

BSBI News



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Edited by Leander Wolstenholme & Gwynn Ellis



Senecio inaequidens (Narrow-leaved Ragwort) in Brussels, Belgium. Photo Q. Groom © 2005 (p. 48)



Gnaphalium norvegicum (Highland Cudweed).
Photo © Natural Image/Bob Gibbons (p. 26)



Viola canina (Heath Dog-violet), Moan,
Orkney. Photo Effy Everiss © 2005 (p. 56)

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Editorial

DR LEANDER WOLSTENHOLME & GWYNN ELLIS

There was a gratifyingly positive response to the new look *News* and several members were sufficiently impressed to write or email their comments (see also page 79); the editors thank them for their kindness.

There was a less satisfactory response to our plea for more colour images made in the last issue. Although we now have twice the number of pages devoted to colour, we had fewer photographs submitted to accompany notes than ever! Once again we are indebted to a few authors of field meeting reports for their help in filling the gaps.

Please read the note below and if you are able to contribute any colour images please don't forget to provide a suitable caption together with the name of the photographer (see apology below).

Embedded images Would all authors please note that all maps, figures, drawings, graphs, photographs, etc., accompanying their notes should be sent as separate images if at all possible and **not** embedded in a Word document.

Congratulations to Eric Clement, who is to be awarded the prestigious H. H. Bloomer Medal of the Linnean Society of London.

The award is made annually to recognise the work of an amateur naturalist who has made an important contribution to biological knowledge, the recipients being alternately a Botanist and Zoologist. Previous recipients include Ted Loustley, David McClintock, Duggie Kent and David Pearman.

Eric's expertise regarding the alien (or non-native) flora of the British Isles is, to quote Professor Stace in his *New Flora of the British Isles*, "unparalleled". The sheer scale and quali-

ty of his publications is evident from the *New Atlas of the British and Irish Flora* reference section, which gives Eric as one of the most cited authors.

The presentation of the Medal will take place at the Anniversary Meeting of the Society on Wednesday, 24th May 2006.

Apologies to Roy Beacham who took the photograph of main *Meum athamanticum* in Cheshire which was mis-attributed to Graeme Kay.

Apologies also to those authors whose contributions in the last issue, the first in the new format, had 'glitches', and apologies in advance if any of the present contributions have similar or different 'glitches'! It's a very steep learning curve.

Our good wishes (writes Mary Briggs) to Margaret Perring who this spring has achieved a major change of habitat by moving to the Shetland Isles. Margaret has bought a house on Shetland to live near her daughter Emma, Emma's family and the grandchildren.

Members will remember the many years in which Margaret presided over BSBI Books from Oundle, and with Franklyn brought books to the Annual Exhibition Meeting and other meetings through the year – as do her successors Jon & Sue Atkins of Summerfield Books now.

We send all good wishes to Margaret for her new home, and hope that we shall nevertheless continue to see her from time to time at BSBI meetings in the south. Her new address is: Mrs M.D. Perring, Cliff Cottage, Hoswick, SANDWICK, Shetland, ZE2 9HL.

Colour Section – no need for a list of plates and corresponding page numbers this time.

Colour photos in *News*

DAVID PEARMAN, GWYNN ELLIS & LEANDER WOLSTENHOLME

We have now been including a colour section for 5 years (since issue 87, 2001). In each issue we have included what we have been sent, which has been apposite to the articles included but often, dare we say, just a little less than totally striking!

Members might think we had a large choice, but the reality is that it is often a great struggle to find images.

We could make a general exhortation, as there must be hundreds of members taking photo-

graphs every week - please send in decent topical pictures (preferably, but not essentially as digital images). Alternatively is there a keen photographer who would like to be the liaison between the editor and the outside world – who would have a suitable image or know instinctively where to find one? Such a person would have to work to a deadline of three to four weeks; that is we would say we have this and that articles, please find images.

We would really be grateful for assistance.

Resignation of our Director of Development

RICHARD J. GORNALL, PRESIDENT, *Biology Dept., University of Leicester, University Road, Leicester, LE1 7RH; rjg@leicester.ac.uk*

Gabriel Hemery has resigned from his post of Director of Development in order to take up another position with a forestry trust. It was with great sadness that we learned of his plans and I, for one, will be very sorry to see him go, and I know that David Pearman, who liaised with him at every stage feels exactly the same. In the year that he has been with us, he has accomplished a great deal and made many of us think hard about what we wanted from the society. His primary achievements lie not only in the greatly improved relations at the highest levels with the JNCC and the country agencies and the promise

of much more effective co-operation and collaboration in the future, but also with an improved public image. He leaves us with a blueprint for our way forward, featuring prominently in which is the establishment of a Plant Unit staffed by professionals, one of whom, it is intended, will be Gabriel's replacement. The society will be advertising very soon. Before this begins to sound like an obituary, I should like to take this opportunity to thank him for everything, wish him good luck and hope that he stays in touch.

Change in the British Flora 1987 – 2004

MICHAEL BRAITHWAITE, *Clarilaw, Hawick, Roxburghs. TD9 8PT*

BSBI has now completed a 400 page book, *Change in the British Flora 1987-2004* (a report on the BSBI Local Change survey), written by Michael Braithwaite, Bob Ellis and Chris Preston. A flier for it is included with this issue of *News*. The book is incredibly good value for money as the Heritage Lottery Fund grant has covered much of the cost. Vice-county recorders and relevant deputies will receive a free copy.

Change in the British Flora 1987-2004 is being launched at Kew at the *Plant Diversity Challenge* conference on 26th April and it is hoped there will be press coverage during that week. An article on the survey and its results is being submitted to *British Wildlife*.

Change in the British Flora 1987-2004 chronicles very substantial change at tetrad scale (2km squares) in the period between the BSBI Monitoring Scheme and BSBI Local Change surveys. 726 native and long-established alien (archaeophyte) species were selected for analysis. At a 90% confidence level 480 species or 66% show no material change, 132 or 18% show a relative increase and 114 or 16% show a relative decrease (relative to an average for well recorded native species). A further 38 species are so widespread that it is not possible to assess change. Thus about one third of the qualifying species show substantial change and perhaps as many again are likely to have changed to a

lesser extent, though the statistics are not robust enough to demonstrate it with confidence. A separate analysis of neophytes showed increases in a large majority of the species, with only a very few showing a decline.

For the more widespread species the changes detected are at the fringes of their distributions where populations are low. It follows that the total populations of widespread species may be little changed even where their distributions show significant change in this survey. For scarcer species changes in distribution may reflect large population changes.

Local Change was one project within a larger joint project with Plantlife: 'Making it count for people and plants'. BSBI and Plantlife are issuing a joint report to celebrate this project as a whole. This includes a summary of the Local Change project's results and information about Plantlife's Common Plants survey. Over 5,500 people participated in the project and the joint report will be issued free to those who took part in the surveys. Others can obtain a free copy by application to Plantlife.

The success of the Local Change project is once again testimony to the dedication of BSBI's volunteer recording network, so a resounding thank you is due to all who contributed so nobly.

An inventory of vascular plants for the Sefton coast

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Introduction & Methods

The Sefton Coast, Merseyside, extends about 28km from Bootle docks to Crossens on the Ribble Estuary. It covers an area of around 7800ha, though a good deal of this is intertidal sand-flats. Major habitats include the largest sand-dune system in England (2100ha) together with extensive salt-marshes and grazing-marshes at the mouth of the Ribble Estuary. Also important is a sizeable area of derelict land, mainly associated with the Seaforth docklands, while coniferous woodland is also well represented.

The coastal zone has long been thought of as a stronghold for biodiversity (Smith 1999a) but, until recently, quantitative evidence to support this idea has not been readily available. In 1999, an attempt was made to draw up a provisional inventory of vascular plants (species, subspecies and hybrids) reliably identified on the coast (Smith 1999b). This used a wide range of sources, beginning with Travis's Flora of South Lancashire (Savidge *et al.* 1963), to create lists for both the coast as a whole and for the sand-dune system. A total of 971 taxa was recorded, 881 (90.7%) of which occurred in the dunes. Subsequently, intensive field-work has been undertaken for the new Flora of South Lancashire, resulting in a large number of new records. It was therefore felt appropriate to produce an up-to-date inventory for the Sefton Coast on similar lines to the first one. The document specifies non-native and introduced native taxa (both archaeophytes and neophytes) and indicates 'notable' taxa as nationally rare, nationally scarce, endangered, vulnerable and near threatened, using the criteria of Preston *et al.* (2002), Hill *et al.* (2004), Lang (2004) and Cheffings & Farrell (2005). In addition, regionally notable taxa were listed as species of conservation importance in North West England as defined by the Regional Biodiversity Steering Group (1999). Brief details are given on the status and main habitats of all the taxa. The full Inventory can be viewed on the Sefton Coast Web-site (www.seftoncoast.org.uk).

Results

A total of 1177 vascular taxa was recorded in the coastal zone, representing an increase of 206 (21.2%) on the 1999 study. The new total for the sand-dune system is 1055 taxa, 174 (19.8%) more than the earlier report (Table 1). Quite a high proportion of this increase is due to plants

of garden origin, the total of non-native and introduced native taxa having risen by 145 (50.0%) from 290 to 435. For the coast as a whole, the proportion of alien taxa is now 37.0%, compared with 33.0% for the dune system. The number of hybrids has soared (by 67%) from 67 to 112, of which 97 occur in the dunes.

Table 2 lists 57 nationally 'notable' taxa (11 introduced). These comprise 15 nationally rare, 13 nationally scarce, three endangered, 17 vulnerable and 15 near threatened (some in more than one category). Although not nationally listed, I have included two *Juncus balticus* hybrids and three *Salix* hybrids which, being found in fewer than 15 hectads, qualify for nationally rare status. Also recorded were 120 species (four introduced) of conservation importance in North West England, not included in any other category. This makes a total of 177 (15 introduced) nationally and regionally important taxa on the coast (15.0% of the total flora).

A list of 39 taxa (eight introduced) considered extinct is given in Table 3. This figure represents 3.3% of the coastal flora and is lower than in 1999 as 10 species thought to be lost have been rediscovered in the last six years (Table 4)

Some of the larger genera are particularly well represented in the study area. Particular efforts have been made to record *Cotoneaster* (14 taxa), *Epilobium* (16) and *Salix* (29), the diversity of the latter genus being quite remarkable for a lowland area. Also noteworthy are *Carex* (23 taxa), *Juncus* (18), *Rubus* (33) and *Veronica* (18).

Habitat analysis (Table 5) shows that by far the largest number and proportion (33.1%) of taxa is dependent on 'disturbed ground'. In general, this is land that has been disturbed by human agency, such as trampling, use of motor-vehicles, tipping (especially of garden waste), dereliction and agriculture. Most of the non-native and introduced native plants are associated with this habitat type while the frequent presence of bare soil allows colonisation by ruderal species and annuals. Not unexpectedly, the next most important type is freshwater wetland, represented by dune-slacks, scrapes and ditches (18.7%). Many of the duneland specialists, such as *Dactylorhiza incarnata* subsp. *coccinea*, *Parnassia palustris* and *Pyrola rotundifolia* subsp. *maritima*, are associated with this habitat. The fixed-dune habitat is also

important (14.5%), both this and humid dune-slacks being Priority Habitats in the EU Habitats Directive. Interestingly, mobile & embryo dunes (1.1%) and the strand-line (1.1%) support the lowest numbers of vascular plants. This is presumably due to the fact that relatively few species have adapted to the severe environmental conditions associated with these habitats.

Discussion

Stace & Ellis (2004) give the total number of vascular taxa in v.c. 59 as 2096, though this figure may now be somewhat out-of-date. Thus, in supporting 1177 taxa, the Sefton Coast has about 56% of the entire vice-county flora. The comparable figure for the dune system is 50%. This species-richness may be attributed to the wide range of habitats present, the abundance of calcareous substrates and also the geographical position of the coast which provides a home to species with both northern and southern distributions in Britain. Unfortunately, the richness of the Sefton Coast is not reflected in data presented in the *New Atlas* (Pearson *et al.* 2002). Fig. 6.1 in that publication indicates that fewer species have been recorded since 1970 in the three hectads that represent the coast than in the hectads immediately inland which consist largely of intensively farmed arable land. This seems to be because a great many coastal records have 'gone missing' for reasons which are not apparent. At least 149 taxa known by me to have been present on the Sefton Coast since 1970, some commonly, have missing coastal hectad records.

While about a third of the coast's vascular plants is non-native, this is not a particularly high figure in the regional or national context. Thus, Stace & Ellis (2004) show that the average proportion of alien taxa in British vice-counties is 40%, while in South Lancashire it is 50%. However, the number of neophytes becoming established on the coast is undoubtedly increasing, largely due to the prevalence of garden-waste dumping (personal observations). Although most are low-impact neophytes, a small number of invasive aliens are causing actual or potential ecological problems (Smith 1999a).

The fact that only 39 vascular taxa are thought to have become extinct in the study area since the 19th century is surprising and is greatly outweighed by the 206 new taxa recorded since 1999, albeit many of these are garden-escapes. The size of the latter figure on a coast with such a long history of botanical observation is presumably due to the recent emphasis on record-

ing less well-studied groups such as hybrids and aliens.

The inventory includes 177 'notable' taxa. The significance of this figure can be judged by the fact that it represents 37% of all the notable vascular plants listed for Cheshire, Cumbria, Greater Manchester, Lancashire and Merseyside (Regional Biodiversity Steering Group 1999).

These data confirm the very high botanical importance of the Sefton Coast, reflected in the many national and international conservation designations that apply to the undeveloped coastal zone. As well as the presence of three National Nature Reserves, two Local Nature Reserves, two County Wildlife Trust reserves and one RSPB reserve, the area also benefits from Green Belt status and sympathetic management co-ordinated through a voluntary association of major land-owners and users – the Sefton Coast Partnership. Therefore, it seems that some optimism for the future of the Sefton Coast's flora is justified.

Acknowledgements

Grateful thanks are due to D.P. Earl, S.E. Edmondson, P.S. Gateley, V. Gordon and, especially, M.P. Wilcox for contributing records to this survey. The latter and also E.F. Greenwood kindly made helpful comments on a draft of the manuscript.

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Table 1. Summary of data from the vascular plant inventory of the Sefton Coast.

	Coastal Zone	Sand-dune system
Total no. of taxa	1177	1055
No. of species	997	900
No. of subspp.	68	58
No. of hybrids	112	97
Introduced taxa	435	348
% introduced	37.0	33.0
Probably extinct	39	37

Table 2. Nationally notable vascular taxa recorded on the Sefton Coast

* = non-native or introduced native taxon

Taxon	Local status	NR	NS	EN	VU	NT
<i>Allium ampeloprasum</i> *	Extinct		+			
<i>Anagallis minima</i>	Extinct					+
<i>Artemisia campestris maritima</i> *	Rare	+			+	
<i>Baldellia ranunculoides</i>	Occasional					+
<i>Blasmus compressus</i>	Occasional				+	
<i>Centaurium latifolium</i>	Extinct	+				
<i>Centaurium littorale</i>	Frequent		+			
<i>Chenopodium bonus-henricus</i>	Rare				+	
<i>Chrysanthemum segetum</i> *	Rare				+	
<i>Coincya monensis</i> ssp. <i>monensis</i>	Occasional		+			
<i>Corynephorus canescens</i>	Locally frequent	+				+
<i>Cuscuta epithymum</i>	Extinct				+	
<i>Cynoglossum officinale</i>	Frequent					+
<i>Cyperus longus</i> *	Rare					+
<i>Dactylorhiza incarnata</i> ssp. <i>coccinea</i>	Frequent		+			
<i>Dianthus deltoides</i> *	Rare		+			+
<i>Epipactis dunensis</i>	Frequent	+				
<i>Epipactis phyllanthes</i>	Occasional		+			
<i>Erodium lebelii</i>	Frequent		+			
<i>Euphrasia ostensfeldii</i>	Extinct	+				
<i>Filago vulgaris</i>	Rare					+
<i>Fumaria purpurea</i>	Rare		+			
<i>Galeopsis speciosa</i>	Rare				+	
<i>Gentianella campestris</i>	Occasional				+	
<i>Herniaria glabra</i> *	Locally frequent	+				
<i>Hydrocharis morsus-ranae</i> *	Rare				+	
<i>Hyoscyamus niger</i> *	Rare				+	

<i>Hypochaeris glabra</i>	Rare				+	
<i>Juncus balticus</i>	Occasional		+			
<i>Juncus balticus</i> × <i>J. effusus</i>	Rare	+				
<i>Juncus balticus</i> × <i>J. inflexus</i>	Rare	+				
<i>Juncus compressus</i>	Extinct					+
<i>Lycopodiella inundata</i>	Extinct		+	+		
<i>Marrubium vulgare</i> *	Extinct		+			
<i>Mentha pulegium</i> *	Rare	+		+		
<i>Mibora minima</i>	Rare	+				
<i>Myriophyllum verticillatum</i>	Rare				+	
<i>Nepeta cataria</i> *	Rare				+	
<i>Oenanthe fistulosa</i>	Occasional				+	
<i>Orchis morio</i>	Locally abundant					+
<i>Papaver argemone</i>	Extinct				+	
<i>Platanthera bifolia</i>	Rare				+	
<i>Potentilla argentea</i> *	Rare					+
<i>Pyrola rotundifolia</i> ssp. <i>maritima</i>	Frequent		+			
<i>Salix</i> × <i>angusensis</i>	Occasional	+				
<i>Salix</i> × <i>doniana</i>	Rare	+				
<i>Salix</i> × <i>friesiana</i>	Frequent	+				
<i>Salsola kali</i> ssp. <i>kali</i>	Occasional				+	
<i>Schoenoplectus pungens</i>	Rare	+				
<i>Silene otites</i>	Rare	+		+		
<i>Spergula arvensis</i>	Occasional				+	
<i>Spiranthes spiralis</i>	Extinct					+
<i>Stachys arvensis</i>	Rare					+
<i>Teesdalia nudicaulis</i>	Rare					+
<i>Viola canina</i> ssp. <i>canina</i>	Frequent					+
<i>Vulpia fasciculata</i>	Abundant		+			
<i>Zostera marina</i>	Extinct					+
Total 57 (11 introduced)		15	13	3	17	15

NR – nationally rare; NS – nationally scarce; EN – endangered; VU – vulnerable; NT – near threatened.

Table 3. Vascular plants considered extinct on the Sefton Coast.

* = non-native or introduced native taxon

Taxon	Last recorded
<i>Allium ampeloprasum</i> *	1891, Formby
<i>Allium scorodoprasum</i>	Early 1980s, Ainsdale
<i>Anagallis minima</i>	1955, Ainsdale
<i>Antennaria dioica</i>	1954/55, Ainsdale, Freshfield
<i>Arabis hirsuta</i>	Pre-1900, Formby, Crosby, Bootle
<i>Armeria arenaria</i>	1941, Ainsdale

<i>Blysmus rufus</i>	1986, Birkdale
<i>Carex rostrata</i>	Pre-1982, Ainsdale
<i>Carex viridula</i> ssp. <i>brachyrrhyncha</i>	Pre-1963, Crosby to Southport
<i>Centaurium latifolium</i>	1872, Freshfield
<i>Coeloglossum viride</i>	1890, Formby, Freshfield
<i>Coronopus squamatus</i> *	1990, Blundellsands
<i>Cuscuta epithymum</i>	1915, Freshfield
<i>Dactylorhiza</i> × <i>wintoni</i>	1949, Freshfield
<i>Elytrigia atherica</i>	No recent records (hybrids occur)
<i>Erigeron speciosus</i> *	1951, Ainsdale, Birkdale
<i>Euphrasia ostenfeldii</i>	No post-war records
<i>Filago minima</i>	1954-63, Formby, Birkdale
<i>Hieracium anglorum</i>	1954, Freshfield
<i>Hieracium diaphanoides</i>	1951, Freshfield
<i>Isolepis cernua</i>	1914, Ainsdale, Freshfield
<i>Juncus compressus</i>	1933, Ainsdale
<i>Lactuca tatarica</i> *	1934, Freshfield
<i>Linaria dalmatICA</i> *	1954, Ainsdale
<i>Listera cordata</i>	1989, Ainsdale
<i>Lycopodiella inundata</i>	Pre-1900, Formby
<i>Marrubium vulgare</i> *	1930, near Ainsdale
<i>Myriophyllum alterniflorum</i>	1932, Freshfield
<i>Oreopteris limbosperma</i>	1989, Ainsdale
<i>Papaver argemone</i>	Pre-1963, Crosby, Blundellsands
<i>Pinguicula vulgaris</i>	1914, Ainsdale
<i>Plantago media</i>	No recent records
<i>Reseda alba</i> *	1927, Southport
<i>Salix</i> × <i>multinervis</i>	Pre-1982, Ainsdale
<i>Salix</i> × <i>pontederiana</i>	Pre-1982, Ainsdale
<i>Salvia verbenaca</i>	1870, Waterloo
<i>Selaginella selaginoides</i>	1953, Freshfield
<i>Spiranthes spiralis</i>	Pre-1900, Southport
<i>Zostera marina</i>	Pre-1900, Crossens, Formby, Altmouth

Table 4. Vascular plants previously thought to be extinct and rediscovered since 1999.

