* or the other species. The petiole hairs are in my experience more clearly defined and invariable than suggested in the *Plant Crib*. Glandular hairs seem nearly always to be present and are usually of fairly uniform medium length, c. $\frac{1}{2}$ - $\frac{2}{3}$ the length of the long bristly eglandular hairs and mixed with eglandular hairs of the same length. The glandular hairs may be very sparse at the base of the petiole, but can become extraordinarily profuse just beneath the leaf attachment. Sometimes, however, they may be absent and replaced by the similar length eglandular hairs, especially in rosette leaves in late summer.



6. *Geranium pyrenaicum*: may often be picked out by its large rather leathery leaves, mat dark-green in colour, which characteristically in spring are very few in number and sprawling, rather than forming a proper rosette. Leaf dissection is usually to just above or below $\frac{1}{3}$, sometimes to $\frac{2}{3}$, rather like *G. molle*, but the leaves are usually larger and thicker in texture. The petiole hairs are quite distinctive with a mixture of three hair types – very short glandular, short regularly deflexed or patent ‘brush-like’ hairs of uniform length, and more occasional long bristly hairs. The long bristly hairs can be very sparse and can be missed if a sufficient length of stem is not examined – the other two hair types seem more or less identical to those in *G. pusillum*.



7. *Geranium molle* growing on very poor soils can have very small basal leaves, with bright wine-red petioles forming tiny flattened rosettes. On better soils, and in more moist conditions, the leaves can be as large as *G. pusillum* and *G. dissectum* but they are usually darker green than the former and less dissected than either, to just above or below half way. The petiole hairs are usually very characteristic, with 4 types of hairs – very short glandular, short to medium-short irregularly deflexed to patent eglandular, long bristly eglandular, and very long ‘wispy’, silky hairs that are diagnostic when present. Occasionally these very long wispy hairs are absent and the leaves might then be mistaken for *G. pyrenaicum* – the sparse long bristly hairs of this species are similar to those in *G. molle*, but mixed with a neat ‘brush like’ layer of uniformly deflexed or patent hairs unlike the untidy mixture of short and medium short eglandular hairs in *G. molle*. Occasionally, however, it might not be possible to distinguish this variant without wispy hairs from *G. pyrenaicum*. It might also be inseparable at times from the variant of *G. rotundifolium* with all eglandular medium long hairs.

The larger perennial *Geranium* species like *G. sylvaticum*, *G. sanguineum* and *G. pratense* do not occur in Norfolk as natives, though the latter is occasionally found as an introduction, usually in churchyards. The alien perennials are also very scarce and rarely naturalised. The leaves of *G. sanguineum*, *G. pratense* and *G. endressii* seem especially similar and liable to cause confusion. Vegetative identification of these species is seldom necessary in our region, but one wonders if drawings of the basal petiole hairs of these larger species might be useful elsewhere in the UK.

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RICH, T.C.G. & JERMY, A.C. 1998. *Plant Crib 1998*. BSBI, London.

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KEEP IT BRITISH, PLEASE!

I may be old-fashioned, but I firmly believe that a book, even for beginners, about 'British plants' should only contain photographs of plants taken within the confines of Great Britain. It should not include photos taken in France, or elsewhere.

There are four major reasons for this:

- Species can vary more outside Britain, e.g. in flower colour.
- Closely allied species (or subspecies) may readily be photographed in error.
- Ecological aspects are spoilt when non-British plant associations/pollinating insects, etc., appear.
- It is not cricket! – it is a misrepresentation.

If, of necessity, a photo is taken overseas, the country represented should be clearly stated. This is quite acceptable.

Sadly, one splendidly illustrated book by Phil Wilson and Miles King, *Arable plants – a field guide* (2003), appears to fail badly on the above counts. It has already received some excellent reviews, e.g. in *Wild Flower Magazine* 459: 50-51 (2004). But, a much more critical one appears in *London Naturalist* 83: 40 (2004), which talks of 'unnecessary errors'. There are acknowledgements (p. 309) to our *New Atlas* editors – Dr Chris [sic] Preston and David Pearman [sic].

But, it is the plates that I wish to concentrate on, suggesting my views of their probable correct identity and location. Naming coloured photos is not easy, and I may have erred. And, maybe one or two aliens that they show are truly established in our cornfields? My tentative IDs are now listed – but the views of others is sought!

- p.55. *Alyssum alyssoides* (Small Alison) – more closely resembles *A. minus* (S & E Europe).
- p.65. *Ranunculus sardous* (Hairy Buttercup) – almost undoubtedly the allied *R. trilobus* (S. Europe).
- p.71. *Iberis amara* (Wild Candytuft) – petals are never pink in Britain; possibly *I. pruitii* (Mediterranean region).
- p.73. *Hypochaeris glabra* (Smooth Cat's-ear) – two different composites are shown, neither of which is typical of the British plant. The *Romulea* fruits indicate a S. European origin.
- p.173. *Anagallis arvensis* ssp. *foemina* (Blue Pimpernel) – lower photo is of *A. morellii* (SW Europe).
- p.195. *Veronica polita* (Grey Field-speedwell) – the short pedicels indicate a form of *V. arvensis* (Wall Speedwell).
- p.257. *Briza minor* (Lesser Quaking-grass) – upper photo is of *B. maxima* (Great Quaking-grass), which may well now be established in English cornfields.

One or two other plates appear to be 'suspect' – e.g. p.79 (*Anthemis arvensis* (Corn Chamomile)), which has so very many look-alikes. Are all the fumitories correct?

Other books undoubtedly err similarly. Chris Parker's most useful *Weeds of Bhutan* (1992) contains a coloured photograph (p.97) labelled as *Barbarea intermedia* (Medium-flowered Winter-cress), which clearly it is not. It is *Sinapis arvensis* (Charlock) – if photographed within Bhutan, it (probably) represents the first record for this country, being absent from *Flora of Bhutan* 1(2): 416-445 (1984). Who knows?

Keep it British, please! – but what do other members think?

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A LOST 'ENDEMIC' – *NOTHOFAGUS ×DODECAPHLEPS*

Conservationists making a list of British endemics – plants that occur nowhere else in the world as natives except in Great Britain – would, in my view, be misled by using Stace's *New Flora*, ed. 2 (1997). This list should contain those few plants that we must protect most forcefully: they are our heritage, and no-one else's.

But, sadly, Clive Stace (not unreasonably?) puts the word 'endemic' against any casual hybrid that has not (yet) been found, identified or reported (in a major botanical journal) anywhere outside the British Isles. Expense at protecting most of these 'freaks' serves little long-term purpose. I feel Stace

should use a different word for such taxa – one already exists, *neoendemic* (Lincoln *et al.* 1982). This would, e.g., indicate a hybrid where one (or both) parents are ecademic species, and that further study will eventually reveal them to be present elsewhere in the world. Ecdemic means ‘foreign; non-native’, a term rarely used by botanists (*ibid.*).

I will illustrate my arguments with one example – *Nothofagus obliqua* × *N. nervosa* that Stace signifies as ‘endemic’ (p. 120). This is a hybrid between two species, both from Chile and W. Argentina, for which Clive Stace failed to find a record outside Britain. Plenty do exist, but ?only in the forestry literature – 4 such references appear in Grant & Clement (2004).

This ‘endemic’ may also be extinct ‘in the wild’ in Britain. Alex Lockton, with his usual great efficiency, sent to me all records on the BSBI VPDB database, *viz.* two: at Alice Holt (v.c. 12) in 1978 and Westonbirt (v.c. 34) in 1979. Possibly just ?casuals at both Arboreta. Stace’s records of it ‘in mixed plantations mainly in SW England’ all elude me. *Watsonia* 12: 344–345 (1979) about ‘*Nothofagus*’ Blume in Britain’ does not help.

A.O. Chater’s experiences (*pers. comm.*, 25/09/2003) in Cards. (v.c. 46) are illuminating: ‘In one Forestry Commission site here a plantation of *N. obliqua* abuts on one of *N. nervosa* (excuse the nomenclature). The former fruits abundantly and the ground is carpeted with seedlings of all ages up to several metres tall. The latter seems never to fruit (though I have seen it fruiting elsewhere in the county). A pity, as it would be a good place for hybrids! Both lots were planted in 1956?’

Stace’s ed.3 (in prep.) will probably follow the nomenclature of Grant & Clement (2004), where we validly create the nothoepithet *N. ×dodecaphleps* Mike L. Grant & E.J. Clement for *N. alpina* (*N. nervosa*; *N. procera*) × *N. obliqua*. The etymology is simple, if you know your Greek, *dodeca*-, 12 and *-phleps*, vein, alluding to the average number of pairs of main secondary leaf veins. Included therein is a key to all 7 deciduous species of *Nothofagus*, plus this hybrid, and the indefatigable Delf Smith provides a fine full-page plate comparing the two species and the hybrid, showing both cupule and leaf characters.

In author citation ‘Mike L. Grant’ should not be abbreviated to M.L. Grant because of possible confusion between the earlier botanical author M.L. Grant (1907–1968).

Finally, non-ecological members may not be aware of the value of Lincoln *et al* (1982), especially of the 21 appendices covering information not readily found elsewhere – like Latin abbreviations in frequent use; Greek and Russian alphabets (and their transliteration); definitions of the 12 particle sizes from colloid to boulder, etc. The elusive Domin scale is defined on p.71. They define *neoendemic* as: ‘An endemic species having a limited geographical range attributable only to its recency of origin; a recent endemic; cf. paleoendemic.’ I ramble!

References:

- GRANT, M.L. & CLEMENT, E.J. (2004). Clarification of the name *Nothofagus alpina* and a new epithet for a *Nothofagus* hybrid. *Bot. J. Linn. Soc.* 146: 447–451.
 LINCOLN, R.G., BOXSHALL, G.A. & CLARK, P.F. (1982). *A dictionary of ecology, evolution and systematics*. 298 pp. Cambridge University Press (A 2nd ed., 1998, is also now available).
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MORE MAGIC VIOLAS

In response to the articles in *BSBI News* 97: 29 ‘Violet and white pansies’ by Steve Hawkins and *BSBI News* 98: 33 ‘Magic Violas’ by Ray Woods, I thought it would be of interest to know that *Viola ‘Magic’* was selected by Allan Robinson while working at the rock garden department at RHS Wisley in the early 1990s. There was a population of *Viola corsica* growing here and there in the rock garden at the time, and I suspect ‘Magic’ arose therein since, in 1993, I made my own selection from the same population, which I called ‘Fade-to-white’, which I note was on my seed list back in 1998. The petals of ‘Magic’ are broader and rounder than those of *V. corsica*, so it is probable that it is a hybrid, though one can only guess the other parent(s). Several generations later, and most of my plants produce flowers of a typical blue/violet colour, though I have had several white, and just two pale mauve ones,

none of which exhibit the colour fading. Talking with Allan about the behaviour of 'Magic' some years ago, I seem to recall he found some plants to be more prone to colour change than others. Undoubtedly Ray Woods' plant of 'Magic' is not the only one to have disappeared over time, or to have reverted through propagation by seed. 'Magic' is still offered for sale by several nurseries listed in *The Plant Finder* (<http://www.rhs.org.uk/rhsplantfinder/plantfinder.asp>).

Last year, I found what appeared to be a *V. tricolor* (Wild Pansy) whose flowers included a pale area, which was lemon yellow when the bud was opening, fading to purer white by the time the flower was fully open, then becoming pale mauve before the petals shrivelled. As the plant had multiple flowers of different ages, all colour variants were visible at the same time on the one plant. The other colours in the petals remained constant. I have not found a colour-temperature correlation yet, but I am watching the plant this year; so far (March), the flowers behave as before. It does seem to be perennial, so it may not be pure *V. tricolor*, but it is unlikely to have any 'Magic' in it since it originated by self-sowing in my parents' garden many miles away. This plant seems to behave similarly to the pansy/viola reported by Steve Hawkins (*BSBI News* 97: 29 and photo 1), though in Steve's plant the whole flower was affected. Steve's plant looks like a cultivar called 'Yesterday, Today and Tomorrow' (one of the Sorbet series), which goes from white through light blue to deeper blue as the flowers age. That cultivar is supposedly an F1 hybrid; it would be interesting to know what its parents are.

Steve asked 'What are the factors controlling pansy flower colour and why is it so variable?'. Fothergill (1941) gives some insights, based on papers by Clausen (1926 & 1931).

By experiment and observation, they deduce several genes affecting petal colour, including two with bleaching effects. Gene 'W' bleaches violet and bright yellow colourings, and gene 'Pal' 'probably bleaches all colours to some extent'. They make no mention, however, of changes in colour within individual flowers over time or in relation to temperature. And they do not mention any unbleaching genes, such as might be postulated to be operating in the plants under discussion here. Or maybe the bleaching gene(s) exist in our plants; maybe they degrade as the flowers age, producing an unbleaching effect?

Some flower colours do fade as they age, e.g. the blue *Brunfelsia pauciflora* and pink *Celosia cristata* both fade to white. But this behaviour has only occasionally been noted in *Viola*. To be clear, this fading is nothing to do with the effects of sun through water droplets on the petals, or sudden exposure to sun after growing in shade.

References:

- FOTHERGILL, P.G. 1941. Studies in *Viola* III. An account of the inheritance of certain characters in the progeny of plants of a wild population of *Viola* hybrids *The New Phytologist* XL(2):148-9.
 CLAUSEN, J. 1926. Genetical and cytological investigations on *Viola tricolor* L. and *V. arvensis* Murr. *Hereditas* 8: 1.
 CLAUSEN, J. 1931. Cytogenetic and taxonomic investigations in Melanium violets. *Hereditas* 15: 219.
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ALGAL ENDOPHYTES WITHIN LEAF & ROOT TISSUES OF WATER FERN (*AZOLLA FILICULOIDES*)

Within the undersides of the upper leaf lobes of *Azolla filiculoides*, tiny cavities contain the symbiotic Cyanophyte alga *Anabaena*. My photomicrographs of the *upper* sides of the *upper* leaf lobes reveal ranks of regular beautiful yellow-green chloroplasts (not shown here). The first illustration (Fig. 1, see Colour Section, plate 4) is of the blue-green gel squeezed from the *under* side of an *upper* leaf lobe. Figs 2-6 are pictures of living *Azolla* root tissue.

Fig. 1. *Anabaena* chains. Trichomes of barrel-shaped photosynthesizing vegetative cells, with the larger intercalary and terminal Nitrogen-fixing heterocysts, are shown.

Fig. 2. *Azolla* root tip. The living young root end of a sunlit *Azolla* plant, stained with a solution of Iodine in Potassium iodide and methanol. The root cap is obvious. The root tip and shaft are black, indicating starch.

This starch could have three origins:

- a) Intracellular root chloroplasts (unlikely, see ensuing photomicrographs)
- b) Storage products from photosynthesized carbohydrates transported down from the upper leaf lobes.
- c) Starch derived *in situ* from root Chlorophyte algal endophytes

Fig. 3. Architecture of young *Azolla* root shaft. The cortex cells measure 20×10μ. Just discernible are a thin scatter of tiny green endophytic algae, 0.5-2μ diameter. In this root, the central core is not invaded (I have one photo, not shown here, with a green *Azolla* root core).

Fig. 4. *Azolla* root cortex. Surrounding the large brown ovoid is a scatter of green endophytes 1-3.5μ in diameter. Enlargement of these (not shown) reveals them to be intercellular, and discoid rather than spheroidal.

Fig. 5. *Azolla* root cortex. A few of the scattered tiny green algae (0.5-1.5μ) are again just discernible. More problematic are the much larger green ovoids (6×9μ), as these were at uncertain tissue depths, could possibly be tethered like balloons on strings, and might be semi-epiphytic rather than true endophytes.

Fig. 6. *Azolla* root cortex. This clump of stippled green algae is clearly between cortex cells, with some pressure distortion of their cell walls. It measures 30μ across. There were green amoeboid outliers 4-9×2-3μ in size, giving a clue to one form of colonization.

Unlike the roots of many colonies of the *Lemna* genus (Oliver 2004, 2005a & b) young *Azolla* roots are not conspicuously green to the naked eye, and older *Azolla* roots become brown and wiry. Cyanophyte algae colonize specialized leaf cavities of *Azolla* as symbionts. Microscopic non-filamentous algae (very probably mostly, or perhaps all Chlorophyte) clearly also colonize root cortex tissues as endophytes, but usually much less densely than seen in *Lemna minuta*, *L. minor* and *L. trisulca* (Least, Common and Ivy-leaved Duckweed).

Acknowledgement: My thanks to Joan M. Davies for her help with the colour illustrations.

References:

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OLIVER, J.E. 2005a. *Lemna trisulca*. Apparent progression of algal endophytes into the root centres. *BSBI News* 98: 34.

OLIVER, J.E. 2005b. Algae within aquatic plant roots. Initial studies of endophytes inside the roots of *Lemna*, *Azolla*, *Callitrichie* & *Elodea*. *Wiltshire Botany* 7: 11-17.

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BOTANY VS. HAY FEVER

Rachel Hacking's experiences with hay fever (*BSBI News* 97: 27) reminded me of a project undertaken by Treliske Hospital in Truro, about 25 years ago. Treatment of hay fever was by packs aimed at one or more species. I was shown some of these clear plastic bags, about 100mm square and containing a clear fluid. I assume (but can't now remember) that treatment was by injection. I can remember seeing the scientific names of grass species on the labels. One pack was used, more or less at random and, if there was no relief, another pack – on the same basis – and so on. This was haphazard and expensive, so why not reduce the element of chance? At this point the hospital contacted the BSBI and I was asked to list the grasses of Cornwall in order of how common they were. An immediate problem arises. How scientific is such a study? Botanists will point out the difference between 'commonness', in the sense of distribution over a given area, and abundance in terms of numbers of individuals. So the study also gave an approximate view of population densities. The grasses began to resemble suspects lined up for an identity parade.

About 120 species fell into three broadly defined groups. As well as I can remember, they were: (1) widespread and abundant to fairly populous; (2) frequent to local and neither abundant nor fairly populous; and (3) infrequent to rare, with abundance in this latter group tending towards insignificance.

I tried to grade each taxon within each group in terms of 'total output' – obviously impossible to do anywhere near precisely. However, using Margetts and David's recent *Review of the flora of Cornwall* and my own observations, I did produce league tables in these three divisions. An interesting result was that, without any help from me, the three divisions each contained about 40 species.

All sorts of snags began to occur to me. Common and abundant grasses may not be the ones causing problems. They might not be actually releasing pollen at the critical time. Also, plants other than grasses produce irritant pollen. In fact, just the raw information might even be misleading in the absence of a lot of extra data. Is the sufferer, for instance, in a seaside location, in a park or on heathland? However, considering that the packs were fairly expensive, it was clearly useful to eliminate (say) *Echinochloa crus-galli* (Cockspur) as a rare casual, and to know that *Holcus lanatus* (Yorkshire-fog) is both widespread and abundant in Cornwall.

The project enabled specialists to eliminate from their treatment regimes, species that (in Cornwall) were rare or non-existent – and this must surely have been helpful. Is there scope for further study here?

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***MIBORA MINIMA* ON THE SEFTON COAST, MERSEYSIDE**

Early Sand-grass (*Mibora minima*) is said to be the smallest grass in the world (Rich 1997). It is a nationally rare annual which the *New Atlas* (Preston *et al.* 2002) shows as native in 15 National Grid hectads in Anglesey, the Gower, the Channel Isles and the Sefton Coast. The latter locality (v.c. 59, South Lancashire) was discovered in April 1996 by D.P. Earl and J. Buckley-Earl, growing on a small area of sand-dunes by Southport Marine Lake (SD336.186). Earl & Buckley-Earl (1997) and Rich (1997) describe the circumstances of the find, the latter stating that it is a new native plant for England, having no doubt been previously overlooked because of its early flowering season and diminutive size.

I mapped the plant's distribution at Southport in March 1999. It was found to be dominant in many patches over a linear distance of about 150m, some of the patches being up to 10m in diameter, others much smaller. Most of the population was associated with the south to south-east facing slope of a low (three-metre high) dune ridge which forms a 'bulge' jutting out into the Marine Lake on its western side. Some small patches were also found on a plateau area to the west of the ridge (Fig. 1). All the colonies of Early Sand-grass were in sparsely vegetated areas with a high proportion of bare sand, often on the edges of sandy, informal footpaths. The most abundant of 16 associated vascular taxa were Kidney Vetch (*Anthyllis vulneraria*), Little Mouse-ear (*Cerastium semidecandrum*) and Common Whitlowgrass (*Erophila verna*) (Table 1).

The association between *M. minima* and Isle of Man Cabbage *Coincya monensis* subsp. *monensis* (Isle of Man Cabbage) is considered to be a world first (Earl & Buckley-Earl 1997).

A Species Action Plan for Early Sand-grass was included in the North Merseyside Biodiversity Action Plan (2001), one recommendation being that the plant should be monitored at regular intervals. Accordingly, the site was revisited in March 2004, five years on from the original survey, the grass being mapped by eye on a large-scale, colour aerial photograph flown in 2003. The data were then incorporated into the Sefton Coast GIS and compared with the 1999 map. *Mibora minima* still occupies essentially the same site on the Marine Lake dunes but has increased in area by 47.3%, from 1465 to 2158m² (Fig. 1). This spread is most noticeable in the southern part of the colony where the plant is dominant over an area of about 50×33m on level ground below the dune ridge. There are also small, isolated patches to the west and north of the area mapped in 1999. Some decline seems to have occurred in the central sector, where the steep slope of the dune ridge appears more stabilised and grassy than it did at the time of the first survey. As before, the plant borders several informal footpaths on top of the plateau.

It is clear that *M. minima* requires a very open, sparsely vegetated habitat with plenty of bare, but not mobile, sand in which to seed. At Southport Marine Lake, this is maintained by a slow input of blown sand from the adjacent foreshore, together with locally intense human trampling and moderate

rabbit grazing. There is plenty of ostensibly suitable habitat in the vicinity of the colony, so it will be interesting to see whether the grass continues to spread in future years.

Table 1. Frequency (DAFOR scale) of vascular taxa associated with *Mibora minima* at Southport

<i>Ammophila arenaria</i>	f	<i>Lotus corniculatus</i>	f
<i>Anthyllis vulneraria</i>	a	<i>Myosotis ramosissima</i>	f
<i>Carex arenaria</i>	o	<i>Oenothera spp.</i>	o
<i>Cerastium semidecandrum</i>	a	<i>Plantago lanceolata</i>	o
<i>Coincya monensis</i> ssp. <i>monensis</i>	r	<i>Sedum acre</i>	o
<i>Erophila verna</i>	a	<i>Senecio squalidus</i>	o
<i>Hypochaeris radicata</i>	f	<i>Senecio vulgaris</i>	o
<i>Leymus arenarius</i>	o	<i>Taraxacum sect. Ruderalia</i>	f

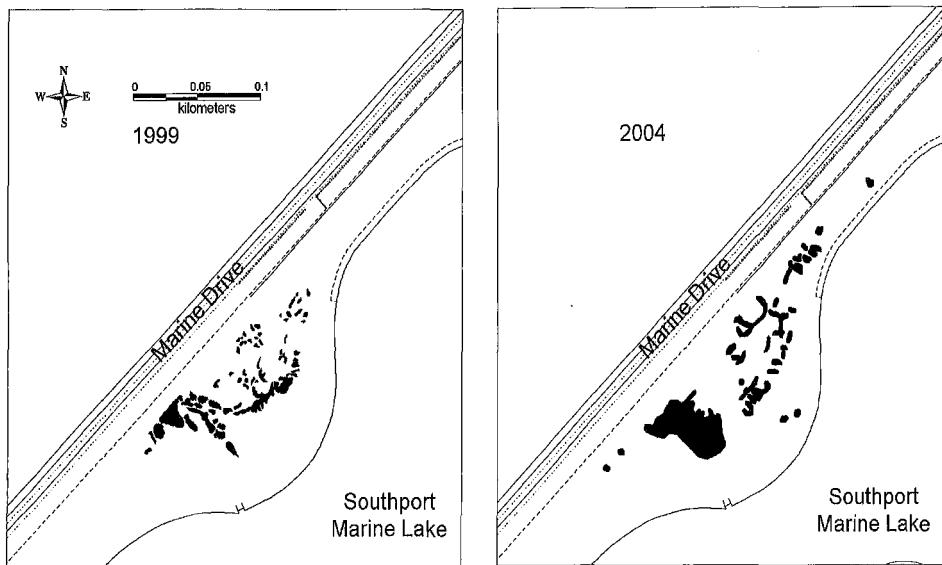


Fig.1 — Distribution of Early Sand-grass at Southport Marine Lake in 1999 and 2004

Acknowledgements:

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NOTES ON SEEDS AND CAPSULES OF *SPIRANTHES ROMANZOFFIANA* WITH SPECIAL REFERENCE TO THE DRAWING OF A SEED IN BUTCHER'S 'A NEW ILLUSTRATED BRITISH FLORA', (1961)

In volume two of Butcher's Flora (page 730) there is a drawing of a seed of *Spiranthes romanzoffiana* (Irish Lady's-tresses). This drawing has particular significance. The captions are described in detail in some of the subsequent paragraphs as they are open to more than one interpretation.