* = non-native or introduced native taxon

Taxon	Recorded
<i>Ambrosia psilostachya</i> *	2000, Birkdale
<i>Carex paniculata</i>	2003, Birkdale
<i>Cotula coronopifolia</i> *	2005, Marshside
<i>Epilobium ×rivulare</i>	2004, Crosby
<i>Filago vulgaris</i>	2000, Ainsdale
<i>Hieracium vagum</i>	Several recent records
<i>Hordeum jubatum</i> *	2000, Birkdale
<i>Hyoscyamus niger</i> *	2000, Formby Point
<i>Onopordum acanthium</i> *	2004, Blundellsands
<i>Senecio erucifolius</i>	2004, Hesketh Golf Course

Table 5. Main habitats occupied by vascular taxa in the inventory

Habitat	No of occurrences	%
Disturbed ground	463	33.1
Slacks, scrapes & ditches	263	18.7
Fixed-dunes	204	14.5
Dune-scrub	133	9.5
Dune-grassland	115	8.2
Woodland	108	7.7
Salt-marsh	47	3.3
Dune-heath	40	2.8
Mobile & embryo dunes	16	1.1
Strand-line	16	1.1

Wake up – It's Spring!

JIM MCINTOSH, *BSBI Scottish Officer, c/o Royal Botanic Garden, Inverleith Row, Edinburgh, EH3 5LR*; Tel: 0131 2482894; j.mcintosh@rbge.ac.uk

If you would like to get involved this spring or summer – here are a number of options you might like to think about:

- Sign up for a BSBI field-meeting. Field-meetings are a great way to get to know your plants – and other BSBI members. This year several field meetings have an educational emphasis, and members who have not been on a field meeting before are particularly welcome. Check out the Field Meeting

programme in the BSBI Yearbook or Website.

- Get in touch with your Vice-county Recorder or local members group and ask how you can help them. VCRs always have lots of interesting projects that they need help with and they will always welcome any records. See the Yearbook for VCR contact details.
- Book up on a botanical course. There is information on courses on the BSBI Website under “Education”, and details of several

workshops on the Scottish webpages (see below). The Field Studies Council provides a wide variety of courses at centres across the country. Phone 0845 3454071 or e-mail enquiries@field-studies-council.org for the 2006 Course Programme. Alternatively find

out about courses on offer from your nearest Botanic Garden, Local Recording Centre, Wildlife Trust or University continuing education department.

When is the best time of year to find plants?

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Introduction

There is probably an optimal time of the year to record each species and these optima are clearly not the same for each species. While some species can be positively identified throughout the year, others are only identifiable for a specific period. Plants may not be recordable either because they are not visible or they may only possess the distinguishing characters for identification during certain periods. Even those evergreen species that are identifiable all year may be more visible in winter.

If botanical censuses are made at suboptimal times of year, it would be useful to know what proportions of the species are likely to be unavailable for recording. Even surveys conducted in midsummer will overlook a certain proportion of species and it is useful to know approximately how many might have been missed.

Estimating the recordability of a species is complicated by the biases in the available data. Botanical records are collected for all sorts of reasons and each recorder will be biased to some extent. For example, some recorders record only certain plant groups, while other recorders may only work during their summer holidays. Amateurs may focus on natural habitats, while professional ecologists may be required to record on wastelands and cultivated areas. Even the most diligent of random samplers cannot avoid physical and manmade obstructions to land access. Even a cursory analysis of botanical record data shows these biases. Rare species are recorded far more often than their natural abundance predicts and recorders spend more time in the field during the summer months. For these reasons records are non-random and comparisons of absolute numbers are not possible. Effects of an individual recorder's bias can be reduced by using large volumes of data from a wide variety of sources, though there are still biases that are common to the whole recording community. Still, if it is possible to normalise data it is possible to com-

pare recording data from one species to another and from one month to the next.

Method

An index for the recordability of a species for each month has been derived from 178,679 individual plant records from Shropshire, Northumberland and Assynt. Species with less than 50 records were rejected from the analysis. Some subspecific taxa were amalgamated where this would take the total for the species to over 50. Other records were rejected because their date was imprecise. This gave recordability data for 709 taxa. The index of recordability is calculated from the total number of records for each species in each month divided by a measure of the recording effort during that month. This measurement of recordability is then normalised, so that the peak of recordability over the year is 1. The recording effort was calculated by counting the number of recorder days for each month. A recorder day is counted when one recorder has recorded one or more species in a day.

An alternative method for measuring recorder effort was also generated and compared. This method took forty species known to be clearly identifiable throughout the year (e.g. *Asplenium ruta-muraria*, *Fraxinus excelsior*, *Hedera helix*, *Pteridium aquilinum*). It is assumed that on average the availability for recording of these species does not change during the year, any change in the numbers of their records should relate to the recording effort in each month. These two measures of recording effort closely agreed with one another (Fig. 1).

Results

Some fairly self evident facts are obvious from the data.

- Most recording is done during the summer months (Fig. 2).
- Peaks in recordability generally coincide with a plant's flowering time, particularly where the species has colourful flowers (Fig. 3).

- June, July and August proved to be the period when the highest number of plants can be recorded (Fig 4).
- November, December, January & February are the poorest periods for recording (Fig 4).

Plots of recordability across the year show a wide variety of patterns, though they follow trends you might expect from knowledge of the species. Spring flowering bulbs such as *Gagea lutea* and *Galanthus nivalis* show peaks of recordability in spring, but little or none in the rest of the year. Evergreens and trees have some degree of recordability all year. Herbaceous species vary between those that are identifiable though the whole year such as *Urtica dioica* and those that are available for a short period, like *Ranunculus auricomus*. Annuals have similar variation, with seasonal species, such as *Erophila verna*, having distinct periods for recording, while other species such as *Poa annua* being recordable throughout the year.

The values of recordability are probabilities of finding the species on a recording trip given the average recording effort within the data I've used. These data are an eclectic collection of records gathered for all sorts of purposes. The average recording day within these data is not a record of every species in a particular area. Though some of the records are from complete surveys, many are of small numbers of 'interesting' species. For this reason this measure recordability can be considered to be the worst case scenario. In an intense survey one would expect to find more species than it predicts.

Should a skilled botanist survey a small area intensively they are bound to find all identifiable species. Some species may be visible, but not identifiable. If we state that if a species has any records in a month then it will be recorded in an intensive survey, we can estimate the maximum limits of recordable plants in any month. This analysis shows that more than 95% of the species are recordable from May to September, whereas, only 30% to 40% are available from December to February. The estimates of upper and lower limits for recordability are shown in table 1. Therefore, if 10 species are found in a quadrat in January then the true number of species will be somewhere between 26 and 59. This assumes that the average recordability is the same for those plants where I have insufficient data.

Similar analysis can be conducted for surveys conducted in multiple months. In this case the highest recordability value for each species in each month is averaged. This shows that surveying in March and October could be expected to record 51-93% of the species, while surveying in April and November would record 47-85%. Recording in March, June and October would record 68-100%. This demonstrates the importance of recording in mid summer, but it also shows that a respectable percentage of species can be recorded out of season if early and late surveys are combined.

Average recordability has been calculated for every pair of months to find the best pairs of months to survey in (Table 2). Essentially, a good return of species is always found as long as recording is conducted in either June or July and one other month.

The previous results are generalisations derived from all the species that an index of recordability could be calculated. Clearly, not all habitats are the same. A separate analysis was conducted by dividing the species for which we have recordability values in to habitat groups. If a species is found in more than one habitat then their recordability was included in the average of each habitat. The results are largely intuitive. All habitats have their peak recordability in June & July, but there is more variation in the winter. Though recordability is always low in the winter more plants are recordable in coniferous woodland and on walls & rocks than any other habitat. While plants of seashore, dune, bog and all other freshwater habitats were less than half as recordable in winter.

Summary

The analysis, though crude, has reinforced the importance of recording during the summer months. Nevertheless, it does demonstrate that a reasonable proportion of species can be counted if spring and autumn surveys are combined. There is no substitute for mid-summer surveys, but if midsummer surveys are impossible then rough estimates for the actual botanical diversities could be extrapolated using these data, though due consideration of the habitat and recording effort must be considered.

Acknowledgement

My thanks to Pat Evans, Alex Lockton and George Swan for the use of their data and their comments on the manuscript.

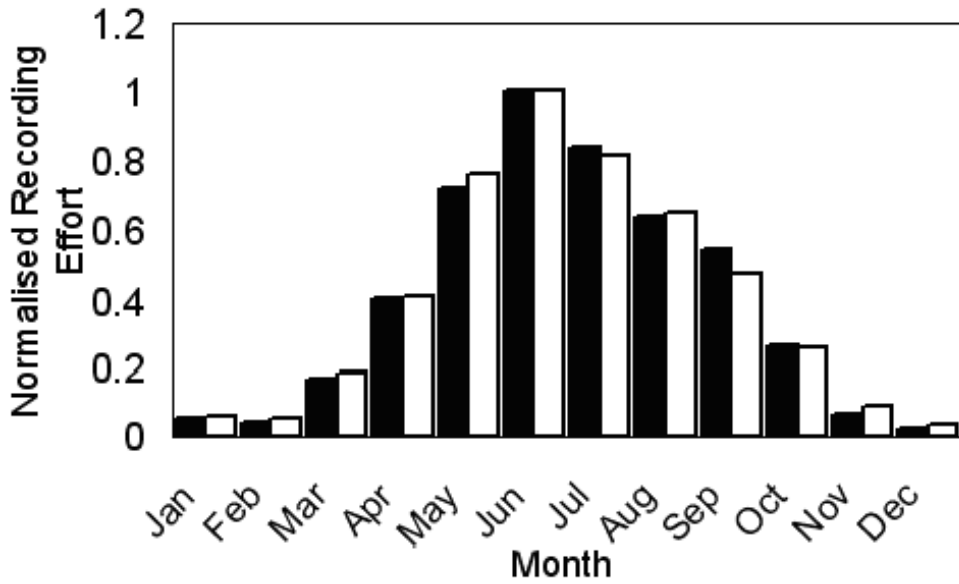


Figure 1. Recording effort for each month. The effort was estimated in two different ways. White bars were calculated from the number of recorder days in each month, while solid bars were calculated from the records of 40 species that can be easily identified all year round.

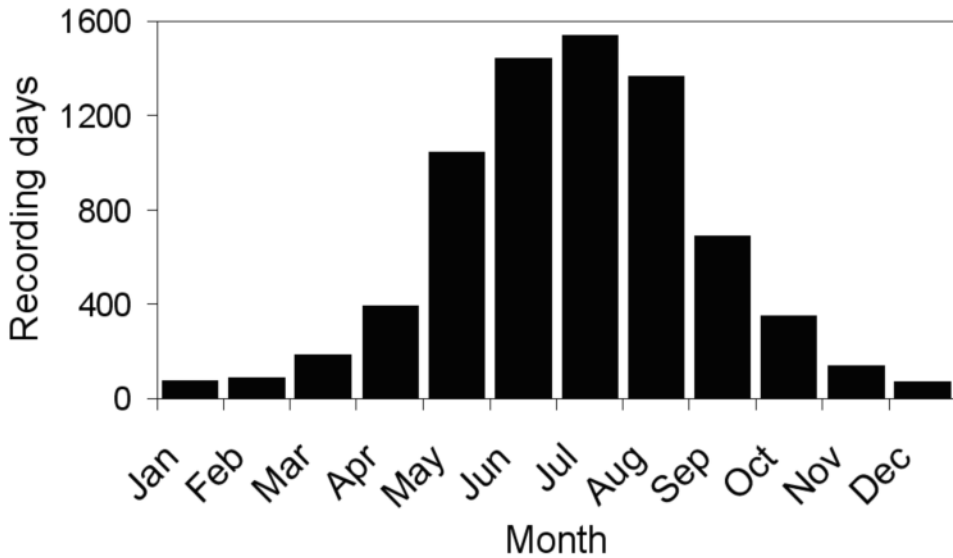


Figure 2. The total number of days spent recording for each month for the whole dataset.

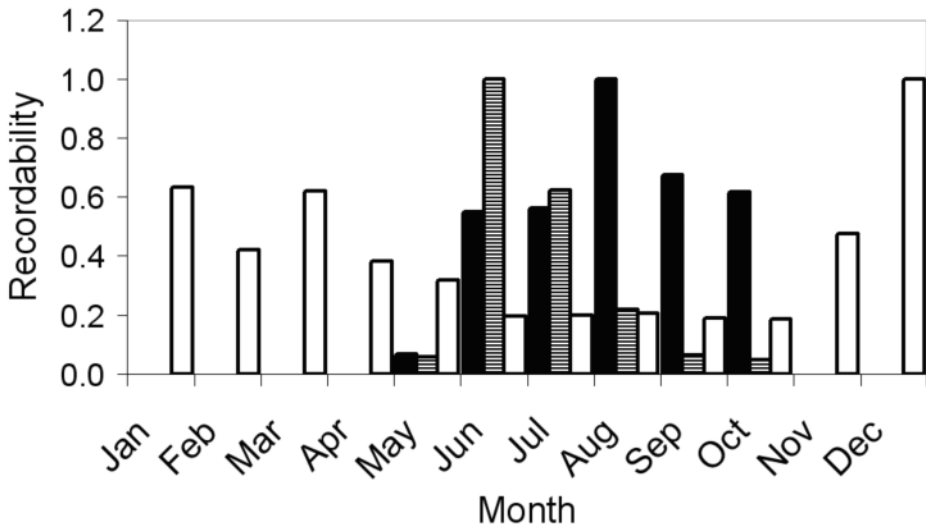


Figure 3. Examples of the normalized recordability values for three species corrected for the recording effort in each month. *Achillea ptarmica* (solid bars); *Dactylorhiza maculata* (striped bars) & *Phyllitis scolopendrium* (white bars).

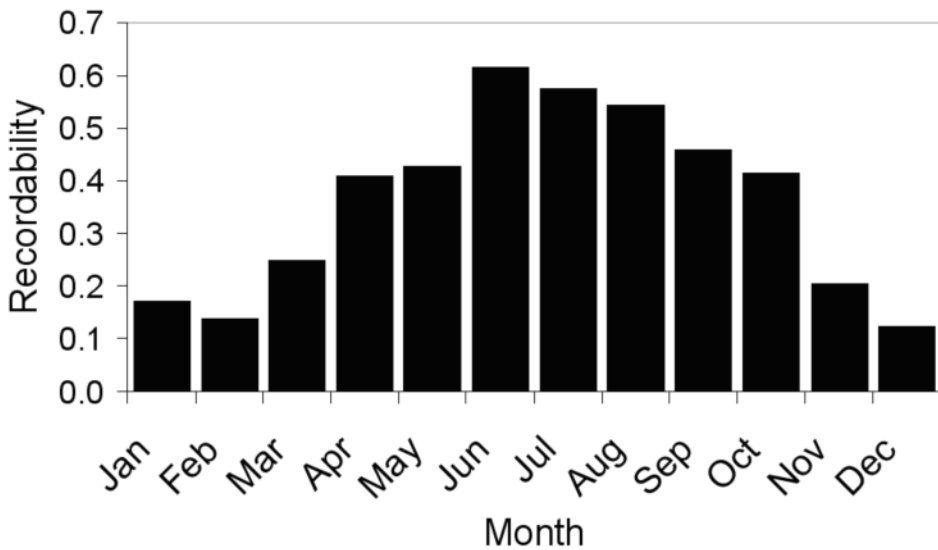


Figure 4. The average recordability for each month for the 709 species for which a value was calculated. All the recordability values are corrected for the recording effort in that month.

Table 1. An estimate of the recordability of plants during a survey in any month. The maximum percentages would be where an experienced botanist was recording a small area in a location they know well. The minimum values would be where a larger area is surveyed by a less experienced botanist.

Month	Maximum	Minimum
January	0.39	0.17
February	0.38	0.14
March	0.59	0.25
April	0.79	0.41
May	0.95	0.43
June	0.99	0.61
July	0.99	0.58
August	0.99	0.54
September	0.95	0.46
October	0.88	0.41
November	0.62	0.20
December	0.32	0.12

Table 2. Average minimum recordability calculated for every pair of months. Values above 0.7 are in bold. The most efficient recording will be achieved if recording is conducted in either June or July and one other month.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Feb	0.24										
Mar	0.31	0.29									
Apr	0.44	0.44	0.45								
May	0.46	0.46	0.48	0.53							
Jun	0.65	0.65	0.68	0.74	0.69						
Jul	0.62	0.61	0.66	0.74	0.70	0.72					
Aug	0.59	0.59	0.64	0.72	0.69	0.75	0.65				
Sep	0.51	0.50	0.55	0.65	0.63	0.72	0.65	0.62			
Oct	0.46	0.46	0.51	0.61	0.61	0.71	0.66	0.63	0.54		
Nov	0.28	0.27	0.34	0.47	0.48	0.65	0.61	0.58	0.49	0.45	
Dec	0.23	0.21	0.31	0.45	0.47	0.65	0.60	0.57	0.49	0.45	0.25

Additions to the Irish Flora

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While awaiting a delayed plane, I had time to look at goods for sale in Belfast City Airport shop.

I was interested in a packet described as an 'Irish Wild Flower Seed Collection' with growing instructions in French, German, Italian and Spanish.

Listed in the contents were clarkia, sweetpea, nasturtiums, baby-blue eyes, calendula, maiden pink, baby's breath, snapdragon and candyfloss! The only

seeds listed that could possibly have been native wild flowers were wild violet, forgetmenot and poppy.

Irish recorders – look out for German botanists searching Connemara for baby-blue eyes and candyfloss!

If you want to create an 'Irish' wild flower garden, contact the Shamrock Gift co. at the Fonthill Business Park, Dublin 22.

Host range of *Rhinanthus minor*

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Edward Pratt reports (*BSBI News* **101**: 21-22) a little on the feeding habits of *Euphrasia*, and asks about other semi-parasites. Well, *Rhinanthus minor* is a case in point, and one which I studied extensively in the 1980s as part of my undergraduate project at the University of York, and then my PhD study at the University of East Anglia.

<i>Achillea millefolium</i>	<i>Elytrigia juncea</i>	<i>Pilosella officinarum</i>
<i>Anthoxanthum odoratum</i>	<i>Festuca rubra</i>	<i>Plantago lanceolata</i>
<i>Arenaria serpyllifolia</i>	<i>Galium verum</i>	<i>Poa pratensis</i>
<i>Bromus hordeaceus</i>	<i>Honckenya peploides</i>	<i>Sedum acre</i>
<i>Carex arenaria</i>	<i>Koeleria macrantha</i>	<i>Trifolium campestre</i>
<i>Cerastium semidecandrum</i>	<i>Lotus corniculatus</i>	<i>Vicia lathyroides</i>
<i>Daucus carota</i>	<i>Ononis repens</i>	

With care, it is possible to trace the roots of *Rhinanthus* in turves removed from the wild, to the point of connection (haustoria) with the hosts, through which water and mineral solutes are drawn, and then back to the host plants for identification (Gibson & Watkinson 1989). In 14 turves from sand dunes in north Norfolk, I recorded connections with:

Previously, in turves from Anglesey and York, I had recorded the following additional species:

<i>Agrostis capillaris</i>	<i>Hypochaeris radicata</i>	<i>Salix repens</i>
<i>Agrostis stolonifera</i>	<i>Lolium perenne</i>	<i>Trifolium repens</i>
<i>Dactylis glomerata</i>	<i>Medicago lupulina</i>	
<i>Deschampsia cespitosa</i>	<i>Potentilla reptans</i>	
<i>Fraxinus excelsior</i>	<i>Ranunculus repens</i>	
<i>Holcus lanatus</i>	<i>Rubus fruticosus</i> agg.	

And Weber (1976) reported the following hosts in central Europe:

<i>Brachypodium pinnatum</i>	<i>Knautia dipsacifolia</i>	<i>Poa trivialis</i>
<i>Coronilla varia</i>	<i>Koeleria pyramidata</i>	<i>Populus nigra</i>
<i>Cynosurus cristatus</i>	<i>Lentodon hispidus</i>	<i>Prunella grandiflora</i>
<i>Cytisus scoparius</i>	<i>Luzula campestris</i>	<i>Trifolium dubium</i>
<i>Echium vulgare</i>	<i>Melampyrum cristatum</i>	<i>Trifolium montanum</i>

So, three studies produced a host range of 50 species of disparate taxonomic relationships, life-histories and growth forms: 9 annual/short-lived perennials, 36 herbaceous perennials, 5 woody, 18 families (of which 11 were Fabaceae and 16 Poaceae). The assumption was made that all haustoria were functional, and that a connection implied a host relationship. However, this was not always the case, as I also identified haustorial attachment to the rhizoids of *Dicranum scoparia*, a dead rhizome of *Carex arenaria*, and an old seed testa of *Rhinanthus*. Furthermore, self-parasitism within and between individuals of *Rhinanthus* was also noted.

The figure of 50 host species fits well within the range of host spectra reported for other species e.g. six for *Pedicularis palustris* (Weber 1976) up to 79 for *P. canadensis* (Piehl 1963). And even wider host ranges have also been inferred from indirect studies (association anal-

yses), although my research showed this to be at best an unreliable method.

Not only is *Rhinanthus* as a species not host-specific, but neither are individuals within the species. Of 65 plants examined from the Norfolk population, only five were attached to just one host, and two were attached to as many as seven hosts: the most frequent number of host species recorded per plant was four.

By also extracting the roots of all available potential hosts, and assuming that all roots are equally parasitisable, it is possible to examine a more interesting question, that of host-selectivity. If a species is attached to more frequently than expected for the availability of its root, it may be classified as a preferred host, and if the converse is true, an avoided host. The statistically preferred and avoided hosts in three subsections of the Norfolk site were as follows:

Site	Preferred hosts	Avoided hosts
1	<i>Koeleria macrantha</i> <i>Plantago lanceolata</i> <i>Anthoxanthum odoratum</i>	<i>Poa pratensis</i> <i>Elytrigia juncea</i> <i>Trifolium micranthum</i> <i>Luzula campestris</i>
2	<i>Poa pratensis</i> <i>Honckenya peploides</i>	<i>Festuca rubra</i> <i>Carex arenaria</i> <i>Ononis repens</i>
3	<i>Ononis repens</i> <i>Galium verum</i>	<i>Elytrigia juncea</i> <i>Festuca rubra</i>

This adds more complication to the picture, with several interesting points:

- 1 Two species (*Poa pratensis* and *Ononis repens*) appear as preferred hosts at one sub-site, but avoided at another
- 2 Of the avoided hosts, only two (*Trifolium micranthum* and *Luzula campestris*) were strictly avoided in the sense that no haustorial connections were found to them.
- 3 The preferred hosts could not in general be inferred from above-ground spatial association – an association analysis demonstrated only one host species (*Ononis*) at one site with a positive association with *Rhinanthus*.