Mature capsule development in *Spiranthes romanzoffiana* has never been reported in Scotland. A large number of capsules have been examined on Colonsay since 1999 by Dr Richard Gulliver, Mrs Mavis Gulliver and Mrs Margaret Keirnen; on Coll since 2000 by Ms Emma Grant and on Barra in detail since 1995 (and with some general observations prior to that date) by Dr James Robarts. No seed has been found inside the capsules that have been examined internally, e.g. Dr Chris. Wilcock (*pers. com.*). Mature capsule development does take place in *Spiranthes spiralis* (Autumn Lady's-tresses). A photograph showing the dried erect capsules of *Spiranthes spiralis* with slits for seed release appears in Gulliver *et al.* 2004. The withered capsules of *Spiranthes romanzoffiana* are shown in Gulliver *et al.* 2000 and Gulliver *et al.* 2004.

There is a 1969 original drawing produced by Raymond Piper of an Irish plant showing two seeds, Dr Frank Horsman (*pers. comm.*; and note added in proof in Forrest *et al.* (2004)). In 2003 Mr Darach Lupton (*pers. comm.*) collected 46 seeds from a single plant growing on the southern shore of Lough Conn in Co. Mayo. The seeds were found in the envelope containing dried, dehisced material; they appeared to have originated from just two capsules. However in two surveys of plants in September only withered capsules have been found. In late September 2002, 354 plants at five sites were examined by Dr Frank Horsman; four in county Mayo, one in county Galway. In mid September 2003 Mr Stephen Foster examined 15 dead spikes at a site on the edge of on Lough Neagh. In both cases mature capsule development had taken place in nearby *Dactylorhiza* species.

The main illustration in Butcher's Flora shows a mature plant of *Spiranthes romanzoffiana* with roots, lateral bud, and inflorescence. There are two illustrations showing front and side view of a flower from the north of Ireland and two showing the same views of a flower from the south west of Ireland. At that time it was considered that plants from these two areas were two separate taxa, and the illustrations show the differences in floral morphology in plants from the two areas. Sell and Murrell (1996) treat the two taxa as different (subsp. *stricta* and subsp. *gemmipara* respectively). Stace (1997) places all British material in a single taxon.

There is one drawing of seed. It is similar in shape to the drawing of the seed of *Spiranthes spiralis* and *Spiranthes aestivalis*. It is also similar in size, despite being described as unripe. The existence of this drawing is mentioned in Gulliver 2002; and in Forrest *et al.* 2004 where it is in the form of a supplementary note added in proof describing information supplied by Dr Frank Horsman.

The text for the main illustration of *Spiranthes romanzoffiana* reads: '(L. Neagh and Co. Cork, Ireland)'. The text for the floral illustrations reads: 'A. flower, front view. B. side view. C. seed (unripe). (Y., Z. flower of *S. gemmipara*).'. The punctuation is as in the original. The caption to the illustration goes on to state '(The plants from S. W. Ireland have been designated *S. gemmipara* and are distinguished by the broader leaves, acute not acuminate bracts, denser spikes and a shorter and broader lip.)'. The page of drawings of *Spiranthes romanzoffiana* bears the initials MS – Mary Smith. The drawings are not dated. The flowering time of the orchid is given as 'Mid July – mid August'.

Butcher (1961) provides a drawing of a seed for all the orchid species with two exceptions. For *Cephalanthera rubra* there is no drawing and the text states 'seed not recorded in England'. Lang (2004) states 'seed set has rarely been observed'. For *Orchis hebridensis* [*Dactylorhiza fuchsii* subsp. *hebridensis*] there is only one drawing which is of the flower, code letter Z. Most of the page is devoted to *Orchis* (*Dactylorhiza* [*Dactylorhiza*]) *fuchsii*, with the seed as illustration D. Apart from *Orchis hebridensis* and *Spiranthes romanzoffiana* the seed drawing is always the last in letter sequence; often C, sometimes D, rarely E (two cases).

For *Spiranthes romanzoffiana*, A & B clearly relate to Lough Neagh and Y & Z clearly relate to county Cork. The question arising is whether the seed is drawn from material from Lough Neagh, from material from county Cork or from a seed collection which might contain material from America.

The second page of the preface of Butcher's Flora (in both volume 1 and volume 2) states that seeds were drawn from the Griffiths seed collection at the University of Durham; the exact words are – 'The problem of obtaining seed for drawing has been greatly eased by the kindness of the University of Durham in lending the Griffiths seed collection... '(he then refers to other people who have helped). Dr Frank Horsman has written to the herbarium at University of Durham. The reply stated that no one at the Herbarium had any knowledge of the Griffiths seed collection.

Fifteen of the orchid drawings in Butcher (1961) first appeared in the same author's '*Further illustrations of British plants*' (see subsequent note on date). In the '*Further illustrations...*' seed drawings are absent. Hence in this set none of the seed drawings were made at the time of the main drawing. '*Further illustrations...*' was first published in 1930; however the copy examined has on the flyleaf the statement 'First Edition' and the date 1946; and the next page bears the two phrases, 'Reprinted 1944 ... Reprinted 1946'. In the '*Further illustrations...*' several of the drawings of dicotyledonous plants show fruits, nuts or capsules in the same style as the rest of drawing and apparently drawn at the same time. This also applies to some of the drawings of monocotyledonous plants.

It is possible to draw three alternative explanations from this information.

- 1) That the seed drawing was made from material from Lough Neagh. This explanation is supported by the sequence of lettering A, B, C. However the letters are not directly linked to the locations, i.e. the legend does not state that C is from Lough Neagh. The letter C, D or E is used for the seed drawing throughout the Orchidaceae. As the drawing of the main plant is in full bloom, any seed drawing must have been later. Conceivably some capsules were taken away for maturation. The fact the seed is described as unripe would support this explanation. However it is curious that no other orchid seeds are described as unripe. If this was the practice with *Spiranthes romanzoffiana*, why was it not also used for other species, resulting in further cases of the drawing of an unripe seed?
- 2) That the drawing is of material from county Cork. In general plants from the south west of Ireland have denser inflorescences. In an American species, *Spiranthes delitescens*, Sheviak (1990) has shown that individual plants in the field which were assumed to be performing poorly in general terms produced more dense inflorescences when in cultivation. Hence it is possible that seed production is more likely in material from the south west of Ireland.
- 3) That the drawing is of material from the seed collection. The fact that there is a comma between the text for A and the letter B, but a full stop between the text for B and the letter C may be taken to indicate this. The description of the seed as unripe suggests fresh material. Dried material is unlikely to be described unripe unless it was not full size. In terms of length the seed appears to be the same size as for the other *Spiranthes* species. It is of note that all fifteen of the orchid seed drawings in the '*Further illustrations...*' were drawn after the main drawing.

I propose that it is impossible to know with certainty which of the three explanations is correct. Hence the drawing can be used to indicate that there may have been production of unripe seed at Lough Neagh or County Cork at or around the time of the main drawing. On the other hand, I propose, the use of seeds from a seed collection in an unspecified number of cases means that one cannot be absolutely certain that this drawing is of material gathered in Ireland.

The uncertainty further serves to emphasise the need for work on the barriers to seed production in the species. Wilcock (2002) examined of capsules 2, 4, 6, 8 and 10 days after manual pollination on Coll. He found.... 'Pollen germinated quickly (see Table 6 – [details in the original report]) and penetrated to the top of the ovary, usually within four days but in all crosses further growth was slow and only a small proportion reached to or beyond halfway down the ovary. In addition no ovule penetration was observed, even 10 days after pollination'.

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SOME OBSERVATIONS ON SPIRANTHES ROMANZOFFIANA IN THE BRITISH ISLES

Spiranthes romanzoffiana Cham., the Irish Lady's-tresses orchid, is one of the very few members of the flora of the British Isles which has an amphi-Atlantic asymmetrical distribution. Another is *Hypericum canadense* L., the Irish St John's-wort. I put a direct question to Richard Bateman, namely: 'Is *S. romanzoffiana* a relict member of the flora of the British Isles?' He replied equally directly: '... I can state with confidence that the degree of molecular divergence shown by *S. romanzoffiana* is far too little to have allowed it to exist prior to the opening of the North Atlantic.' Similarly, Norman Robson told me of *H. canadense*: 'There is no question, in my view, of its having persisted [in Ireland] from the time before the Atlantic was formed. The pattern of evolution of the whole genus, and of section *Trigynobrathys* (which includes *H. canadense*) in particular, denies that possibility.' So how was the seed of these two plants introduced into the British Isles from North America?

John Heslop-Harrison (1953) put forward the theory that the Greenland white-fronted goose carries the seed of *S. romanzoffiana* from North America to the British Isles. I have visited many *S. romanzoffiana* sites in the British Isles looking for correlations with the winter roosting and feeding sites of the Greenland white-fronted goose. Conversely, I have worked winter roosting and feeding sites of the Greenland white-front for *S. romanzoffiana*. My results (Horsman, 1998), together with my observations in the Irish Republic, reveal a correlation which it is difficult to ignore. In view of the following, I find this puzzling. There is no bird migration route directly across the North Atlantic to the British Isles because Iceland, and to a lesser extent eastern Greenland, can be used as staging posts. The Greenland white-front uses Iceland as a staging post (Fox & Stroud, 1981). *S. romanzoffiana* has not been recorded from either Iceland or Greenland, although its presence in Greenland cannot yet be ruled out. In these circumstances I am forced to rule out the Greenland white-front theory.

Do any birds make a direct crossing from North America to the British Isles? Yes: American vagrant waders. The favourite candidate is the pectoral sandpiper, although, in terms of numbers, the white-rumped and buff-breasted sandpipers are also worthy of consideration. The pectoral sandpiper is an annual visitor to the British Isles from North America; indeed, it is much the most common such visitor (Cramp *et al.*, 1983). In 1986 the pectoral sandpiper was removed from the rarity list of the Irish Rare Birds Committee (Fitzharris & Smiddy, 1995). In the period 1950 to 2000 there were approximately 2976 records for the pectoral sandpiper in the British Isles (based on data from the Irish

Rare Birds Committee and the British Birds Records Committee). The question arises as to how far back in time one should extrapolate this figure to arrive at some kind of realistic estimate of the total number of Atlantic crossings made by the pectoral sandpiper. In any event, the number will be substantial.

In the autumn the pectoral sandpiper migrates from its breeding grounds in the Arctic and sub-Arctic tundra on the northern coast of Canada and some northern islands, and the western shores of Hudson Bay. It winters mainly in South America from southern Bolivia and northern Argentina to Paraguay. In eastern Canada, where *S. romanzoffiana* grows, it is mainly an autumn transient, following the coastline of the Hudson and James Bays, then across Quebec to the Gulf of St Lawrence; it is common in New Brunswick, Prince Edward Island, and Nova Scotia (Cramp *et al.*, 1983). It is interesting to note that *H. canadense* is recorded from Ecuador, at 2800m in the High Andes (Jørgensen, 1994). The pectoral sandpiper is also recorded from Ecuador (Rodner, 2000). It has been recorded at 3700m in the Argentine (Hale, 1982) and 3000m in the Rocky Mountains (Cramp *et al.*, 1983). *H. canadense* is to be found in Canada (eastern Ontario to Newfoundland), the U.S.A. (Minnesota to Maine, south to Florida and west to Alabama and Mississippi), and introduced into Ireland and Holland (Robson, 1990). Waders feed on small invertebrates, mainly in wet habitats. Many waders refuel at staging posts on their southerly autumn migration route. Such staging posts are also used as resting places in which the moult, or part of it, can take place (Hale, 1982). It is unclear if any vagrant waders moult, or complete their moult, in the British Isles but it would seem likely.

Given that the seed of *S. romanzoffiana* is like dust, it is not difficult to appreciate that the feathers of the pectoral sandpiper could easily pick it up at a staging locality where the orchid was in seed. Indeed, in sandpipers the feathers of the upper parts are notched (Hale, 1982). However, I can put it no better than Norman Robson (1990) who states: '... it seems too much to expect that a bird will be caught *in flagrante delicto*.'

The seed of *S. romanzoffiana* is dust-like, as is the case with all other orchids. It has been put to me that the dust-like seed of *S. romanzoffiana* is blown over from North-Eastern America to the British Isles. I reject this for the following reasons. Sixty-six species of orchid grow wild in the North-Eastern United States. Three of these are introductions, and six also grow in the British Isles, namely, *Coeloglossum viride* (Frog Orchid), *Corallorrhiza trifida* (Coralroot Orchid), *Goodyera repens* (Creeping Lady's-tresses), *Liparis loeselii* (Fen Orchid), *Listera cordata* (Lesser Twayblade) and *S. romanzoffiana* (Brown, 1993). However, of these six species only *S. romanzoffiana* has an amphi-Atlantic asymmetrical distribution. Including *S. romanzoffiana*, ten members of the genus *Spiranthes* are present (Brown, 1993). If the seed of *S. romanzoffiana* has indeed blown over from North-Eastern America to the British Isles why are none of the other fifty-seven species present in the British Isles?

In R.W. Butcher's *A New Illustrated British Flora*, 1961 (Butcher, 1961), there is a drawing of a seed of *S. romanzoffiana*. There is some dispute as to the place of origin of this seed. Why does it matter? Because there are only three other authenticated examples of seeding in *S. romanzoffiana* in the British Isles. It is, thus, important that the maximum amount of information is obtained in each instance so that we can try and gain some understanding of why this orchid apparently so rarely sets seed in the British Isles. In chronological order the other three examples are as follows. John Heslop-Harrison (1953) states: '... there are few years when it (*S. romanzoffiana*) sets seed in Northern Ireland...' John Heslop-Harrison (*pers. comm.*) knew the Lough Neagh population of *S. romanzoffiana* well as he was living at the time in Northern Ireland. He was Professor of Botany at Queen's University, Belfast, from 1954 to 1960[!] (Buczaki, 2004). He made a chromosome count on *S. romanzoffiana* material from Lough Beg near Lough Neagh (D.M. Moore, 1982). Secondly, in 1969 Raymond Piper drew Figure 1 A (see p. 40) from a plant in seed at Lough Beg. And thirdly, Darach Lupton found a plant in seed on the southern shores of Lough Conn in County Mayo in the Irish Republic in 2003 (R.L. Gulliver, *pers. comm.*). In my opinion the seed came from Lough Neagh in Ireland.

What is my reasoning? As the drawing of the main plant is in full bloom, the drawing of the seed must have been added later. If the drawing of the seed could be added, then so could the place of origin of the seed. Butcher apparently deemed this unnecessary as he had not identified the seed as coming from *Spiranthes gemmipara*, that is, County Cork. Butcher treats *S. gemmipara*, found in south-west Ireland, as being distinct from *S. romanzoffiana*. Most authorities do not now recognise this distinction. Thus, as the seed was not *S. gemmipara* it did not come from County Cork but from

Lough Neagh, Butcher's source of *S. romanzoffiana*. In that Butcher had to take the extraordinary step of using what he describes as 'unripe' seed to figure in his plate, I find it very difficult to believe that he did not remember its source.

Butcher (1961) describes this seed as 'unripe'. It was, therefore, fresh and came from the British Isles. It did not come from North America. Having an amphi-Atlantic asymmetrical distribution, *S. romanzoffiana* only occurs in North America and the British Isles. In any event, in a work entitled: *A New Illustrated British Flora* I cannot believe that Butcher would have used American seed without making it absolutely clear. Further, as it was fresh, it did not come from a seed collection, the source of some seeds depicted in other plates in Butcher (1961), as made clear in his preface.

Butcher (1961) states that *S. romanzoffiana* occurs: '... very rarely in the Outer Hebrides and has been recently found in Devon.' *S. romanzoffiana* was not found in the Outer Hebrides until 1967 (Horsman, 1989). As Butcher did not know the distribution of the plant in Scotland, it is not unreasonable to assume that the seed did not come from Scotland. In 1957 this orchid was found in Devon, still the only English record. Only seven plants were found of which five were damaged by grazing animals (Anon., 1958). Would a responsible botanist have removed seed from such a delicate population?

Thus, we come back to Ireland and Lough Neagh.

Acknowledgements: I particularly want to thank Raymond Piper for giving me permission to reproduce his marvellous drawings of the Irish Lady's-tresses orchid. I am delighted to have the privilege of putting them into the public domain. I thank Richard Gulliver for first drawing my attention to the Butcher plate of *S. romanzoffiana*. I would also like to thank Richard Bateman for his interest, and Norman Robson for help with my work on *Hypericum canadense* in Ireland, and for the Ecuadorian record for this plant.

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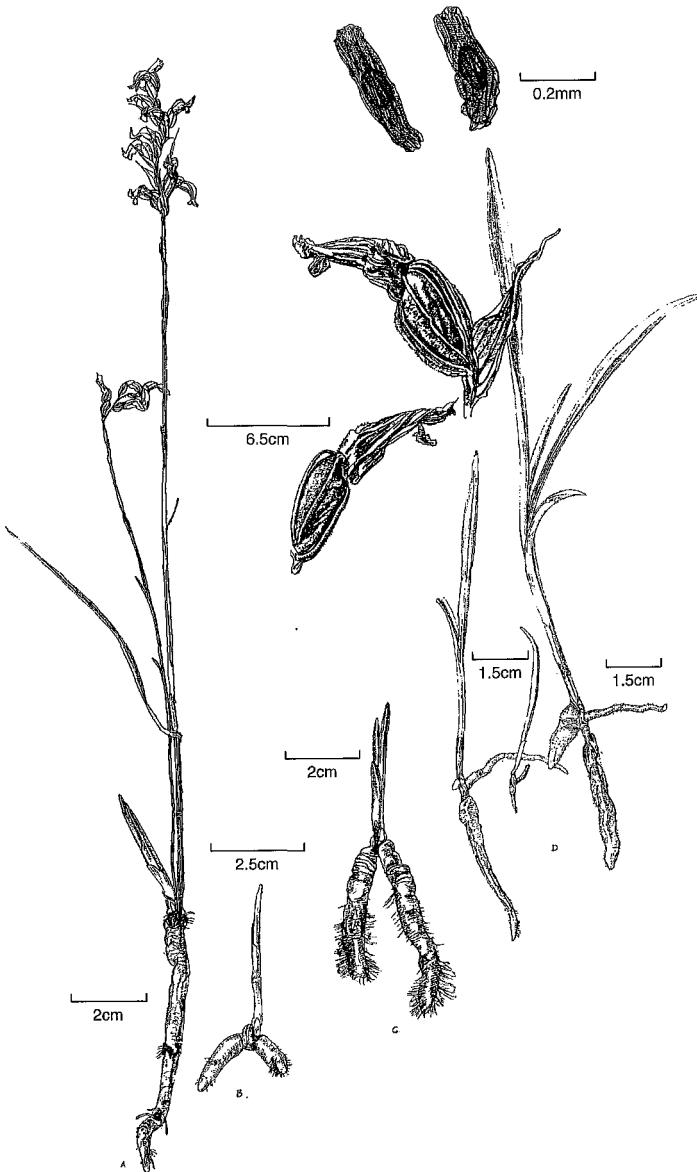
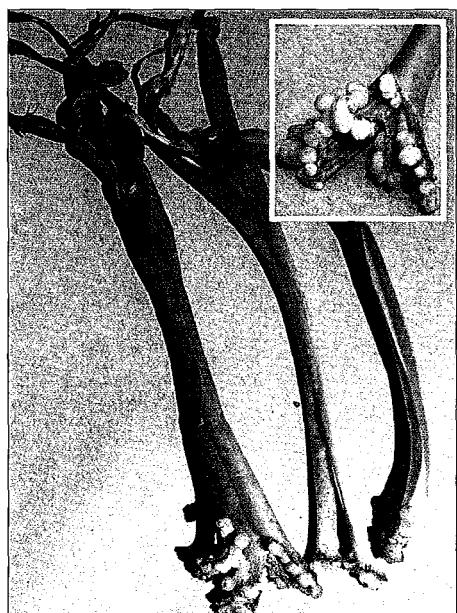


FIGURE 1

- A. Lough Beg. *Spiranthes romanzoffiana* showing tuber & remains of 2 flowering stems from summer. Note small tubercles at end of tuber. (November. 7. 1969).
- B. Lough Neagh. Young tubers found on the site of plant which flowered 1968.
- C. Lough Corrib. Leaf spike of next year's plant from flowering stem 1969: note root hairs and small white shoot on stem.
- D. Above studies of root system of young *S. romanzoffiana* from Lough Beg & showing adventitious root on each 6/7/79.



Houttuynia cordata at Waunygwial Fach, Camarthenshire. Photo R.D. Pryce © 2004 (p. 63)



Spanish Bluebell showing bulbils at base of leaves.
Both photos J. Wynne-Jones © 2004 (p. 51)



Reseda phytisma at Peacehaven, E. Sussex
Photo A.G. Knapp © 2005 (p. 50)



Fallopia dumetorum in Herefordshire; amongst *Chamerion angustifolium* (1) and showing fruits (r). Both photos J. Wynne-Jones © 2004 (p. 21)



Hen-and-chickens Daisy at Sudland,
Dorset.

Photo E. Pratt © 2004 (p. 22)



Typical south-facing wall with *Polypodium* sp. and *Soleirolia soleirolii*, Glamorgan. Photo A. Lewis © 2004 (p. 41)



North-facing wall with *Campanula poscharskyana*, *Asplenium trichomanes*, *Cymbalaria muralis* and *Adiantum capillus-veneris*, Glamorgan. Photo A. Lewis © 2004 (p. 41)



Salix caprea × *S. cinerea* × *S. repens* Braunton Burrows, N. Devon
Photo J. Webb © 2004 (p. 16)



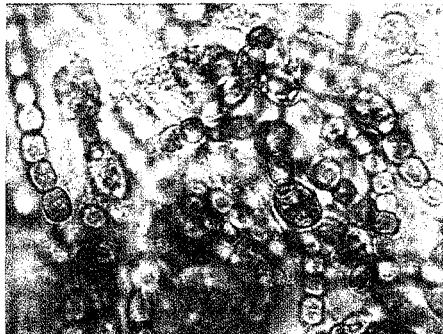
Mimulus × *robertsii*, Esgairwen, near Brechfa, Carmarthenshire
Photo R.D. Pryce © 2004 (p. 61)



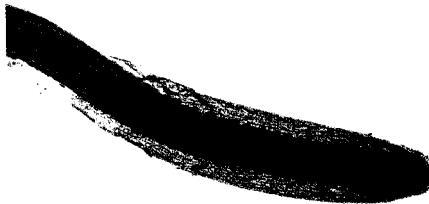
Elytrigia × *drucei* on saltmarsh south of Kilcoole railway station
Co. Wicklow. Photo S. Reynolds © 1999 (p. 19)



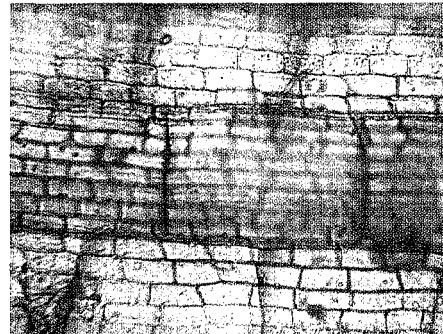
Troodos mountains, Cyprus © 2004 (p. 66)



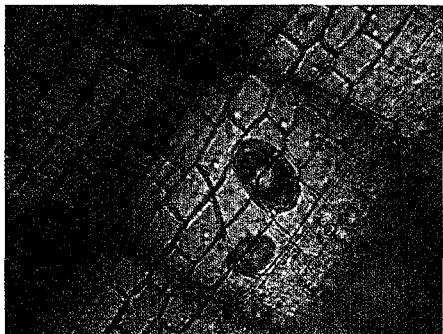
1. Anabaena chains from *Azolla* leaf



2. *Azolla* root tip and cap (Iodine stained)



3. *Azolla* root architecture; Endophytes
0.5 to 2 μ diameter



4. Root cortex. Green Endophytes
around large brown ovoid (25 \times 12 μ)



5. Root cortex. Green ovoids 6 \times 9 μ and
tiny Endophytes 0.5 to 1.5 μ diam.



6. Stippled Algal clump 30 μ across, and
green amoeboid outliners

Figs. 1 – 6 Water Fern Endophytes
Photos J.E. Oliver © 2004 (p. 31)

SUBURBAN FERNS

Richard Middleton's note in *BSBI News* 98: 28-30 coincided neatly with mine in the January Newsletter of the Llanelli Naturalists. The suburb in question, Sketty, is in Swansea and, like Kingston Upon Hull, near the sea and many of its houses were built during the period of expansion between the wars. Their brick walls however are taller, about two metres on average and of the retaining variety, i.e., they have no 'backs', and although generally facing south, the mortar between their engineering bricks rarely dries out completely. Thus they support the range of ferns mentioned by Richard (except *Asplenium marinum* (Sea Spleenwort)) plus many flowering plants like, for example, *Campanula portenschlagiana* and *C. poscharskyana* (Adria and Trailing Bellflower), *Alyssum saxatile* (Golden Alison), *Erigeron glaucus* (Seaside Daisy), *E. karvinskianus* (Mexican Fleabane), *Verbena bonariensis* (Argentine Vervain) and *Soleirolia soleirolii* (Mind-your-own-business) (see photo, Colour Section, plate 2). To compensate for the absence of *Asplenium marinum* the Sketty walls do support two small colonies of *Adiantum capillus-veneris* (Maidenhair Fern), one on the south-facing brick, the other on a high, free-standing, north-facing wall in one of the back lanes which are a feature of many older suburbs. This particular lane runs east to west and is fairly damp and shaded (see photo, Colour Section, plate 2). The brickwork is Victorian and, sadly from our point of view, has largely been destroyed to make way for garages.

As to whether Hull is unique, almost certainly not I would suggest, and the further south and west one goes the greater the variety; even more exotic species can turn up, *Pteris cretica* (Ribbon Fern) and *Cyrtomium falcatum* (House Holly-fern) for example.

Reference:

- LEWIS, A. S. 2005. On the Street - the weed flora of a Swansea suburb. *Llanelli Naturalists Newsletter* 71.
TONY LEWIS, 12 Cannisland Park, Parkmill, Swansea SA3 2ED

CATABROSA CORRECTED

Catabrosa aquatica (L.) P. Beauv. (Whorl-grass) is a relatively uncommon aquatic perennial grass. The bright green shoots of *Catabrosa* are wintergreen and thus luxuriant growth can be found during the winter months. The species is instantly recognisable, the lax fresh green growth and purplish sheaths diagnostic to many familiar with the species (Clive Chatters *pers. com.*). This account is based upon observations from three distant populations in Hampshire.

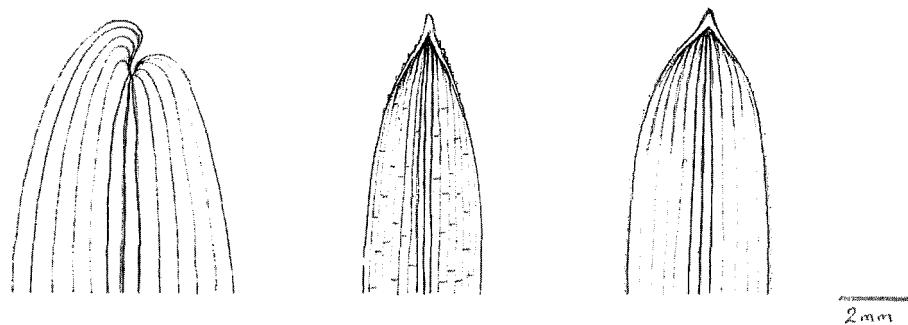
Perhaps with the exception of *Glyceria maxima*, *Catabrosa* may occasionally be confused with other *Glyceria* species in the vegetative state. This problem is confounded by the errors in Hubbard's *Grasses* 3rd edn (1984) which means these grasses cannot be keyed out reliably. In Hubbard's vegetative key (p387 onwards), *Catabrosa* is referred to having cross-veins in the leaf, although the previous couplet (82a) requires the user to select '...without cross-veins and air-spaces...or if not, then the sheaths with free margins'. Very confusing! Cross-veins (or more precisely cross-partitions since vascular tissue is absent) are in fact a diagnostic feature of *Glyceria*. The margins of the leaf-sheath, although open in the distal third, cannot be described as free and are clearly united in a zip-like manner. The blade is also described as 'equally wide throughout' however it is usually gradually tapering, a character more akin to the North-west coastal variety, var. *uniflora*, as described in the *Plant Crib* (1998) and listed by Stace (1997). Haslam *et al.* (1982) agrees that the blades of *Catabrosa* are gradually tapering but adds that submerged leaves may be parallel sided. The apex, although blunt, can be asymmetrically notched in mature leaves, a character possibly absent from any other European grass! *Catabrosa* has also been observed to branch readily, a plant Hubbard describes as unbranched. The ligule illustrated by Hubbard most likely depicts that of the uppermost leaf of a flowering culm. The vegetative shoots, or tillers, of any grass may have a much shorter ligule, thus such illustrations may be somewhat misleading in this otherwise indispensable field guide when identifying non-flowering grasses.

The ecology of *Catabrosa* is also of interest as it may be abundant under shade where it apparently out-competes *Glyceria* (*pers. obs.*). This somewhat concurs with the recently corrected Ellenberg

values published in *PLANTATT* (2004), although *Catabrosa* seems to favour the more permanent shallow water, with *Glyceria* often confined to the waterlogged margins.

The frequently perennating and ever-variable *Poa annua* (Annual Meadow-grass) may also occur in habitats similar to *Catabrosa*. Portal (2005) describes an aquatic variety of *Poa annua* (aptly named var. *aquatica* Ascherson) unrecognised by Stace (1997). This is seemingly an impressive and unmistakable gargantuan *Poa annua* growing to 65cm! Its distribution in Europe is relatively unknown and thus its presence in the British Isles is quite likely. Both *Poa annua* and *Catabrosa* may show transverse wrinkling of the occasional leaf just to add to the confusion, however large air cavities are distinct in the sheath of *Catabrosa* but absent from *Poa*. Additionally, *Catabrosa* and *Glyceria* have distinct grooves either side of the midrib, visible as pale translucent 'tramlines' when held against the light. These tramlines are often indistinct in *Poa annua*, although they are actually characteristic of several species of this genus.

The three species can also be separated by examination of just the leaf apex and are superbly drawn from fresh material by Joanna Haigh of the Hampshire Biodiversity Information Centre. The *Catabrosa* is illustrated as to highlight the uniquely asymmetric apex, with the *Glyceria* illustration and key description based upon *G. ×pedicellata* (*G. fluitans* × *G. notata*) (Hybrid Sweet-grass) (identification confirmed by flowering characters).



Catabrosa aquatica

Glyceria ×pedicellata

Poa annua

del. J.M. Haigh © 2005

Below is a vegetative key to the three 'aquatic' genera (arranged in one of several ways) describing a number of the main vegetative differences:

Leaves folded (not rolled) in bud; leaf sheaths closed, at least when young:

Lvs with cross-veins absent or obscure

Lf sheaths with air cavities present

Lvs with smooth margins, apex blunt with an asymmetric notch, bright green, often wrinkled, deep furrow either side of midrib (visible as translucent tramlines), gradually tapering.....*Catabrosa aquatica*

Lf sheaths with air cavities absent

Lvs with margins minutely scabrid towards apex (not to touch), apex acute or blunt, yellow-green, often wrinkled, furrows (and translucent tramlines)

± indistinct, ± parallel sided.....*Poa annua*

Lvs with cross-veins prominent

Lf sheaths with air cavities present

Lvs with margins minutely scabrid towards apex (often to touch), apex acute, dark green, never wrinkled, deep furrow either side of midrib (visible as translucent tramlines), ± parallel sided.....*Glyceria ×pedicellata*

Incidentally, if anyone likes a challenge and can help me reliably separate the *Glyceria* species vegetatively please let me know! Many thanks to Eric Clement for his useful critique of this article.

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- JOHN POLAND, 91 Ethelbert Avenue, Southampton, Hants SO16 3DF; jpp197@alumni.soton.ac.uk

CONSERVATION NEWS & VIEWS

AN INTRODUCTION TO RE-INTRODUCTIONS

Some of the most contentious discussions in conservation revolve around whether populations of declining species should be augmented or re-introduced. While there are many published examples of re-introductions for animals, there is rarely anything available about plants, as for example in the International Union for Conservation of Nature and Natural Resources (IUCN) Species Survival Commission Newsletter (www.iucn.org/themes/ssc/species/spec-int.htm). In Biodiversity Action Plans a very frequent component under the heading of 'Species management and protection' is to 'restore' the species to a given number of former sites. It is understandable that rare plants re-introductions are usually not widely publicised to protect the plants. If the project has failed then it does not make a very interesting story; but does the lack of open reporting on re-introductions mean that many are not successful? For some projects plants will not have had time to establish yet and success can only be measured once regeneration occurs, but it would be useful to know even the percentage of re-introduced plants that have survived for a given number of years. A lack of information means that others are deprived of knowledge that could be useful in planning further work.

I would like to start with some thoughts on why species decline and why it might seem a reasonable option to attempt a re-introduction. The *Woodsia ilvensis* (Oblong Woodsia) project is a useful example and I can give a summary of the results so far. Secondly, on a completely different tack, there is concern about many arable plants including *Fumaria purpurea* (Purple Ramping-fumitory), which calls for a very different approach.

It is well known that many species are present in fewer sites or in smaller numbers than previously and there are different explanations for this. With some species the habitat has been lost, due to changing land use. For example, permanent pasture has suffered from 'improvement', ploughing and drainage and these changes are reasonably obvious. However, such pasture is itself the product of centuries of traditional management, whether for hay or grazing and would not have covered such a wide area without human influence. With the possible exception of exposed mountain tops, inaccessible cliffs and steep wooded river valleys there will be few areas in Britain that have not been changed by some kind of management. Even the high tops have been grazed more than might have occurred in an undisturbed eco-system with appropriate top predators. When we attempt to 'restore' or 'regenerate' an area there is often no precise model to adopt. Our perception of a given type of vegetation is frequently based on an arrested point in a succession. We expect to see heather moorland and think of it as more natural than grass fields, but each, with its accompanying range of species, is the outcome of a particular management regime, neither of which would occur in such abundance 'naturally'. It is unrealistic to imagine that we can go back in time to past vegetation, and in any case which period would we choose? If we are interested in arable weeds we might prefer pre-improvement farming. For forested areas it might be necessary to 'go back' several centuries or even thousands of years. We cannot go back; the best we can do is to go forward, conserving and

encouraging the best of the vegetation that still remains, which returns to the difficulty of vegetation management and how to encourage species that are present in low numbers or small populations.

The problem begins when there are few or no surviving species to re-colonise. With a dynamic mosaic of natural habitats there would be constant change as trees died and left more open areas which in turn became more densely vegetated through time. With the fragmentation of our current landscape local seed or spore sources are probably absent. If the habitat has been irretrievably changed and is no longer suitable then re-introductions are out of the question. There is more difficulty with sites that appear to be little changed but are still experiencing decline.

A major factor is changing climate. Since the ice retreated during the present interglacial period the climate has variably been temperate, warmer and drier, warmer and wetter, cooler and drier, or as at present, cooler and wetter, all within the space of 10 000 years. At different times some species would have fared considerably better than others and present distributions are a combination of the interaction between climate and land use changes. As the ice melted there would have been abundant rock debris providing nutrient-rich conditions with many open pools. With natural succession there would have been less open water and more trees. Wetter conditions, possibly accentuated by tree-felling, heralded the faster growth of peat with further cycles of drier and wetter periods, each with appropriate vegetation. There has never been a stable, unvarying equilibrium in the British vegetation as it would always have been changing in a dynamic way, adapting to new circumstances and frequently with the addition of new species as well. This process continues.

Rare plants have always been especially attractive to plant collectors and collecting in the past has made them even rarer. Once the plants have declined to only a few individuals there might be problems with inbreeding. Some species require cross-pollination to produce viable seed and this might not be possible. Or the plants might still be present but if the pollinating insect is affected by changes elsewhere then again pollination might not take place. This is where a detailed knowledge of species' breeding systems is essential before any re-introductions take place. The source of the plants has to be investigated carefully. The usual procedure is to propagate plants from the nearest surviving populations and use these. The further the populations are from the re-introduction site, the greater the risk that the plants will not survive as they will be less well adapted to the local conditions. However, the nearest population might consist of only one or two plants and the plants might be inbred and produce seed or seedlings that are not very vigorous and competitive; an unhelpful re-introduction which is unlikely to succeed. Some species such as *Linnaea borealis* (Twinflower) are readily propagated vegetatively, but if the plants require a genetic mix to promote outcrossing, a re-introduction might inadvertently consist of a clone with no greater capacity to reproduce than the few surviving plants in the nearest population. An alternative but more controversial strategy with small inbred populations is to deliberately use a mixture of plants derived from several other populations of known genetic variation, even if it means selecting sources geographically removed from the re-introduction site. An example of this is the genetic mixture that was used for a re-introduction of *Woodsia ilvensis* in Teesdale, where there were no adjacent plants to propagate from.

A methodical re-introduction is not cheap. The proposal has to be fully discussed with appropriate conservation agencies, sites surveyed to define exactly the existing distribution of the plant in question, breeding systems investigated, and source plants identified. Propagating the re-introduction plants (with appropriate permits for collection of seeds/spores) may well take some time and require considerable horticultural expertise. While it might be difficult to grow plants in a nursery, persuading them to survive in the field with little or no aftercare is an even greater hurdle to overcome. It is vital that precise records are kept of planting sites and positions so that the progress of individual plants can be monitored. Exact locations must be recorded if regeneration is to be confidently recognised. All these factors are described in detail in the IUCN guidelines (www.iucn.org/themes/ssc/pubs/policy/reinte.htm).

If the habitat is apparently still suitable, but a given species has been lost due to a known reason, such as over-collecting, then it is a good candidate for a re-introduction. *Woodsia ilvensis* has completely gone from many of the sites where it was formerly well known. Careful searches, using ropes, had failed to find any plants at all. One population found in the 1950s has declined from twenty-five to two plants within fifty years and seems likely to disappear altogether. Although the decline of this species is not fully understood, it was felt that this was the last chance to help this

species before it disappeared from the area. It was decided not to plant near the existing plants (augmentation) so the two re-introductions in the Scottish Borders were made into former sites three and five kilometres away. Because these re-introductions were so close, the plants were derived from spores from the last four plants surviving in two populations in the adjacent valley (only three now). These plants might be inbred, but it was felt that it was most appropriate to use local material. We do not know how frequently wild ferns produce new plants. All the existing populations appear to consist of large, old, multi-crowned plants. It might be that natural populations only have the right conditions to regenerate every few decades, or even less frequently. Before the heavy collecting in the past, there would have been more plants producing spores, so that if suitable conditions did occur, new plants would appear. With small populations, the probability of regeneration is reduced. Through this re-introduction programme more plants will be producing more spores so that if the time is right, it might well happen. Of the first re-introduction near Moffat 60% of the plants have survived after five years and 72% of these were fertile in 2004. The second re-introduction in this area was only made last winter and the plants have not yet been assessed. Two further re-introductions in Teesdale had 48% and 88% survival after four years, both with 70% of the plants fertile. A re-introduction is essentially buying time, although if the climate is changing significantly then the regeneration might never happen. Only a considerable passage of time will tell if it has been successful and this should be borne in mind as a long-term well-funded monitoring project is essential to gain the full benefit from the vast amount of work which would have preceded a re-introduction.

A very different picture arises from the development of species that were introduced with food crops. *Chrysanthemum segetum* (Corn Marigold) and *Papaver rhoeas* (Common Poppy) were introduced so long ago they are now thought of as part of our 'native' vegetation although officially classified as archaeophytes. Also the present species are many generations away from the south-temperate European plants that were first imported. Some species, *Agrostemma githago* (Corn Cockle) for example, appear to have been less able to contribute to the soil seed bank and depended on repeated re-introduction in grain to appear regularly in the fields. With improved seed cleaning this no longer happens. However, many other arable species have declined due to more extensive use of herbicides, autumn sowing that discourages spring-germinating species, increased levels of fertiliser combined with plant-breeding that produces shorter and denser crops. This means that plants that have adapted to local conditions over thousands of years are progressively being lost. The decline of arable species has implications for the future survival of many species including *Fumaria purpurea*. This endemic species has evolved in Britain from one species that colonised as the ice retreated (*Fumaria muralis*) and an introduced species (*Fumaria officinalis*) that hybridised and then produced a new species through chromosome doubling. The species that thrive in an arable context require very specific conditions and have many mechanisms to ensure their survival. If like Corn Cockle they depend on being stored among grain and re-sown then they are unlikely to survive into the future. If they have short-lived seed banks that cannot survive between rotations they also have a problem. But many weed species have long-lived seeds, including tactics like delayed dormancy.

However, it is now more than fifty years since the major changes were initiated. There might at this point only be a small number of fields left with the capacity to produce a wide range of arable weeds. Few seed-banks are of sufficient longevity to survive through decades of intensive management so that time is probably running out for arable plants. On a conventionally managed farm it has become remarkable to see fields with even a few Common Poppies or Corn Marigolds. Set-aside schemes have allowed existing species to set seed and supplement the seed bank but often this involves only a limited range of predictable species. More interesting is the range of arable plants that appear on soil from areas that have been grassed over for some time, illustrating the seed bank potential where it has not been systematically depleted. As it has been recognised that the absence of weeds not only means fewer seeds for birds and fewer food plants for invertebrates to feed on (which are also food for birds) there has been increasing interest in having species-rich field margins. There are also agri-environment schemes encouraging the sowing of wild plant seed. This is not entirely straightforward as wild-flower mixes are sown with seed that is not of local provenance. How many local authorities and private individuals carefully research the local flora and consider the superior adaptations of local plants that have been modified over several millennia?

There is no actual legislation covering the source seed for large-scale restoration projects. There are initiatives to encourage the use of local seed such as *Flora Locale* (www.floralocale.org). Within Scotland the Flora Celtica project financed by the Scottish Executive explored the sustainable development of Scottish plants with recommendations on their use (www.scotland.gov.uk/cru/kd01/orange/sdsp-00.asp) and with new roadside planting there is guidance on using local provenance seed (www.scottishexecutive.gov.uk/library5/environment/smts-01.asp). It is encouraging that the Scottish Executive were able to specify the use of local seed in schemes that they funded.

In some instances local seed might not be available. In the time that would be taken to bulk up sufficient quantities enthusiasm for the project might wane, or it does not fit within the timescale of a community project, so it is much faster and cheaper to import seed. Does this matter, especially as the plants in question were originally imported? If it does matter, then the whole issue requires a higher profile as many people with the best of intentions will be unaware that there is a problem. It could be said that if species are not well adapted to the area in which they are planted, then they will not survive anyway. But for some specific species, like *Fumaria purpurea*, I would still be concerned if re-introductions did not use local provenance seed. (How local is local, 10km, 100km?). Is it possible, or feasible, to have a list of 'special' species that ought to be derived locally while others are less significant?

There is quite rightly an increasing emphasis on the conservation of habitats rather than of individual species. Arguably if the appropriate habitat is provided then spores and seeds will blow in, and species will re-establish. The problem is that with a depleted seed bank and fragmented 'natural' vegetation, in many instances there are no longer local sources. This applies not only to the rarer species that merit projects in themselves, but also to the commoner native species that typically are included in seed-mixtures and are entirely unregulated. Having acknowledged the extent to which most of the country is managed, and that what we get is so much a product of our input, does it perhaps become more acceptable to 'garden' the landscape? Re-introductions are viewed with suspicion by many people and it will be useful to hear more about the subject. It would be especially interesting to have examples of re-introductions more widely available.

Acknowledgements: Thanks for comments from Jim McIntosh, Douglas McKean, Luke Gaskell and Mary Gibby.

Information on the *Woodsia ilvensis* re-introduction programme:

DYER, A.F., Lindsay, S. & Lusby, P.S. 2000. *Woodsia ilvensis* in Britain - last chance or lost cause? *Pteridologist*, 3: 137-142.

LUSBY, P.S., LINDSAY, S. & DYER, A.F. 2002. Principles, practice and problems of conserving the rare British fern *Woodsia ilvensis* (L.) R. Br. *Fern Gazette*, 16: 350-355.

LUSBY, P.S., LINDSAY, S. & DYER, A.F. 2003. The role of Botanic Gardens in species recovery: the Oblong Woodsia as a case study. *Sibbaldia*, 1: 5-10.

MCHAFFIE, H.S. 2004. *Woodsia ilvensis* re-introduction programme. *Pteridologist*, 4: 67.

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ALIENS

AGASTACHE RUGOSA – AN ALIEN NEW TO BRITAIN

The genus *Agastache* (Lamiaceae) consists of 22 species of herbaceous perennials native to N. America (incl. Mexico) and E. Asia (1 sp. only). Several have become very popular in British gardens in recent years; some are sterile hybrids but at least one species sets abundant seeds in gardens and will self-sow therein. The names are much confused, but three species (at least) could be involved, hence the Key below. Currently, all records of escapes refer to *A. rugosa*, to wit:

- v.c.17 (Surrey). Cleared ground beside RHS garden tip, Wisley village. Sept. 2004. Kathryn Hart *et al.* 3 plants.

- v.c. 29 (Cambs). Victoria Street, Ely. Sept. 2001. R.M. Payne, *det.* Ken Beckett, **Herb. RMP.** 1 plant. See *Nat. Cambs.* 44: 51 (2002), and republished here (for 4th time!).
- v.c. 62 (NE Yorks). Caravan site, Lebberston. J. Clarke, ?2003. **Herb EJC.** 1 plant amongst nettles.
- v.c. 95 (Moray). Rubbish tip, Elgin, Oct. 2002. I.P. Green, *det.* EJC. 2 plants.

I have heard of other *Agastache* records, but precise details have yet to reach me.

A. rugosa (Fischer & Meyer) Kuntze is a native of E. Asia (E. & C. China, USSR, Japan, Korea and Taiwan), growing ± unbranched up to 80-150 cm tall. An accurate description by A.C. Whiteley appears in *The European Garden Flora* 6: 220 (2000). Good illustrations are hard to find (Whiteley quotes none!) – hence the great value of our cover drawing which Ruth Freeman enjoyed drawing for us, ‘intoxicated’ by the strong, pleasant peppermint scent that emanates from all parts of the plant. C.G. Hanson (CGH) kindly supplied this plant, grown from seed ex Elgin (see above).

Accounts of *Agastache* in our gardens are mostly now a little dated – *Baileya* 1(4): 115-117 (1953) gives a key to 8 species (incl. *A. rugosa*). Just six species are discussed in *Dendroflora* 28: 3-6 (1991) wherein *A. rugosa* is depicted (but just 1 leaf and 1 bract); this paper also contains a long, useful list of references, incl. a ref. to *Icon. Corm. Sin.* 3: 630 (1974) for a line drawing.

CGH reports seeing *A. 'Blue Fortune'* at Waterperry Gardens, nr. Oxford, Sept. 2004: it ‘looked like’ the *A. rugosa* that he cultivates. *A. rugosa* is currently very widely grown, usually misidentified as the N. American *A. foeniculum* (Pursh) Kuntze (*A. anethiodora* (Nuttall) Britton; *A. anista* nom. inval.), the genuine article of which I have yet to encounter! (I do wonder whether a fertile *A. foeniculum* × *A. rugosa* now exists in gardens). *A. urticifolia* (Bentham) Kuntze, again, looks very similar. The following key is based on that of Whiteley (*ibid.*):

Key

Corolla 12-16mm

A. urticifolia

Corolla 6-8mm

Lvs sparsely to densely hairy beneath; floral bracts 1-4mm, lanceolate to linear;
nutlets 1.5mm, dark brown

A. rugosa

Lvs densely white-hairy beneath; floral bracts 4-6mm, ovate; nutlets 1.2mm, yellowish brown

A. foeniculum

My deep thanks are again due to Mike L. Grant (RHS Gardens) for help with the literature and for pointing out that it is *A. rugosa* that self-sows so readily in British gardens.

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CORTADERIA SELLOANA DOES SELF-SOW ABUNDANTLY IN BRITAIN

Much confusion over the graminaceous genus *Cortaderia* (and its allies) has reigned almost since its inception. Untruths still persist in recent literature. Long ago, only the female plants of pampas-grass were grown in our gardens – ‘the silky plumes of the female plants are much more beautiful than those of the male [sic.]’, quoting C.E. Hubbard in *RHS Dictionary of Gardening, Supplement*, 2nd ed. (1969), p.899, and this is still the only morph that Stace describes in his *New Flora*, ed. 2 (1997). In recent times, however, both the male and bisexual plants have been adored, and hence we now have an abundance of self-sown plants in Britain. This very variable species is, in truth, gynodioecious (not gymnodioecious, as in Sell & Murrell’s *Flora*, vol. 5: 223). ‘Although seeds are formed on bisexual plants they are never abundant,’ quoting Edgar & Connor, *Flora of New Zealand*, 5: 498 (2000) – i.e. this species is largely self-incompatible and is thus effectively ‘dioecious’ (as per Stace’s *New Flora*, 2nd ed.: 899).