Clearly, this is a very complex situation. A wide range of hosts can be used, but some more frequently than others. Whether this is adaptive, with the ‘best’ hosts for a given situation being preferred, is not known, but perhaps likely. And given that host quality has been shown to vary (eg Gibson 1986), can differences in host selectivity go some way towards explaining the often confusing phenotypic and genotypic variation within *Rhinanthus*?

Furthermore, the presence of host-selectivity, variation in host quality, and a differential response of hosts to parasitism (Gibson 1986) opens up the possibility of *Rhinanthus* parasitism exerting a significant effect upon grassland community structure. But that’s another story...(Gibson & Watkinson 1992).

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Grassland plant phenology

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It is usually recommended that botanical assessments of lowland grassland plant communities take place during the summer months (June-August).

These recommendations are based on the perception that certain grassland species are not evident during the autumn to spring period. However, ecologists are sometimes required to make assessments of grasslands outside the optimum period. This may occur during the assessment of the environmental impact of planning applications, an application to intensify farming operations under the Environmental

Impact Assessment Regulations for use of uncultivated land or semi-natural areas or the undertaking of a Farm Environment Plan which is an essential part of an application for Higher Level Environmental Stewardship.

However, currently there is very little information on the phenology of individual species of vascular plants of grasslands, in particular whether certain species are evergreen or deciduous during the winter.

A better knowledge of the phenology of key species of lowland grasslands would allow judgements to be made as to how realistic it is

to identify and evaluate grassland types in the field outside of the late spring/summer period.

It was felt that the positive indicator species used in the assessment of the condition of neutral grasslands would be a good starting point for a pilot investigation of plant phenology. There is often a need to distinguish these species-rich neutral grasslands from semi-improved and improved grasslands outside of the spring/summer period and the indicator species are often the species that contribute to conservation value.

The 72 vascular plant indicator species used by Robertson & Jefferson (2000) in their condition assessment protocols for the various neutral grassland types (National Vegetation Classification types MG3, MG4, MG5 & MG8, MG11, MG13 (Rodwell 1992)) were used for a pilot project.

Known sources of phenological data were then consulted and the information extracted. The sources used were Grime *et al* 1988, the various Biological flora accounts published in the *Journal of Ecology* and the online Ecological Flora database assembled by the University of York. Personal observations by experts were incorporated where available. The data were presented as a phenological chart showing the duration of flowering, seed set and presence/absence of leaves. Life form and seedling germination time were also included where available.

This pilot project demonstrated that there remain many gaps in knowledge, especially the phenology of leaves. Surprisingly, few of the information sources consistently give data on leaf phenology. It does however give a clear, if incomplete, indication of those species that would be missed by conducting surveys during autumn and winter.

Any remaining gaps in the phenology of the species would need to be filled by further fieldwork as the literature sources have been extensively explored. There may be some scope for

filling some existing gaps by further consultation with a wider range of botanists. However, it is anticipated that this is unlikely to provide much in the way of additional data as most vascular plant botanists do not visit sites during the autumn and winter!

The fieldwork involved in filling the gaps could be quite resource intensive as it would be necessary to track the phenology of each of the species in the field over an annual cycle preferably in a range of locations. The phenological behaviour of some species may differ depending on geographical location. In addition, timing of flowering, seed set and leaf apparency may vary from year to year.

I would welcome any views on whether there is merit in trying to fill the gaps in knowledge and whether any botanists would be willing to collect such information. This would involve either returning to known species-rich grasslands on a monthly basis and recording the life form stages of species or by providing ad-hoc observations. I can supply a copy of the phenological diagram on request.

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Turning over a new leaf – revealing ptyxis

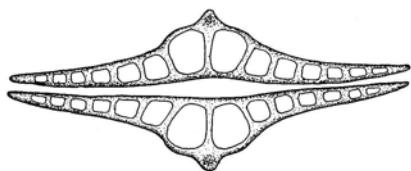
JOHN POLAND, 91 Ethelburt Avenue, Southampton, Hants SO16 3DF; jpp197@alumni.soton.ac.uk

Now is an ideal time of year to observe the little-documented phenomenon of vernalization. Vernalization is simply the way in which the leaves are arranged in bud (ptyxis, in the strictest sense, refers only to a single leaf) and should not to be confused with venation, which is the pattern of veining! New leaves can be observed at most times of year, even during arrested devel-

opment in winter. Whether leaves are folded like *Poa* or rolled like *Agrostis* is a standard character in vegetative grass keys, but its usefulness can be applied far more widely. For example, there is a clever way of separating Barren Strawberry *Potentilla sterilis* and Wild Strawberry *Fragaria vesca* before the leaves have even opened, let alone the flowers. Read on.

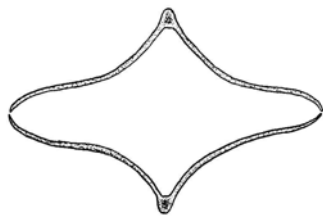
The major types of vernation, with just a handful of straightforward examples, are listed below. It is crucial to look at the youngest leaves – use a lens! With compound leaves, look at the individual leaflets. Ptyxis is normally constant for a species, although some states can be intermediate and there may be a fixed sequence of changes through leaf development. Sometimes an entire family has just one type of ptyxis. Elsewhere very closely related species can differ dramatically.

Applanate (leaves flat and erect against each other without overlapping). A classic example of applanate vernation can be observed in the emerging leaves of Snowdrop *Galanthus nivalis* (N.B. the leaves of all *Galanthus* spp are in pairs – a good vegetative character in itself).



Leaves of *Galanthus nivalis* in cross-section

Valvate (leaves meet without overlapping but curve to resemble a bivalve mollusc shell). Strictly speaking valvate is a variation on applanate although I have opted to modify this as no comparable simple term appears to exist for this characteristic pattern. Examples can be found in *Hypericum*, *Vinca*, *Hebe* and many other genera with opposite entire (i.e. un-toothed) leaves.



Leaves of *Hypericum calycinum* in cross section

Conduplicate (leaves folded once lengthways). A good distinction between *Lathyrus* and *Vicia*. The young leaflets are typically rolled in *Lathyrus* and folded in *Vicia*. The leaf-like stipules of Yellow Vetchling *Lathyrus aphaca* are applanate and thus cannot be leaves!



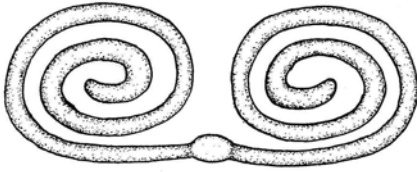
Leaf of *Lolium perenne* in cross-section

Supervolute (one leaf margin rolled within the other) and **convolute** (leaves rolled singly, with one leaf rolled inside another like Russian dolls) have been lumped here for simplicity as **rolled**. The leaves of grasses are either rolled (actually supervolute) or folded (conduplicate). Hybrid Rye-grass *Lolium ×boucheanum* is a hybrid of Perennial Rye-grass *Lolium perenne* (leaves folded) and Italian Rye-grass *Lolium multiflorum* (leaves rolled). Consequently, the leaves of the hybrid are folded proximally and rolled distally! A few grasses are partially rolled or channelled along the entire blade length – Velvet Bent *Agrostis canina* and Brown Bent *A. vinealis* can be picked out by this character alone.



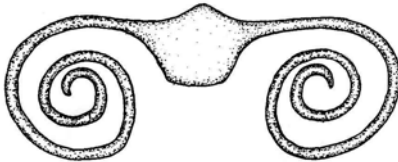
Convolute leaves of *Arum maculatum* in cross-section

Involute (leaves rolled upwards equally at each margin). The leaves of violets (*Viola*) are notably involute, a feature shared with *Sambucus*, *Mercurialis*, *Populus* and some broad-leaved floating aquatics such as bog Pondweed *Potamogeton polygonifolius* and White Water-lily *Nymphaea alba*. Young leaves of Black Horehound *Ballota nigra* are arguably involute, most unlike the weakly folded leaves of White Dead-nettle *Lamium album*.



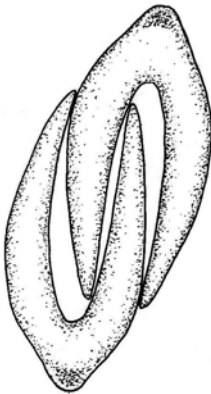
Viola leaf in cross-section

Revolute (leaves rolled downwards equally at each margin). The British species of *Primula*, some *Senecio* and all Polygonaceae are revolute in bud, with the recurved margins often retained at maturity. The leaves of Rosebay Willowherb *Chamerion angustifolium* are revolute, unlike the generally rolled leaves of the closely related *Epilobium* willowherbs.



Leaf of *Rumex sanguineus* in cross section

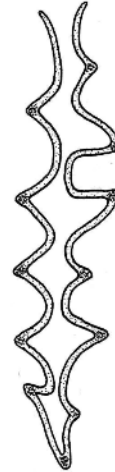
Obvolute (one half of a leaf wrapped around half of another leaf). Some genera of Caryophyllaceae i.e. *Silene* and *Lychnis* are obvolute in bud.



Leaves of *Silene nutans* in cross-section

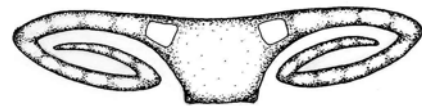
Plicate (folded more than once lengthwise i.e. pleated like a folding fan). This is readily observed in Malvaceae, *Geranium* and *Alchemilla* to name just a few. The answer to my puzzle in the opening paragraph is that the leaflets of Wild Strawberry *Fragaria vesca*, although folded, are also weakly plicate along the lateral

(secondary) veins. Barren Strawberry *Potentilla sterilis* is purely folded. Some broad leaved *Carex* species are also plicate in bud (more so at maturity) and resemble paper aeroplanes.



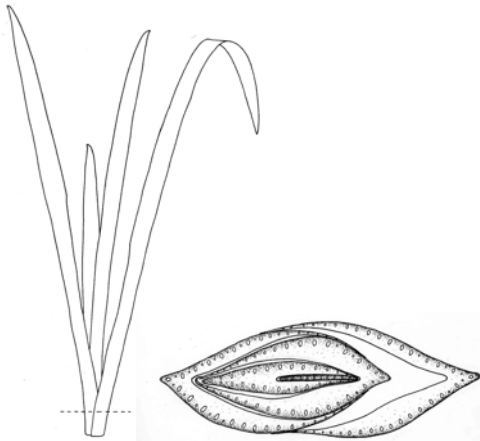
Single leaflet of *Fragaria vesca* in cross section (compare with conduplicate)

Explicative (leaf margins folded sharply below). The youngest leaves of Pleated Snowdrop *Galanthus plicatus* are explicative (compare this to the applanate leaves of *G. nivalis* mentioned earlier, and the supervolute leaves of Greater Snowdrop *G. elwesii*). An account of snowdrop ptyxis can be found on pp 16-17 of the *Surrey Flora Committee Newsletter* (New Series No.3, 2003) by Clare (Coleman) O'Reilly.



Leaf of *Galanthus plicatus* in cross section

Equitant (Folded laterally along the midrib (conduplicate) but with the faces joined together with just the true lower side visible). The resulting sword-like leaves are typical of some Iridaceae (i.e. *Iris*, *Sisyrinchium*, *Gladiolus*, *Crocasmia*), Araceae (*Acorus*), and Liliaceae (i.e. *Nartheceium*, *Tofieldia*). Only rarely found in other families such as Juncaceae, with Sword-leaved Rush *Juncus ensifolius* being one of the few examples.



Leaves of *Iris foetidissima* in cross-section

Recurved (leaf blades applanate but teeth revo-lute). This is not an accepted anatomical term, but one I have coined myself (can anyone provide me with a better alternative?). Wood Sage *Teucrium scorodonia* is a prime example.

Circinate (leaves coiled in a flat spiral, with the apex near the centre of the coil, like a shepherd's crook). Diagnostic of pteridophytes, except Adder's-tongues *Ophioglossum*, Moonwort *Botrychium lunaria* and Water Fern *Azolla filiculoides*. One of few ways Pillwort *Pilularia globulifera* betrays itself as a fern. Elsewhere in the British flora, it is found only in Sundews *Drosera* spp.

Corrugate (leaves crumpled – like poppy petals (petals are really modified leaves) or a bota-

nist's hankie!). The translucent underwater leaves of Yellow Water-lily *Nuphar lutea* show this character clearly, whilst cabbage and lettuce leaves display it partially.

Of less importance in identification are two other types – **imbricate** (leaves overlapping, such as terminal leaves of Biting Stonecrop *Sedum acre*) and **carinate** (leaves keeled, like many narrow leaved *Carex* spp.).

There is an additional character involving direction of leaf development to which observers should be made aware – whether leaves are **acropetal** (leaflets or lobes developing upwards, towards the apex) or **basipetal** (developing downwards, towards the base). In the perennial species of restharrow (*Ononis repens* and *O. spinosa*) the leaves are folded in bud but the terminal leaflet develops first (basipetal), thus young leaves are not immediately obvious as being trifoliate leaved. In contrast, in *Trifolium* (and the annual Small Restharrow *O. reclinata* – see the *Plant Crib* 1998, p185) the folded leaflets develop almost simultaneously so this confusion never arises.

Most terms can be found in *The Cambridge Illustrated Glossary of Botanical Terms* (Hickey & King, 2003) and a selection are shown on p. 344 of Stearn's *Botanical Latin*, 2nd ed. (1973). There are seemingly other forms of ptyxis, and intermediates, which I do not yet understand – can anyone help? Thanks to Eric Clement for sound comments on this article and to Jo Haigh of the Hampshire Biodiversity Information Centre for providing such excellent illustrations.

Wall-to-wall ferns

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At the Exhibition Meeting the author displayed a variety of wall-to-wall ferns from Metropolitan Middlesex (v.c. 21) seen since 1988. His abstract spread the net rather wider than v.c. 21 and in view of recent articles in *BSBI News* it seems worth reproducing this in full, since it gives details of 11 species to look for, from 3 genera.

Cyrtomium

1. Fronds glossy, dark bright green, coriaceous
C. falcatum
Fronds matt, yellowish to grey-green, not coriaceous 2
2. >6 Pinnae pairs, pinnae narrowly ovate <3cm wide
C. fortunei
< 6 pinnae pairs, pinnae broadly ovate, >3cm wide.
C. cf. macrophyllum

***C. falcatum* (Linn. F.) C. Presl.** is less hardy than *C. fortunei* and currently less available commercially but has become established in several mainly coastal localities. In its typical form the pinnae margins are entire but the frequently grown cv. 'Rochfordianum' has a deeply lacerate margin, both differ from the shortly dentate margin of *C. fortunei*. Only the typical form has been recorded as established. ***C. fortunei* J. Smith** is an increasing escape, reflecting its current horticultural availability. Under-recorded and previously mistaken for *C. falcatum*. It is well established in several sites around London and in towns and cities elsewhere, including a culvert outside the main public library in Read-

ing (v.c. 22). *C. macrophyllum* (Makino) Tagawa is probably less hardy than the above more regularly grown and naturalised taxa and perhaps therefore killed before reaching its full size. This species has fewer, larger, entire pinnules, the terminal equalling or exceeding the laterals and often tricuspidate. Sterile broad pinnuled British plants are probably this taxon but differ from typical material in their somewhat undulate dentate margins. Until found fertile their identity cannot be definitely established.

Also consider: *C. caryotideum* is more widely cultivated than *C. macrophyllum* which it most closely resembles, and may also escape. It differs in its auriculate pinnae with spiny-dentate margins and a more fimbriate-erose margin to its indusia, that of *macrophyllum* (and *fortunei*) being nearly entire.

Adiantum

1. Frond pedate with once pinnate branches
A. aleuticum 2
Frond 2-4 pinnate
2. Indusium oblong, veins ending in teeth
A. capillus-veneris
Indusium reniform, veins ending between teeth
A. raddianum

A. aleuticum (Ruprecht) C.A. Paris a recently recognised segregate of *A. pedatum* L. (which is how this has been listed in earlier British flora accounts) is the most frequent form of 'Five Finger Fern' in cultivation. It was found on a mortared wall at Virginia Water, v.c. 17 (close to the Saville gardens) in 1968. It is not known how long it persisted. *A. capillus-veneris* L. is a rare coastal native but widespread escape from cultivation inland, often on railway bridges, or other sheltered brickwork with wet mortar. Under-recorded and surprisingly persistent, *A. raddianum* C. Presl was long overlooked as *A. capillus-veneris*; this pantropical weed is known from several London walls (v.c. 21) where its persistence is largely dictated by the regularity of wall cleaning operations. It persisted for many years in Reading (v.c. 22) on University buildings close to the glasshouse it presumably escaped from. To be expected in cities elsewhere.

Other taxa to consider: *A. venustum* G. Don is available in commerce, is hardy and might establish by spore or through discarded horticultural material. It is distinguished from *A. raddianum* by its more creeping patch forming habit and the distal serrulations on its sterile pinnules. The tropical *A. tenerum* Swartz is widely grown as a houseplant. It is very similar to large

forms of *A. capillus-veneris* but differs in its more dehiscent pinnules detaching from a distinct disc like abscission zone. It may escape, or indeed already be being overlooked.

Pteris

1. Frond simply pinnate, widest above middle
P. vittata
At least lowest pinnae divided, widest at base 2
2. Frond 2-4 pinnate-pinnatifid *P. tremula*
Frond pinnate above, lower pinnae divided, linear lanceolate 3
3. Pinnae with white-ish central zone and without decussate wings *P. nipponica*
Pinnae without pale zone, upper pinnae decussate, winged 4
4. Only uppermost pinnae pair significantly winged *P. cretica*
2-3 uppermost pinnae pairs winged
P. multifida

P. cretica L. The most frequently encountered alien *Pteris*. This widely grown polymorphic apogamous taxon has many cultivars some of which have also escaped. *P. multifida* Poiret (syn. *P. serrulata* Linn. f.) distinguished from *P. cretica* by its narrower pinnae and the decussate character extending further down the frond. It is less widely cultivated and only rarely reported as an escape. Unfortunately, a nomenclatural confusion over synonymy has given rise to the incorrect listing of the Macaronesian *P. incompleta* Cav (syn. *P. serrulata* Forsk.) in recent British floras (see Clement & Foster; Stace etc.) The latter sexual species is not commercially available and is a striking fern with fronds to >2m. *P. nipponica* W.C. Shieh is a widely grown decorative house plant previously known as *P. cretica* var. *albo-lineata*. Its fronds are perhaps more wintergreen than those of *P. cretica*. *P. tremula* is a larger fern with more divided fronds than its other alien escapees. It is more likely to be overlooked as juvenile *Pteridium*. Present on several London walls and undoubtedly elsewhere. *P. vittata* is a widespread weed of damp mortared walls and wet coastal limey rocks in the Mediterranean and Macaronesia. It is of border-line hardiness and therefore needs shelter or other sources of warmth to survive. Its best-known and long persistent sites are in botanic gardens on external walls of heated glasshouses (Oxford (v.c. 23) and Chelsea Physic Garden, (v.c. 21)) and on smouldering colliery waste in the Forest of Dean (v.c. 34) where it is now probably extinct.

Identity and longevity of the 'Mystery Orchid': a serendipitous week in the life of a BSBI referee

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A week before the time of writing (10.12.05), I simultaneously received two especially noteworthy requests in my capacity as BSBI co-referee for the 'challenging' orchid genus *Dactylorhiza*.

The first request, which came from Clive Stace, was stimulated by the ongoing revisions of Kent's list of British and Irish vascular plants. Prompted by notes penned by the late Duggie Kent, Clive had begun to suspect that Pugsley's Marsh-orchid, *Dactylorhiza traunsteinerioides* (Pugsley) Landw., which is recognised in my forthcoming synopsis of the UK orchid flora (Bateman 2006), had not been legitimately published. My subsequent literary researches suggested that Pugsley's (1936) original description of '*Orchis majalis* subsp. *traunsteinerioides*' was predictably thorough. However, unlike Clive (and Duggie), I failed to note that when recombining *traunsteinerioides* as a full species, Landwehr (1975; see also 1977) had cited as basionym not Pugsley (1936) but rather a subsequent, less formal article by Pugsley (1940). This taxonomic riddle was thus ultimately solved by Clive himself, and the appropriate 'comb. nov.' has been made in the subsequent third supplement to Kent's list (Stace 2006). I hope that this action will at last conclude the nomenclatural strand of this story.

As is increasingly often the case, John Edmondson's (seemingly unconnected) request for dactylorchid identifications focused on several digital images of the plants in question. Rather less conventionally, the images in question depicted entire herbarium sheets (in this case, enigmatic dactylorchid specimens held at National Museums Liverpool). Now, the significant number of BSBI members who have sent me orchid-related queries over the last two decades will already be aware that I am not overly fond of identifying herbarium sheets of orchids. Orchids make decidedly uninformative herbarium specimens, which tend to induce in me feelings of sorrow (or, in the case of rarities, anger) rather than unbridled enthusiasm. However, this particular case was a rare exception.