Our elephantine *New Atlas* (2002), p.799, tells us that this species is ‘reported to regenerate from seed, but such records require confirmation.’ I oblige herein. No one planted the one seedling that appeared in my own flower bed a few years back – admittedly just one in 16 years from my huge parent tussock – 3 inches more, and it would have been a garden escape!

Genuine escapes can be found in pavement cracks in Gosport (S. Hants, v.c. 11) – there are two between my home and the local supermarket, 1km away. At Seafield, W of close-by Lee-on-Solent,

abandoned allotments contained the parents, plus a dozen or more of seedlings which were reported in April 1999 by D.R. Allan and J.A. Norton.

Plants freely occur on old walls (if you can recognise just the leaves!) – e.g. around Lake Battery (Isle of Wight) and Hampton Court Palace Park (Middlesex), with, surprisingly, self-sown *Hypericum hircinum* (Stinking Tutsan) in the latter spot. It also loves the dry ballast of railway lines – e.g. between Portsmouth and London, as well as sandy sea cliffs – e.g. Boscombe and Bournemouth (both S. Hants, 2000, B. & J. Goater).

H. Bowen in his *Flora of Dorset* (2000), p.272, tells of ‘a large colony on made-ground at Lodmoor which must have been self-sown...and the same is true of a dwarf form at Derbys Corner...and on cliffs W. of Branksome Chine.’ Much more surprisingly it can also self-sow happily into swamps – e.g. North Oakley Inclosure, Apr. 2000, Mrs A.E. Bolton; edge of reedbed, Stanpit Marsh, R.P. Bowman, Jan. 1990; open willow swamp, Salterne Marsh, R.P. Bowman, Mar. 1989. All from S. Hants, amongst the 43 records sent to me by the late Paul Bowman, *pers. comm.* 8/1/2003.

Indeed, this species is a widespread aggressive invader in California (and elsewhere), and I suggest that this trait is now being revealed in Britain, especially in the warmer and more coastal parts of England. Global warming, again, I cry. Daily, our weed flora is more resembling that of California.

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CORTADERIA RICHARDII (ENDL.) ZOTOV AND ALLIES

Remarkably little has been written about *Cortaderia richardii* (Early Pampas-grass): only those members with computers can read the CD supplied with the BSBI *New Atlas* (2002), wherein T.D. Dines summarises current records. Alex Lockton has very kindly updated this account for me by supplying all 30 records now on the BSBI Vascular Plants Database (14/2/2005).

The (apparent) first British record is from Lyme Regis cliffs (Dorset) by T.B. Ryves in 1980. Alas, there is no voucher specimen to support the record, and an error seems likely. Dr H.J.M. Bowen was probably influenced by this record when he recorded it in 1987-1999 from this locality, as well as from Canford tip, Lodmoor old tip and Huish. Dr S.L. Jury tells me there are no vouchers in RNG, where the majority of his herbarium now resides. Recently, at my request, E.A. Pratt has enthusiastically visited all these spots (and more) but has totally failed to find this species either in or out of a garden – but lots of *C. selloana* (Pampas-grass) were forwarded to me! Meantime, I have peered into 100's of private gardens in Hants, Surrey, Sussex, Isle of Wight and Dorset, and likewise have failed to locate one plant. It is apparently confined in this area to botanical gardens – Oxford, Kew, Wisley and Ventnor. Nor could I find a seedling therein!

BUT, completely the reverse picture is true in Scotland. Ian P. Green (IPG) tells me (*pers. comm.* 17/3/2003) the *C. richardii* is a very common plant in gardens in both Moray (v.c. 95) and Renfrews (v.c. 76). In his village of Bogmoor 11 gardens grow *C. richardii* and 4 possess *C. selloana*, the latter apparently never self-seeding. But *C. richardii* self-sows freely – certainly into wild situations in at least v.c. 92, 94 and 95.

In England, IPG has only seen *C. richardii* twice – in a garden in Wells (v.c. 6) with ‘one plant self-sown at base of a wall on the opposite side of the road’; and ‘in one garden in Cornwall as well, here it had also self-sown itself at the base of a garden wall’. Both records were made in 2002.

In Scotland *C. richardii* is flowering at its best around late-June and through July (contrary to ‘Flowers 9-10’ given by Sell & Murrell’s *Flora*, vol. 5: 223), so missing the worst of strong winds and bad weather of late autumn, while *C. selloana* is at its best in November by which time the bad weather has arrived. Hence the prevalence of dwarf/short forms up here. These comments by IPG agree exactly with those of Christopher Lloyd in RHS *The Garden* 110(3): 38 (March 1985), to quote:

‘One hears varying reports on the flowering or otherwise of various clones of pampas grass, *C. selloana*, in Scotland, but quite often it misses the boat through being overtaken by winter before it has produced its plumes. Much grown and largely taking its place is the New Zealand toe-toe, *C. richardii*, which has the great advantage of flowering in July. Its slender inflorescences are charming in their prime but peculiarly bedraggled in decline.’

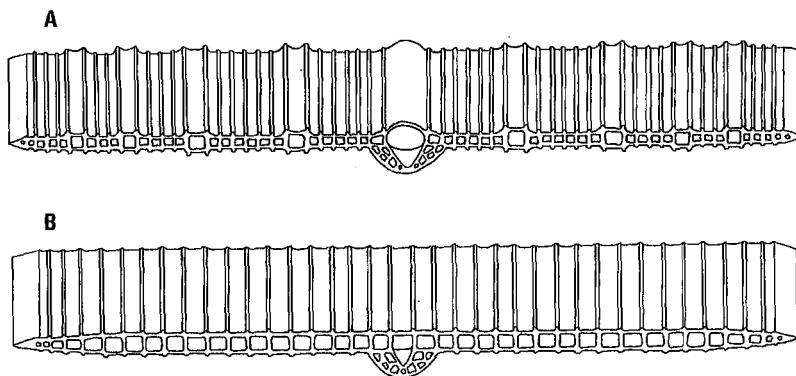
Roy Lancaster (RL) gives a fine illustrated account of *Cortaderia* (and the somewhat similar genus *Chionochloa*) in RHS *The Garden* 126(3): 198-199 (2001) where he tells how he has been struck by

the popularity of *C. richardii* 'on the milder, wetter western side of Britain, especially in Scotland and the northwest of England as well as in Devon and Cornwall. There is no question that *C. richardii* enjoys moist conditions and is less drought tolerant than pampas grass.' RL explains that 'some confusion has been caused in gardening circles by the word 'toetoe' (a Maori name pronounced 'toyttoy') which is used in New Zealand to refer to all native cortaderias and not just the species as defined by botanists' – i.e. a reference to *C. toetoe* Zотов (1963), not ?yet in British gardens, and hence Sell & Murrell (*ibid.*) unusually choose this English name of toetoe, contrary to Stace!

A.O. Chater (AOC) reports that *C. richardii* has self-sown in Cards (v.c. 46) in 4 localities (1993–1999) and he has put a voucher into NMW. AOC has not seen *C. selloana* self-sown in v.c. 46, although it is by far the commoner species in gardens. With permission, I quote more from his interesting letter (*pers. comm.* 25/9/2003).

'*C. richardii*: Here are bits from my garden [in Penyrrangor, Aberystwyth]. The house sparrows go mad when the seeds ripen, 20 or more spend several days feeding on them. When 3 or 4 sparrows are on the same inflorescence it bends so it hits the ground and they all fall off and have to start again. They provide hours of entertainment. It self-seeds abundantly all over the garden.'

Although *C. richardii* is gynodioecious (like *C. selloana*), the bisexual plants are self-fertile, and hence the possible abundant progeny from just one plant. Oddly, in New Zealand 'natural populations comprise 62% bisexual and 38% female plants; populations exclusively of bisexual plants were found in Mackenzie Country,' quoting from Edgar & Connor *Flora of New Zealand*, 5: 497 (2000).



Leaf sections of *Cortaderia*: A – *C. richardii*; B – *C. selloana*

Del. D.P.J. Smith © 2004

AOC and Dr T.A. Cope (Kew) both point out – much to the excitement of John Poland!! – see *BSBI News* 98: 14–15 – that the leaves offer the best distinguishing character. AOC very kindly supplied leaf fragments from Aberystwyth of both species, from which Delf Smith, ever-eager to help, has drawn for us the splendid transverse sections of the leaf blades (no, not of roof girders!). If words are required, AOC offers them in the form of a key:

Longitudinal vascular strands in leaf ± equal, none forming conspicuous ribs.....*C. selloana*

Longitudinal vascular strands markedly unequal, every 4th to 8th longitudinal strand in leaf very much larger, forming a strong rib.....*C. richardii*

A blind man (yes!) can easily separate the two leaf blades when they are desiccated – those of *C. selloana* fold longitudinally in half exposing the very scabrid edge on one side, whereas in *C. richardii* the two leaf margins incurve and the leaf feels terete and smooth. Users of Stace's *New Flora*, ed. 2 (1997), p.899, are less successful, since the description of the lemmas has been inter-

changed between the two species! IPG relies on the jizz characters – the pendulous and ± secund inflorescence of *C. richardii* is a beautiful gold colour (*not* silver or purple) and the leaves not forming such dense clumps make an ID easy.

Beware! Fresh leaves of both species have cutting leaf edges: *Cortaderia* is clearly derived from the Spanish word *cortadera*, meaning a knife or other cutting instrument. Beware, equally of the literature. As pointed out by Ryves *et al.*, *Alien Grasses of the British Isles* (1996), p.70, this grass has seriously been confused with *Chionochloa conspicua* (*Arundo conspicua*) – e.g. the classic line drawing of *C. richardii* in J. Buchanan's *Manual of indigenous grasses of New Zealand* (1880), plate XXVII, is mislabelled thus. Remember that the upper glume is 1-nerved in *Cortaderia* and 3-7 nerved in *Chionochloa*, and they are now attributed to different subtribes (Edgar & Connor, *ibid.*, p.18, couplet 28a).

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OXALIS DILLENII ALSO IN NORFOLK

Following John Presland's note in *BSBI News* 98: 48, I can report that *Oxalis dillenii* (Sussex Yellow-sorrel) also occurs in my garden in West Norfolk. A small colony appeared in 2004 and is still there in February 2005. As Stace (1997) records it only from Sussex and the Channel Isles I had my identification confirmed by Ken Beckett.

The plants in my garden are at the base of the house wall, only a few yards from where I feed wild birds with cheap seed mixtures. Although no *Oxalis* species appear to have been recorded so far as bird-seed aliens (Hanson & Mason 1985, Hanson 2000), I understand from Gordon Hanson that a lot of bird seed is imported from North America, where *O. dillenii* is native, so presumably my plants could have arisen from a contaminant in the seed mixture.

References:

- HANSON, C.G. & MASON, J.L. 1985. Bird-seed aliens in Britain. *Watsonia* 15: 237-252
 HANSON, C.G. 2000. Update on bird-seed aliens (1985-1998). *Watsonia* 23: 213-215
 STACE, C.A. 1997. *New Flora of the British Isles*, 2nd edition, CUP, Cambridge.

R.M. PAYNE, Applegate, Thieves Bridge Road, Watlington, King's Lynn, Norfolk, PE33 0HL

OXALIS DILLENII IN DUBLIN

John Presland (2005) notes that *Oxalis dillenii* (Sussex Yellow-sorrel) is flourishing in his Wiltshire garden. In July 2004, I saw a single plant of this species growing in a weedy area of disturbed ground on the campus of University College Dublin (v.c. H21). There are a number of Irish records for *O. stricta* (Upright Yellow-sorrel) (Reynolds, 2002), some of which may refer to this species, but none for *O. dillenii*. The vegetation at the site was largely *Persicaria maculosa* (Redshank), with many other weedy species including *Apera spica-venti* (Loose Silky-bent). This latter species is also a rare alien in Ireland, so it is possible that seeds of both it and the *Oxalis* were introduced as a result of ongoing construction work in the area. Unfortunately, the whole area was strimmed during the late summer of 2004 and there has been no sign of the *Oxalis* since, so if it fails to reappear from seed it may have become extinct in Ireland already.

References:

- PRESLAND, J. 2005. *Oxalis dillenii* not extinct. *BSBI News* 98:48
 REYNOLDS, S.C.P. 2002. *A Catalogue of Alien Plants in Ireland*. National Botanic Gardens, Glasnevin
 GILES KING-SALTER, Dept. of Botany, UCD, Belfield, Dublin 4, Ireland; Giles.kingsalter@ucd.ie

RESEDA PHYTEUMA IN EAST SUSSEX

On 10th October 2003 one of the authors (AGK) decided to do some recording in one of the Local Change tetrads (TQ40A) which, at that time, had not received much attention. The chosen route was to the north of Peacehaven, along a footpath running out into fields at the eastern edge of the tetrad. Although on the South Downs, this area is unusual in that it has Tertiary sand overlying the chalk,

making the soil in the fields rather sandy. The first few hundred metres were singularly uninspiring but once in the arable things began to look more promising with the discovery of a mass of plants consisting of a roughly 50:50 mix of *Solanum nigrum* (Black Nightshade) and *Solanum physalifolium* (Green Nightshade) on the edge of a failed maize crop. A little further on was a white flowered *Reseda* species (see photo in Colour Section, plate 1) which, on careful inspection, was found to be *Reseda phytisma* (Corn Mignonette). This was later confirmed by Eric Clement (EJC). The plants were scattered for about 50m along a narrow strip of disturbed soil between the footpath and the edge of the maize. A quick search of a wider area, straying into the adjacent tetrad, TQ40F, did not at that point reveal any more *Reseda* but other interesting aliens were found, including *Physalis peruviana* (Cape-gooseberry) and *Abutilon theophrasti* (Velvetleaf) in a disturbed area among a mass of dead plants of a *Chenopodium* species (probably *C. album*).

A few days later AS visited the site to take a look at the *Reseda phytisma* and found over 100 more plants scattered throughout the maize crop in TQ40A and another colony in tetrad TQ40F, near the *Physalis peruviana*. This latter colony contained 14 plants scattered over an area of several square metres and included some very large plants, one forming a hemispherical clump more than 1m in diameter. Nearby was a single plant of *Fumaria vaillantii* (Few-flowered Fumitory), a very scarce species in Sussex. The *Reseda phytisma* colonies represent the first known occurrence of that species in Sussex.

In late June 2004 the site was re-visited by AGK and AS, accompanied by Eric Clement (EJC). *Reseda phytisma* was still present in the area between the footpath and the edge of the crop (once again maize) where it was first found. The quantities were similar to 2003 and careful examination showed that the plants extended along a strip 75m long. Once again both *Solanum* species were common in the same area together with a few plants of *Fumaria densiflora* (Dense-flowered Fumitory) and *Tagetes patula* (French Marigold). A search of the area nearby in TQ40F failed to reveal any of the species (including the *Reseda phytisma*) which were present in 2003. During this visit EJC suggested that *Solanum* hybrids might be present and that the best time to look for them would be late in the autumn as they were likely to remain green and in flower longer than the parents. As a result AGK re-visited the site at the end of November. Unfortunately the field had been ploughed right up to the footpath and planted with a winter crop but a few *Solanum* plants were still present at the edge of the path. Among these one plant stood out because it was still in full flower and those flowers which had gone over were not forming fruit. Closer examination indicated that it was a good candidate for the hybrid *Solanum nigrum* × *S. physalifolium*. A specimen from the plant was sent to Eric Clement who confirmed that it was indeed the hybrid.

From what we have seen it appears that *Reseda phytisma* and *Solanum physalifolium* are established at this site but their source is unclear. One possibility mentioned in Salisbury (1964) is that Lucerne, *Medicago sativa*, seed imported from southern Europe was a source of many aliens including *Reseda phytisma*. Unfortunately, we have no information on past crops at this site. At the time of writing the future of the plants is uncertain as it appears that the fields may be built over. If anyone has other recent records for *R. phytisma* or has any suggestions about the possible source of these plants we would be very pleased to hear from them.

We would like to thank Eric Clement for his help and for encouraging us to prepare this note. We must also acknowledge the contribution of the Local Change project in encouraging us to record in what most local botanists would have regarded as a rather unpromising area.

Reference:

SALISBURY, E. 1964. *Weeds and aliens*. (p.126), London: Collins New Naturalist, 2nd edition.

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TONY SPIERS, 69 Elm Grove, Brighton, East Sussex BN2 3ET; Atonyspiers@aol.com

SPANISH BLUEBELLS – SURVIVING TECHNIQUE

When we first moved to Herefordshire some 30 years ago the clumps of Spanish bluebells, huge blue ones and smaller (possibly hybrid) white ones were a welcome feature in the garden. They were useful as cut flowers as they lasted longer in water than the wild ones and many visitors were thrilled to take a bunch home particularly if they were encouraged to choose the biggest. As the years went by

they spread alarmingly and I became less enamoured of their charms. The dying foliage was swamping more choice plants and when it turned slimy it encouraged slugs. I tried digging them out being careful not to leave any damaged bulbs as these sprouted lots of babies. It was a mistake to think they would compost down. They just had a rest until the next season, and spreading the compost distributed the bulbs all over the vegetable patch. I think it was when I ate one that made its way into the saucepan with the new potatoes that I resolved to poison some of them. This was not as easy as I expected. The foliage died but the bulbs did not. They came up again later in the season so I poisoned them again. The foliage again died. The bulbs came up again the next season . . . and the next. It was evident that if I wanted a quick solution I would have to dig them out. It was a very wet season and probably not a good idea to attempt to burn them. The unburnt ones thrived in the middle of the bonfire. A bucket of bulbs ready to go on the fire had filled up with rainwater – and that was when I hit on the solution. I would drown them. I dug up bunches of bulbs with the leaves, put them in a large bucket, and kept the water topped up. The bulbs near the surface kept their leaves for some weeks so I gave the mixture a good stir. Something was rotting. The smell was appalling. All the bulbs were still alive but it looked as though some of them had lost their outer layer. The leaves that had broken away from the surface bulbs where still alive so I pulled them out thinking they would be safe to compost. To my amazement there were hundreds of tiny bulbs growing from the leaves at the point of detachment (see photos, Colour Section, plate 1). It took several more months before the bulbs rotted away and I was able to tip out the contents of the bucket and get rid of the smell.

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NOTICES (BSBI)

IDENTIFICATION MASTERCLASSES

This year the University of Birmingham, the Field Studies Council and the Natural History Museum are teaming up to deliver high level species identification courses.

The Identification Masterclasses are intended to help ecologists and environmental professionals develop the high level skills needed for their work, and to prepare them for the Natural History Museum's Identification Qualifications (IdQs).

This year the following Identification Masterclasses will be offered on the following dates:

Vascular Plants Masterclass	18 th - 22 nd July 2005
Tutors Sarah Whild & Tim Rich	6.30 Monday evening to 4.30pm Friday
Aquatic Macrophytes Masterclass	1st - 5 th August 2005
Tutors Nick Stewart & Sarah Whild	6.30 Monday evening to 4.30pm Friday
Woodland Arthropods Masterclass	11 th - 15 th September
Tutor Paul Lee	6.30 Sunday evening to 4.30pm Thursday
Bryophytes	26 th - 30 th September
Tutor Fred Rumsey	6.30 Monday evening to 4.30pm Friday

£50 discount for BSBI and BBS members

For more information on the Identification Masterclasses and Identification Qualifications please contact:

Sarah Whild, Director: Biological Recording Programmes, School of Biosciences, Shrewsbury Office, University of Birmingham, The Gateway, Chester Street, Shrewsbury, SY1 1NB; 01743 355137; S.J.Whild@bham.ac.uk

Alistair Taylor, Biodiversity Liaison Officer, Research and Consulting Office, Science Directorate, Natural History Museum, Cromwell Road, London, SW7 5BD; Tel: +44 207 942 5372; Fax: +44 207 942 5841; a.taylor@nhm.ac.uk

EXCURSION TO WESTERN PORTUGAL – MARCH 2006

Teresa Farino would like to hear from any members who might be interested in a field meeting in Western Portugal in March 2006. The limestone plateaux and cliffs to the south of Lisbon are renowned for their drifts of early-flowering spring bulbs, particularly orchids, while the Tróia sand-spit harbours a rich and colourful sand-dune flora. A number of local endemics (*Arabis sadina*, *Jonopsidium acaule*, *Euphorbia pedroi*, *Ulex densus*, *Santolina impressa*, *Narcissus calcicola*, etc.) can be found in the area at this time of year.

Although the meeting will concentrate on the diverse flora, the area also attracts a huge variety of wintering waterbirds, including such emblematic species as greater flamingo, spoonbill and glossy ibis, with Bonelli's eagles breeding on the sea-cliffs. The excursion will also include a half-day boat trip to visit the Sado estuary's resident pod of bottle-nosed dolphins, and we could also spend time exploring Lisbon itself, should members be interested.

Dates have yet to be finalised, but the excursion will probably take place from Saturday 18th March to Saturday 25th March 2006 (8 days/7 nights), starting from Lisbon airport. We will be staying in a family-run hotel on the limestone plateau of Azóia, with all facilities en suite and an open-air swimming pool. The cost will be €990 (plus €130 single-room supplement), which is about £680 at the current exchange rate, to cover half-board accommodation, picnic lunches, transport by minibus throughout, all entry fees and the services of the leaders (principal leader Teresa Farino), but excluding flights and travel insurance (obligatory).

More information about the flora and fauna of the area can be found on www.iberianwildlife.com (Sado and Arrábida).

For further details, or to express an interest, contact:

TERESA FARINO, Apartado de Correos 59, 39570 Potes, Cantabria, Spain; tel.: 00 34 942 735154;
teresa@iberianwildlife.com

NOTICES (NON-BSBI)

CONSERVATION OF NATIVE PLANTS IN CHURCHYARDS, IN RELATION TO A NATIONAL CONFERENCE ON 'CARING FOR GOD'S ACRE' (CFGAG), MAY 23RD-24TH, 2006

We are having a National Conference on the Conservation of Churchyards/Burial grounds. This will be held in Ludlow, Shropshire.

CFGAG is a registered charity, centred in Herefordshire, South Shropshire, and parts of Worcestershire, Powys and Monmouthshire, but we are proposing to make it a National organisation, as everyone is becoming so enthusiastic about it.

We would like to invite all those interested in the conservation of our native flora/biota throughout the country to join us in friendly discussions and to learn how like-minded people are helping in this aspect of churchyard conservation. For, as all readers here will know, much of the native flora of the country, even around country churchyards, has been lost over the last several years due to intensive agriculture, a loss now regretted and possibly irretrievable. Churchyards are now often oases for some of these declining species, and also provide a diversity of habitats such as old trees and stonework; however, they need to be looked after, with the conservation of the species – as members of pre-existing plant communities – in mind.

For the conference, we are planning residential accommodation in the beautiful market town of Ludlow, and, as well as some important keynote addresses by well known conservationists, we are organising a series of exhibits and displays. We are also proposing to visit some of the historic churchyards in the local countryside, and learn something about how they are being managed. Just come and see what inspiring plant community gems we have here!

CFGAG is divided into two parts, the Rural Heritage Project, which is supported by DEFRA, and the Lifelong Learning Project, which has a grant from the Heritage Lottery Fund. English Heritage is

also helping with the National Conference. To learn more please visit our website www.caringforgodsacre.co.uk.

These, however, are just some of the ways that CFGA provides assistance to participating churchyards: it can help in an initial survey of all aspects of the churchyard, – its archaeology, history, geology and ecology, including surveys of its flora and fauna. Local people, professional and amateurs alike, can be recommended and invited, and help is also given with grant applications for management and interpretation.

The Rural Heritage side of CFGA helps to provide opportunities to learn about the natural, cultural and built heritage of churches and churchyards. In our local area, workshops and practical courses have already provided practical help on aspects of churchyard memorials and gravestones, the art of hedge-laying, and the repair of dry stone boundary walls and the conservation of associated mosses and lichens. Visits to local County Record Offices have been made, and local historical and genealogical information have been provided by specialists in their field. These are all fantastic windows of opportunity for local people to contribute.

Do put May 23rd-24th, 2006 in your diary and join us at the Conference. Also, tell your friends about it and START PREPARING SOME POSTERS/DISPLAYS about wildlife in YOUR churchyard, or of its history, NOW.

We hope to keep you posted of future plans, and look forward to seeing you in 2006.

Our Project Manager for 'Caring for God's Acre' is Sue Cooper to be contacted at the office at: 6 West Street, Leominster, Herefordshire, HR6 8ES. Telephone 01568 611154; info@cfga.fsnet.co.uk – Sue will be delighted to hear from you, and to provide you with informative leaflets.

YOLANDE HESLOP-HARRISON, Old Post, Hatfield, nr. Leominster, Herefordshire HR6 0SF and 95 Knighton Church Road, Leicester LE2 3JN

A CELEBRATION OF GRASSES

Friday and Saturday 9-10 September 2005

Jointly organised by the Linnean Society of London and the Royal Botanic Gardens Kew, to be held at the Linnean Society and Kew.

This meeting marks the retirement of Steve Renvoize after 41 years on the staff of the Kew Herbarium, the last 15 as Head of the Grass Section. Steve is co-author of *Genera Graminum*, the essential book for all grass taxonomists, and has authored many floristic accounts and taxonomic and anatomical papers. The meeting will celebrate the Grass Family in all its diversity, to reflect Steve's broad interests and experience.

Programme

Day 1 – Linnean Society – lectures covering a variety of grass-related themes including: taxonomy, anatomy, molecular systematics, horticultural and economic uses, grasses in art, etc. Some lectures by invited speakers, but offers of lectures are still welcome. A dinner will be held in the evening.

Day 2 – RBG Kew – Poster session. Offers of posters welcome. Field excursion in and around RBG Kew led by Kew Grass experts.

Organisers - Dave Simpson, Sylvia Phillips, Tom Cope, Jill Marsden (all at RBG Kew).

Registration Fee: £40 (includes teas/coffees, lunches and a copy of the Proceedings).

Further details and registration forms are available from the Linnean Society website (www.linnean.org) or contact Dominic Clark, The Linnean Society of London, Burlington House, Piccadilly, London W1J 0BF (tel:020 7434 4479; dominic@linnean.org.)

OFFERS

BSBI News nearly complete set from 1 (Jan 1972) to 87 (Apr 2001), with some indices. No. 26 missing. Free to collector (from Bristol). Tel.: 0117 9423295; jsrees@blueyonder.co.uk

JOHN REES, 24 Kings Avenue, Bishopston, BRISTOL, BS7 8JN

REQUESTS

VOLUNTEERS WANTED AT THE MANCHESTER MUSEUM HERBARIUM

We are looking for volunteers to help us input herbarium label data for British and Irish plants onto Manchester Museum's database system KeEmu.

If you live in the Manchester area and would like to help please contact Leander Wolstenholme on 0161 275 2671 or email leander.wolstenholme@manchester.ac.uk or write to the address below.

LEANDER WOLSTENHOLME, The Herbarium, The Manchester Museum, The University of Manchester,
Oxford Road, Manchester M13 9PL

REQUEST FOR INFORMATION ON J. H. PENSON

I am attempting to obtain information on J.H. Penson who botanised in North America and Canada in the 1940s and then in the U.K. (mainly Scotland) from about 1955 to 1977. In his later years he appears to have lived in the Glasgow area. So far, I have been unable to trace any botanical obituary but have obtained some details from his notebooks which have recently come to light. If anyone has information regarding his background, achievements, life span, etc., I would be interested to hear. Thank you.

MICHAEL FOLEY, Faraday Building, Department of Biological Sciences, University of Lancaster;
m.foley@lancaster.ac.uk

BOOK NOTES

Unattributed comments in square brackets are mine.

Berwickshire Rare Plant Register 2004. M.E. Braithwaite. Pp 220. Privately published. £15. Hbk. No ISBN. Available from the author at Clarilaw, Hawick, Roxburghshire, TD9 8PT for £18 incl. p&p.

Rare Plants of Shropshire, 3rd edition. A.J. Lockton & S.J. Whild. Pp 127. Shropshire Botanical Society. 2004. £14. Pbk. ISBN 0 9530937 1 9.

The Botanist in Skye and Adjacent Islands, 3rd edition. C.W. Murray & H.J.B. Birks. Pp136. Privately published. 2005. £10. Pbk. ISBN 0 9548971 0 2. Available from John Birks at Department of Biology, University pf Bergen, Allegaten 41, N-5007 Bergen, Norway for £14 incl. p.&p. Cheques payable to H.J.B. Birks (Skye).

Flora Celtica – plants and people in Scotland. W. Milliken & S. Bridgewater. Pp 328. Birlinn, Edinburgh, in collaboration with RBGE. 2004. £30. Hbk. ISBN 1 841583 03 0.

[This addresses the role of plants in such areas as environment, craft, diet, healthcare, culture, housing and language.]

A History of the Native Woodlands of Scotland 1500-1920. T.C. Smout, A.R. Macdonald & F. Watson. Pp 434. Edinburgh UP. 2005. £60. Hbk. ISBN 0 7486124 1 6.

Please note that *Rare plants in Great Britain – a site guide*, by C. Twist, mentioned in *BSBI News* 98, is available from him for £6, incl. p&p. Please telephone 0151 4260215 for details.

DAVID PEARMAN, Algiers, Feock, Truro, Cornwall TR3 6RA; Tel: 01872 863388

BERWICKSHIRE RARE PLANT REGISTER 2004

The *Berwickshire Rare Plant Register* is now on sale. It is a hard-backed book with iv + 220 pp. There are species accounts for 390 taxa with very detailed locality data including all the historical records and many distribution maps. The taxa selected cover all rare and scarce species and some regional specialities that are not so scarce.

The exceptional historical record for the Berwickshire flora allows a much more detailed study of change over almost 200 years than is usually possible in a county flora. The historical data for

individual species is carried through to a summary analysis to derive trends for loss of broad habitats in both the nineteenth and twentieth centuries. These trends are discussed in detail.

In addition to the CRPR there is an up-to-date v.c. 81 check-list including tetrad frequencies and status. This covers 1402 taxa.

The colour cover features *Potamogeton × bottnicus* and *Alchemilla glaucescens*.

I am circulating the book privately, so it is only available from me. The price is £15 + £3 pp.

MICHAEL BRAITHWAITE, Clarilaw, Hawick, Roxburghshire, TD9 8PT

WILTSHIRE BOTANY

Issue No. 7 of this journal is now published. It contains:

- A guide and keys for identifying Wiltshire's ferns
- An account of Algae as endophytes within the roots of aquatic plants (*Lemna*, *Azolla*, *Callitrichie* and *Elodea*)
- Write-up of a study of the effects of thinning on a Wiltshire Elm wood
- A further article on great-girth trees in Wiltshire, this time featuring the Aceraceae
- An account of a survey of the distribution of *Ornithogalum pyrenaicum* (Spiked Star-of-Bethlehem) in a Wiltshire parish
- Additional data on *Ornithogalum pyrenaicum* at Clouts Wood near Swindon, a follow-up to an article in Issue No. 6
- A selection of the Society's plant records for 2003

Contributions to the journal are welcome on any aspect of Wiltshire botany. Articles should be submitted to John Presland, 175c Ashley Lane, Winsley, Bradford-on-Avon, BA15 2HR, who will also be pleased to discuss proposed articles informally (Tel: 01225 865125). A leaflet is also available offering guidance to authors on the most helpful forms in which to submit articles.

Copies of No. 7 and some earlier issues are available from Rosemary Duckett, 50A The Butts, Westbury, Wiltshire BA13 3EX (Tel 01373 858296; rosemary.duckett@virgin.net). The cost is £3.00 post free. Cheques should be made out to Wiltshire Botanical Society.

OBITUARY NOTES

With regret we report the following deaths: *Joan Hall; *Allan McG. Stirling; Jean Clunes; Eleanor Isherwood; Dr K.M. Mattheu S.J. and Peter Thomson. As we go to press we hear the sad news of the death of *Richard Charles Palmer, a member for over 50 years.

There will be a *Watsonia* Obituary for those marked *, and further notes in a future *BSBI News* for others mentioned. Peter Thomson was currently Hon. Minuting Secretary to Council.

My thanks to the three lady members who sent comments on Frances Partridge, following my enquiry in *BSBI News* 97 for information on the commissioned, then cancelled, 22-volume British Flora in the 1940s. This was reported in the *Times* Obituary for Frances. Their comments will be co-ordinated for a future number of *BSBI News*.

MARY BRIGGS, Hon. Obituaries Editor, 9, Arun Prospect, Pulborough, West Sussex, RH20 1AL

REPORTS OF FIELD MEETINGS – 2004

Reports of Field Meetings (with the exception of Reports of Irish Meetings written by Alan Hill) are edited by, and should be sent to: Dr Alan Showler, 12 Wedgwood Drive, Hughenden Valley, High Wycombe, Bucks, HP14 4PA, Tel.: 01494 562082. Potential authors of reports should note that they should not be much longer than 500 words (half a page of *News*) for a one day meeting and 1000 words (1 page of *News*) for a weekend.

MENDIP HILLS, North Somerset & South Wiltshire (v.cc. 6 & 8). *Rubus* meeting, 16th - 18th July

On Friday 16th, members met near the old Ashcott Station on the disused Cheddar Valley line to examine some of the specialities of the Somerset peat moors. In addition to common species were seen *R. nemoralis* (rare in v.c. 6) and the suberect species *R. nobilissimus* and *R. vigorosus*, both with a very restricted distribution nationally, but the main reason for visiting this location was to see the recently described *R. avaloniensis*, which has its centre of distribution on the moors.

The Mendip Hills were explored on the Saturday beginning with Cheddar Gorge which, despite the Carboniferous Limestone bedrock, has a good *Rubus* flora including: *R. prolongatus*, *R. winteri*, *R. radulaoides*, *R. troiensis*, *R. halsteadensis* agg. (the Trelleck type), *R. pictorum* and *R. vagensis* as well as commoner lime-tolerant species. Several unidentifiable forms were also seen, but one, which was previously thought to be unnamed, provided a first record of *R. tamarensis* for v.c. 6.

Heavy rain curtailed a visit to Black Down, moorland at 300m on Old Red Sandstone. Some species there were typical of Devon and Cornwall, e.g. *R. prolongatus*, *R. villicaulifarmis* and *R. leyanus*, while others were more familiar in SE England, eg. *R. surrejanus* and *R. trichodes*.

Lunch was had at East Harptree Woods, on silicified strata of Rhactic to Inferior Oolite age. The bramble flora had not previously been explored, but despite some scrub clearance and a predominance of bracken it was possible to record new localities for 15 species including: *R. radulaoides*, *R. trichodes*, *R. dentatifolius*, *R. leyanus*, *R. dasypyllus* and *R. halsteadensis*.

A visit to Stock Hill Plantation, again on the Old Red Sandstone, was less productive. In earlier years it had a more varied bramble flora, but it appeared that *R. bartonii* had become dominant and most other species had vanished. There were though a number of puzzling unknowns, probably of hybrid origin.

The last stop for the day, at Edford Wood near the eastern end of Mendip produced a rather different flora. A brook runs through the wood, which is situated on Coal Measures and has had some surface mining in the past. Species seen included *R. longus*, *R. leyanus*, *R. longithrysiger*, *R. pallidus* and two unknowns: a plant very like *R. criniger*, but with glabrous anthers, and a plant rather like *R. tamarensis* that the leader nicknamed *Mendip rotundifolius*.

On Sunday 18th the party visited woodland remnants of the medieval royal forest of Selwood. In Saxon times the forest, known then as Sael Wod (Sallow Wood), extended from what we now call Braydon Forest in the very north of Wiltshire to Blackmoor Vale in north Dorset, and straddled the Wiltshire/Somerset border in between. The part where sallow was particularly prevalent would have been on the Oxford Clay, but the remaining woodlands are predominantly on the Upper Greensand between Warminster and Penselwood, near Stourton.

The day began at Southleigh Wood on the Longleat estate, type locality for *R. leyanus*, one of the first species seen there. Others seen were *R. nessensis*, *R. subintegribasis* (at its most northerly locality), *R. arrhenii* (almost restricted to the Longleat estate), *R. mucronatiformis*, *R. flexuosus* and *R. phaeocarpus*, an unexpected addition from S.E. England. A short stop at Warminster Plain allowed better material of *R. arrhenii* to be inspected along with *R. sciocharis*, *R. glareosus* and *R. largificus*, the last species unknown elsewhere in v.cc. 6 & 8.

Lunch was had at the Heaven's Gate car park where search was made for *R. calvatus* and *R. silvicus* and although a few scraps were found, most had been swamped by *R. leyanus* which was dominant in many places.

The first stop on the Stourhead estate was Alfred's Tower. This locality is well known for its abundance of *R. durotrigum*, endemic and restricted to a few localities in v.cc. 6, 8 & 9. Other species noted included *R. nessensis*, *R. arrhenii* (a new hectad), *R. surrejanus*, *R. glareosus*, *R. melanodermis*, *R. dentatifolius*, *R. bloxamii*, *R. flexuosus* and an unknown form superficially like *R. flexuosus*. David Allen was later able to identify this as a form well established on the Isle of Wight and previously mapped as *R. praetextus*. The 1st records of *R. melanodermis* in v.c. 6 had been made on a 'reccy' carried out a few days earlier.

The last place visited was Blackslough, a favourite collecting place for R.P. Murray and E.S. Marshall. The flora was similar to that at Alfred's Tower, although recent forestry work had obliterated the best material. Yet another colony of *R. arrhenii* was discovered, as well as its commoner relative *R. sprengelii* and a small amount of *R. durotrigum* and the 'false *praetextus*' seen

earlier. After a long search a cane or two of *R. cinerasiformis* were discovered at its most easterly locality. It was also possible to confirm a pre 1988 record of *R. sciocharis*.

ROB RANDALL

PITLOCHRY, Mid-Perthshire (v.c. 88) 17th & 18th July

The week-end covered some of the remaining tetrads in the vice-county for Local Change from a base in Pitlochry. There was a good turn-out of about a dozen BSBI members from around the country, including some local members, who are also members of the Perthshire Society of Natural Science. We split up in to three groups on each day, each group covered one tetrad. This article can only touch on some of the highlights and apologies to Lynne Farrell and Ian Green and their groups who may be offended by omissions.

The Saturday was typical of a Scottish summer, all four seasons rolled in to one day! Tetrad NN76J is set on the rolling hillsides above Dalnacardoch Lodge beside the A9 – General Wade country. Bog and moor are typical of the flat expanses, but the flora is enriched by underlying limestone where exposed rock and flushes bring variety. In the sphagnum pools *Carex pauciflora* (Few-flowered Sedge) and *Sparganium natans* (Least Bur-reed) were found; a little lower down remnant woodland yielded *Populus tremula* (Aspen) and *Juniperus communis* (Juniper). In the rich flushes above the River Garry, *Gymnadenia conopsea* (Fragrant Orchid), *Gentianella campestris* (Field Gentian) and *Tofieldia pusilla* (Scottish Asphodel) were added to our list.

Six kilometres to the south-east, in tetrad NN76W, on similar ground but with large tracts of forestry plantation, *Carex limosa* (Bog Sedge), *Eriophorum latifolium* (Broad-leaved Cottongrass) and *Drosera intermedia* (Oblong-leaved Sundew) were found on open ground, but the forestry yielded the odd pleasant surprise, such as extensive *Lycopodium annotinum* (Interrupted Clubmoss) a single tussock of *Melica nutans* (Mountain Melick) and a population of *Orthilia secunda* (Serrated Wintergreen) growing on a moorland 'island' at the forest's edge.

On Sunday two groups were on opposite sides of Glen Almond. On lower ground, but facing magnificent mountain scenery across Loch Tay, tetrad NN73J yielded *Galium boreale* (Northern Bedstraw) *Helianthemum nummularia* (Common Rock-rose) *Pimpinella saxifraga* (Burnet-saxifrage) *Trollius europaeus* (Globeflower) and *Platanthera chlorantha* (Greater Butterfly-orchid).

In tetrad NN73A *Polystichum lonchitis* (Holly Fern), *Potentilla crantzii* (Alpine Cinquefoil) *Salix arbuscula* (Mountain Willow), *Sibbaldia procumbens* (Sibbaldia), *Thalictrum alpinum* (Alpine Meadow-rue) and *Veronica serpyllifolia* subsp. *humifusa* (Thyme-leaved Speedwell) reflected the montane character there.

Without exaggeration, Jim McIntosh and I could not have covered all our Local Change tetrads without the assistance of our fellow members, and we wish to thank them for their support. In recognition of their efforts and for those who do not have access to the BSBI website, the results of our week-end are summarised below.

Losses, gains and totals for taxa in each tetrad.

	NO03A	NO03J	NN73A	NN73J	NN76J	NN76W
Losses	39	32	11	14	23	76
Gains	65	67	110	119	69	31
Re-found	160	147	107	127	152	176
Total	264	246	228	260	244	283

ALISTAIR GODFREY & JIM MCINTOSH

FELMERSHAM GRAVEL PITS, Bedfordshire (v. c. 30) 31st July

On one of the few fine sunny summer days of 2004 a select group of eight members met to study the botanical delights of this important Bedfordshire wetland site which is an SSSI. This site covers an area of some 21 hectares and was formed just before and during the last war by the extraction of gravel for war-time aerodromes. The resultant pits, which are close to the River Great Ouse, became flooded and the resultant habitats of the site include open water, semi-aquatic and marsh with significant grassland areas around the pits.

The south east lake of the reserve was studied before lunch. Along the edge of the water were large stands of *Lysimachia vulgaris* (Yellow Loosestrife) creating a dramatic yellow boundary to the water. In the shallower parts were stands of *Typha angustifolia* (Lesser Bulrush) interspersed with *Lythrum salicaria* (Purple-loosestrife) and *Rumex hydrolapathum* (Water Dock). Well-vegetated spits of land protrude into the pit and one of these yielded two uncommon local taxa, *Oenanthe fistulosa* (Tubular Water-dropwort) and *Myosotis laxa* (Tufted Forget-me-not).

After lunch the party moved on to the larger part of the site where, between the areas of open water, there are wooded areas. Here were noted *Epipactis helleborine* (Broad-leaved Helleborine) and *Daphne laureola* (Spurge-laurel). On the more open banks the grassland vegetation was very colourful with plants such as *Centaurea nigra* (Common Knapweed), *Lathyrus pratensis* (Meadow Vetchling), occasional *Geranium pratense* (Meadow Crane's-bill) and also many stands of the alien *Lathyrus latifolius* (Broad-leaved Everlasting-pea). At the water's edge were *Stachys palustris* (Marsh Woundwort) and *Scutellaria galericulata* (Skullcap).

In the water were *Myriophyllum spicatum* (Spiked Water-milfoil) and *Stratiotes aloides* (Water-soldier). The latter is now a problem since it was introduced, probably as a garden throw-out, some years ago. A drag line yielded *Ranunculus circinnatus* (Fan-leaved Water-crowfoot) and *Utricularia australis* (Bladderwort) a local speciality which is usually in full flower in late summer but, unfortunately, no flowers were seen.

At the north east end of the site the party ventured towards the River Great Ouse and, in a backwater, were rewarded with fine specimens of *Butomus umbellatus* (Flowering-rush) a few *Thalictrum flavum* (Common Meadow-rue), *Spirodela polyrhiza* (Greater Duckweed) and *Lemna gibba* (Fat Duckweed). Also noted, and fully tested by the party, was *Urtica galeopsifolia* (Fen Nettle).

The day yielded 187 taxa and I would like to thank Andy Lear for compiling the species list.

CHRIS R. BOON

CARMARTHENSHIRE RECORDING WEEK, GLYNHIR (v.c. 44) 31st July – 7th August 2004

Most of the BSBI party gathered for a relaxed Saturday lunch at Glynhir and were met by Dr Margaret Redfern and John Robbins, two of the four British Plant Gall Society members who were joining us for the week. After lunch, some participants (including the BPGS members) visited nearby Carreg Cennen Castle but most travelled to the coast at Pwll, west of Llanelli, where, in the glorious sunny weather, it was intended to visit the Pwll fly-ash lagoon, recently designated as an SSSI. However, the leader (RDP) wished to show the party a substantial population of *Monotropa hypopitys* subsp. *hypopagea* (Yellow Bird's-nest) recently discovered by Dr Philip Jones, a local mycologist, before entering the SSSI. Numerous ephemeral species were examined along the length of a new pipeline recently buried in the sandy ground, including *Stachys arvensis* (Field Woundwort) and *Juncus ambiguus* (Frog Rush). Further delays were caused by the party pausing to closely scrutinise a small brackish lagoon with marginal saltmarsh vegetation where both *Elytrigia repens* (Common Couch) and *E. atherica* (Sea Couch) were growing together: Arthur Chater (AOC) later identified the hybrid (*Elytrigia × oliveri*) among material collected at the site, which was a new vice-county record. Other stops were made to photograph *Artemisia abrotanum* (Southernwood) and *Geranium pusillum* (Small-flowered Crane's-bill), both growing by the track and pointed out by Tony and Viv Lewis. As the party approached the *Monotropa* site, the ground flora under the birch scrub included frequent *Pyrola minor* (Common Wintergreen) but Graeme Kay (GMK) made the discovery of a single plant of *Pyrola rotundifolia* subsp. *maritima* (Round-leaved Wintergreen) amongst the abundant *P. minor*, a new record for the 10km square and another photo stop! The *Monotropa* population had been described by Dr Jones as being in the form of a 'fairy ring' and it appeared that its growth had radiated out from a single young tree of *Pinus nigra* subsp. *laricio* (Corsican Pine), self sown in the scrub. Now retracing our steps, a single showy plant of a white-flowered form of *Vicia cracca* (Tufted Vetch) was admired, a new variety to most members, which caused further delay! Having at last reached the way into the SSSI, it was realised that, were we to examine the site in the detail it warranted, we would be late for dinner as a result of so many diversions. I must confess that, this late in the afternoon, the attraction of the Glynhir cuisine was more tempting than the prospect of paddling through the lagoon and the collective decision was made to return to the site later in the week!

After breakfast on Sunday, another beautifully sunny day, the whole party travelled to the Pembrey Sands Bombing Range located on the northern part of Tywyn Burrows, by courtesy of Guy Jeffs, RAF Officer in Command. Many of the species expected were soon discovered adjacent to the track across the dunes – *Trifolium fragiferum* (Strawberry Clover), *Blackstonia perfoliata* (Yellow-wort), *Senecio erucifolius* (Hoary Ragwort), *Juncus acutus* (Sharp Rush), *Anacamptis pyramidalis* (Pyramidal Orchid) – and there were frequent stops for discussion, particularly as regards the dactylorchids. Near the targets, stands of *Epipactis palustris* (Marsh Helleborine), *Pyrola rotundifolia* subsp. *maritima* and a few plants of *Ophioglossum vulgatum* (Adder's-tongue), and *Sisyrinchium bermudiana* (Blue-eyed-grass) were found in the rank grassland. In company with a mat of *Littorella uniflora* (Shoreweed), *Equisetum fluviatile* (Water Horsetail), *E. variegatum* (Variegated Horsetail), *E. palustre* (Marsh Horsetail) and *E. arvense* (Field Horsetail) were found in the dry-pond by the targets and material collected by Sam Thomas (ST) was later determined by him as *Equisetum ×rothmaleri*. Walking from the targets along the fire-break track towards the helipad, several plants of *Carex punctata* (Dotted Sedge) were found, which the leader was relieved to see because he had feared that, not having been seen here since 1997, it had been lost as a result of management works on the Range. Also in this area, the BPGS members were excited at seeing a frequent gall on *Mentha aquatica* which was identified by John Robbins as *Eriophyes menthae*, a new British record (determined from the galls alone, and not confirmed by examining the causer). A short diversion by some members onto the saltmarsh recorded *Carex extensa* (Long-bracted Sedge) and *C. distans* (Distant Sedge) amongst the dominant *Festuca rubra* (Red Fescue) and *Puccinellia maritima* (Common Saltmarsh-grass) with frequent *Juncus maritimus* (Sea Rush) and *Oenanthe lachenalii* (Parsley Water-dropwort). The helipad is the only small part of the dune system which is mown (mimicking the tight rabbit grazing to which the dune grassland was subject in the past) and now appears to be the only area where gentians still grow, although it is hoped that future site management will encourage the restoration of larger areas of this vegetation. *Gentianella amarella* (Autumn Gentian) was found to be quite frequent and a few plants which were convincingly *G. uliginosa* (Dune Gentian) were also seen. However, *Spiranthes spiralis* (Autumn Lady's-tresses) was not seen, this being probably its last extant site in the vice county, although it was a little early to expect it to be in flower. During the evening, Brian Gale and Joan Chandler, the two additional BPGS members arrived.

On Monday, participants split into small groups which were dispatched to different parts. Some very useful Local Change recording was completed in the west and centre of the vice-county in tetrads SN12W, SN42J and SN42W, whilst AOC, ST, Kath Pryce (KAP) and RDP set off for Cwm Clydach, cut into the northern face of Mynydd Du (the Black Mountain) in order to monitor the population of *Rubus saxatilis* (Stone Bramble). The weather started sunny but before long we were overtaken by a violent and frightening thunderstorm! The storm soon passed and in the meantime the *Rubus* populations had been pinpointed and their extents measured. The Old Red Sandstone crags also supported populations of *Phegopteris connectilis* (Beech Fern), *Thelypteris dryopteris* (Oak Fern), *Hymenophyllum wilsonii* (Wilson's Filmy-fern) and *Polystichum aculeatum* (Hard Shield-fern) together with a few plants of *Sanguisorba officinalis* (Greater Burnet) and a single *Huperzia selago* (Fir Clubmoss). When the sun came out to dry us with its welcome warmth, the grassy valley slopes yielded a second Carmarthenshire population of *Euphrasia rivularis* (Snowdon Eyebright). On arrival back at Glynhir we found out that the other groups had enjoyed continuous sunshine all day!