To consider the obvious question first, how successful was this attempt at 'remote identification'? I fear that, unless we can extract high-quality DNA from the specimens, we will never truly know. Admittedly, of 12 sheets, I was able

to determine 11 with reasonable levels of confidence, including two that had previously been misidentified (one having been assigned to the wrong genus!). But I must confess that the label information and various other annotations on the sheets were as helpful a guide as the specimens themselves. Also, even these fairly high-resolution 'jpeg' images (ca 3Mb apiece) could not provide adequate details of critical features of the flowers. A second, close-up, high-resolution image of the inflorescence will be routinely required if remote identification of herbarium specimens using morphology is ultimately to prove viable.

Given a different set of 12 orchid specimens this second story might have ended then and there. However, this particular set most prominently featured examples of *D. traunsteinerioides*, including three plants collected from its *locus classicus* at Newcastle, Co. Wicklow (v.c. H20), in 1937 by the late, great Ted Lousley. But my interest was even more strongly piqued by two sheets bearing single dactylorchids collected by a J.N. Frankland from a 'wet pasture ... near Hellifield, W. Yorks, v.c. 64' and labelled '*Orchis majalis* Reichb. subsp. *traunsteinerioides* [sic] Pugsley. var. *eborensis* (Godf.) Pugsley.' [in modern parlance, *Dactylorhiza traunsteinerioides* (Pugsley) Landw. var. *eborensis* (Pugsley) R.M. Bateman & Denholm (1983)].

This taxon, provocatively and presciently named the 'Mystery Orchid' when originally described by M.J. Godfery (1933) in his monumental orchid monograph, has a fascinating history in its own right (cf. Roberts & Gilbert 1963; Tennant 1979; Bateman & Denholm 1983). However, what first struck me as interesting was that the two Frankland specimens had been taken from the same locality six days apart in June 1951, and that one specimen was annotated 'one of a colony of seven' (Colour Section Plate 3, fig. 1). Now I confess that it is not clear to me whether there were seven (presumably flowering) plants of the Mystery Orchid present at the site before or after these two specimens had been consigned to a premature death between sheets of newspaper. But I did recall that, when Ian Denholm and I visited this locality in June 1982, in order to conduct a morphometric survey that required removal and preservation of a single flower from each plant, we found only five flow-

ering plants (together with six non-flowering plants and a single hybrid with *D. fuchsii* (Druce) Soó). And when I revisited the site in June 2005, intending to encourage each plant to donate a further flower to science (this time with Swedish colleagues aiming to analyse the orchids' DNA), just three flowering plants were found (C.S. Pl. 3, fig. 2). I began to wonder whether it was remotely possible that the five individuals so generously left *in situ* by Mr Frankland in 1951 were the same five plants evident in 1982, before the population plummeted(!) to three plants during the subsequent 23 years. This observation would, of course, indicate a longevity for individual dactylorchids considerably exceeding that with which they are generally credited, as well as demonstrating considerable resilience on the part of a periodically threatened orchid population.

An hour's rummaging through my reprint collection and in Kew Gardens library rapidly disabused me of that particular notion. The Mystery Orchid was first reported from the Hellifield locality by no less an authority than H.W. Pugsley himself (Pugsley 1939). He had been shown the plant there in 1937 by W.A. Sledge, a notable Leeds-based botanist who made many notable contributions to British Botany (and also played a significant supporting role in early explorations of the 'Rum affair': Sabbagh 1999). Sledge had first found the population in 1930 (Tennant 1979), and by the time of Pugsley's visit in 1937, about 50 flowering plants were evident. Moreover, the locality was visited by R.H. Roberts and O.L. Gilbert in 1961, when they reported that a thorough search revealed 22 flowering plants, 16 of which donated mounted, measured flowers (Roberts & Gilbert 1963, plate 13a). Thus, a slightly clearer picture emerged of substantial fluctuations in numbers of flowering plants at the site, outlining an overall trend of decrease since the 1960s (Tennant 1979). These additional observations undermined my initial hypothesis of surprising longevity of individual orchids, though I take some comfort from the probability that the overall number of plants remained rather more consistent than the number of inflorescences recorded.

My attention then turned to the type locality of the Mystery Orchid, originally described as '*Orchis latifolia* L. var. *eborensis*' by Godfery (1933), which is located on the southern margin of the North York Moors near Rievaulx (v.c. 62). First found in July 1928 by Messrs St Quentin and Stephenson (i.e. just before W.A. Sledge's 1930 discovery at Hellifield), by June 1929 eleven flowering plants and several non-flowering plants occupied 'a peaty patch of

boggy ground only about 12 yards square'. Similar numbers were seen by Godfery at the site annually during the period 1930–1932. Two of these plants were exhumed in 1928 by Mr St Quentin for cultivation experiments, which according to Godfery revealed considerable, and apparently environmentally-induced, dwarfing; these plants were illustrated in his monograph (Godfery 1933, plate H3, fig. 4). Two of several flowering plants of putative hybrids between the Mystery Orchid and '*Orchis maculata*' (actually the present *Dactylorhiza fuchsii*) were also exhumed and illustrated by Godfery (1933, plate H3, fig. 3).

The Rievaulx population was later re-surveyed by Roberts & Gilbert (1963, plate 13b) during their 1961 expedition, where they found only nine flowering plants. According to local botanist C.M. Rob, who monitored the site during this period, this was a typical annual number. So once again, there is some evidence of striking stability of numbers of orchids over a considerable time period (in this case, 32 years). During our expedition of June 2005, we believe that we were able to identify the '12 yards square' of still-healthy habitat, which yielded six Mystery Orchids just coming into flower (C.S. Pl. 3, fig. 3). These provided further circumstantial evidence of the longevity of the population and potentially of the individual orchids.

It then occurred to me that one last opportunity existed to use the Mystery Orchid as a test of individual longevity in dactylorchids. Much larger populations often attributed to the Mystery Orchid have been found elsewhere around the margin of the North York Moors, most notably northeast of Pickering. One of these populations is notorious for containing a single white-flowered plant. Now, white-flowered individuals (albeit often possessing pink rather than yellow pollinia) are relatively common among the spotted-orchids (*D. fuchsii*, *D. maculata* (L.) Soó) and the diploid marsh-orchids (*D. incarnata* (L.) Soó *s.l.*), but as noted by Bateman & Denholm (1983), they are extremely uncommon among the tetraploid marsh-orchids of the *D. majalis* group (it is possible that the presence of four, rather than two, copies of genes in these tetraploids buffers them against the expression of recessive mutations that preclude the synthesis of red-purple anthocyanins). For example, although Derek Turner Ettliger (1997) reported albinos in all of the British tetraploid marsh-orchids, his subsequent iconograph (Ettliger 1998) and his extensive slide collection contain only two examples: an individual of *D. praetermissa* (Druce) Soó from

Hampshire, and the albino *D. traunsteinerioides* 'var. *eborensis*' from Pickering (Ettliger 1998, plate 57, fig. 5).

Ettliger's field notes record visits to the Pickering site in three consecutive years: there is no mention of the albino in 1991, but its presence is explicitly noted for 1992 and 1993. Several BSBI members have sent reports or images of the plant to me in subsequent years, and I was able to examine it myself in 2005 (C.S. Pl. 3, fig. 4). I was therefore especially excited when I noted that the illustration of the plant in Ettliger's iconograph is dated 21st June 1983, suggesting that the plant may have survived for 22 years. However, I was able to examine the original slide illustrated by Ettliger in its present resting place – the Kew orchid herbarium – and it is clearly dated 19th June 1992, reducing the recorded longevity of the plant to 13 years; still relatively impressive, but less so than I had originally hoped.

So what conclusions have I been able to derive from this decidedly serendipitous week of periodic dactylorchid research? Well, firstly, multiple images are highly desirable when attempting to identify the contents of digital herbaria. Secondly, there is an extraordinary diversity of pertinent information available to botanists, both published and unpublished, that can be brought to bear on any particular question. Thirdly, when inaccurate, such information can be seriously misleading, suggesting the wisdom of maintaining a healthy degree of scepticism (a statement that certainly applies to the content of this hastily compiled article!). And fourthly, anecdotal evidence of the kind I have summarised in this article is no substitute for the detailed, long-term monitoring of individuals within orchid populations that has been pioneered in the UK by Terry Wells (e.g. 1981) and, latterly, Mike Hutchings (e.g. 1987).

But what, I hear you ask, have we learned about the systematics and biology of the Mystery Orchid? How much less mysterious has it become in the 77 years since its original discovery? Although recent detailed molecular surveys of European dactylorchids (e.g. Pillon *et al.* 2006) have included several populations of *D. traunsteinerioides*, these have not encompassed material from Yorkshire. That situation has just changed, but the DNA results have yet to be collated and interpreted. This statement applies equally to the large body of morphometric data accumulated in the wake of Bateman & Denholm (1983). My provisional impression is that most of the controversial Yorkshire populations previously attributed to 'var. *eborensis*'

fall well within the predictions of a southeast–northwest cline evident in the morphology of *D. traunsteinerioides*. However, the type population of the Mystery Orchid at Rievaulx is notably morphologically deviant (see also Roberts & Gilbert 1963), more closely resembling populations in northwest Scotland that are often erroneously attributed to *D. lapponica* (I have also seen similar plants in Wharfedale). If so, it is analogous to (and, indeed, closely resembles) A.J. Wilmott's 1935 discovery of '*Orchis francis-drucei*' near Loch Maree, Wester Ross (v.c. 105: Wilmott 1936), which I had the pleasure of sampling in 1995. This controversial taxon is also undoubtedly attributable to *D. traunsteinerioides*. I look forward to discovering whether these hypotheses are confirmed by the eventual 'global synthesis' of our accumulated data.

Acknowledgements

I thank Clive Stace, John Edmondson and many other BSBI members for the stimulus of their respective enquiries, Clive for finally laying to rest a 70-year nomenclatural puzzle, and Mikael Hedrén and Sofie Nordstrom for their companionship during our brief survey of known localities for the Mystery Orchid during 2005.

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What's in a Name

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Apropos Anna Pavord's 'The Naming of Names' (reviewed briefly by David Pearman in *BSBI News* 101: 60) I was given this book for Christmas and have been working my way through it since. The illustrations are a major source of the book's enjoyment; but one in particular has puzzled me. It is a page from a manuscript made in Lombardy in about AD 1440 and depicts various medieval persons, and (to a much larger scale) two highly stylized portraits of herbaceous plants. One of these consists of a central stem from which arise scores of upswept thread-like green branches, the whole being similar in outline to a Lombardy poplar. At its base is the name 'Hyppuris'. But the drawing resembles an *Equisetum* much more closely than mare's tail, *Hippuris vulgaris*, the more so in that the stem on close examination can be seen to have rings around it at regular intervals, representing no doubt the rings of sheath teeth that are characteristic of the horsetail family. Ms Pavord's caption reads 'Plate 48: "Hyppuris" (our common horsetail, *Equisetum arvense*)' ... She may or may not have made the mistake of supposing that the two English names, mare's-tail and horsetail, are alternatives for the same genus, *Equisetum*, and to have further supposed that *Hippuris* was an earlier name for what we now call *Equisetum*. Perhaps it was; the fact that the artist drew a relatively accurate representation of a horsetail, probably as Ms Pavord suggests *E. arvense*, but labelled it 'Hyppuris', certainly suggests that.

I turned to Geoffrey Grigson's delightful book 'The Englishman's Flora' for further enlightenment. He indeed lists Mare's Tail, and comments that '*Equisetum* species in shops (see Gerard) were *cauda equina*, "horse-tail". *Hippuris vulgaris*, thought to be

the female kind among the larger male Horse-tails, was distinguished as *cauda equina femina*. This has been transformed (in books) into the tail of a female horse, Mare's Tail. In English neither *Hippuris vulgaris* nor any *Equisetum* appears to have been known as a Horsetail, outside botanical literature. Cat's Tail is the commonest name ...'

This implies that the two genera, so widely separated in modern taxonomic botany, were confused by the herbalists of Gerard's time, but does not take us further back than the late 16th Century. Does any reader of *BSBI News*, more knowledgeable than I about the early identification and naming of wild plants, know when *Hippuris* and *Equisetum* were first reliably reported as different genera, and whether or not the first name was in the early days – i.e. 15th Century and before that customarily applied to what we now call *Equisetum*? No-one could call this an issue of burning importance; but I notice that our editors are not averse to contributors occasionally straying into some of the bye-ways and backwaters of what is for most of the time a relentlessly serious and scientific field of study!

An afterthought: I wonder which plant Iris Murdoch's hero Charles Arrowby in 'The Sea, The Sea' (Botany in Literature – 38, also in *BSBI News* 101) is referring to in Jack Smith's excerpt. '...the red-tufted mosses and mare's tails which I remembered from my youth, and that weird yellow flower that catches flies.' *Hippuris* grows in water ('in ponds and slow-flowing rivers' according to Stace) whereas the terrain described by Charles Arrowby sounds much more like an ordinary peat bog. I bet he meant, or should have said, horsetail.

Loss of Highland Cudweed *Gnaphalium norvegicum* from the Caenlochan area, Angus Scotland

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It is sad to have to report that Caenlochan, generally considered to be the second best area in Britain for montane plants, has lost one of its important species, *Gnaphalium norvegicum*. We monitored the plant as it declined and we have not seen it since 2001. Our observations of the site indicate that grazing and trampling by red deer are the main, perhaps the only, reasons for the plant's demise.

Background

In the 19th century *Gnaphalium norvegicum* was frequently collected from Caenlochan Glen and the nearby Canness Glen. The exact location of these plants is unknown, but most of the herbarium specimens are of tall well-grown plants much larger than the small plants seen during the 1990s on tiny cliff and gully ledges.

Red deer numbers in the 19th century were much lower than now. In those days some estates (e.g. Balmoral) were importing red deer to supplement the sparse indigenous stocks and provide satisfactory stalking. Further evidence of low deer numbers is provided by a photograph (Plate 34) in Holden (1952), which shows a mature larch plantation in Canness Glen. Trees grew successfully well up the steep slopes of the glen in situations where the maintenance of a deer fence would have been impracticable. Deer numbers must have been very low at the time of planting for such a plantation to succeed.

Recent History

We have been visiting Caenlochan Glen and Canness Glen for over 30 years, making a visit each year and sometimes spending a week camped in the area. During this time there have been changes. The main change has been the rise in red deer numbers which has led to ever more widespread erosion around cliffs and in gullies, and an increasingly pervasive smell of deer. Many gullies that were once a botanical delight to visit are now more eroded and heavily grazed. On one occasion we watched over 100 stags pouring down a gully on their way to the grasslands below the crags. We visited the gully and it looked as if an avalanche had swept down it. As deer numbers have risen, it would seem that the search for food has pushed the deer into gaining access to the more awkward gullies and ledges, leaving ever less ground ungrazed. In 1977 red deer found their way to the second last

site for *Cicerbita alpina* in these glens and by 1978 the small colony had disappeared. We have often seen hundreds of deer in Caenlochan Glen with our highest count being 700 animals on 8 August 1998.

We had found two small colonies of *Gnaphalium norvegicum* in Caenlochan Glen and in 1995 we started to monitor, annually, the number of plants at each location. One colony was in a gully in which the plants rarely flowered due to grazing. In 1995 there were 3 flowering plants and 10 non-flowering rosettes but by 2000 only 2 non-flowering rosettes, after which we have not seen plants in this location. The other location was a small outcrop with little suitable habitat on the outcrop but plenty round about. In 1995 there were 3 flowering plants and at least 70 non-flowering rosettes on the outcrop and just below it. The number of plants declined rapidly and in 2001 only one non-flowering rosette was present. We have not seen any plants since then. We consider that *Gnaphalium norvegicum* is extinct in Caenlochan Glen.

Although *Gnaphalium norvegicum* has been recorded from Canness Glen we have never found any plants there. Suitable habitat is limited and has been searched intensively, but signs of deer are now present throughout. We consider *Gnaphalium norvegicum* to be extinct in Canness Glen too.

The Present

Caenlochan Glen and Canness Glen are no longer within Caenlochan National Nature Reserve. However, the glens are within a Site of Special Scientific Interest and a Special Area of Conservation and so receive some protection. This protection has not helped *Gnaphalium norvegicum*.

Red deer numbers are at last being reduced in Caenlochan Glen and Canness Glen, but it is probably too late for *Gnaphalium norvegicum*. The nearest extant site for this species for this species is about 7 miles away and recolonisation of these two glens is not a reasonable possibility. But could *Gnaphalium norvegicum* arise again from seed in the seed bank? How long do the seeds of this species survive in the soil? We would be grateful to hear from anyone about this.

Of course *Gnaphalium norvegicum* plants may still be lurking in Caenlochan Glen or

Canness Glen. Does anyone have locational information about this species in the Caenlochan area, especially recent information? We would be delighted to be proved wrong in our belief that *Gnaphalium norvegicum* is extinct there. (Please note that *Gnaphalium supinum* is present in both these glens in habitat similar to that of *Gnaphalium norvegicum*, and wishful thinking can lead to misidentification).

Reference:

HOLDEN, A.E. 1952. *Plant Life in the Scottish Highlands*. Oliver & Boyd, London.

[See Colour Section inside the front cover for a photo of *Gnaphalium norvegicum* kindly supplied by Bob Gibbons.]

Two Missing Major Herbaria Rediscovered

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Eight folio volumes in Southampton

Soon after becoming Recorder for South Hampshire, the late Pete Selby was casually informed one day by an acquaintance on the staff of Southampton University Library that there was a large collection of old botanical specimens in its Rare Book Room. That a library should have a herbarium is not as rare as one might think, for any sheets of paper within hard bindings are liable to be classed as books regardless of what that paper has on it and treated accordingly (one public library in Warwickshire has even gone so far as to place a one-volume local herbarium out on the shelves of its lending section!)

On deciding the information sounded worth following up, Pete found that involved a more elaborate procedure than he had bargained for: the Rare Book Room is about as hard to enter as Fort Knox, requiring proof of identity to be produced (I took along my passport when I accompanied him on a later visit) and the donning of white cotton gloves. Once having penetrated this fastness, however, Pete was amazed to discover that the herbarium consisted of as many as eight leather-bound folios, each packed with localised British specimens, about half of those with at least the year of collection (1837-50 but mostly 1838-9); what is more, most of them were from southern Hampshire or the Isle of Wight. As no such collection is mentioned in either edition of F. Townsend's *Flora* of those counties, and as the specimens have consequently escaped being taken into account for local recording purposes, it was clearly worth compiling a catalogue of the 839 specimens; and that Pete proceeded to do, a task necessitating numerous visits extending over many weeks.

Research that Pete concurrently put in hand (but was prevented from publishing by his untimely death) established that the collector in almost all cases was a certain Emma Delmé-Radcliffe, née Waddington (1811?-1880), the wife of a Hampshire landowner and M.P. who

also had Hitchin Priory in Hertfordshire as a second residence. Through the latter connection the herbarium's existence became known at some date prior to 1935 to the leading Hitchin botanist J.E. Little, to whom is due its eventual listing in *British and Irish Herbaria* (Kent & Allen, 1984) – but, by then, as 'not traced'. According to Little, there were two further volumes, but it seems that those at some point became separated from the rest and may now be definitively lost. A sizeable minority of the specimens, most of them undated, are from Hitchin and neighbourhood. A few others are from Mildenhall and elsewhere in West Suffolk, which internal evidence suggests were the products of one or more stays with Waddington relations.

When the Isle of Wight specimens – about one-fifth of the total – came to be scrutinised in detail, an exciting extra dimension emerged. One or two of them bore initials that some recent research of my own fortuitously enabled us to identify as Georgina Elizabeth Kilderbee (1798-1868), a resident of Cowes who features in *Flora Vectensis* (Bromfield, 1856) as the most prolific contributor of localised records after the author himself. We then spotted a high degree of correspondence between those records of hers and the localities named as the sources of many of Mrs Delmé-Radcliffe's specimens, which suggested that the two had worked closely together and were probably friends or relations. Some genealogical delving established that they were in fact cousins (though one generation removed). Evidently Miss Kilderbee had invited the other over to Cowes and conducted her on one or more tours of her choicest finds. As there are references to a Herb. Kilderbee in Bromfield's *Flora* but no collection attributable to her has been heard of since, it thus seems that the cream of what it contained has in this way come down to us at one remove.

Twenty-three fat quarto volumes at Wisley

This second collection that has come to light has, by contrast, long been known about but has had its true identity concealed by the pernicious, all-too frequent practice of identifying a herbarium by the name of its owner instead of that of the person who formed it (why? This does not happen with paintings). Thanks to Barry Phillips, who is currently carrying out a study of all the herbaria in the possession of the Royal Horticultural Society at Wisley, it has at last come in for close scrutiny and its provenance conclusively established. As he will be publishing a lengthier account of it elsewhere in due course, I report here just the salient findings.

In essence, this one consists of localised specimens collected c.1830 in and around Bury St. Edmunds, in West Suffolk. It appears far more extensive than it actually is because of the inclusion of very many blank sheets awaiting the eventual insertion of an example of species as yet unrepresented – after the manner of many a stamp album. With few exceptions all the specimens seem to have been collected by one and the same individual. That person – who, as so commonly happens, failed to leave even his initials – was the Rev. William Steggall (1804–1885), initially a master on the staff of Bury Grammar School, when presumably the collection was principally made, and later vicar of Hunston, a parish just outside that town. By the time Hind (1889), to whom we owe the information, came to examine the herbarium it was in the custody of the owner of the ‘big house’ in that parish, Stowlandtoft Hall, but in such a detached fashion that it seems to have been only with some effort that Hind squeezed Steggall’s name out of him.

Unfortunately, a truncated version of Hind’s account of Steggall and his herbarium that appeared in the biographical dictionary of Desmond (1977) did not extend to repeating that the collection was a Suffolk one. In copying Desmond’s entry, Kent & Allen (1984) failed to realise that it was incomplete in that respect and the Steggall herbarium was consequently not identified with Suffolk in the geographical index on p.295 of *British and Irish Herbaria*. As a result, it has been overlooked that a Bury St. Edmunds herbarium at Wisley attributed to Sir George Holford on p.167 of that work is in fact this very same collection. As Sir George was not born till 1860, he cannot have been the person who formed it and he seems an unlikely one to have made a herbarium of British plants in any case. The entry on him in *British and*

Irish Herbaria should accordingly be deleted in its entirety.

Country mansions as sources of herbaria

That these two collections have both ended up in institutional locations with no obvious connection with British field botany, and have remained long ‘out of circulation’ as a result, can seemingly be blamed on both having previously spent most of their existence in country mansions in the ownership of individuals off the subject’s information networks. Collections such as these constitute a distinct herbarium genre. Dating from periods at which forming a personal herbarium was a well-regarded and even fashionable pursuit among the rural gentry and aristocracy – and fostered, maybe, by many a governess – they have passed down within families as semi-heirlooms, unseen by the outside world. The vicissitudes that large country houses underwent during the twentieth century, in particular the requisitioning of so many by the armed forces during World War Two, probably led to most of those collections that still survived being donated to institutions, perhaps typically at short notice. In a few cases the houses themselves have been opened to the public and herbaria have continued to remain *in situ*. Lacock Abbey in Wiltshire is one such instance: the museum of photography into which one of its lodges has been converted, in celebration of the invention on the estate of the negative-positive process by W. H. Fox Talbot, the house’s one-time owner, reputedly contains two herbaria. One may have been formed by Fox Talbot himself (for he was botanist enough to compile an unpublished *Flora of Corfu*), but possibly the specimens are all non-British (perhaps a Wiltshire member can check this sometime?). So far as is known, the twenty-three volumes that the Marchioness of Huntly filled with Huntingdonshire specimens in the middle years of the nineteenth century (Sheail & Wells, 1980) are one of the very few large representatives of the genre still remaining in private hands – at Aboyne Castle in Aberdeenshire. But at the time *British and Irish Herbaria* was compiled not even all of the country-house herbaria known to have been in existence down to comparatively recent years, such as the two formed by successive Earls of Gainsborough that had been at Exton Hall in Rutland, had been located. If there are others as well of which the botanical community has been ignorant all along, then perhaps some further discoveries, not just rediscoveries, have yet to be made too.

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The Botanical Exchange Club Distribution for 1919 has now been completed

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In the course of work now under way on the backlog of unmounted material in the British Herbarium at The Natural History Museum, a box recently came to light full of previously-unexamined bramble specimens slipped between sheets of old newspapers. They turned out to comprise two unrelated collections, one hidden beneath the other. Though both were anonymous, the lower one bore notes on the sheets in the unmistakable handwriting of E.S. Marshall, the dominant figure in British field botany along with Druce in the decades on either side of 1900. Though not a specialist in *Rubus*, Marshall diligently collected unfamiliar examples of the group wherever he botanized, selecting and documenting them with more than ordinary care. Though his own very extensive herbarium was bequeathed to Cambridge University – despite the fact he was a graduate of Oxford – in common with many of his contemporaries he contributed on a massive scale to the annual distributions of the two exchange clubs and as a result individual specimens of his are to be found in many other places. It is highly exceptional, however, for a whole collection of them to be anywhere but at Cambridge, so the presence in **BM** of this one immediately appeared intriguingly anomalous (it is also a mystery how it comes to be there).

The specimens had all been collected in Somerset, in which much of Marshall's later fieldwork was carried out while rector of West Monkton, outside Taunton. So the fact that most were from the coastal foot of the Quantock Hills in v.c. 5, some way to the north-west of his parish (the remainder were largely from the Somerset Levels in v.c. 6), was fully in keeping. *Rubus* material from that part of

Somerset is not well represented in the main British herbaria, so the collection is of particular interest and value for that reason just in itself.

Marshall had distinguished about 25 different taxa and placed those in separate makeshift 'folders', on the front sheet of each of which he had written very tentative determinations (if only for sorting purposes) together with locality details and the date. The one curious feature was that he had collected in almost every instance enough specimens to fill quite a number of herbarium sheets. The only reason for doing that would seem to be that they were intended for distribution through one (or both) of the exchange clubs, the rules of which required contributors to send in a sufficiently sizeable gathering of any taxon submitted to allow it to be shared out among several other members at the very least. As most of the specimens in this case had been collected during the summer of 1919, why therefore had they not been included in that winter's Distribution?

The penny then dropped: that was Marshall's last-ever season; for that autumn, we know, he took his own life in a bout of depression. The collection is thus a poignant relic of that premature end to one of the most productive lives the study of the vascular flora of these islands has ever benefited from.

It seemed only fitting to complete the task that Marshall had left undone. Accordingly, if only as a start, two sets have been made up from the collections, one for incorporation into the **BM** British Herbarium, the other for donation to the National Museum of Wales (**NMW**).

Searching for the hybrid *Rumex xpratensis* in Co. Wexford

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I like to set myself a task of some sort each year. As the BSBI is working on a new book on hybrids of Britain and Ireland this provided a sensible option. One of the easiest hybrids to identify (and it can be done all year round) is the hybrid between *Rumex crispus* (Curled Dock) and *R. obtusifolius* (Broad-leaved Dock). As there are no records for the county of Wexford in the *New Atlas* (Preston *et al.* 1997) I have set out to find it for each 10km square that falls within or partly in the county during 2006. At the timing of writing I have found it during January and February in 26 tetrads (figure 1).

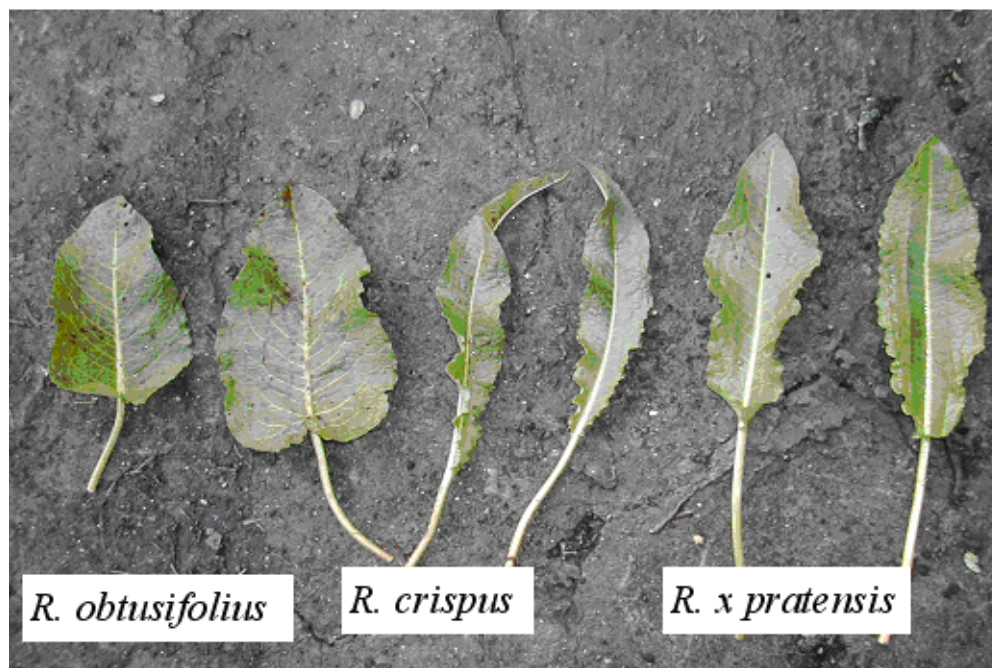
The best way to look for this hybrid is to find an area where there are a large number of docks growing e.g. waste ground, rough pastures, fields grazed by horses, etc. Look for the largest plants in the population and these are usually the hybrid. I have also noticed that at this early time of year the hybrid has a large rosette of leaves while both parents have none or just a few starting to show. It can be identified by the

leaves alone if you are brave enough. They inherit their length and slightly waviness from curled dock and their width from broad-leaved dock. There is an excellent drawing of the fruits in the *New Flora of the British Isles* (Stace 1997). At this time of year the biggest problem is finding a fruit as most have dropped off, but if you look hard enough there are normally a few remaining. Usually you will find both parents with the hybrid. On a few occasions I have had neither parent anywhere in sight, these records are always from waste ground.

Go on! Give it a go and you may be surprised to find that hybrids are not always as difficult as you think!

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Comparison of *Rumex* leaves. Photo © Paul Green 2005

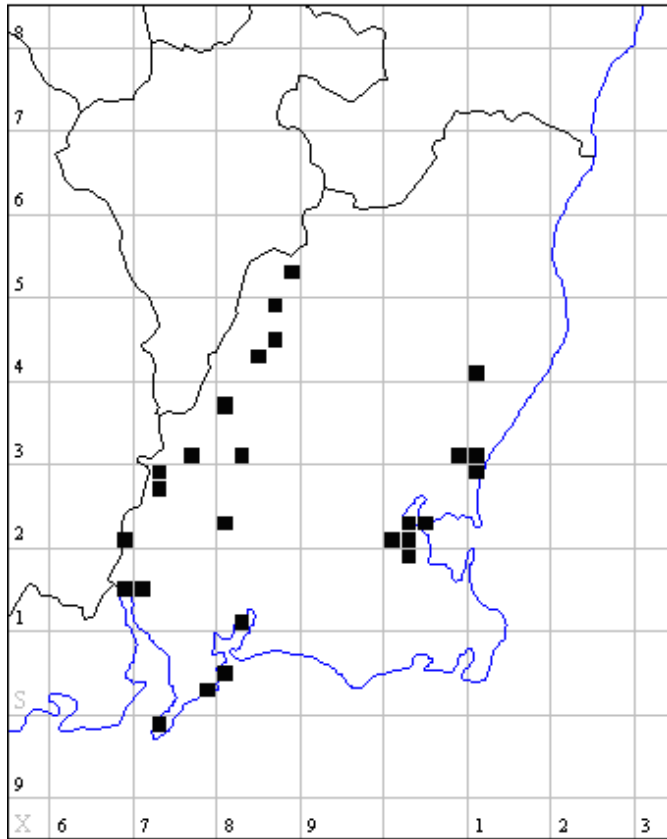


Figure 1. Tetrad distribution of *Rumex xpratensis* in Co. Wexford January-February 2006 (mapped using MapMate, version 2.0.6 . © Teknica Ltd. 2006)

Summer Lady's-tresses (*Spiranthes aestivalis*) in the New Forest: a tale of destruction (1878)

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Much has been written about *Spiranthes aestivalis* in the New Forest, and the part played by collectors in its demise. It was discovered there, apparently, in 1840, and the last record was just over a century later, in 1959. Evidence relating to the over-collecting of this species in the 19th century is mainly drawn from the large numbers of specimens in herbaria. Brewis *et al.* (1996) noted that '...persistent collecting may well have contributed to its extermination, as herbaria show that numerous botanists collected a whole sheet of plants with roots'. Foley (2005), while acknowledging that drainage, tree planting and scrub encroachment were at least partly to blame for the plant's extinction, noted that it

'... [was] harried by collectors for its rarity'; and that in the New Forest 'collection no doubt played a part in hastening its demise... The legacy of 236 British specimens, some with tubers attached, in three of our major national herbaria, is itself a testament to the general lack of consideration for the plant's conservation'. Even so, many observers consider that habitat changes in the 20th century may have been more important in finally propelling the species to extinction than the fact that in the 19th century 'some collectors – reputable men, many of them – seem to have measured their status by the number of orchids they could cram into their vasculum' (Marren 1999).

I must admit, I had never paid much attention to the details of the decline and eventual extinction of *S. aestivalis* in Britain, but then I acquired from Ro Fitzgerald five volumes of a Victorian naturalists' monthly magazine entitled *Hardwicke's Science-Gossip*. These contain much of interest, but nothing to quite match an article on *Spiranthes aestivalis* by the Hampshire naturalist E.D. Marquand (Marquand 1878). This author, having noted with deep regret the appalling effects of over-collecting at first hand, then decided – for the plant's own good it seems – to resort to a little collecting of his own. It is an extraordinary eye witness account of a 'cottage industry' that sprang up, almost overnight, in response to the rapacious demands of Victorian botanists; and it shows, very clearly, why it was so dangerous at that time to publicise the whereabouts of rare species. I had intended to give just a few short extracts, but in the end there seemed no alternative but to quote the whole thing *verbatim*.

'SUMMER LADY'S TRESSES (*Spiranthes aestivalis*).

I am quite sure all botanists will deeply regret to learn that this rare plant – which, like *Gladiolus illyricus* and *Pulmonaria angustifolia*, is to be seen nowhere in England but in the New Forest – is being rapidly cleared out of its station near the Lyndhurst and Christchurch Road. I have reason to fear that in two years not a single specimen will be found in the famous *Spiranthes* bog. This is deplorable – and I must explain how this much-to-be-deprecated eradication is being effected.

The year before last a second edition of the 'New Forest Handbook' was brought out, comprising, among other additions, a short paper on the botany of the district, and in this the author thought fit to describe, with almost painful minuteness, the exact locality of the bog. This, no doubt, was kindly meant, but the consequences are lamentable, as I shall presently show.

In the vicinity of Lyndhurst, and in many other parts of the Forest, there are resident 'collectors,' who collect insects (chiefly *Lepidoptera*), birds' eggs, rare ferns, and anything else which is marketable, and dispose of them either to London dealers or to visitors. Now, when the handbook appeared containing the notice of *Spiranthes aestivalis*, and referring to it as 'a plant peculiar to the New Forest, and to be found in no other spot in England,' they saw at once a rare opportunity for increasing their returns; since, by carefully pulling up every plant they could find, they would hold the monopoly, and always be sure of a ready and certain sale. This was made more apparent when large numbers of visitors flocked to the bog last

year, even as early as May, and when orders for specimens came in from all parts of the kingdom. Their anxiety to discover the plant as early as possible was very great, and on more than one occasion I have been asked what it looked like, and how they might know it, for a plant a few inches high, with a lax spike of small white flowers, growing in a very wet sphagnum bog, is not very likely to attract much attention.

In the month of August I called at one of the cottages close by and inquired about the *Spiranthes*. I was told that the day previously it had been found by a visitor. 'So,' continued my informant, 'as we have so many people asking about them, and so many orders, we went out last night and this morning and brought in every plant that was in blossom. I'll show you them,' and – shall I say it? – to my intense disgust a large earthenware pan, about two feet in diameter, was brought out *completely filled with Spiranthes aestivalis* – roots, flowers and all! Besides this there was on the table a good handful of cut blossoms.

I said I would walk over the bog and see if there were any more, which called forth the remark: 'I don't think it's of any use, Sir; I don't think there's one left.' However, I searched, and after wading half-knee-deep in water for an hour or so, succeeded in finding three specimens, two of which I took, and afterwards reproached myself for leaving the third; for I felt sure it would be gone next day.

I have not visited the cottage since, but I have no doubt that every visible specimen was ruthlessly pulled up. The only chance was for young plants which did not blossom – these of course are bound to go this year; next year the last lingering vestiges will be swept away, and *Spiranthes aestivalis* shall never again flourish at its celebrated station in the New Forest of Hampshire. Nothing can save it. Other bogs will, when this one is exhausted, be searched, and if, as is said, the *Spiranthes* occurs elsewhere in the neighbourhood, it will soon be a thing of the past, and one of the very rarest plants in the United Kingdom will be extinct, unless specimens are procured from the Channel Islands and planted.

Can anything be done to prevent its complete extirpation? I do not for one moment blame the cottagers; if a wild plant will fetch a given number of shillings in the market, these people have, undoubtedly, as great a right to sell them as have more wealthy collectors to travel a long distance in order to gather them for themselves. The plants do not belong to anybody in particular, and the cottagers may as well make money out of them as by the sale of a *Vanessa antiopa*, a Montagu's Harrier, or a nest of raven's or honey-buzzard's eggs. The error lies in making the habitat of a rare plant

publicly known. When will kind-hearted botanists learn that it is a grand mistake to publish the exact habitat of a rare or local species? It is disheartening enough to know that a plant is gradually becoming more and more scarce in a district, yet it is some consolation to know that it grows in other parts; but what must be the feeling of all right-minded botanists on learning that the only spot in the kingdom in which a species flourishes is being rapidly and surely shorn of its glory?

Spiranthes aestivalis, compared with other orchids, has but small pretensions to beauty, and is far from being a conspicuous plant; and growing in the very wettest part of a peat bog, might have escaped destruction, and continue to flourish for

many long years to come. The (perhaps) well-intentioned, but most injudicious, publication of half-a-dozen lines will, in all probability, be the means of extirpating it, and robbing the British flora of one of its brightest gems.'

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Elytrigia atherica (Sea Couch) and blue couches – a new roadside halophyte phenomenon?

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In August 2005 I noted a robust and very glaucous couch grass growing in the salt zone alongside the westbound carriageway of A14 in Cambridgeshire about two miles beyond the M11 junction, (approximate GR TL39.63) and risked the law, life and limb to snatch a piece for identification. This was *Elytrigia atherica* (Link) Kerguelan ex Carreras Mart. (Sea Couch), identified primarily by the presence of minute hairs on the exposed free margins of leaf sheaths, inrolled leaves and flat-topped leaf ribs. On the remainder of my journey back to Yorkshire I saw numerous other patches of blue couch, though not all were as distinctly *E. atherica* in 'jizz'. I was without the luxury of a dictaphone or a passenger to take notes but I spotted more on the A14 near Huntingdon/ Alconbury and at several places on the A1 north of Grantham. At home, I referred to the Atlas and found only half a dozen inland records for *E. atherica*. This observation set me off on a quest to identify other inland records and to sort out why some couches appeared to be bluer than others. My first stop was a lay-by on the A63 to the west of Hull, on a road verge less than 50 metres from the bank of the Humber estuary. Here *E. repens* (L.) Desv. Ex Nevski (Common Couch) was identified by its glabrous leaf sheath margins and round-topped leaf veins and was found growing together with its cross with *E. atherica* (= *E. ×oliveri* (Druce. etc.)). A blue hue was evident on these hybrid plants, the leaf blades showed a tendency to twist and loosely roll rather than tightly roll and rib conformations were well-spaced and rounded-

more-or-less flat topped. These two findings are not exactly 'inland' but show that these plants can grow on salt-laden road verges, and that the hybrid might also account for some of the differences in jizz that I had noted among 'blue couches'.

A blue-hued couch on the verge of a B-classified road to the East of Hull had caught my eye a few years ago. Unfortunately, a 'grass-barber' now regularly shaves the verge and the main bed has gone, however, I found one or two stems and leaves near a bridge. These answered the description of *E. atherica* based on the presence of hairs on leaf sheath margins and leaf ridge shape, but the leaves were not as tightly rolled as in the coastal forms. This suggests that *E. atherica* might occur both on our trunk road system and alongside the more rural, salt-treated B roads.

I believe that *E. atherica* and its hybrid with *E. repens* can be added to the growing list of road verge halophytes and that it may be more firmly established than we verge botanists have noticed. However, there are two cautions. First, I have found *E. repens* on the coast hereabouts with a hint of blue and such forms may also exist on salt-laden road verges. These grasses cannot be recorded by jizz and at speed in the same way that the more obvious species such as *Hordeum jubatum* (Fox-tail Barley) and *Puccinellia distans* (Reflexed Saltmarsh-grass) can. Secondly, I've been blessed to survive numerous carriageway dashes to retrieve bits of plant in my time – please live on to report your findings!

Wall Whitlowgrass – *Draba muralis*

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I was pleased to read Dr Corner's article on *Draba muralis* in *BSBI News* 100:15 as I am interested in this species and can give a little more information about its fate at Newark Castle.

My record card shows that on 7/5/1991 I found one plant on the bank of Gala Water where there were many wool aliens at that time; the disused railway line was quite near. My second entry reads: '12/5/1991, Newark Castle, foot of barmkin wall – very limey. Seen with Arthur Smith who had sown seeds some years before.' On approximately 14/5/1991 A.J.S. phoned. He saw this plant at Upper Faldonside: 'Right hand side of gate pillar. Wide place top of wall.' When I looked there I could find no trace of it.

Alas, there are no more entries on the record card, nor can I find my recording notebook for these years so the rest is from memory. A few

years later there was no sign of the plant on the barmkin wall but a square of grass beside the Castle was covered with dozens of plants – if not hundreds. The grass then was medium length, but on next visit it had been cropped very short and there was no sign of *Draba muralis*. I assumed the grass had been cut before the plants had grown and seeded, and that this accounted for their disappearance.

The last memory is shared with Mrs Jean Murray, also of Galashiels. On the narrow road back there was a cottage on the right; one plant was growing on hard standing on the other side of the road. A return visit shortly afterwards found the area had been weeded.

Here ends the sad tale of the demise of *Draba muralis* at Newark, where it had obviously been very happy.

Salix × *taylorii* Rech. fil., hybr. nov.

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In 1947 the Austrian botanist K.H. Rechinger was a guest of the British Association under invitation from Mr. W. Ogilvie in Scotland. He visited the site known as Barry Links, near Carnoustie golf links, which is a military firing range and he was intrigued by the willows found there. Rechinger subsequently published a paper in *Watsonia* (1950) where more details can be found.