The BPGS and a few BSBI members were met on Tuesday by Dic Davies (RHD) and Nigel Stringer (RNS) at Carmel Woods NNR who led them around this potentially gall-rich, limestone grassland and woodland site. Another group comprising Margot Godfrey (MG), Chris Cheffings and Guy Moss, spent much of the day at Tumble Community Woodland, a poorly restored, former opencast site on which thousands of plants of *Mentha pulegium* (Pennyroyal) had been recorded in the late 1990s. Rather surprisingly, they could find none, but they did find 63 flowering spikes of *Pyrola rotundifolia* subsp. *maritima* on largely bare ground with very little top soil: the first record for the 10km square SN51. In recent years, large mats of *P. minor* have been recorded nearby under maturing conifer plantations. A third small group (Sarah Stille and Priscilla Tolfree) explored Carreg Dwfn and Llandysfan where their star-finds were *Equisetum hyemale* (Rough Horsetail) and *Carex spicata* (Spiked Sedge).

Most participants, however, visited Talley Lakes where they were joined by Clive Jermy (ACJ), Sam Bosanquet (SDSB) and George Hutchinson. In the south-eastern corner of the Upper (southern) Lake, the *Isoetes echinospora* (Spring Quillwort), found here in 2001, was demonstrated by AOC and SDSB before the party walked around the western shore, noting the several stands of *Carex aquatilis* (Water Sedge), here at its southern-most site in the world. The only Carmarthenshire record of *Thelypteris palustris* (Marsh Fern) was made by J.E. Griffiths between the lakes at Talley in 1892 but has not been seen since, despite several searches. One of the aims of today's visit was for ACJ to examine the habitat and assess its present suitability still to support this fern. The area has evidently become very much more wooded, scrubbed-over and rank since Griffith's time and it is likely that the species is no longer present, or if it is, then is most likely to be on more open areas of floating vegetation along the margins of the northern lake which would only be accessible by boat. However, *Dryopteris* ferns were abundant under the alder canopy and one of the most frequent taxa was *D. ×dewevari* (see Colour Section, plate 2), the hybrid between *D. dilatata* and *D. carthusiana*, although the latter was not seen. But the highlight of the day must have been SDSB's discovery of the liverwort *Cryptothallus mirabilis* under a *Sphagnum* tussock in the alder woodland: the first vice-county record. Talley is the only site in the county supporting this vegetation in suitable condition, so *Cryptothallus* would be unlikely to occur elsewhere and his prediction of its possible presence was proved to be accurate.

CCW staff had invited BSBI members to visit some farms participating in the Tir Gofal whole farm stewardship scheme, in order to record plants in areas of set-aside, game-crops and unimproved grassland and mire habitats. A small party (GMK, KAP, Julie Clarke, Heather Slade (HS) and RDP) set out on Wednesday morning to Acheth Farm, Abergorlech where we were made very welcome by the owner who then saved us a long, uphill walk by transporting us in his vehicle along forestry tracks to two outlying fields. The first was mainly semi-improved sheep-grazed pasture but included a wet, rush-dominated valley mire which supported locally frequent *Wahlenbergia hederacea* (Ivy-leaved Bellflower) and occasional *Scutellaria minor* (Lesser Skullcap). The farmer patiently waited for us whilst we recorded the plants before taking us to his field sown the previous year with a game-bird seed mix which had been dominated by *Helianthus annuus* (Giant Sunflower) and had produced a spectacular display judging by the photographs supplied by CCW! A few sunflower skeletons stuck out amongst the remaining rape, colonising docks and rank grasses but persistent species included frequent *Fagopyrum esculentum* (Buckwheat), *Fallopia convolvulus* (Black Bindweed), *Viola arvensis* (Field Pansy) and rare *Stachys arvensis*, *Silene latifolia* (White Campion) and *Carduus nutans* (Nodding Thistle). In the yard several plants of *Rorippa islandica* (Northern Yellow-cress) were seen which was the first record of this species in the 10km square SN53.

We received another warm welcome at the second farm, Esgairwen, near Brechfa, which was all the more surprising as the owners claimed to have known nothing of our visit until we arrived! (RDP had been given the phone number by CCW and had spoken a few days previously to a Mr Davies, a farmer on a Tir Gofal farm in Brechfa, who had been very amenable to our proposed visit – but apparently not this Mr Davies!). However he dropped everything and willingly took all the time we needed to show us around his fields, detailing their history and past and present farm management. The extensive areas of wet, unimproved acid grassland were mostly dominated by *Molinia caerulea* (Purple Moor-grass) and rushes but also had populations of *Carum verticillatum* (Whorled Caraway), *Serratula tinctoria* (Saw-wort), *Wahlenbergia hederacea*, and *Anagallis tenella* (Bog Pimpernel). Returning to the yard, more plants of *Rorippa islandica* were seen as well as a single plant of *Mimulus ×robertsii* (a hybrid Musk) (see Colour Section, plate 3) which was the first record for the 10km square SN54. HS's ability to greet and converse in Welsh, I am sure went a long way towards fostering good relations between the local farmers and the visiting botanists!

Another small party comprising MG, Caroline Tero (CT) and Steve Woodward spent the day exploring the Gwendraeth Fach valley. They examined the fields at Cil-yr-ynys, another Tir Gofal farm, which they recorded field by field, thus facilitating re-survey in the future. But most of their highlights were from further down the valley near Torcoed Fawr where they discovered *Gymnadenia conopsea* (Fragrant Orchid), *Pedicularis palustris* (Marsh Lousewort), *Triglochin palustris* (Marsh Arrowgrass) and *Valeriana dioica* (Marsh Valerian) as well as several tall sedges in the marshy fields south of the river. Meanwhile Jean Green and Delyth Williams had travelled to Llanboidy in the far

west of the vice county to record tetrad SN22F which turned out to be a rather mundane agriculturally improved area where the most noteworthy plant was *Filipendula vulgaris* (Dropwort), a new record for the 10km square. John Killick (HJK), who was only able to join us for the second half of the week, managed to record 212 species from tetrad SN72A (another Local Change tetrad) on his journey to Glynhir but failed to re-find *Genista anglica* in the spot where he had recorded it fifteen years earlier during the first Monitoring Scheme!

Both BSBI and BPGS members combined on Thursday to visit the restored former Wernos coal preparation site at Pontyclerc, near Ammanford, led again by RHD and RNS. Immediately on arrival, a magnificent plant of *Dipsacus pilosus* (Small Teasel), in full flower, was discovered growing at the woodland edge by the Fferrws Brook. This was only the third site recorded for the species in the vice-county. The diversity of vegetation and abundance of galls dictated that progress was slow through the young mixed-species plantation-woodland with its wide glades yielding species established from the restoration seed-mix. These included *Trifolium hybridum* (Alsike Clover), *T. medium* (Zigzag Clover), *Lotus corniculatus* var. *sativus* (the Eastern European variety of Bird's-foot Trefoil), *Poa compressa* (Flattened Meadow-grass) and *Agrostis castellana* (Highland Bent) (determined later by AOC) and were in company with naturally-colonising, dry neutral grassland plants such as *Pastinaca sativa* (Wild Parsnip), *Daucus carota* subsp. *carota* (Wild Carrot), *Centaureum erythraea* (Common Centaury) and *Centaurea nigra* (Common Knapweed). The catkins on the various alders (*Alnus* spp.) displayed an abundance of magnificent specimens of the *Taphrina alni* gall whilst colonising bushes of *Rosa canina* agg. (Dog-rose) had conspicuous *Diplolepis rosae* (Bedeguar or Robin's Pin-cushion) galls. After lunch the party climbed to the summit of the re-contoured colliery spoil tips where dry, sparsely vegetated, mobile shale supported *Vulpia myuros* (Rat's-tail Fescue), *Aira caryophyllea* (Silver Hair-grass), *Linum catharticum* (Fairy Flax), mats of *Pilosella officinarum* subsp. *officinarum* (Mouse-eared Hawkweed) and some of the party were lucky enough to see Grayling butterflies basking in the warm sun with their wings angled to avoid casting a shadow. Nearby at the edge of a damp rush-dominated hollow with abundant *Equisetum arvense*, both *Vicia tetrasperma* (Smooth Tare) and *Lathyrus nissolia* (Grass Vetchling) had become established. Returning along a wooded track parallel to the brook, a single plant of *Epipactis helleborine* (Broad-leaved Helleborine) was found. Time remained to walk along the former sidings to the bridge across the River Llwchwr and beyond to the extant Heart of Wales Railway line. Here both *Melampyrum pratense* subsp. *pratense* var. *pratense* and *M. pratense* subsp. *pratense* var. *hyans* (Cow-wheat) were growing in close proximity together with *Luzula sylvatica* (Greater Woodrush), all under the canopy of a small remnant of old oak woodland. On the railway ballast *Linaria × sepium* (a hybrid toadflax) was growing with just one of its parents: *L. repens* (Pale Toadflax).

Small groups were again the order of the day on Friday when MG and CT visited the National Trust's Dinefwr Estate at Llandeilo and their survey of the park included *Sherardia arvensis* (Field Madder) growing in the keep of the old castle, the first record of the species in the 10km square SN62. Others met Ian Morgan (IKM) at Machynys, South Llanelli, and spent the day looking at brownfield sites, puzzling over the alien *Conyza* and *Cyperus* plants. The several visits by both local and visiting botanists during 2003 and 2004 have come to a consensus that *Conyza bonariensis* (Argentine Fleabane) and *C. sumatrensis* (Guernsey Fleabane) as well as the more familiar and common *C. canadensis* (Canadian Fleabane) are present. The *Cyperus* has since been determined as *C. congestus* by David Simpson at Kew: a new Welsh record! The group were then shown the single clump of *Scirpoidea holoschoenus* (Round-headed Club-rush) on another site destined for future development located some 500m to the east, before continuing along the coast to Burry Port.

A third group was met by Andrew Stevens (AS) at Gwndwn Bach Farm near Meinciau where rather neglected *Molinia* dominated acid grassland had frequent *Carum verticillatum* and occasional *Carex pallescens* (Pale Sedge), *C. ×fulva* (a hybrid sedge) and *Genista anglica* (Petty Whin), the latter a very local species in the vice county. The brambles were systematically identified and recorded by Mike Porter (MP) (Recorder for v.c. 42 (Brecknock) who had joined us for the day) and RDP and included *Rubus alticruatus*, *R. leyanus*, *R. longus*, *R. prolongatus*, *R. rossensis*, *R. rubritinctus*, *R. tuberculatus*, *R. ulmifolius*, *R. ulmifolius* hybrid and *R. vestitus*. During the afternoon the group moved on to AS's farm at Waun-y-Gwial Fach, Four Roads, where a brief stop was made to admire the large *Sorbus torminalis* (Wild Service-tree) before continuing to some unimproved acid grassland and heathy fields with local base-rich flushing. Here the basophiles *Listera ovata* (Common

Twayblade), *Carex pulicaris* (Flea Sedge) and *C. hostiana* (Tawny Sedge) were seen juxtaposed with acid-demanding species such as *Molinia caerulea* and *Nardus stricta* (Mat Grass). With the exception of *R. prolongatus* and *R. vestitus* all of the brambles seen earlier in the day were also seen at Waun-y-Gwial with the addition of *R. cardiophyllum*, *R. polyanthemus* and *R. scissus*, as well as several indeterminate plants. The group was next taken to a small pond where a variety of aquatic species was growing including *Eleocharis fluitans* (Floating Club-rush), a rather uncommon plant in the vice-county. On the way to the final locality, a deep wooded gorge at the western edge of AS's farm, a small patch of *Houttuynia cordata* (Houttuynia) (see Colour Section, plate 1) was examined which was growing on imported rubble by the track. This plant, the leaves of which superficially resemble young growth of Japanese Knotweed, was first recorded here by AS the previous year and caused some head-scratching before it was identified! On reaching the gorge, ST disappeared for some time but soon returned triumphant with the news that he had found both *Trichomanes speciosum* (Killarney Fern) gametophyte and *Dryopteris aemula* (Hay-scented Buckler-fern). Both of these species had been recorded here in the past, the former in 1996 and the latter in 1991. A hurried return was made to the cars and we arrived back at Glynhir just in time for dinner!

After Saturday breakfast, goodbyes were exchanged before participants left, following what had been another very enjoyable and memorable week, made all the better by the prolonged fine weather. But as if to prolong their stays as long as possible, several members took the opportunity to explore the county further by recording tetrads on their way home! Time was never found to revisit the Pwll fly-ash lagoon so that remains an attraction for another year!

As always I must thank all participants for their enthusiasm for botanical recording both on led excursions and when exploring the county on their own. It was also good to have the company of Trevor Crosby and Mary and James Iliff who, during the week and subsequent days, also completed surveys near Gwynfie and in Cross Hands and Pontyberem as well as in north-east Carmarthenshire. The expertise of the BPGS members gave an added dimension to the whole meeting and the success of this co-operation I hope will be a model for future events. But I am most indebted to Katie and Carole at Glynhir for, as always, providing such excellent accommodation and fare and to Kath for making all the arrangements and for so efficiently completing most of the subsequent computer input of records!

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RICHARD PRYCE

ENVIRONS OF STAMFORD (LNCS), Northamptonshire (v. c. 32) 8th August

The aim of the day was to see a range of elm species and to address the two main issues that have caused problems for elm identification, namely hybridisation and the wide distribution of certain clones. The party of 15 met at Stamford station and left in convoy for the grounds of Burghley House TL040.069. Examples of *Ulmus glabra* (Wych Elm) and an elm of uncertain identity, possibly atypical *Ulmus procera* (English Elm) or a hybrid elm, were examined. Both elms were regrowth of about 20 years old, which is very common throughout the area, and tends to become infected by Dutch elm disease (DED) before getting much larger. The second stop, just south of Southorpe TL090.997, was made to view a fully mature *Ulmus minor* (Smooth-leaved Elm) growing in a hedge. Despite DED being widespread in the area since the 1970s a small percentage of elms have remained uninfected. Interestingly, these are mostly *Ulmus minor*, and no examples of *Ulmus procera* are known. The lunch stop at Elton TL090.938 was also an opportunity to see a second mature *Ulmus minor*. Quite noticeable differences were noted between this and the previous tree in terms of habit and leaf form. The variability of *Ulmus minor* is an issue to be aware of with elm identification. The

fourth stop near Laxton SP958.952, was made to see the East Midland speciality *Ulmus plotii* (Plot's Elm). This species has now been shown to be a single clone of wide distribution in the East Midlands and is probably best treated as a distinctive form of *Ulmus minor* rather than a species. A nearby *Ulmus glabra* was also examined. During discussions one of the party spotted a solitary *Satyrium w-album* (White-letter Hairstreak) flying around an elm sucker hedge. This butterfly uses elm as its foodplant and underwent a decline in response to the loss of mature elms. On route back to Stamford a final stop was made near Barrowden SK940.008 to view a third mature *Ulmus minor*. The party arrived back in Stamford at approximately 3.30pm having experienced fine sunny weather all day.

MAX COLEMAN

RYE HARBOUR, East Sussex (v.c. 13) 21st August

Thirty people in total attended this joint meeting with the Sussex Botanical Recording Society for a chance to enjoy the special plants of the Rye Harbour Nature Reserve. Unfortunately recent unseasonal storms had affected many of the interesting plants, particularly *Galeopsis angustifolia* (Red Hemp-nettle) and *Lactuca saligna* (Least Lettuce) for which Rye Harbour is one of only two known sites in the UK. We soon found some *Galeopsis* but the plants were rather small and present in smaller numbers than is normal. *Lactuca saligna* is very hard to spot, even at the best of times, but a careful search by many people revealed a scattering of plants in a few places beside the roadway and on nearby shingle.

Chris Bentley, the assistant warden, who led us round, came armed with a ladder for everyone to climb up and over a 5 feet high fence (designed to protect birds nests from foxes) to a brackish hollow where *Chenopodium chenopodioides* (Salt-marsh Goosefoot) and *Atriplex ×gustafssoniana* (Kattegat Orache) had been found in 2003 but which unfortunately did not appear to be present this year although we did find some *Althaea officinalis* (Marsh Mallow). Moving further east we found some plants of *Lathyrus japonicus* (Sea Pea) in fruit on the shingle near to the mouth of the R. Rother. Above the tideline beside the river, *Limonium hyblaeum* (Rottingdean Sea-lavender) was seen in an area where it was first found in 2002 and where it now seems to be increasing. Nearby was a patch of *Frankenia laevis* (Sea-heath). After careful searching a number of plants of *Bupleurum tenuissimum* (Slender Hare's-ear) were found on a low bank where it has been known for at least 20 years.

A brief visit was made in the afternoon to Castle Water, where quite a small muddy pool had *Baldellia ranunculoides* (Lesser Water-plantain) in its only East Sussex site. *Samolus valerandi* (Brookweed) and an immature aquatic *Ranunculus* which was almost certainly *Ranunculus baudotii* (Brackish Water-crowfoot) were also present on the muddy pool margins. In the water nearby, we found *Potamogeton pusillus* (Lesser Pondweed) and *Myriophyllum spicatum* (Spiked Water-milfoil) and on an adjacent bank were some plants of *Oenanthe lachenalii* (Parsley Water-dropwort).

Thanks must go to the Reserve Manager, Barry Yates, for permission to visit the reserve and to Chris for showing us around.

ALAN KNAPP & PAUL HARMES

EAST LONDON CANALS (mostly v.c. 21), 11th September

This popular meeting attracted 42 expressions of interest. Eighteen attended on the advertised day and a further fifteen were accommodated on a reconnoitre and two repeat walks. The meeting started on the Green Bridge over Mile End Road, part of the Lottery-funded Mile End Park. Here wild ground revealed quantities of *Buddleja davidii* (Butterfly-bush), *Conyza sumatrensis* (Guernsey Fleabane) *Diplotaxis tenuifolia* (Perennial Wall-rocket), *Hirschfeldia incana* (Hoary Mustard) and *Picris echioides* (Bristly Oxtongue) laced with *Centaurea cyanus* (Cornflower) of unknown origin, *Artemisia vulgaris* (Mugwort), *Ballota nigra* (Black Horehound), *Cichorium intybus* (Chicory), *Daucus carota* (Wild Carrot), *Medicago sativa* (Lucerne) and other common species. The *Buddleja*, *Diplotaxis* and *Hirschfeldia* turned out to be common wherever we went.

We set off southwards along the Grand Union Canal where *Bidens frondosa* (Beggarticks), *Lycopus europaeus* (Gipsywort) and *Scutellaria galericulata* (Skullcap) were frequent, growing out of cracks in the canal walls, and the murky waters yielded much *Ceratophyllum demersum* (Rigid Hornwort). Along the towpath, we scrutinised some of the abundant *Conyza sumatrensis*, looking for

C. bilbaoana. Voucher specimens submitted to the Vice-county Recorder, Rodney Burton, were not accepted as such. An area of grassy parkland near Ben Jonson Road produced *Crepis capillaris* (Smooth Hawk's-beard), *Galium verum* (Lady's Bedstraw) and *Sherardia arvensis* (Field Madder), with *Sisymbrium orientale* (Eastern Rocket) on disturbed ground in one corner and a single plant of *Consolida ajacis* (Larkspur) on the southern edge. Back by the canal, a steep bank of disturbed soil was massed with *Chenopodium* spp. – *C. album* (Fat Hen), *C. ficifolium* (Fig-leaved Goosefoot), *C. hybridum* (Maple-leaved Goosefoot) and *C. polyspermum* (Many-seeded Goosefoot), the predominant green enlivened by the red-flowered form of *Mirabilis jalapa* (Marvel-of-Peru) and the mauve-flowered *Nicandra physalodes* (Apple-of-Peru). Nearby, another taxon which interested us was *Solanum nigrum* subsp. *schultesii* (Black Nightshade), with numerous patent, often glandular, hairs on its stems. Self-sown saplings of *Ailanthus altissima* (Tree-of-Heaven) were seen in several places. Other species of interest along the towpath in this area were *Ambrosia artemisiifolia* (Ragweed), *Rorippa palustris* (Marsh Yellow-cress) *Rumex cristatus* (Greek Dock), *Senecio inaequidens* (Narrow-leaved Ragwort) and one or more *Setaria* species (Bristle-grasses)*.

All this excitement had taken a lot of time, and it was lunchtime before we reached Limehouse Basin. Before settling down to picnic on a sunny, grassy area, we saw *Euphorbia prostrata* (Prostrate Spurge) cowering in a crack of pavement at the foot of a wall behind a large, potted palm.

Refreshed, we set off north-east along Limehouse Cut, passing a wall with much *Parietaria judaica* (Pellitory-of-the-wall) and some *Polypogon viridis* (Water Bent) and fruiting *Veronica agrestis* (Green Field-speedwell) at its foot. Further along, the canal wall produced *Chenopodium ambrosioides* (Mexican-tea) growing near water-level, and *Solanum chenopodioides* (Tall Nightshade) here with diagnostic matt-black ripe fruits. Similar plants, seen earlier, had just flowers and unripe fruits.

On reaching Bow Locks, on the Lee Navigation, we immediately found *Bidens connata* (London Bur-marigold) and *B. frondosa* (Beggarticks) growing side-by-side, and *B. tripartita* (Trifid Bur-marigold), nearby, giving an opportunity to examine the achenes of each and of differentiating them. Slack water close by was covered in *Lemna gibba* (Fat Duckweed) and *Azolla filiculoides* (Water Fern).

Opposite Three Mills there was a large clump of *Stachys palustris* (Marsh Woundwort), and *Angelica archangelica* (Garden Angelica) was fruiting; up to now, we had encountered only leaves growing in the canal walls.

North along the Lee Navigation the grass beside the towpath had been mown, and all that was left of *Bunias orientalis* (Warty Cabbage) were the distinctive rosettes. Here, too, was a good stand of *Sambucus ebulus* (Danewort), scattered *Foeniculum vulgare* (Fennel), and *Ranunculus sceleratus* (Celery-leaved Buttercup). We were delighted to fish some *Egeria densa* (Large-flowered Water-weed), albeit without flowers, out of the water, still very opaque here, but perhaps somewhat alarmed to see several large rafts of *Hydrocotyle ranunculoides* (Floating Pennywort), a potential menace.

Before turning for home along the Hertford Union Canal, we made a small diversion to see the yellow-flowered form of *Mirabilis jalapa* at the edge of a factory car park. The water in the Hertford Union was much clearer, and in one place supported a good population of flowering *Vallisneria spiralis* (Tapegrass). *Amaranthus retroflexus* (Common Amaranth) occurred plentifully along the landward side of the towpath. Near Bow Wharf, at the junction of the Hertford Union and Grand Union Canals, we were shown some very dried-up *Sisymbrium irio* (London-rocket) beside the path; fortunately, there was a small quantity still in flower and with green foliage in a sheltered alcove nearby.

There was no time left to look closely at the Ecology Park, another section of the linear Mile End Park, but as we hurried back to the station, we managed to see *Typha angustifolia* (Lesser Bulrush) and *Nymphaoides peltata* (Fringed Water-lily) both introduced to the shallow pond and *Cotula coronopifolia* (Buttonweed) growing at its muddy margin. The day finished with a sight of *Persicaria capitata* (Pink-headed Knotweed) growing on the front steps of a house in Grove Road where it has survived the last three winters.

Despite a rather dodgy forecast, most of the day was fine and sunny and a brief light shower in the morning did nothing to dampen our enthusiasm. The steady series of interesting plants demonstrated on this tour was the result of meticulous reconnaissance and planning by the leader, John Swindells, to whom we were most grateful for such a congenial day's botanising.

*John Swindells adds, ... We thought we might have found both *Setaria pumila* (Yellow Bristle-grass) and *S. viridis* (Green Bristle-grass). Clare Coleman sent voucher specimens to Eric Clement for confirmation. Eric identified both as *Setaria viridis* (Green Bristle-grass) and commented, 'This species seems to consist of many self-pollinating races, one of which often forms uniform populations quite unlike the next colony, e.g. longer bristles, size of panicle, etc., (some have names but there are really no worthwhile taxa in my view). Bristle number is hard to see and may be variable. All *S. viridis* specimens have the first glume $\frac{1}{3}$ of the length of the spikelet; the second glume equals the spikelet length.'