The site was visited by P.E. Michell (PEM) and myself (MW) in order to search for the hybrid known as *S. × angusensis* Rech. as part of a dissertation (PEM). However, the other willow flora was assessed (MW) to gain an idea of any changes since Rechinger's time. The hybrid *S. × angusensis* was not found on that occasion but has since turned up from specimens collected by Dr. Les Tucker from this site. This hybrid is the subject of a future paper.

At this time it was an opportunity to look for the hybrid *S. × taylorii*, (*S. viminalis* × *S. caprea* × *S. cinerea* × *S. purpurea*) at the time described as *S. × dasyclados* × *S. purpurea*. *S. × dasyclados* is known as a synonym for *S. × claodendron* but also as a species elsewhere. Fortunately, R.D. Meikle (RDM) and I had corresponded on this willow hybrid previously. RDM had received a b/w Photostat of *S. × taylorii* from the museum Wein (W) in Vienna and a copy was sent here. In a reply it was noted, at the time, that it was not possible from a Photostat to be able to separate this from *S.*

× forbyana and through further correspondence it was agreed that the actual specimen would need to be seen if these suspicions were to be valid.

Encouraged by RDM's interest, World Museum Liverpool (LIV) kindly loaned the specimen from (W) in Austria and the specimen was reviewed in LIV. It was clear that the specimen of *S. × taylorii* was what is known today as the putative hybrid; *S. × forbyana* and it now has this determination. Subsequently a colour, digital photograph was taken, life size, printed out and sent to RDM. The conclusions were agreed and the specimen has since been returned.

RDM also commented that it is likely that Rechinger was unfamiliar with *S. × forbyana*, a willow which later became increasingly planted and survives as a frequent relict in some areas, e.g., the Sefton Coast in Lancashire. Therefore the presence of a four times cross, originally reported with some doubt, is yet to be shown, at least on morphology, in Britain.

Acknowledgements:

Thanks to RDM for his interest in this subject and to the staff of World Museum Liverpool and staff at Wein, Vienna, Austria. Also thanks to Pauline Michell and Les Tucker, and to Sgt Dougie Shearer and the MoD for access.

Reference:

RECHINGER, K.H. 1950. Observations on Scottish Willows. *Watsonia*, 1(IV): 271-275

Some observations on an inland record for *Raphanus raphanistrum* subsp. *maritimum*

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While surveying for a proposed new Suffolk flora with the Norfolk Flora Group in the Spring of 2005, two of us came across several radish plants which subsequently proved to be *Raphanes raphanistrum* subsp. *maritimum*, growing on the edge of a large green in the village of Earl Soham, some 22km from the sea.

This appears to be the first truly inland record for this subspecies in the UK. The *New Atlas* shows Sea Radish apparently a few kilometres inland in some areas such as S.W. Scotland, where it presumably occurs around sea lochs, and it certainly has occurred a little inland around Breydon Water in Norfolk, another inlet of the sea. It also appears to extend right across the far tip of Cornwall, but here nowhere is more than a few kilometres inland. Two red dots, presumably indicating roadside records like ours, occur in Hampshire and Sussex, but again they are virtually on the coast.

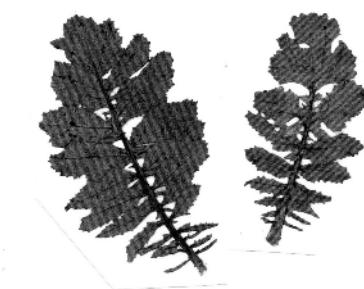
This find throws some hopefully interesting light on the value of the 'crowded', 'contiguous', or 'overlapping' lateral lobe character as a spotting feature for Sea Radish. When the colony was discovered on May 21st there were no diagnostic flowers or fruits, but Sea Radish was suspected because one well grown plant was noticeably tall and bushy in habit, with crowded or actually overlapping lateral leaf lobes. However, when one of the smaller plants was taken and grown on in the garden, even the lowest and largest leaves had very remote side lobes (see photocopy). Nevertheless, the yellow unveined petals, petal length (19-25 mm), number of mericarps (1-2), fruit shape and fruit width (up to 9mm), all confirmed Sea Radish. The mericarps were globose, separated by deep constrictions, and the beaks were about twice the length of the terminal mericarp.



Raphanus raphanistrum subsp. *maritimum*,
Earl Soham, Suffolk, 21/5/2005 (grown on).
All leaves with remote lateral lobes

This experience would seem to show that the contiguous leaf lobe character in Sea Radish is phenotypic, perhaps associated with vigour of growth and leaf size. The transplanted plant remained straggly, never producing such large leaves as the well grown plant on the road verge, either because of adverse soil conditions, growth later in the year, or weakening due to transplantation.

The expression of the contiguous leaf lobe character is, however, also associated with the stage of growth – I know of another colony of Sea Radish which never seems to have crowded side lobes just before flowering, but does on the



Raphanus raphanistrum subsp. *maritimum*,
Waxham, Norfolk, 17/1/2006. Leaves from
overwintering rosettes

massive, dark green leaves of its overwintering rosettes. (see photocopies above). Very large overwintering rosettes of dark green radish leaves with markedly overlapping lateral leaf lobes are very suggestive of Sea Radish, and may be diagnostic with experience. But a little later, when the basal leaves are gone, it may be necessary to go more on the large size of the plant and its leaves, the bushy habit, and the dark green rather than greyish colour, as spotting characters. The absence of the crowded leaf lobe character should not be taken to rule out Sea Radish.

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Chloroplasts and Algae within vascular aquatic plant roots

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Underwater stems in genera such as *Elodea* and *Callitriche* can have well organised symmetrically serried ranks of intracellular chloroplasts. Within the roots, dispositions usually are more erratic, varied, irregular and (to me at least) more puzzling.

Drawings (2) and (3) (pp. ##) unequivocally show chloroplasts inside root cortex cells of *Callitriche obtusangula*, *Lemna minuta* and *L. trisulca*. Colour microphoto (3) (see Colour Section plate ##) illustrates these root cortex chloroplasts of *Lemna minor* aligned along the inner surfaces of the cell walls, with the adjacent stelar tissues (dark). In Colour microphoto (4), massed chloroplasts are packed inside a root cortex cell of *C. obtusangula*: but there appear also to be extracellular chloroplasts presumed to have been extruded from adjacent root cortex cells.

Fruond chloroplasts from *L. trisulca* appear as in Drawing (1). Drawings (4), (5), (7), (9), (10), (11), and microphotos (1) and (2) all illustrate 1-11µ green bodies (therefore not starch grains) from root cortex (and sometimes peristelar) tissues from six vascular aquatic plant species. Most of these green bodies gave the starch positive reaction with iodine – but not all. Many, perhaps most, seem to be extracellular. Pressure on the coverslip of the *L. minor* rootlet shown in microphoto (1) caused the appearance of microphoto 2. I surmise that chloroplasts are extruded from the cells, and that grana can be extruded from the chloroplasts: but such appearances are also common in fresh young unsquashed roots of at least six vascular aquatic species. Perhaps grazing by molluscs (Oliver 2004), enzyme attacks inflicted by crustacea or invading algae, or winter frost damage can all cause chloroplast extrusions and/or autolysis.

Algal epiphytes are not a subject of this paper, but filamentous algae such as *Oedogonium* and *Stigeoclonium* attached to the roots of vascular aquatics can hold other smaller filamentous algae in highly complex meshes entrapping perhaps dozens of different microscopic algae genera and species close to the host root cell surfaces. My impression is that there may sometimes be as many algal species held within 1 sq. cm of sub-

surface meshes as there are vascular plant species in a 10 hectare water meadow, a billion times the area. (Excluding diatoms, there are over 2,200 species of freshwater algae known in the British Isles. John *et al.* 1993).

The first stage of invasion is by algae simply floating into the rims of (usually older) loosely attached root caps of *Lemna* and *Azolla* species. These can then attach inside to form the tiny green ‘test-tubes’ at the ends of these plant roots, one cause of green root tips (Oliver 2005). The second stage is where algae seem able to penetrate inside sealed root caps; the third is invasion of root cortex tissues; and the fourth is infiltration deep into the root cortex surrounding the stele, possibly even inside the central vascular root tissues.

The green bodies shown in Drawings (6) and (12) (and (5) sometimes) were attached to the inner surfaces of *Lemna* root caps, but not inside the cells. On the assumption that chloroplasts do not form inside root cap cells, these green bodies seem very similar to the terrestrial algae *Desmococci/Apatococci* which were certainly abundant above and in the plastic gutters from which some of the *Lemna* colonies were derived. The similarities between presumed extruded extracellular chloroplast fragments in root cortex tissues and rather featureless (but presumed) algae lining the inner surfaces of root caps are disconcerting. (Drawings (4-7) and (9-12), especially (11 & 12)).

Drawings (8) and (13-24) were of emerald, pea-green, stippled, brownish-green, or brown and green organisms which I thought all algae, found either within root caps, root cortex tissues, or both (see key). Slight distortions of host root cortex cells were noted around drawings (15 & 20), and some of the ovoids shown in (16 & 18). Some roots might have been weakened by frost, epiphyte loadings, water snails, presenescence or unknown adversities, but were growing. Only the host roots of (21) were obviously much damaged. The ovoid illustrated in microphoto (5) was the deepest one of three, the other two stuck just inside a *L. minor* root surface slightly damaged by lever-

age of an epiphytic *Oedogonium* attached by a sticky brown holdfast. Chance opportunism of the preceding algae into root cortex tissues is in contrast to the determined endophytic infiltration by the two ensuing.

The genus *Entocladia* includes *E. cladophorae* (common; on or endophytic within filamentous green algae) and *E. endophytica* ('In the British Isles only known on filamentous algae', John *et al.* 2003). As far as I know, neither *Entocladia* nor any other alga has been described as an endophyte within the roots (or indeed any other tissues) of vascular aquatic plants. So far I have found *Entocladia* inside the root caps of *L. minor*, *minuta* and *trisulca* where it can be responsible for the pea-green appearance of the root ends. More interestingly it can also infiltrate the root cortex tissues of these same three duckweeds and those of *Elodea nuttallii* – probably also the underwater stems of *E. nuttallii*. The alga in microphoto (6) is *Entocladia*, either *E. cladophorae* or an inhibited form of *E. endophytica* (see also drawings (25) and (26)). The filaments are forming an enveloping sheath around the root central vascular tissues of *L. minor* following deep invasion of the root cortex tissues.

Convincing intracellular chloroplasts have therefore been found within root cortex cells of the three *Lemna* species and *Callitriche obtusangula*. Deep algal endophytic infiltration of root cortex tissues by green *Entocladia* filaments has been seen on different occasions within the living roots of the three *Lemna* species and *Elodea nuttallii*. Green bodies of 0.25-1µ and 1-11µ, usually extracellular, often (but not always) starch positive are extremely commonly found within the root tissues of the three *Lemna* species, *Callitriche obtusangula*, *Elodea nuttallii*, *Azolla filiculoides*; and sometimes *Potamogeton natans*. Some of the breathtaking varieties of algae surrounding rootlets of the three *Lemnans* and *Azolla* can colonise the internal surfaces and insides of the root caps. A few of these also can occasionally, and opportunistically penetrate and invade root cortex tissues.

Acknowledgements: My thanks to Joan and Brian Davies for help with my colour illustrations; and to Drs D.M. John and H. Sluiman of the Natural History Museum (London) and Royal Botanic Garden Edinburgh.

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Oliver, J.E. 2005. Algal endophytes within vascular plant root tissues. *BSBI News* 100: 36-38.

Key to drawings (pp. 38-39) of the green bodies within the roots

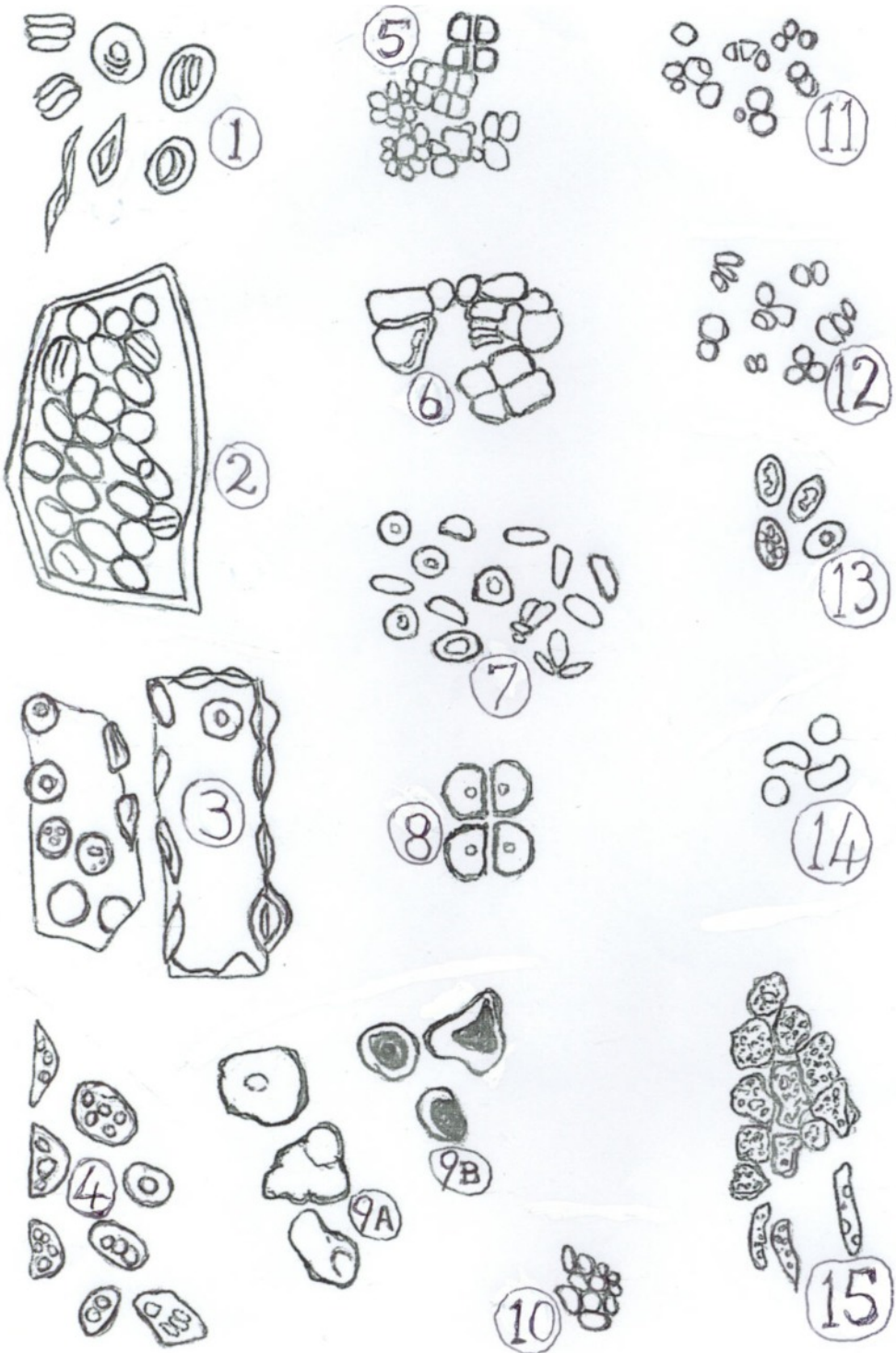
Lmn, Lmt, Ltr, LLL = *Lemna minor*, *minuta*, *trisulca*, all three *Lemnans*

Azo, Enu, Cal = *Azolla filiculoides*, *Elodea nuttallii*, *Callitriche obtusangula*.

rcap, rcx, rcvt = Inside root caps, (invasion of) root cortex, surrounding or even inside root central vascular tissues.

Measurements allude to diameters, lengths (including ovoids), or widths of plaques or filaments, in microns (µ).

- (1) Ltr. Frond chloroplasts for comparisons with (2)-(14) ensuing. 5-7µ
- (2) Cal. rcx chloroplasts, towards underwater stem junction. 8µ
- (3) LLL, Enu, Azo. rcx chloroplasts mid-root. 3-6µ (Azo 1.5-2.5µ)
- (4) LLL. rcx, rcvt. Frequently extracellular. ?extruded chloroplasts. 5-11µ
- (5) LLL. rcx. (rcap sometimes). Extracellular, clump forming. 1-5µ
- (6) Lmn, Lmt. rcap. 1-9µ. Possibly Desmococci or Apatococci.
- (7) LLL. rcx. Mainly extracellular. ?extruded chloroplasts. 2-7µ
- (8) Lmt. rcx. Algal tetrad. 13µ
- (9) LLL. rcx. 4-8µ. 9B shows the starch positive iodine reaction. ?autolysed chloroplasts.
- (10) LLL. rcx, just above meristematic regions, sometimes densely massed. 2-4µ
- (11) LLL, Azo, Enu, Cal. rcx, rcvt, mainly extracellular. 2.5-5(8)µ
- (12) Lmn, Lmt. rcap. Seemingly almost identical to preceding. 2.5-9µ
- (13) Azo. rcx. Emerald green algal ovoids. 9µ
- (14) Lmt. rcap. Algal spheres and 'sausages', 2.5 & 5µ
- (15) Azo. rcx. Infiltrating stippled algal clump. 30µ (excluding outliers)
- (16) LLL, Azo, Enu, Cal. rcaps, occasional rcx. Brownish-green ovoids 10-26µ
- (17) Lmt. rcap. Brown ovoid surrounded by green 'sausages' 25µ
- (18) LLL, Azo, Enu, Cal. rcaps, occasional rcx. Green ovoids 8-25µ
- (19) Lmt. rcap. Brown cyst shedding 0.5µ green bodies, and associated ovoid 25µ
- (20) Cal. rcx. Infiltrating wedges, whole disc 30-40µ
- (21) *Agrostis stolonifera*, floating mat. Damaged rcx. Greenish-brown rods 5µ
- (22) Cal. Damaged rcx. Golden-green infiltrating plaque 15µ
- (23) LLL. rcap. Stippled algal spheroides 5-15µ
- (24) LLL. rcap. Stippled algal plaques, variable, 5-50µ
- (25) LLL, Enu. rcap, rcx, rcvt. *Entocladia*; *E. cladophorae* or ensuing. 10µ, variable.
- (26) LLL. rcap, rcx, rcvt. *Entocladia*; *E. endophytica*, 10µ, variable



Drawings of green bodies within the roots of various aquatic plants (see page 37 for key)



Drawings of green bodies within the roots of various aquatic plants (see page 37 for key)

BOTANY IN LITERATURE – 40

Cyclamens – Freud – Lucca – Pronunciation

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‘The origin of the elements included in the content of dreams’, the Austrian neurologist, psychoanalyst, and writer, Dr. Sigmund Freud (b. Moravia 1856 – d. London 1939) (see also Souchier, *BSBI News* 96: 40-41) asserted, in his 1899 [‘1900’] *The Interpretation of Dreams* is ‘that in every dream it is possible to find a point of contact with the previous day’. (This is fundamentally true, as I have found, although the ‘point of contact’ can equally be something one has recently read, as much as an actual experience).

Although Freud’s works are essentially non-fiction, many of his cases and analyses read, as several editors and critics have pointed out, like autobiographical short stories, and thus qualify, at least secondarily, as psychological literary fiction. In this wise, the following example, taken largely from pages 254-258 of the 1991 (Penguin) edition of the above title (although the subject actually spans pages 249-603) tells of the:

DREAM OF THE BOTANICAL⁶ MONOGRAPH

I had written a monograph on a certain plant. The book lay before me and I was at the moment turning over a folded coloured plate. Bound up in each copy there was a dried specimen of the plant, as though it had been taken from a herbarium (p. 254)

ANALYSIS

That morning I had seen a new book in the window of a bookshop, bearing the title *The Genus Cyclamen*^{1, 8} – evidently a *monograph* on that plant.

Cyclamens, I reflected, were my wife’s *favourite flowers* and I reproached myself for so rarely remembering to *bring her flowers*, which was what she liked. – The subject of ‘bringing flowers’ recalled an anecdote which I had recently repeated to a circle of friends and which I had used as evidence in favour of my theory that forgetting is very often determined by an unconscious purpose and that it enables one to deduce the secret intentions of the person who forgets. ² (p. 254).

ANECDOTE TOLD

.... I now made a fresh start. Once, I recalled, I really *had* written something in the nature of a monograph on a plant, namely a dissertation on

the coca-plant³ which had drawn Carl Koller’s attention to the anaesthetic properties of cocaine⁴ ... (p. 255)

... I will make an attempt at interpreting the other determinants of the content of the dream as well. There was a *dried specimen of the plant* included in the monograph,⁵ as though it had been in a *herbarium*. This led me to a memory from my secondary school. Our headmaster once called together the boys from the higher forms and handed over the school’s herbarium to them to be looked through and cleaned. Some small *worms* – bookworms – had found their way into it. He does not seem to have had much confidence in my helpfulness, for he handed me only a few sheets. These, as I could still recall, included some Crucifers. I never had a specially intimate contact with botany. In my preliminary examination in botany I was also given a Crucifer to identify – and failed to do so. My prospects would not have been too bright, if I had not been helped out by my theoretical knowledge. I went on from the Cruciferae to the Compositae, and indeed I might fairly have called them my *favourite flowers*. Being more generous than I am, my wife often brought me back these favourite flowers of mine from the market. (pp. 256-7).

... *The folded colour plate*. While I was a medical student I was the constant victim of an impulse only to learn things out of *monographs* ... It had once amused my father to hand over a book with *coloured plates* ... for me and my eldest sister to destroy; and the picture of the two of us blissfully pulling the book to pieces (leaf by leaf, like an <artichoke>, ...) was almost the only plastic memory that I retained from that period of my life. Then when I became a student, I had developed a passion for collecting and owning books, which was analogous to my liking for learning out of monographs: a *favourite hobby*, (the idea of ‘favourite’ had already appeared in connection with cyclamens⁷ and artichokes). I had become a *book-worm* (c.f. *herbarium*) ... (pp. 257-8).