REPORT OF OVERSEAS FIELD MEETING – 2004

CYPRUS 13th - 20th November

Introduction

We were assured by our leaders, Dr Yiannis Christofides and Mary Briggs that November, although seemingly surprising for a botanical excursion, was a good month to go to Cyprus and they were certainly right! During six days we recorded 237 plants, 110 of which were flowering, 28 species of fungi, 17 species of butterfly and numerous birds, reptiles, insects and mammals.

Eleven members were based in the Troodos Mountains at 1150m where we stayed in Platres on the edge of the Pera-Pedi Forest at the excellent Minerva Hotel where our leader was also the hotelier! From here we explored the surrounding woodlands, streams and waterfalls before travelling further afield to some of the historic sites near the south coast, notably the Temple of Apollo and Kourion. We visited Akrotiri with views across to the Salt Lake where 3000 flamingos waded. We spent a day in the Akamas peninsula in the west going via the Pegeia Forest and finding many Spring flowers growing in the limestone pavement area. Our leader, Yiannis, also took us to several Greek Orthodox churches explaining the symbols and frescoes at both Áyios Ioánnis Lambadhistis in Kalopanyiotis and Arkhángelos Mihail at Pedhoulás.

In addition to these botanical and cultural riches we enjoyed many good evening meals at the Village Taverna , much local wine, Cyprus sherry, Hotel Minerva's famous Brandy Sours and during the day we feasted on berries and grapes as we explored in the warm sunshine!

Troodos Flora

Approximately 1960 species of plant are found in Cyprus. Why such a large number of species in such a small area? The answer lies in the different habitats that are found on the island. So what is it that makes Cyprus special? To help find the answer, Yiannis gave us a geology lesson on our first morning so that we could appreciate the significance of the plate tectonics. The central part of the Troodos massif is an ophiolite, i.e. a piece of the ocean floor that has been uplifted through the movement of the nearby African and Eurasian plates. As such it consists of igneous rocks, i.e. rocks that have come to the surface from deeper within the earth during the process of ocean floor formation.

What other types of rocks are found in Cyprus? During the time when the Troodos massif was still under water large amounts of limestone were deposited on the ocean floor. Through the process of erosion the limestone covering the highest peaks has been eroded exposing the igneous rocks beneath. Material eroded from both the limestone and igneous rock has been deposited in the lowland regions giving yet another type of soil structure.

The Troodos mountains rise to a height of nearly 2000m with considerable variation in the temperature and rainfall from sea-level to the top. The highest part of the mountain above 1500m. is covered by snow from December to April while at sea level a mild Mediterranean climate prevails during the winter but with hot baking summers. A large part of the Troodos range is occupied by the Troodos Forest of which 9000 hectares was designated a National Forest Park in 1992 and which can be subdivided into several botanically distinct zones.

The most distinct zone is that above 1500m., such as we saw up at the Troodos Visitor Centre, and is characterised by sparse growth of *Pinus nigra* subsp *pallasiana*. The ground beneath the pines is covered with cones (as there are no squirrels to dispose of them) and a variety of small plants, many endemic. Examples include *Crocus cyprius*, *Teucrium cyprium*, *Alyssum troodi*, *Scorzonera trooidea*, *Cynoglossum troodi*, *Ornithogalum chionophyllum*, *Acinos exiguus* and *A. troodi*, *Genista sphacelata* var. *crudelis* and *Rosa chionistria*, the apple-scented Troodos Rose.

The next zone down (1500-900m) which we experienced on our walk to the Kaledonia Waterfalls, is that of dense cover of *Pinus brutia* with the endemic *Quercus alnifolia*, the Golden Oak, the smooth, red-barked *Arbutus andrachne*, the Eastern Strawberry Tree with sweet, red fruits and *Styrax officinalis* with ghostly pale fruits once said to be used to stupefy eels when cast into watercourses. It is the source of Storax gum, obtained by making cuts in the branches, used since ancient times and still, today, for incense. The shrub layer here is

more varied and we found *Quercus coccifera* (Kermes Oak), *Olea europaea* (Wild Olive), the sweet-smelling *Myrtus communis* (Myrtle) and *Crataegus azarolus* (Azarole), the large yellow haws of which make a fine jam and which we were given every morning at breakfast time!

Other woodland trees to be found along the upland streamsides include *Platanus orientalis*, *Alnus orientalis* and *Juglans regia* with an occasional *Populus nigra* subsp. *afghanica* looking very much like an eastern version of our familiar Lombardy Poplar.

Alongside these a number of smaller plants are found, the commonest being the two species of *Cistus*, *C. cretica* with pink crinkly petals and *C. salvifolius* with white smaller flowers. Amongst the *Cistus* grow scattered scented salvias, *Salvia fruticosa* with an upright habit, from which a herbal tea is made locally, and *Salvia willeiana*, the endemic *Salvia* with broader green leaves with the branches growing straight from the ground.

As most of the largest streams in Cyprus rise in the Troodos Forest we were able to spend some time searching for plants along the banks of rivers such as the Kryos and Platys. We found *Umbilicus rupestris*, *Juncus inflexus*, *Epipactis veratrifolia*, *Mentha longifolia* subsp. *cypria*, and *Samolus valerandi* and some species growing even on the rock face under the waterfalls, *Pinguicula crystallina*, *Solenopsis minuta*, *Putoria calabrica* and *Schoenus nigricans*. We were pleased to find the distinctive grass, *Oryzopsis miliacea* which has an eastern Mediterranean distribution but reaching to Iran and the Atlantic Islands.

Ferns were well represented in the damp, protective environment of the steep-sided watercourses; *Equisetum ramosissimum*, *Asplenium adiantum-nigrum*, *Dryopteris pallida* and *Adiantum capillus-veneris* were all found by the Kryos river and *Pteridium aquilinum* was seen on the drier woodland slopes. *Ceterach officinarum* and *Cheilanthes pteridoides* found niches in the rocks here.

Moving across to the River Platys near to the beautiful Kélefos Bridge, built by the Venetians during their brief occupation of the island in the 16th century, we found *Spiranthes spiralis* flowering. Terry Wells, our *Spiranthes* expert had never seen it growing under conifers in Britain. In this river valley too we found the flowers of autumn-flowering *Cyclamen cyprium* growing through a carpet of Oriental Plane leaves.

This was an excellent valley for Fungi as there had been some rain in the days before we arrived. Along the path by the Platys River, we found *Stropharia collinitis* under pines, *Baeospora myosura* which grows attached to fallen pine cones and *Micromphale foetidum* on a fallen branch of alder and which smells of rotting cabbage!! *Paxillus filamentosa* occurred under alder – on the ground. The one which caused the greatest excitement was the dainty, vinaceous-coloured toadstool *Mycena seynii* which grows on the fallen cones of *Pinus brutia*. Another notable species was the gasteromycete – *Pistolithus arhizus* which seemed to flourish at the edge of the tarmac on several roadsides. During the week we found 28 species including two of the wild mushrooms that the locals like to eat – *Lactarius deliciosus* and a pure white *Russula* which seemed to be near *R. densifolia*, but didn't quite fit.

Historic sites

We visited some of the historic sites in the south travelling through the dry, stony countryside seeing hillside terraces with many vines but also citrus and olive groves with carob trees near the farms. Further south the vegetation was of the garigue type with scattered Juniper as we descended towards the coast.

It was appropriate for botanists to go to the sanctuary of Apollo Hylates near Episcopi as Apollo was worshipped as the god of the surrounding woodland but now not a great deal of which remains. We explored the site noting *Heliotropium hirsutissimum*, *Lantana camara* and *Capparis spinosa* amongst the ruins and a few tiny plants of *Scilla autumnalis* which had sprung up after the rain.

Close by is the ancient city of Kourion, perched spectacularly on a hillside above the sea and whose history dates back as far as the Late Bronze Age. A magnificent theatre, originally Hellenistic but remodelled in the second century AD, faces the sea and next to it is the House of Eustolios with extensive hypocaust and several very fine mosaics. One of the largest mosaics depicts fish and various birds including a partridge, guinea hen and falcon with some wonderfully intricate backgrounds and borders. Another was the bust of a woman holding a measure in her right hand – perhaps an early botanist?! Leaving these compelling images we began our plant search and although the site has recently been 'tidied up' we managed to record several interesting species; *Adiantum capillus veneris* was adorning a wall of the bath-house and we found *Dianthus strictus*, *Smilax aspera* in flower and *Taraxacum cyprium* growing amongst the stones. Another endemic, *Bosea cypria*, (Amaranthaceae) with bright red berries was climbing over a small Olive tree with *Ephedra fragilis* and is of particular interest, being a Tethyan- Tertiary relict in the Mediterranean flora. The genus has a very disjunct distribution. Its three species are all narrow endemics, one in Macronesia, one in NW Himalayas and *B. cypria* endemic to Cyprus. Also unknown to us were the twiggy shrubs of *Noaea mucronata* (Chenopodiaceae) in full flower. Near to the House of the Gladiators, so-called because of the mosaics depicting fighting gladiators most intricately worked, but not as appealing as the very fine Hellenistic pebble mosaic nearby, we found *Plumbago europaea* and the extremely spiny *Lycium ferocissimum* and along the dry and dusty paths grew *Echium angustifolium*. Near here we spotted a magnificent Swallowtail, *Papilio machaon syriacus* basking on a rock in the late November sun.

The churches and monasteries we visited were also full of botanical interest. At the World Heritage Site of the monastery of Áyios Ioánnis Lambadhistis, *Anchusa strigosa* with large woolly leaves cascaded down one wall and another held *Ceterach*, *Cheilanthes* and the withered remains of *Campanula erinus*, *Catapodium rigidum* and *Phagnalon rupestre*. *Sedum cyprium* was flowering on the roof at one end of the cloisters and as we walked alongside the gabbro outcrop above this church we saw four endemics; *Anthemis plutonia*, *Arabis purpurea*, *Asperula cypria* and flowering *Odontites cypria*. In the village of Pedhoulá, near to the tiny church of Arkhangélus Mihail which we visited to admire the richly coloured frecoes, was a wall with *Euphorbia nutans* and *Aristolochia sempervirens*.

The Commandaria

A visit to Cyprus would not be complete without seeing one of the Krassokhoriá or wine villages clustered around the westerly approaches to the Troodos, well-known for both dry and sweet dessert wines. Commandaria, the world's oldest named wine is a sweet wine which has been made in this area since the Crusaders came over in 1294 and we visited a wine cellar in Ómodhos to learn a little more – a fine plant of *Aristolochia sempervirens* was climbing up the wall opposite the entrance! Inside the stone-walled cellar was the huge wooden wine press and vast, immovable pithari for storing the wine, made *in situ* by the travelling potter. As soon as we walked along the road out of the village we could see the abundance of vineyards in this area and on the terraces beyond. Every house had its own vine laden with grapes. We feasted very well indeed especially when we were given a small crate of sweet white grapes by a kind vineyard worker! The chalky road verges here were rich in species and we noted the strongly smelling *Tageetes minuta*, *Solanum villosum* with orange berries and masses of *Rubia tenuifolia* clambering over shrubs and walls. As we passed a stationary car laden with round loaves, Yiannis explained that these locally made specialities are 'raised' with the fermented juice of the chick-pea. Because of the very dry conditions of the verges many of the plants could only be identified by their distinctive inflorescences; *Zosima absinthiifolia*, *Hypericum triquetus* and *Opopanax hispidus* used in flower-arrangements, *Echium italicum*, white, woolly and shaped like a Christmas Tree and *Onopordium bracteatum* were common and the globose heads of *Allium willianum* and *A. junceum* were scattered here and there. *Muscaris parviflorum* was flowering in a dry bank, some *Scilla autumnalis* seen and, on a stony-edged bend in the road, were several clumps of *Colchicum pusillum*, flowering before the leaves and very pale and fragile-looking. Some fine *Scutellaria cypria*, another endemic was still displaying its striking yellow and maroon flowers.

Coastal sites

Not all of our time was spent up in the mountains. We travelled down near to the coast, and after visiting the quaint little church of St Ermogenis set in a small Eucalyptus grove near Kourion Beach we had the opportunity to look at some of the Cypriot arable plants. We crossed a potato field on the edge of which grew *Chrysanthemum coronarium* and *Digitaria sanguinalis*. The field had been liberally spread with horse manure from the nearby stables but, undeterred, we recorded *Ajuga iwa*, *Salsola kali*, and the *Echinops*-like *Cardopodium corymbosum* with lilac blue flowers, large stands of *Polygonum equisetiforme* and some good rosettes of *Verbascum sinuatum* with very crinkly leaves.

The most southerly point of our visit was to Akrotiri where we went to the newly opened Environmental Centre and through telescopes we had close views of wintering Greater Flamingos (*Phoenicopterus ruber*) feeding in the Salt Lake. On a short walk through the salt marsh we recorded some local and some familiar species, *Sueda vera*, *Inula crithmoides*, *Plantago maritima*, *Juncus acutus* and *Polygonum equisetiforme*.

For our second coastal day we went north of Paphos to Pegeia Forest, but first stopping *en route* to view Aphrodite's Rock, where she is said to have come ashore on her large shell. From the cliff top in perfect weather we viewed the chalk rocks set in a picture postcard blue. On the cliffs we saw the endemic *Taraxacum aphrogenes* – one of the two autumn-flowering dandelions on the island. Then skirting Paphos to Pegeia, where among the limestone rocks and rock pools, we found *Ranunculus bulbatus*, *Scilla autumnalis*, *Muscaris parviflorum* and *Narcissus serotinus* all in flower. Also a prostrate spurge, *Euphorbia dimorphocaulon*, in flower; not too spectacular, but rare on the island. Along the ridges the miniature *Colchicum pusillum* was flowering well.

Above the village of Kritou Terra on the dry hillside we found many groups of the delicate, white *Crocus veneris*, the first of the Cyprus *Crocus* species to flower, together with large areas of *Bellis sylvestris*.

Fauna

Although plants were the primary focus of the group, we also encountered a good selection of the Cypriot fauna during the week. In terms of mammals, some of us had distant views of the Cyprus Mouflon (*Ovis orientalis ophion*) on the hills above the river Platys, we flushed a Cyprian Hare (*Lepus cyprius*) near Omodos, Clare saw what was probably a Spiny Mouse (*Acomys cahirinus*) at Kourion, and we also encountered a dead Red Fox (*Vulpes vulpes*) whilst walking down from Troodos to Platres on the last day.

Birdwise, we saw the Cyprus endemic races of Short-toed Treecreeper (*Certhia brachydactyla dorothaeae*) and Coal Tit (*Parus ater cypriotes*) in the pines around Platres, with good numbers of Hooded Crows in the foothills and near the coast. A lone male Black Redstart (*Phoenicurus ochruros*) was seen on the coastal cliffs near Aphrodites'

Rocks. Most of us saw or heard Chukar (*Alectoris chukar cypriotes*) in the Akamas peninsula, but only a privileged few in the front of the bus caught a glimpse of the much rarer Black Frankolin (*Francolinus francolinus*) flying across the road below Drouseia.

Owing to the balmy weather, reptiles were much in evidence. Cedric spotted our first Starred Agama (*Laudakia stellio*), near Platres, although we had many more sightings of this bizarre lizard in the lowlands, some of which were a good 40cm in length. We also saw large numbers of the endemic Troodos Lizard (*Lacerta laevis troodica*) scuttling between the bushes at higher altitudes, with a single Snake-eyed Lizard (*Ophisops elegans*) observed by a few near the river Platys. Our sole snake of the trip – found dead on the road below Drouseia – provoked much discussion: although most likely the Large Whip Snake (*Coluber jugularis*), it bore a close resemblance to the extremely rare and endemic *C. cypriensis* – whatever it was, the driver took some convincing before he allowed the corpse on board! We also encountered two of the three Cypriot amphibians: the endemic tree frog *Hyla savignyi*, near Omodos, and a couple of Marsh Frogs (*Rana ridibunda*) lurking in the river Platys.

Although it was November, we came across no less than 17 species of butterfly; including the Swallowtail already mentioned. There were Cleopatras (*Gonepteryx cleopatra taurica*) near Platres, an Eastern Bath White (*Pontia edusa*) near Omodos, tiny African Grass Blues (*Zizeeria knysna karsandra*) in the coastal sands, Lang's Short-tailed Blues (*Leptotes pirithous*), Long-tailed Blues (*Lampides boeticus*) and Large Wall Browns (*Lasiommata maera*) in the Akamas peninsula, and, best of all, the endemic Cyprus grayling (*Hipparchia cyprensis*) alongside the river Platys. Several species of grasshoppers and crickets also attracted our attention, including a few Migratory Locusts (*Locusta migratoria*), remnants of a plague which had swarmed over the island only a few weeks previously, and, near the coast, an Egyptian grasshopper (*Anacridium aegyptium*) and two much-photographed, but unidentifiable species of 'nosed' grasshopper.

CONTRIBUTIONS TO THIS REPORT MADE BY THE LEADERS AND ALL MEMBERS OF THE GROUP

ANNUAL EXHIBITION MEETING 2004 ABSTRACTS

A JERSEY BRAMBLE IN IRELAND

Rubus caesarius, a recently-described member of the woolly and thinly glandular series, *Vestiti*, is abundant over much of the island of Jersey. That it occurs there mainly on roadsides and appears to be absent from the other Channel Islands as well as the neighbouring parts of France suggests it may be no more than adventive. Strengthening that impression is the nature of the only two other occurrences of this bramble elsewhere that have been known: a cluster of roadsides near Southampton and a dock-side in Gloucestershire. But if it is an invader, where can its native home be?

A possible answer to that question has now presented itself: Ireland.

In August 2004 a patch of what was clearly this very same bramble was found growing in a natural-looking habitat in Fermanagh, v.c. H36, in the north-west of that island. Two further finds shortly afterwards suggest that it may prove to be widespread in that district, just to the south of Lower Lough Erne. A specimen collected in 1905 by R. A. Phillips at Douglas on the coast of Mid Cork, v.c. H4, in the far south of Ireland, has since also come to light in *Herb. BM*, raising the hope that more extensive fieldwork may reveal the distribution to be even county-wide, though probably at best patchy.

Material from each of the places referred to was exhibited.

D.E. ALLEN

‘FACES FROM THE PAST’ – FROM THE BSBI ARCHIVES

Exhibited were photographs of three past presidents (Sir George Taylor, T.G. Tutin and J.E. Lousley); three groups photographed on the field meeting on Halling Down, Kent, for the study of *Rosa* in September 1950; a group including J.E. Lousley, E.C. Wallace and R.W. Derbyshire on Longstone Edge, Derbyshire, in 1946; and photographs of E.S. Marshall and H.J. Riddelsdell that were published with their *Journal of Botany* obituaries.

D.E. ALLEN

ART IN NATURE

A continuing search for suitable specimens of flowers, grasses and leaves to photograph on a light box has resulted in a new set of prints. On display they depicted the beautiful and fascinating patterns and shapes found in nature. The specimens have been collected in Britain and Europe.

RUTH BERRY

OROBANCHE PICRIDIS F.W. SCHULTZ IN KENT

Orobanche picridis (Oxtongue Broomrape) is perhaps the rarest and most easily confused of our Broomrape species, currently restricted to chalk sea-cliffs on Britain's southern coasts. Population data for the largest Kent sites have been gathered for most years since 1997 and were presented. Not seen in the UK for several decades in the 20th century this species was clearly overlooked in its cliff-ledge habitat and more intensive survey by the authors has revealed new populations within the known area of occupancy. However a clear decline has occurred at a classic site in St. Margaret's Bay through encroachment/shading by trees at the cliff base. Recent management activities promoting the survival and spread of the species were outlined and illustrations of the species and the similar *O. minor* shown to aid in their discrimination. A paper on the past and present status in Britain of *O. picridis* is in preparation.

P. CHANTLER & F. RUMSEY

DOES GENTIANELLA CAMPESTRIS SUBSP. BALTICA OCCUR IN BRITAIN?

Gentianella campestris subsp. *baltica* was described by S.S. Murbeck (as *Gentiana baltica*) as distinct from *G. campestris* sensu stricto (Field Gentian) in being annual rather than biennial, and he reported it from, amongst other places, Britain. Examination of herbarium material from the British Isles indicates that both annuals (with cotyledons at flowering) and biennials (without cotyledons or basal rosette) occur, but no consistent morphological differences can be found between them. Some populations have both annual and biennial plants. There is no justification for separating them in the British Isles.

H. CLEAL & DR T.C.G. RICH

EARLY ALIEN RECORDS FROM THE MANCHESTER COLLECTION

The Manchester herbarium (MANCH) has proved to be a valuable source of specimens documenting the early history of many of the alien giant Polygonaceous herbs introduced to Britain from Asia in the 19th Century. Particularly noteworthy is the Grindon Collection, which unusually for the period, concentrates on cultivated plants. The collection is made more valuable by the addition of various cuttings from contemporaneous horticultural journals to some of the herbarium sheets. Most significant are the 1872 and 1876 dates for the hybrid *Fallopia ×bohemica*, which was only described in 1983. Since this is only a few years after the introduction of *F. sachalinensis* (Giant Knotweed), it appears that horticulturalists didn't waste much time hybridising the two taxa. The earliest dates for *Persicaria weyrichii* (Chinese Knotweed) and *P. wallichii* (Himalayan Knotweed) are also revealed.

Tantalising snippets about which nursery supplied which plant and under which name are also to be found. That nursery gardens were distributing these plants under wildly incorrect names didn't augur well for their smooth incorporation into the British Floras. Japanese Knotweed was given the horticultural epithet *P. sieboldii*, presumably in acknowledgement of Philip von Siebold the author of *Polygonum cuspidatum*, and the person responsible for its introduction. Something the good doctor, who, somewhat lacking in the self-effacement department, would have done little to curb!

ANN CONOLLY & JOHN BAILEY

SOME 2004 ABERRATIONS

A variety of plants found in 2004 and showing some type of aberration were exhibited. These included:

- *Dipsacus fullonum* (Wild Teasel) showing spiral torsion. From a garden in Hullavington, Wilts. Last reported to me about 10 years ago from another Wiltshire garden.
- *Anthriscus sylvestris* (Cow Parsley), a new variegated leaf form, stabilized over the summer, differing from other cultivars by a yellowy green margin. From Barrow Field, Chedglove.
- *Hedera helix* (Common Ivy) with proliferous? flowers. Most of the flowers on this bush showed this tendency. From a private garden in Bath.

- *Trifolium repens* (White Clover) with a 2-tone V and extensive winter purpling at the base of the leaflets. From a lane in Hullavington.
- *Urtica dioica* (Common Nettle), a form which turns yellow in winter, selected from a sectorial chimera looking yellow in spring but turning green for summer growth. From a lane in Hullavington.
- *Fraxinus excelsior* (Ash) with digitate leaves subtending resting buds on one low branch. On a tree on a track near Hullavington.
- *Fraxinus excelsior* (Ash) showing two new arrangements of buds. One vigorous shoot with buds in threes from a hard-flailed hedge, Hullavington. The second from a similar hedge, with buds paired but on the same side of the stem. Opposite this hedge the flailed *Rhamnus cathartica* (Buckthorn) showed equal amounts of shoots, with buds opposite and alternate.
- *Acer campestre* (Field Maple) with keys in threes. In a newly planted wood behind hedge with Buckthorn; just one example. At Hullavington.
- *Bergenia* sp. (Elephant's-ears). This year's aberration involves a pitcher leaf surrounded by much smaller pitcher leaves ('the family'). From a private garden, an old cultivar, Hullavington.
- *Heracleum sphondylium* (Hogweed) with bi-coloured flowers on a November flowering specimen. Is this common?

MARTIN CRAGG-BARBER

CAREX SALINA – A NEW SPECIES OF SEDGE FOR BRITAIN RELATED TO CAREX RECTA

A new species of sedge to Britain, *Carex salina* Wahl. (Salt-marsh Sedge) was discovered at Morvich, Loch Duich (v.c 105 Wester Ross), on the west coast of Scotland, by Keith Hutchison in July 2004, whilst undertaking a survey of the Kintail Estate for the National Trust for Scotland. The turf-forming plants edged the creek channels, but were not in the main river channel, growing in the mid-marsh part of the salt marsh zonation. The species is part of a group of taxa that are of hybrid origin (as is *C. recta* Boott, Estuarine Sedge) and because of it, they are morphologically variable and difficult to identify. The Kintail material was sent to Dr Jacques Cayouette, a Canadian expert in this group, who has confirmed our determination. The parent species, *C. paleacea* Schreb. ex Wahl. (also a parent, with *C. aquatilis*, of *C. recta*) and *C. subspathacea* Wormsk., neither of which has been found in Britain were also exhibited.

MARY DEAN, KEITH HUTCHISON, CLIVE JERMY & PAUL ASHTON

THE FLORA OF V.C. 35 (MONMOUTHSHIRE)

Frequent queries by participants of *The Monmouthshire Mapped Flora Scheme 1985-90*, (extended to deal with the critical species, though updating has continued at the same time) and the gentle persuasion of Tim Rich, who is my taskmaster, mentor and critic, and the realisation that my time could be running out, has stirred me since midsummer into sitting at my computer to record the accumulated results of the efforts of many people during the five-year stint and a small number of recorders who have continued to give me support, since. They all will be acknowledged in the final product.

So far 44% of the first draft has been written, vetted and amended. That amounts to 168 (plus more for the *Rubus* species to be re-formatted) A4 pages, some examples of which were on display. Eventual page size has not been decided yet. To be added are the species distribution maps some of which are also on display. Introductory chapters and acknowledgements have already been prepared. A promise to add geological information has been given. Drawings and photographs help descriptions and their inclusion will be discussed.

TREVOR EVANS

THE BSBI FIELD TRIP TO THE PICOS DE EUROPA, 2004

14 members and two leaders visited this floriferous area of northern Spain from 31st May to 9th June. The exhibit showed the variety of habitats and species, and the range of colour and form to be found in locations around the two centres of Espinama and Posada de Valdeon. A copy of the meeting report (see *BSBI News* 97: 66) and a full list of plants and animals recorded in the Picos was also available for further reference.

LYNNE FARRELL

SOME EARLY ENGLISH PLANT RECORDS OF THOMAS PENNY (C.1530-1588)

Thomas Penny, who is remembered mainly for his entomological work was also a botanist of great talent. He spent four years on the continent during which time he annotated plant drawings in Conrad Gesner's collection.

In these annotations he also referred to English localities where he knew the plants; these must be amongst the earliest known records. Copies of illustrations shown were for *Cochlearia anglica* (English Scurvygrass), *Hypochaeris maculata* (Spotted Cat's-ear), *Onobrychis viciifolia* (Sainfoin), *Pinguicula vulgaris* (Common Butterwort), *Primula vulgaris* (Primrose) and *Pulsatilla vulgaris* (Pasqueflower). The non-native *Crocus sativus* (Saffron Crocus) was also included.

MICHAEL FOLEY

CAREX HYBRIDS FOR THE NEW CYPERACEAE HANDBOOK

For the first time *Carex* hybrids are to be described in the new BSBI Cyperaceae Handbook due for publication in Spring 2005. Some examples of the text and illustrations together with relevant herbarium specimens were shown. These involved *Carex ×boenninghausiana*, *C. ×gaudiniana*, *C. ×involuta* and *C. ×pseudaxillaris*.

MICHAEL FOLEY, MIKE PORTER & CLIVE JERMY

PLANT COMMUNITIES OF DISUSED RAILWAY BALLAST

There has been a lack of botanical research on the ballast of disused railway lines in Britain for some time, with only a few botanists over the years publishing their findings from their local railway lines, whereas in Europe the study of the flora of railways goes back a long way and still continues to this day. My research concentrates on describing plant communities found on disused railway line ballast and placing them in a European context. The Braun-Blanquet methodology is being used in able to directly compare British railway plant communities with those already described in Europe. The NVC methodology is also being used in an attempt to compare railway plant communities to existing NVC communities. Many disused lines have been studied, particularly in the north-west of England and preliminary association tables have been drawn up although further data is needed and will be collected during 2005.

RACHEL HACKING

NOTEWORTHY RECENT FINDS IN CUMBRIA

Specimens were shown of plants which now reach their northern limit in Cumbria:- *Myosurus minimus* (Mousetail), *Rubus caesius* × *R. idaeus*, *Galium spurium* (False Cleavers) (both the bristly-fruited var. *vaiillantii* and the smooth-fruited var. *spurium*) and *Eleocharis palustris* subsp. *palustris* (Common Spike-rush). The *Galium* record is the only post-1986 one north of Essex whilst the diploid *Eleocharis* subspecies had not previously been recorded north of Nottinghamshire. Three bird-seed aliens were also exhibited:- *Setaria verticillata* (Rough Bristle-grass), *S. pumila* (Yellow Bristle-grass) and *Amaranthus hybridus* (Green Amaranth).

G. HALLIDAY

WINDBREAK SHRUBS ET AL. FROM THE ISLES OF SCILLY

Material was exhibited of the three commonest exotic windbreak shrubs: the ubiquitous *Olearia traversii* (Akeake) (Chatham Island), *Pittosporum crassifolium* (Karo) (New Zealand) and, a more recent planting, *Coprosma repens* (Tree Bedstraw) (Rutaceae, New Zealand). Other alien species shown were the handsome composites *Chrysocoma coma-aurea* (Shrub Goldilocks) and *Helichrysum petiolare* (Silver-bush Everlastingflower), the latter with a striking resemblance to *Otanthus maritimus* (Cottonweed). Both are from South Africa and are locally naturalised by sandy beaches. Another plant from the same habitat was *Senecio minimus* (Toothed Fireweed), a species not listed in Stace's Flora and said by Clement & Foster to be a wool alien.

G. HALLIDAY

STAFFORDSHIRE FLORA PROJECT SPECIES DISTRIBUTIONS WITHIN V.C. 39

E.S. Edees' 1972 *Flora of Staffordshire* was one of the first to record on a tetrad basis. A New Flora is in preparation. It is scheduled for publication in 2010 and will be based on surveys made in the period 1995–2008. The number of records collected already exceeds that for the 1972 volume.

The New Atlas cites distribution changes that have taken place nationally as a result of altered land use or other reasons. Many of these are paralleled in v.c. 39, but other trends are already evident. Notes and maps were displayed under sections relating to: county specialities; plants increasing on salt-treated roadsides; species spreading north and west; taxa spreading along the canal system; and changes at variance with national ones.

J.E. HAWKSFORD

CURRENT WORK ON SOME CRITICAL GROUPS

Work recently commenced at the Natural History Museum on several critical genera including *Utricularia* (Bladderworts) and *Salicornia* (Glassworts) was illustrated and reviewed. Preliminary studies of the genus *Utricularia*, initially using morphometric techniques but with molecular diagnostics being developed, will hopefully clarify the confused distributions of non-flowering *U. australis/vulgaris* and establish the status and abundance of the segregates of the *U. intermedia* aggregate. Assistance from the membership in gathering troublesome specimens of these taxa for identification would be appreciated.

P. HAYES & F. RUMSEY

BRITISH HABITAT CREATION IN BOTANIC GARDENS

There are 58 botanic gardens and arboreta listed within the British Isles of which 46 are classified as botanic gardens. Out of these 46 botanic gardens between 8 and 12 contribute in a major way to British habitat creation for conservation, education and/or display. A small selection of other gardens show some evidence of British habitat representation, often in the form of types of grassland or other minor creations that contribute to the study of the British flora.

The project traces the cultural changes of European botanic gardens with special reference to those in Britain from the early days of medicine to more recent habitat creations and from plant taxonomy through to the new science of plant ecology. First-hand investigations are being made into the types of habitat which have or are being created, discovering the reasons for their creations.

The study is part of an M.Phil. thesis on British Habitat Creation in Botanic Gardens, under the supervision of Mr Richard Bisgrove in the Department of Horticulture and Landscape at the University of Reading. (A display chart was available)

MICHAEL HICKEY

HOW MANY BRISTOL WHITEBEAMS ARE THERE?

Bristol Whitebeam *Sorbus bristoliensis* is a rare English endemic tree, confined to the Avon Gorge, Bristol. At least 232 trees were found during field surveys in 2004 but there are undoubtedly more, and surveys will continue in 2005. Height and girth data indicate that there is a broad range of age classes present, including many saplings and young trees. There appears to be little problem with regeneration, and given that most of its sites are SSSI/SAC, *S. bristoliensis* probably has a secure future.

L. HOUSTON, DR A. ROBERTSON & DR T. C. G. RICH

BAMBOO NEW TO WALES

Semiarundinaria fastuosa (Narihira Bamboo), a first for Wales, was displayed together with a brief key, description, other records for the British Isles, references, history and uses, synonyms, history of the site and species status there. The full record reads:

Semiarundinaria fastuosa (Lat.-Marl. ex Mitford) Makino ex Nakai (Narihira Bamboo). 41, Glam.: W. side of silted-up millpond, W. of stream, Coed-y-felin Wood, Lisvane, Cardiff, ST181828, G. Hutchinson, 10 Aug 2002, conf. Dr C. Stapleton (at K, 2003), NMW.

A revisit to the locality (6 Nov 2004) gave a further plant of *Semiarundinaria fastuosa*, a short distance upstream of the original plant.

Fargesia nitida (Chinese Fountain-bamboo) was also displayed - an additional record for Wales. One is attracted initially by its delicate purple culms. A similar set of information was displayed as for the previous species. The full record reads:

Fargesia nitida (Mitford ex Stapf) Keng f. (Chinese Fountain-bamboo). 41, Glam.: S. side of silted-up millpond, W. of stream, Coed-y-felin Wood, Lisvane, Cardiff, ST181827, G. Hutchinson, 10 Aug 2002, conf. Dr C. Stapleton (at K, 2003), NMW. Alas, a revisit (6 Nov 2004) showed the vegetation which included the *Fargesia nitida* to have been cleared.

Pseudosasa japonica (Arrow Bamboo) with yellow blades and stems from Bynea, Llanelli (v.c. 44) was shown as a digital image (© R.D. Pryce). Chris Stapleton had commented that it didn't look like the variegated cultivar 'Akebono' or 'Akebonosuji' but just a rather unhappy part of the clump, suffering from drought or sun. New and peculiar chimeras come up around flowering time. The two variegated cultivars 'Akebono' and 'Akebonosuji' are relatively unstable, culms reverting to partially variegated and green, and the separation of culms referred to by Mike Bell (2003) is really removal of such reverting culms.

Taller plants of the species, with green blades and stems, were growing in a parallel line with the yellow material at Bynea, but in more shade. A digital image was shown for comparison (© R.D. Pryce).

Reference:

BELL, M. 2003. *The Gardener's Guide to Growing Temperate Bamboos*. Pbk edn, David & Charles, Newton Abbot, Devon.

GEORGE HUTCHINSON

THE HERBARIUM OF MRS KATHARINE MURRAY-LYELL (1817-1915)

Recent research on this collection of c.2500 ferns in the University of Reading Herbarium (RNG) shows it to contain specimens collected by J.D. Hooker and many other contemporary significant botanists, including Alfred Russell Wallace (Borneo). The collection was remarkably comprehensive in its day, containing one-third of all known species. It provided the background for her book, *A Geographical Handbook of Ferns* (published by John Murray in 1870). Examination of the Kew Archive shows she was a good friend of the Hookers, and also that she was unable to identify the specimens herself, paying Hooker £3 per collection to employ his staff out-of-hours for the process.

A number of interesting specimens were displayed, including from New Zealand collected on Hooker's epic *Erebus & Terror* voyage of 1839-1843.

Sample families of *Ophioglossaceae*, *Vittariaceae*, *Hymenophyllaceae* and *Davalliacaeae* have been entered into our herbarium database and will soon be viewable over the internet as will data for c.12% of the collection.

NOOR JUNA, STEPHEN JURY & RONALD RUTHERFORD

A MAJOR WEED HERBARIUM NOW IN RNG

The University has recently been presented with c.7550 specimens of world-wide weeds. These were once the collections of the former Weed Research Organisation at Oxford and more latterly at Long Ashton, Bristol. A display of interesting parasitic plant specimens was shown, including *Cuscuta epilinum*, now thought to be extinct in the British Isles.

The collection has now been completely entered into BRAHMS (the Herbarium's Botanical Research and Herbarium Management System database) and editing is now being completed for displaying collection data on the internet. So far, approximately one-third is visible in this way.

STEPHEN JURY & RONALD RUTHERFORD

A RUM AFFAIR IN RNG

The Herbarium of The University of Reading contains vouchers for a number of Heslop Harrison's dubious discoveries.

The Story

A host of plants new to Britain, and others growing far beyond their established British range, were repeatedly recorded on the Scottish Hebridean islands by Professor J.W. Heslop Harrison of Newcastle University during the 1930s and 1940s.

As the number of astonishing finds grew, botanists began to doubt their authenticity. In the late 1940s, John Raven investigated by visiting Rum. His conclusions were presented in a report held under lock and key in the library of King's College, Cambridge. Heslop Harrison's son was also a botanist and it was not until his death in 1998 that the full story was pieced together by a journalist, Karl Sabbagh, and *A Rum Affair* was published in 1999. Raven's report was edited and prepared for publication by Preston (2004) in *Watsonia* this year.

Incredibly, five of the species claimed by Heslop Harrison as new to Britain all grew together on one hill, Barkeval on Rum. These remarkable finds were a few of many that enhanced Heslop Harrison's reputation. However, rumours began to circulate that at least some of his records must be erroneous, perhaps due to misidentifications. A rumour also developed that the Professor planted the species which he subsequently 'discovered'. Raven found evidence suggesting that this rumour may have been true – one of the 'discoveries', *Polycarpon tetraphyllum* (Four-leaved Allseed), had an unknown plant growing with it, *Wahlenbergia mafabuna* (a bellflower), a weed of botanic gardens and unknown in the wild in Britain. Raven concluded that this had contaminated the plant pot in which the *Polycarpon* had been grown and was then planted out with it on Rum.

Pearman & Walker (2004) in *Watsonia* consider that 13 of Heslop Harrison's finds appear to have been misrepresentations and that some, perhaps all, were deliberately planted – by the Professor or an unknown third

party. However, we should remember that Heslop Harrison's other, genuine discoveries on Rum have contributed greatly to our knowledge of the island's flora.

Reading's role

The University of Reading Herbarium holds an excellent collection of British material, including several historic collections of note. The specimens shown here, collected by Heslop Harrison from Rum, are from the collections of Ted Lousley and Ted Wallace, presented by their executors.

The *Carices* and *Epilobium* shown here were all new to Britain. The nearest known native locality for the *Juncus* is Anglesey. (It is also found in West Cornwall and on the Channel Islands.).

Carex bicolor (Bicoloured Sedge) — The story of the first discovery of this species in 1941, as new to Britain, was told to Raven by a botanist who used to accompany Heslop Harrison on outings. The Professor apparently set out on that day's walk with a trowel in hand, saying he intended to 'dig beetles'. While the party was some 200 feet higher up the hill than the Professor, there came the shout 'I've got a new sedge'. However, he was not eager (as you might expect) to show the party the colony, and the botanist had to make do with the specimen that had been dug up. This story differs from Heslop Harrison's own version of events. Raven visited another colony and remarks on how one plant looked half-dead, as though it had been quickly and carelessly dibbed in. Nearby, one *Carex bicolor* tuft contained a vigorous plant of *Poa annua* (Annual Meadow-grass) at its centre and Raven comments that one would normally expect to find the *Poa* in a garden or roadside, not in a Scottish corrie. Raven published brief conclusions about this species in *Nature* (Raven, 1949), suggesting that this plant must be an introduction on Rum, but without commenting on the means in which it reached the island. *Carex bicolor* was last recorded (by Heslop Harrison) in 1951.

Carex glacialis — There were apparently only ever a handful of plants of this arctic-montane species, claimed from two localities on Rum. Raven failed to find it and comments that 'no genuine British alpine is as scarce as that'. Heslop Harrison reports *Carex glacialis* as very rare but says little further about such a remarkable find, other than mentioning it in some phytogeographical papers.

Epilobium lactiflorum — This species was growing only about 100 yards away from the *Carex bicolor* colony. Raven comments that although it looked natural enough, it was growing alone – not with any other Arctic-alpine plant or with the common *E. alpinum*.

Juncus capitatus (Dwarf Rush) — Raven joined one of Heslop-Harrison's expeditions on Rum and recounts an encounter with this *Juncus*. One plant was found, to the Professor's surprise, growing out of the middle of a plant of *Polycarpon tetraphyllum* (another of the dubious discoveries) which the Professor hurriedly uprooted after showing the party the 'official' colony some 200 yards away. Raven suspected that the Professor was not pleased to see this apparent spread of one of his notable discoveries because it might suggest that the rush had been cultivated with the *Polycarpon*.

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STEPHEN L. JURY & CLARE COLEMAN

INGE'S LAWN - THE BEST LAWN WE HAVE EVER SEEN!!

This Summer we met a new friend in County Clare. Inge Uieseking lives near the edge of the Burren at Mollaceen, Dysert O'Dea, near Corofin. She invited us to visit her home to have a look at her lawn, and to name her orchids for her. Her home is a fairly new bungalow, and her garden was made by covering rocky ground with 14 lorry-loads of top-soil. The source of the soil was not revealed to her, but it must have been somewhere nice. Probably many, perhaps most, of her flowers will have come in by natural dispersal from nearby seed sources. When Inge and her husband Klaus decided that intensive gardening was not for them, they made it all into lawn. 'Maintenance' basically consists of mowing it after the flowers have set their seed, and donating the crop to a neighbouring hay-field. The result is by far and away the best lawn we have ever seen! When we visited in June it was a mass of Ox-eye Daisies, Red Clover, White Clover, Ribwort Plantain, Hop Trefoil, Crested Dog's-tail, Yellow-rattle, Cowslips, Smooth Hawk's-beard, all sorts of grasses, and five species of orchids. She has got Bee Orchids (about 40 this year), Common Spotted-orchids, Pyramidal Orchids, Early-purple Orchids, and Twayblades. Inge assured us that some of her Bee Orchids had flowered for her in several consecutive years, further confirmation (if any is still needed) that this species is not monocarpic in spite of what some of the books tell us. Inge takes justifiable pride in her lawn, and says she will be glad to show it

to any passing lover of flowers. And she will probably force-feed you with a dish of tea as well. If you cannot find her house, ask at Dysart O'Dea Castle and museum. (Irish Grid Reference IR28608854. Latitude 52°54.33m North; Longitude 9°3.49m West.).

SEAN & ANN KARLEY

MANCHESTER MUSEUM & THE HISTORY OF BOTANICAL COLLECTING

Local businessmen and amateur botanists Charles Bailey and James Cosmo Melville collected plants from around the world. On their deaths in the 1920s, their ½ million specimens were donated to Manchester Museum. Together with other personal herbaria from collectors such as Leo Grindon, Richard Buxton, & George Crozier and many others, the herbarium at Manchester Museum was formed and now contains approx. one million specimens.

LINDSEY LOUGHTMAN

NOTES FROM THE HULL UNIVERSITY HERBARIA: HLU & HLL

Professor Ronald Good established the Hull University herbarium shortly after his appointment in 1928 as head of the Botany Department in the newly established University College. Over the next three decades he built up this collection with his own material, donations and purchases. In 1995 the University herbarium was moved to the Geography Department but, unfortunately, by this time most of the associated documentation had been lost and the extent of the collection and its origins had been forgotten. Work has now been completed to produce an electronic catalogue of the British plant material in the herbarium and from this establish its origins. This work is now complete and the catalogue may be accessed on line from the herbarium web site at www.hull.ac.uk/geog/herbarium/index.html

The British material seems to consist of two herbaria that were brought together somewhere around 1985, more than 25 years after Prof. Good's retirement. In addition to Good's herbarium (**HLU**) there is a body of around 1000 specimens that was never interleaved with the larger collection. Although labelled the 'Wilson Collection' it seems certain that this is the herbarium of the Hull Technical College (**HLL**) although how and why it arrived at the University is still unclear.

In 2004 a pilot study was carried out to investigate the feasibility of digitisation of herbarium sheets with a view to making them available on CD (or DVD) for computer use. The first CD in the series, which contains images of all 450 pteridophytes held in the **HLU** herbarium, has now been produced. Please contact the Geography Department if you are interested in obtaining a copy of this CD.

RICHARD MIDDLETON & JAMES R. MIDDLETON

POPULATION CHANGES IN A CHILTERN GENTIAN (*GENTIANELLA GERMANICA*) POPULATION 1985-2004

A population of the biennial Chiltern Gentian *Gentianella germanica* on the Lambourn Downs, Berkshire has been monitored since 1985 by G. Osmond. The number of flowering plants has generally increased, but fluctuates from year to year. Correlations of population size against temperature and precipitation suggest, but do not prove, that summer temperature may be important in regulating the populations.

DR. G. OSMOND, A. MCVEIGH, DR T. C. G. RICH & DR. T. SPARKS

AN UNUSUAL *SONCHUS OLERACEUS*, 2N = 30 + 2 ?

A specimen of *Sonchus oleraceus* (Smooth Sow-thistle) with an unfamiliar leaf dissection pattern has been found in Torquay, S.Devon (v.c. 3) whose progeny have a consistent chromosome count of $2n=30+2?$, an apparently unreported count for the species. The extreme variation in the shape and dissection of the leaves of some other *S. oleraceus* specimens was demonstrated. The significance of this variation in the chromosome number is uncertain, nor is it clear whether it is associated with any distinctive morphological differences in this plant.

Chromosome studies were performed by Celia Hansen, Department of Biology, University of Leicester, and I am very grateful to her and to Dr John Bailey for their swift and expert help. My thanks also to Dominic Stevens for unhesitating consent for access.

JAMES PARTRIDGE

SONCHUS TENERRIMUS – FIRST CYTOLOGICALLY CONFIRMED BRITISH RECORD

A single plant of *Sonchus tenerrimus* L. (Slender Sow-thistle) was found in a ruderal site in 2004 in Leamington Spa, (v.c. 38) and identified cytologically as $2n=14$. The morphological distinction of this plant from the closely-related *S. oleraceus* ($2n=32$) is not easy. Ligule length may be useful, but chromosome number may be the only certain determinant.

My thanks to Dr. John Bailey, Celia Hansen, Dr. Richard Gornall (all of the University of Leicester), Eric Clement, alien plant expert par excellence, John Roberts for expert close-up photography, Miles-of-Tiles Ltd. for access and information and Mary, my wife, for her computer (and other) skills.

JAMES PARTRIDGE

IDENTIFICATION SHEETS FOR WELSH BIODIVERSITY ACTION PLAN SPECIES

The Welsh Assembly Government has sponsored the National Museums & Galleries of Wales to run training courses and prepare identification sheets for the species listed in Section 74 of the Countryside Rights of Way Act which occur in Wales. Examples of identification sheets for 4 of the 30 vascular plants were shown; the full set will be published in early 2005.

DR T.C.G. RICH & DR G. HUTCHINSON

GENTIANELLA ULIGINOSA PROBABLY DOES NOT HYBRIDISE WITH G. AMARELLA

The very rare Dune Gentian *Gentianella uliginosa* has been reported to hybridise ‘fairly readily’ with Autumn Felwort *G. amarella*. To investigate the hybridisation, we studied British and European material in the field and herbarium. The analyses show that *G. uliginosa* and *G. amarella* are clear, distinct taxa which can be separated on many characters. No strong evidence for hybridisation could be found either in the field or the herbarium (including N.M. Pritchard’s collections), and there was certainly no evidence of widespread hybridisation.

DR T.C.G. RICH, A. MCVEIGH & DR G. OOSTERMEIJER

MAPPED RANGES OF TWO NORTH PENNINE ‘ALPINES’

Since the outbreak of foot-and-mouth disease in 2001, there has been a significant general reduction in the level of sheep-grazing over the higher regions of the Cross Fell range.

This has already allowed a marked recovery in the vigour of the vegetation. In the three seasons since 2001, many species of high conservation importance and phytogeographical significance have flowered and fruited abundantly, making them much more easily located and surveyed, and a large number of new records, in both distribution and altitude, have been made.

The known ranges were shown of *Alopecurus borealis* (Alpine Foxtail), now known in approximately 26 spring-zones, with over 3600 heads counted, and *Carex vaginata* (Sheathed Sedge), first found here in 2002, new to England, by R.W.M. Corner, and now known in 11 discrete patches in 5 separate areas.

F.J. ROBERTS

THE FOLLOWING ALSO EXHIBITED:

- | | |
|--------------------------|--|
| Michael Braithwaite | – <i>Hierochloe odorata</i> new to England (see <i>Watsonia</i> 25 (2005))
– Berwickshire CRPR progress |
| Jane Croft | – Arctium - Has Stace got it wrong? (see <i>BSBI News</i> 98: 23-5)
– Field Meetings 2005; a preview
– BSBI Excursion to Cyprus, Nov. 2004 (see <i>BSBI News</i> , this issue) |
| Derby Museum | – Progress on the new <i>Flora of Derbyshire</i> |
| Bob Ellis | – Local Change / MapMate |
| Sean & Ann Karley | – Help: To deal, as usual, with members’ mysteries |
| Oliver Ludlow & Tim Rich | – Updated Maps for <i>Sorbus croceocarpa</i> , <i>S. latifolia</i> and <i>S. aria</i> |
| Richard Pryce | – The County Flower - a poster to support a lecture to local councillors on biodiversity
– Some Botanical Highlights in Carmarthenshire 2001-2004 |

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