NOTES

1. *The Genus Cyclamen*: *Cyclamen* L. (Primulaceae), from the Ancient Greek κύκλος, [c.f. *kylos*, Stearn, 1992], a contraction of κυκλάμινος, a circle (c.f. κυκλάμινο (Modern Greek), *Cyclamen*). The allusion is to the coiled



Lycium barbarum flower, Aber-arth, v.c. 46. Photo Arthur Chater © 2005 (p. 50)



Lycium chinense flower, Aber-arth, v.c. 46. Photo Arthur Chater © 2005 (p. 50)



Anemanthele lessoniana in the children's maze in Cambridge University Botanic Garden. Photo Philip Oswald © 2006 (p. 50)



Asplenium adiantum-nigrum (Black Spleenwort), Dwarmo, Orkney. Photo Effy Everiss © 2005 (p. 56)



Leontodon autumnalis var. *coronopifolius taliaris*, Camarthenshire. Photo R.D. & K. Pryce © 2005 (p.60)



Participants at the Vegetative Grass Identification Training Day in Surrey led by Clare O'Reilly (centre). Photo John O'Reilly © 2005 (p. 62)

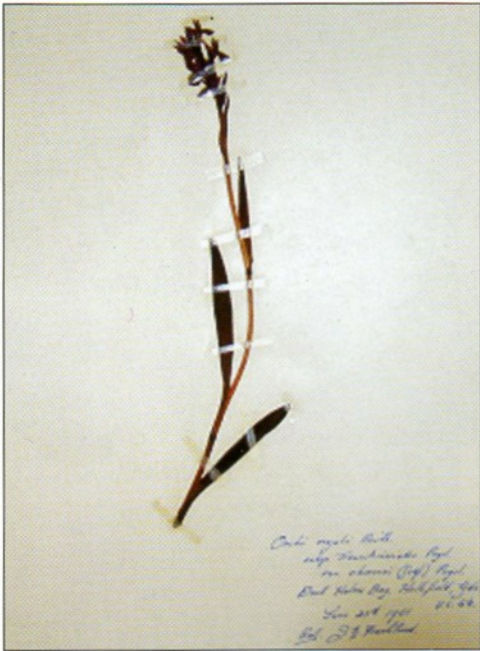


Fig. 1. Specimen of the Mystery Orchid, *Dactylorhiza traunsteinerioides* 'var. eborensis', collected at Hellifield, W Yorks in 1951. © Trustees of National Museums Liverpool (p. 22)



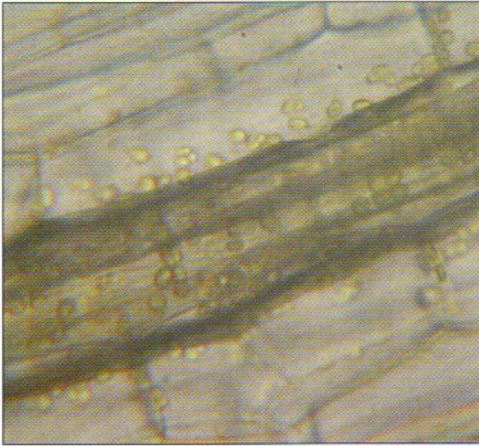
Fig. 2. *Dactylorhiza traunsteinerioides*, photographed at the Hellifield locality in 1982. © Richard Bateman (p. 22)



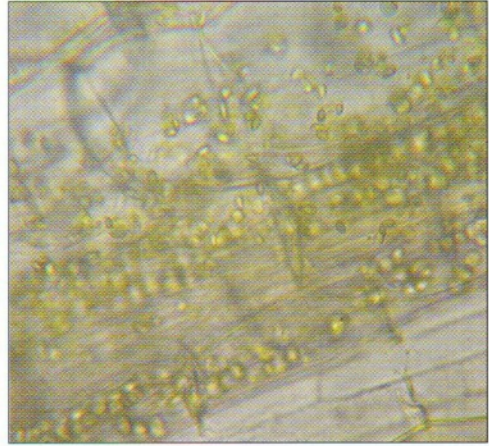
Fig. 3. *Dactylorhiza traunsteinerioides* var. eborensis (the 'Mystery Orchid'), photographed in 2005 at its *locus classicus* near Rievaulx, N Yorks. © Richard Bateman (p. 22)



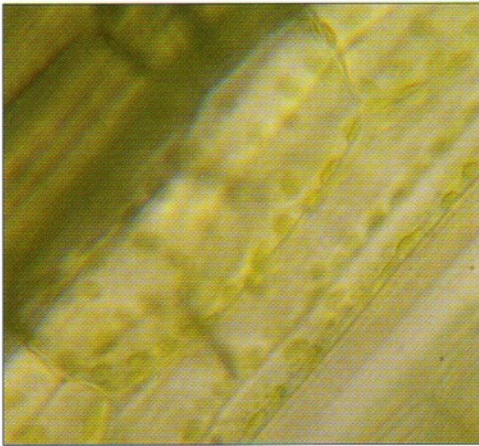
Fig. 4. The famous white-flowered individual of *Dactylorhiza traunsteinerioides* long known to occur near Pickering, N Yorks, photographed in 2005. © Richard Bateman (p. 22.)



1. Peristelar green bodies in *Lemna minuta* root



2. As 1. but with cover slip pressure



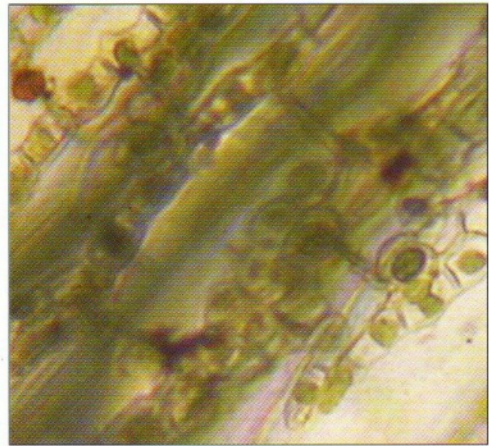
3. Regular chloroplasts in *Lemna minor* root cortex cells



4. Massed chloroplasts in *Callitriche obtusangula* root cortex cell



5. Ovoid alga in *Lemna minor* root cortex tissues



6. *Entocladia* filaments encircling *Lemna minor* root stele

stem of the seed vessel (Johnson & Smith, 1986) or to the rounded tubers (Stearn, 1992). These latter are regarded as favourite food for swine in the south of France, Sicily, and Italy, hence the vernacular name of Sowbread. It is also called Persian Violet, or Alpine Violet, although Dony *et al.* (1986) list the correct common name as simply Cyclamen. There are 17 species found in Eurasia, and the Mediterranean to Iran.

2. *the person who forgets*: Forgetfulness (λήθη, *lēthē*), according to Aristotle (2000:185), 'is caused by indifference, and indifference is a slight'. So when someone forgets your name, your birthday, or even to thank you for something (for examples), you have a right to feel anger (!). The River of Forgetfulness (i.e. Lethe or Lethæus) or Oblivion, which geographically exists in Cyrenaica (in Africa) and rises 'in the Desert' (Hazlitt, 1851), is of course classically found in Hades or Hell (see e.g. Virgil, *Aeneid* VI. 968-71, Dante (1949 159-60, 161 (f.n.); 288, 291 (f.n)). The poet Keats (b. London 1795- d. 1821 Rome) appears to embrace Lethe as oblivion in his *Ode to a Nightingale* and to reject it in his *Ode to Melancholy*.

3. *coca-plant*: *Erythroxylum coca* Lam. See Freud's 'On Coca' (1884) in his *The Cocaine Papers*, Vienna and Zurich, 1963:255.

4. *cocaine*: Used initially in Victorian times, especially by e.g. Sir Arthur Conan Doyle's famous fictional private detective, Sherlock Holmes. Opium smoking was also in vogue. Coleridge's poem *Kubla Khan* (1816) was known to have been written under the influence of the latter.

5. *monograph*: 'So, too, "monograph" in the dream touches upon two subjects; the one-sidedness of my studies and the costliness of my favourite hobbies' (Freud, 1991: 388).

6. *BOTANICAL*: Connected only in the core of Freud's dream-thoughts by antithesis – 'the fact that botany never had a place in my favourite studies' (Freud, 1991: 414).

7. *cyclamens*: John Ruskin (b.1819 – d.1900; see Souchier, *BSBI News* 100: 29-30) wrote in a letter to Mrs La Touche (Ruskin, 1964: 115) of the cyclamens at Lucca in Tuscany (northern Italy), describing them as 'the common mountain flower which grows in autumn everywhere' but in nooks of marble rather than limestone,

and compared them to the colchicum [*Colchicum autumnale*] which 'is very like it in distant effect on fields, but has a way of dog's-earing itself, and dropping its petals in a tired way, while the cyclamen will fade white without looking tired; and then its tidyness and trimness and toilettness and shyness are so precious, when it's all itself.'

8. Cyclamen: (koo-kla-men), a name of vexed pronunciation as this poem in an old-time gardening periodical (*apud* Johnson & Smith, 1986) demonstrates:

How shall we sound its mystic name
Of Greek descent and Persian fame?
Shall 'y' be long and 'a' be short,
Or will the 'y' and 'a' retort?
Shall 'y' be lightly rippled o'er,
Or should we emphasise it more?
Alas! The doctors disagree,
For 'y's' a doubtful quantity.
Some people use it now and then,
As if 'twere written 'Sickly-men';
But as it comes from *kuklos*, Greek,
Why not 'kick-laymen', so to speak?
The gardener, with his ready wit,
Upon another mode has hit;
He's terse and brief – long names dislikes,
And so he renders it as 'Sykes'.

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Botanists in literature (41); some light relief?

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When Jack Smith initiated this series of notes he asked specially that quotations should be limited to those mentioning “botany” or “botanising” or “botanist” by name, or at least dealing with our subject as such, and not with plants in general. Given that botany, botanising and botanist are relative young words, in that spirit I offer a trio of extracts from three rather different works, linked by the theme of humour. The first two qualify, I contend, as extracts dealing with our subject; the last one requires no justification.

The great satirist Jonathan Swift, Dean of St Patrick’s Cathedral in Dublin, was not uninterested in plants, nor was the science of botany exempt from his caustic pen. In his immortal book *Travels into Several Remote Nations of the World*, first published in London on Friday 28 October 1726 (one day after Caleb Threlkeld’s *Synopsis stirpium hibernicarum*, the earliest Irish Flora) and attributed to one Lemuel Gulliver (“first a surgeon, then a captain of several ships”), there is a satire on the Royal Society which surely involves the kind of botanist that lives in a laboratory, blindly pursuing his research without seeing real, growing plants. Gulliver encountered this person while in Laputa during his visit to the Academy in Balnibarbi.

‘This academy is not an entire single building, but a continuation of several houses on both sides of a street; which growing waste, was purchased and applied to that use. I was received very kindly by the warden, and went for many days to the academy. Every room hath in it one or more projectors; and, I believe, I could not be in fewer than five hundred rooms. The first man I saw, was of a meagre aspect, with sooty hands and face; his hair and beard long, ragged and singed in several places. His cloaths, shirt, and skin, were all of the same colour: he had been eight years upon a project for extracting sun-beams out of cucumbers; which were to be put into vials, hermetically sealed, and let out to warm the air, in raw inclement summers. He told me, he did not doubt, in eight years more, that he should be able to supply the governor’s gardens with sun-shine at a reasonable rate; but, he complained that his stock was low, and entreated me to give him something as an encouragement to ingenuity, especially since this had been a very dear season for cucumbers: I made him a small present, for my lord had furnished me with money on purpose; because he knew their practice of begging from all who go to see them.’

Pelham Grenville Wodehouse, memorably described by the Irish playwright Sean O’Casey as

“English literature’s performing flea”, also ventured to poke fun at a well-known subspecies of botanist. In one of his golf stories, “The rough stuff” (in *The clicking of Cuthbert and other golf stories*, 1922), he depicts Eunice’s aunt.

‘... Eunice [fiancée of Ramsden] and her brother had just come to visit an aunt who lived in the neighbourhood. Their house was not far from the links; Eunice was not engaged to be married; and the aunt made a hobby of collecting dry seaweed, which she pressed and pasted into an album. One sometimes thinks that aunts live entirely for pleasure.

... While his rivals clustered thickly about the girl, [Ramsden Waters] was invariably somewhere on the outskirts learning all about dried seaweed. Indeed by the end of the month [he] ... could not have known more about seaweed if he had been a deep sea fish. And yet he was not happy. He was in a position if he had been at a dinner party and things had got a bit slow, to have held the table spellbound with the first-hand information about dried seaweed, straight from the stable; yet nevertheless he chafed.’

My final offering is from an unjustly neglected work, *The ascent of Rum Doodle* by William (“Bill”) E. Bowman (1911–1985), a civil engineer who spent his free time hill-walking, painting and writing. A team of climbers is trekking in the foothills of the Himalaya, making for the peak of Rum Doodle.

‘The steepness of the valleys was such that the vegetation ranged from tropical to arctic within the distance of a mile, and our botanists were in their element. I am no naturalist myself, but I tried to show an intelligent interest in the work of the others, encouraging them to come to me with their discoveries. I am indebted to them for what small knowledge I possess in this field.

The lower slopes were gay with Facetia and Persiflage, just then at their best, and the nostrils were continuously assailed with the disturbing smell of Rodentia. Nostalgia, which flourishes everywhere but at home, was plentiful, as was the universal Wantonia. Higher up, dark belts of Suspicion and Melancholia gave place to the last grassy slopes below the snow line, where nothing was seen growing but an occasional solitary Exentricular, or old-fashioned Manspride.

The fauna, too, was a constant delight. ...’

You must read the rest for yourselves! Gorgeous persiflage.

Coordinator's Corner

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Recorders Conference

The annual recorders' conference this year will be in Shrewsbury again, hosted very generously for us by the University of Birmingham with accommodation at Preston Montford Field Centre. It is scheduled for September 15-17th and will have the usual taxonomic themes plus talks on the issue of reintroductions. County Recorders, Referees and others actively involved in the work of the society are invited: the cost is £135 for the full three days or £30 just to attend a day's talks. Contact me if you are interested. We have an interesting line-up of speakers, including Chris Preston, David Pearman, Tim Rich, Alan Silverside and possibly Clive Stace. There will be workshops on *Rosa*, *Taraxacum*, *Fumaria*, *Euphrasia*, Batrachian *Ranunculus* and other difficult groups. What I am struggling with at the moment is finding good speakers on reintroductions. What can we learn from twenty years of planting out rarities? What are the benefits? Why is it such a secretive process? It would be interesting to open the doors on this, the blackest of the botanical arts.

The Atlas Updating Project

The AUP grows on me every day. The facility of having up-to-date distribution maps available whenever you want them is so wonderful; some days, when I am working on species accounts, I simply have it open on my desktop all the time. I know that other people feel the same, because it has ousted the database as the most popular part of our web site. The reason we launched it was because county recorders (especially Arthur Chater) kept nagging for something to do with their new records, but it turns out to have much more potential than that. Michael Braithwaite and Quentin Groom have been analysing the data that has come in since the Atlas to find out which species are showing the biggest increase. This is proving to be an effective way to detect the spread of new aliens, and it turns out to be more sensitive to rare species than Local Change. I have in mind that we could effectively produce a new Atlas of the British flora every decade throughout the 21st century. This would be the closest thing to a monitoring scheme that anyone has yet come up with, although it would require a lot of work. Many county recorders are keen on the idea, but Records Committee thinks it might be too much to ask. However, any member can contribute: all we need is a complete list of the taxa in every

10km square every ten years. If anyone is interested in adopting a square, they should talk to their county recorder. I did write 'British flora' deliberately, because I am not convinced that the level of recording in Ireland (or perhaps the rate of change of the vegetation) would be sufficient, but perhaps we could accept 20 year recording periods in the remoter areas. The star of the AUP to date is John Hawksford, who has made so many new records that he has achieved 139% re-recording in Staffordshire since 2000.

Herbarium news

One of my pet interests is the computerisation of herbaria. I am particularly pleased with developments at Bristol and Manchester museums. Both have started extensive databasing operations and opened their records to public scrutiny. It is really good to see some of the bigger museums entering this field, as the running has all been made by the smaller institutions to date. The BRISTM data is on Dick Middleton's Hull University web site (www.hull.ac.uk/geog/herbarium) and Leander Wolstenholme tells me that the MANCH material will be offered there, too, as well as on their own web site, which is being developed for the big national museums (herbariaunited.org).

Montgomery Canal

The word on the grapevine is that the Montgomery Canal redevelopment is looking likely again. It would be a great shame if Britain lost its last and best canal for wildlife; I was hoping that we might be able to save just one canal in its historical state, complete with its traditional vegetation and wildlife. But the Lottery seems committed to sponsoring as many development plans as British Waterways can come up with, and now they seem to be offering several million pounds as a giveaway if the work is allowed to proceed. The developers have admitted that they cannot preserve the aquatic vegetation if they are allowed to put motorised boats on the canal, so now they are proposing to spend £8 million in handouts to create nature reserves elsewhere in exchange for the destruction of the canal.

I suggest that it is time now for the Lottery people to offer to fund an alternative study by, say, CCW or the local Wildlife Trusts to see if they cannot come up with a better plan for managing the canal with the £40 million total budget on offer. It wouldn't be difficult to create more jobs and facilitate much greater public

usage than the current plan envisages, while putting nature conservation at the heart of the process. After all, 90% of canal users do not drive boats and the current plan creates less than one job for every £1 million spent.

Hybrids project

As you may have read elsewhere, Clive Stace, David Pearman and Chris Preston have teamed up to produce a new edition of *Hybridization in the British Flora*, which will include distribution maps of the hybrids concerned. It is my job to collect the records that will make up these maps, and we have had some 25,000 submitted already, to add to the 100,000 previously in existence. All the maps, including the new data, are available for viewing on the AUP as the

project progresses. This summer is the last opportunity people will have to make new field records, so do please keep your eyes peeled. Not all hybrids are difficult or rare: in *Symphytum* and *Salix*, for example, they are as common as the species. I would like to encourage people to make more use of voucher specimens during this project. It would be nice to impose a rule that all records not supported by a voucher should be rejected, but that might not be practical. However, all such records should be considered vulnerable to rejection if they are questioned, so don't forget that it is your job as a recorder to prove your records; not ours to disprove them.

Some people have all the luck

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Top of the pops – SU89A! I should be pleased that one of the tetrads which I helped to monitor for the Local Change scheme had the highest number of taxa and the other two were in the top 10. And well, yes, I am because we all worked hard on those squares. But then again ... there's a lot of luck in it, isn't there?

Firstly, one hectad in every 9 was selected and then 3 tetrads (from 25) in that hectad to be recorded. No choice, of course, otherwise everyone would have chosen their best tetrads. So who would expect one of those to be recognised as probably the best tetrad in Bucks.? Despite my joy then, along with the hard work and the enjoyment, I have to recognise my or more correctly, our, good fortune.

Secondly, as I edit the field meeting reports, I read each one at least 4 times and this brings home the fact that many meetings at the time were used to record for Local Change. In the more 'difficult' tetrads, each report brought out

the problems involved, especially in Scotland. Here the tetrad could be 4 or 5km from the nearest road, whereas our three were criss-crossed with roads and footpaths. Safety was clearly a factor too, with a party of 4 or more needed in many cases, while bad weather could always curtail a meeting.

In our southern clime we could go out on any day of the year, alone, with no worries about safety. At a rough estimate, no part of any of our tetrads was more than 750m from a road. Many of my records were made whilst cycling along a road and my nearest tetrad was just 3km from home. So OK, it's nice to figure in the lists, but much more credit is due to those who recorded that remote area in the north of Scotland, found just 15 species (or maybe even less!) and got soaked to the skin doing it.

Thanks to Roy Maycock for his comments, his enthusiasm and for doing all the donkey work at the end.

Bassia scoparia (Summer-cypress) in Hampshire

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These notes are prompted by the article by Leach and McDonnell in *BSBI News* 101: 35-37; and particularly by the observation that there has been a dearth of recent information tracking the spread of *Bassia scoparia*.

Bassia scoparia (Summer-cypress) was first recorded in Hampshire in 1999 at two places on the M27/M3, by Paul Stanley and Eric Clement. Apart from one record close to gardens in 2002,

nobody then seems to have taken much notice until I and others started mapping it along the road system in 2003, by which time it was widespread at least in the south. Most of my own observations are taken by using the 'way-mark' facility of a GPS and are then recorded to 1km square precision. The accompanying map (at tetrad resolution) shows its spread in recent years. Before 2005, although it had entered

both the south and the north-east of the county, there was only one record from the central chalk, and I speculated that there were environmental factors at play here. However in 2005 it spread northwards up the M3 onto the chalk at Compton, near Winchester, and appeared at

several points on the A34 between Winchester and Newbury. I have not had a chance to check whether it is progressing north along the A3, or on the M3 between Winchester and Basingstoke, but it does not seem to have colonised the A303 yet.

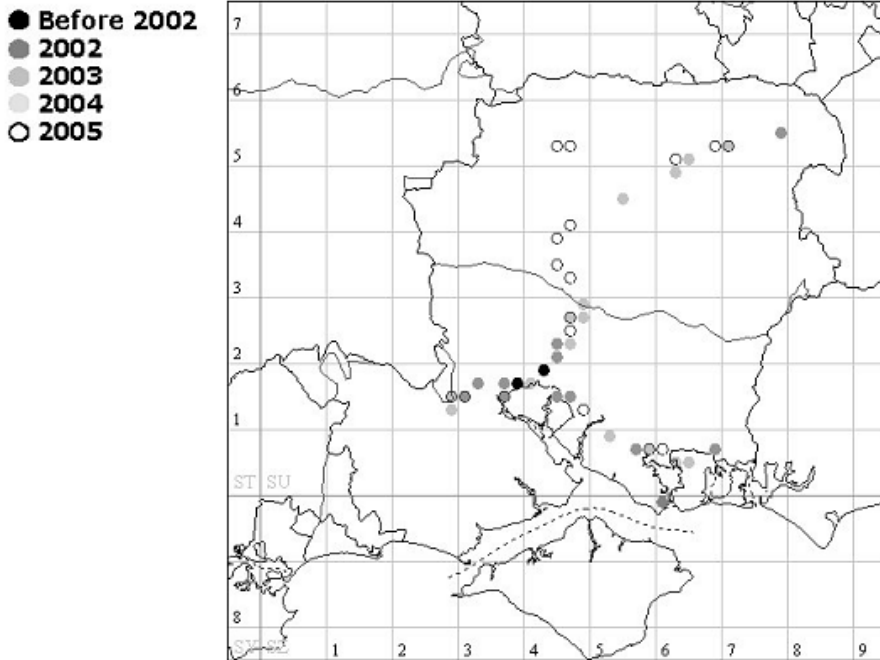


Figure 1: tetrad distribution of *Bassia scoparia* in Hampshire (mapped using Mapmate V2.1.4, © Teknica Ltd 1998-2006)

It is most prominent on the central reservation of dual carriageways, but in the last two years seems to be increasing on slip roads and junctions. It seems to have a perverse predilection for stopping just short of the end of motorway restrictions, making collecting difficult. In some parts of the county, particularly on the M3 towards the Surrey border as well as its Hampshire 'locus classicus' at Rownhams, paving of the central strip is eliminating it or restricting its spread.

Plants characteristically have a squat conical outline as they develop, becoming domed or rounded at maturity. Occasionally one sees a bushy-shaped plant like the garden form sometimes called 'Burning Bush' or 'Kochia'. Typically the central stem turns a rich purplish red as the plant matures but the leaves go straight to a russet-brown. A few plants go red all over. Plants begin to appear in July or early August, and there are then several successive flushes. The last to germinate are usually in late Novem-

ber or even early December, but these do not mature. There seems to be considerable variation in the foliage but broadly, two forms can be distinguished: one with narrow, thin, rather feathery leaves and one whose leaves are sparser, broader and more rigid. I would be interested to know whether the taxonomy of these forms has been investigated.

Mature *Bassia* plants are unlikely to be mistaken for anything else even at motorway speeds. At 70mph young plants may need to be distinguished carefully from narrow-leaved forms of *Atriplex patula* (Common Orache) growing in the same situations (*A. littoralis* has not yet been recorded as a road weed in Hampshire), but the paler, more yellowish green colour is a good guide.

There has been some discussion on *Bassia* behaving as a tumbleweed in Britain. Before 2005 I had seen isolated bushes riding the slipstream on Hampshire motorways; but in autumn 2005 there were two days when strong gales

occurred overnight at the right time in the life cycle. On one of these occasions in October the strong winds persisted into the rush hour the next morning, when on the M3 between Southampton and Winchester there were haunting scenes of heavy traffic making its way amongst

a steady north-bound procession of bouncing bushes.

I am grateful to Tony Mundell for providing information on *Bassia* in North-east Hampshire.

***Bassia scoparia* (Summer-cypress) in Somerset and *Echinochloa crus-galli* (Cockspur) on roadsides in S. England – a response**

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In response to articles of similar title (Simon Leach & E. McDonnell, *BSBI News* 101:35-7; Leach 101:37-8) I have some observations to add. My own monitoring of the spread and persistence of *Bassia scoparia* (L.) Voss became severely curtailed between 1998 and 2000. However, I managed to make some journeys in late 2000 and 2001 and gave a brief update reporting that the place of *B. scoparia* had apparently been largely replaced by *Atriplex littoralis* (Grass-leaved orache) across this region of Yorkshire (*BSBI News* 94:16). Today the picture seems to be much the same as five years ago, although the A63 and M62 have both recently undergone radical change with new intersections and central reservation barriers. These works may have either eradicated the species altogether or awakened seed to a new proliferation. This and next year will tell.

In 2003 I noted *B. scoparia* on the M5 intermittently between Avonmouth (J18) and Weston (J21). These were singletons by the hard shoulder of the south-westbound carriageway. So, these are a little further north and earlier records for the M5 in Somerset but complementary. The question arises; does this signify arrival at Bristol and gradual southwestern progression from there?

During 2005 I made twice-monthly journeys to Salisbury via the M1, M34, A43, M40, A34, A303 and A343/A30 and can add *Bassia* sitings at the A43/M40 junction (J10) and on the A34 between M40 (J9) and Kidlington. The M40 may therefore be worth studying. Incidentally, I am also witness to *Echinochloa crus-galli* (Cockspur) at several of the locations recorded by Simon (*BSBI News* 101:37-38) and can add another location by the A303 at the Bulford turnoff for Amesbury.

That my Lincolnshire and East Anglia records for *Bassia* did not appear in the Atlas is probably due to my naughtiness in not reporting them to the V.c. Recorder – an important lesson! As to Simon's speculation that *Bassia* will rival *Cochlearia danica* (Danish Scurveygrass) as one of the most conspicuous of our salt tolerant/halophytic plants, I do not agree. Both Ray Eades and I speculated similarly from our observations in Yorkshire in 1997/8, but *Bassia* disappeared as quickly as it arrived, except in occasional groups and singletons. Now, I am speculating that *Elytrigia atherica* (Sea Couch) might be developing as a candidate for that status. Here's a lead-in to a different story (*ibid.* p. 33).

What is *Symphytum officinale* subsp. *bohemicum* (Schmidt) Čelak.

A taxon on the Red Data 'Waiting List'

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Symphytum officinale subsp. *bohemicum* is on the 'Waiting List' as data deficient in *The Vascular Plant Red Data List for Great Britain* (Cheffings & Farrell 2005), therefore it is a plant to look out for, yet it may seem rather enigmatic: subsp. *bohemicum* is not in Stace (1997) or *Flora Europaea* (Pawlowski 1972).

This taxon originated from chemotaxonomic research (Jaarsma *et al.* 1989) which established

that *S. bohemicum* Schmidt and *S. officinale* are best regarded as conspecific.

Three subspecies of *Symphytum officinale* are recognised by Gadella & Perring (2000) as subsp. *officinale*, subsp. *bohemicum* and subsp. *uliginosum*. *S. officinale* subsp. *uliginosum* (A. Kern.) Nyman has not been recorded from the British Isles since before 1930 (Clement & Foster 1994) although it may occur here (Perring 1994). It is distinguished from the other subspecies by the

outer surface of the sepals being more sparsely pubescent (Figure 1) and on chromosome number being $2n=40$. It also nearly always has purple buds and flowers (some cytotypes of *S. officinale* and *S. ×uplandicum* also have purple buds and flowers) and Gadella & Perring (2000) provide further details on its identification.

S. officinale subsp. *bohemicum* occurs in the Netherlands, and Eastern Europe, particularly in the Czech Republic and Hungary. In the British Isles, it is recorded from only three English vice counties: Cambridgeshire v.c. 29 and Huntingdonshire v.c. 31 (Stace *et al.* 2003) and South Lincolnshire v.c. 53 (Perring 1994), with all records being from fens. Unfortunately I have not been able to track down any voucher specimens for these records. Hopefully I will find living material of subsp. *bohemicum* in Franklyn Perring's *Symphytum* collection, which has been translocated to Cambridge Botanic Garden.

Subsp. *bohemicum* is widely regarded as a poorly defined taxon (Jaarsma *et al.* 1989; Murin & Májovský 1982; Smejkal 1978).

Stace *et al.* (2004) includes the following key:

- Corolla >16 mm, purplish or cream, rarely white *Symphytum officinale* subsp. *officinale*
- Corolla <16 mm, pale cream
...*Symphytum officinale* subsp. *bohemicum*

Gadella & Perring (2000) state that subsp. *bohemicum* has 'corolla to 14 mm, usually creamy yellow but occasionally white' and Perring (1994; 1998) that subsp. *bohemicum* has buds 'always greenish yellow'.

Another key (Smejkal 1978; in Czech) includes the following details:

- Corolla (10-) 13-17 (-19) mm – nutlets 4.5 – 6 mm long
.....*Symphytum officinale* subsp. *officinale*
- Corolla 10-14 (-16) mm – nutlets 3.5 – 4.5 mm long
.....*Symphytum officinale* subsp. *bohemicum*

Chromosome counts show that subsp. *bohemicum* plants are diploid $2n=24$; British plants of subsp. *officinale* with cream or white corollas may be $2n=24$ or 48 (Perring 1994; Gadella, Kliphuis & Perring 1974).

Please send any slender plants (under 1m high) of *Symphytum officinale* with small, cream flowers, greenish buds and small nutlets to me for determination in due course. As is often the case with taxonomic research, an apparently simple issue has mushroomed into a protracted project! Subsp. *bohemicum* arguably may be best regarded as a variant within the polymorphic *S. officinale* subsp. *officinale* com-

plex. It will be interesting to see how recent Czech authors (Hejny & Slavik 1997) deal with this issue, once I get the text translated. I will report on progress in future issues of *BSBI News*.

In addition, anyone interested in carrying out a taxonomic study could refer to the Red Data 'Waiting List' – taxa in need of research and/or further mapping data are clearly indicated.

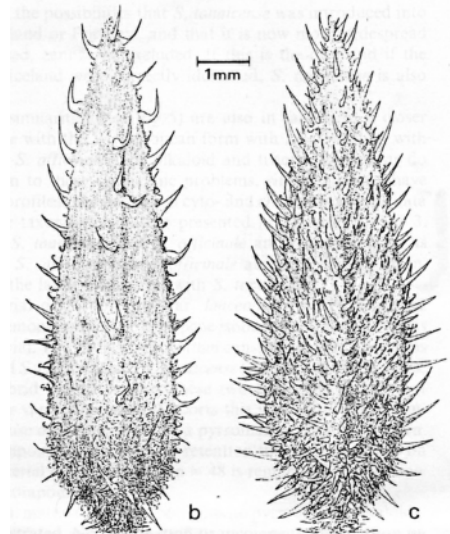


Figure 1: *Symphytum* outer surface of sepal
1a *Symphytum officinale* subsp. *uliginosum*
(A. Kern.) Nyman ($2n=40$)
1b *S. officinale* subsp. *bohemicum* (Schmidt)
Čelak. and *S. officinale* subsp. *officinale* L.
($2n=24, 48$)

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The invasion of *Senecio inaequidens* (Narrow-leaved Ragwort)

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The much-anticipated invasion of Britain by *Senecio inaequidens* (Narrow-leaved Ragwort) has perhaps started (see inside front cover). It was first introduced to Britain as a wool alien in 1836. It comes from South Africa and early introductions were largely casual. In continental Europe, there was a similar pattern of introductions associated with the wool industry. Some local populations persisted, but usually, its presence was temporary. Yet, starting in the 1970s, *S. inaequidens* spread across Northern Europe, as far north as southern Finland. This recent range expansion is apparently of a vigorous tetraploid form, possibly from Lesotho. The only regions of Northern Europe left largely uncolonised are the British Isles and northern Scandinavia.

Its habit and habitat are similar to *S. squalidus*. It grows on waste-ground, in pavement cracks and, most importantly for its dispersal, on road verges. Apparently, it is quite salt tolerant. One can overlook it for *S. squalidus*, but anyone examining the leaves will know it is something different. The leaves are quite distinct, being linear, sessile and toothed. It can grow up to a meter tall, but it is usually around knee height.

So what evidence is there that it is spreading in Britain? It is still too rare to have been singled out by the change index used in the New Atlas. However, its spread is evident from a comparison of the maps of the Atlas Updating Project (www.bsbiatlas.co.uk) and the New Atlas. The AUP has only 20% coverage for the post 1999 period, yet of the 58 hectads where *S. inaequidens* has been recorded, there are already 27 post 1999 hectads. Its current stronghold is in East London, yet the maps suggest other urban areas where it is persisting.

If *Senecio inaequidens* behaves as it has in the rest of Northern Europe, we are at the start of a significant plant invasion. I would like to encourage detailed recording of this species, particularly its habitat, spread and population size. Many plant invasions are only well monitored once they are already well under way.

I would like to thank Clare & John O'Reilly, Rodney Burton (v.c. 21) and Geoffrey Wilmore (v.c. 63) for the information they gave me about *Senecio inaequidens* in their counties.

Another record of *Triteleia laxa* on Merseyside

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MICHAEL P. WILCOX, 32 Shawbridge Street, Clitheroe BB7 1LZ

In June 2004, P.S. Gateley drew PHS's attention to an unusual plant he had photographed on sand-dunes at Crosby Marine Park, Sefton, Merseyside (SJ308987; v.c. 59, South Lancashire). He thought it was a *Brodiaea* sp. We visited the site on 19th June 2005, counting 18 of the mystery plants in full flower on a few square metres of semi-fixed dunes near to housing. Using Brickel (1989), MPW provisionally determined it as *Triteleia laxa*. Associated taxa were identified and are listed in Table 1.

A specimen sent to Eric Clement was confirmed as *Triteleia laxa* Bentham, known to gardeners as *Brodiaea laxa* (Bentham) Watson, a native of N. California and S. Oregon. Liking the plant to a small *Agapanthus*, Clement

(2004) describes a single individual found in a barley field at Eccleston, St. Helens, Merseyside, on 11th July 2004. He considered this to be the first record for Britain outside of a garden. At Crosby, there was no sign of this species in adjacent gardens but the population is clearly well established and it will be interesting to follow its progress.

[We thank Bob Gibbons for the 'stunning' photograph on the front cover. Eds.]

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Table 1. Vascular associates of *Triteleia laxa* at Crosby Marine Park

<i>Achillea millefolium</i>	<i>Eryngium maritimum</i>	<i>Plantago lanceolata</i>	<i>Sisymbrium officinale</i>
<i>Aira caryophyllaea</i>	<i>Festuca rubra</i>	<i>Poa humilis</i>	<i>Taraxacum officinale</i> agg.
<i>Bromus hordeaceus</i>	<i>Holcus lanatus</i>	<i>Rumex obtusifolius</i>	<i>Trifolium arvense</i>
<i>Carex arenaria</i>	<i>Hypochaeris radicata</i>	<i>Sedum acre</i>	
<i>Crepis capillaris</i>	<i>Leymus arenarius</i>	<i>Sedum rupestre</i>	
<i>Elytrigia juncea</i>	<i>Lobularia maritima</i>	<i>Senecio jacobaea</i>	

Anemanthele lessoniana in Ireland

PAUL R. GREEN, 46 Bewley Street, New Ross, Co. Wexford; paulnewross@eircom.net

I read *BSBI News* **101**: 43-44 (February 2006) with particular interest. '*Stipa arundinacea*' in Taunton, S. Somerset (v.c. 5) by Simon Leach helped me as I had a problem with naming this grass. I found it on waste ground in Waterford city in 2005. There were around thirty clumps of the grass on the waste ground, now a building site.

A few days later I visited the National Botanic Gardens, Glasnevin, Dublin and there it was! Almost the first plant I walked by was a large patch of the grass I had seen in Waterford. The label read *Calamagrostis arundinacea*; problem solved! However, when I read Simon's article I thought I ought to have a look on the web and sure enough my plant also matched the pictures of *Anemanthele lessoniana*. The pictures of *C. arundinacea* looked very different and certainly this was not my plant.

While in Dublin on 27th January this year I visited the herbarium at the National Botanic Gardens and found a single clump of *A. lessoniana* growing at the base of a wall in Botanic Road (0/1528.3694) and many clumps on a small piece of waste ground just outside the Botanic Gardens by the entrance to their car park growing with *Stipa tenuissima*.

The only other record for Ireland is of it seeding at Lucy's Wood, Bunclody, Co. Carlow (Ryves *et al.* 1996) in the garden of the late Evelyn Booth where it can still be seen growing today.

Could *A. lessoniana* be the next alien to colonize our island?

Reference

- RYVES, T.B., CLEMENT, E.J. & FOSTER, M.C. (1996) *Alien grasses of the British Isles*. Botanical Society of the British Isles, London.

Anemanthele lessoniana ('*Stipa arundinacea*') in Cambridge

PHILIP OSWALD, 33 Panton Street, Cambridge, CB2 1HL

Simon Leach (*BSBI News* 101: 43–44) amusingly describes the difficulty he had in tracking down the identity of the New Zealand 'Wind grass' or 'Pheasant's-tail grass', *Anemanthele lessoniana*, which he seems to have accidentally launched into the wild in Taunton. I was more fortunate: when I found numerous small clumps of grass leaves streaked in green, red and brown, some with inflorescences, along the base of two stretches of the wall of St Mary's School, Bateman Street, Cambridge (TL452573 and 453573), on 18 September 1999 (Crompton & Preston, 2000), I was already familiar with this colourful grass. It had been used in the neighbouring University Botanic Garden for decorative displays and to construct a children's maze (see Colour Section plate 2), and I knew of its propensity to spread by seed, having noticed self-sown clumps in various parts of the Garden. So distinctive is its 'jizz' that I was confident that the small clumps in the street were of the same species, but I took a sample and compared it with a clump in the Garden just to be sure.

In the course of my recording for a comparative survey of the flora of streets north of Cambridge Botanic Garden and of central Aberystwyth (Chater, Oswald & Preston, 2000) I subsequently found small clumps of this grass in two other streets somewhat further from the Botanic Garden, Trumpington Street on 17 October 1999 and Panton Street on 5 September 2000 (Crompton & Preston, 2000). All the clumps were weedkilled or removed within a few weeks of my finding them.

As Simon Leach has pointed out, *Anemanthele lessoniana* is square-bracketed in Ryves, Clement & Foster's (1996) *Alien Grasses of the British Isles* as not yet reported from the wild. In

November 2003 I edited a four-page supplement to this work (available by sending a stamped addressed envelope to BSBI Books) and, with the authors' agreement, added the following item:

Anemanthele lessoniana (Steud.) Veldkamp Bateman, Trumpington and Panton Streets, Cambridge (Cams), 1999–2000, self-sown from University Botanic Garden, where it is grown and has seeded widely. New Zealand. CGE. J17(42:93). Remove []. (p. 11)

Since 2000 Cambridge City Council has been so efficient at weedkilling that there has been no further appearance of *Anemanthele lessoniana* in my local streets. However, in the course of a late attempt on 26 October 2004 to fill in some gaps for my Local Change tetrad (TL45J), I noticed six clumps of decorative grass in the front garden of 5 Wilberforce Road in west Cambridge, one still carrying a label saying '*Stipa arundinacea*'. I was just thinking what fun it would be to find this grass again 'in the wild' when I spotted a clump in the gutter by the bollards closing off the road just north of the junction with Clarkson Road (TL43595894)!

Judging by Simon Leach's and my experiences of this grass's ability to self-seed and its wide availability for sale, I suspect that it has escaped in other parts of the country too: botanists may just need to learn its 'jizz'.

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Identification of *Lycium*

ARTHUR CHATER, *Windover, Penyrangor, Aberystwyth, Ceredigion SY23 1BJ*

Distinguishing between *Lycium barbarum* and *L. chinense* has always been a problem for British and Irish botanists, and both the *New Atlas* and the *Vice-county Census Catalogue* have given up the struggle and treated them as an aggregate. Accounts by W.T. Stearn in *Flora Europaea*, A. Baytop in *Flora of Turkey*, W. D'Arcy in *Flora of China* and C. A. Stace, *New Flora* ed. 2, are all difficult to use and in varying ways unsatisfactory, yet it is clear that the two

species are quite distinct and should be easy to differentiate if one had the right characters clearly described. The following couplet gives what seem the most reliable distinctions, and photos of the corollas (#Colour Section Plate 2) show the patterning of colour in them as this provides as good a character as any for separating the species. I am grateful to Clive Stace for helpful discussions on the matter.

Larger leaves of main stems elliptic to narrowly so, widest at the middle; corolla usually less than 17mm in diameter; dark veins of corolla-limb mostly unbranched; corolla-lobes shorter than the rest of the corolla *L. barbarum*

Larger leaves of main stems ovate, widest below the middle; corolla usually more than 17mm in diameter; dark veins of corolla-limb reticulately branched; corolla-lobes at least as

long as the rest of the corolla *L. chinense*

In addition, the corolla-tube of *L. barbarum* is usually more cylindrical and less widened towards the apex than that of *L. chinense*, and *L. barbarum* has usually less densely ciliate or often eciliate corolla-lobes, but these characters, along with the calyx characters given in some Floras, are unreliable or less easy to use. *L. barbarum* is probably the commoner species

***Cordyline australis* (Cabbage-palm) becoming street-wise in Ireland**

PAUL R. GREEN, 46 Bewley Street, New Ross, Co. Wexford; paulnewross@eircom.net

Cabbage-palm is a commonly planted tree of gardens in Ireland. Trees flower well and set fruit abundantly. In south-east Ireland I am increasingly finding self-sown plants at the base of walls about towns and cities and on waste ground. These seedlings rarely survive for more than a couple years before the council comes along to tidy the street or the waste ground is levelled and built on.

My first record was in 2001 from Tramore (S/5700), Co. Waterford where a tree is self-sown at the base of a wall by a lamppost. It is still there this year; the owner of the garage whose forecourt it is on, watches with amusement while I am showing it to visiting botanists. Out of the seventeen records for the county, there are only two other sites where cabbage-palm has persisted. One is the top of a high wall south of Lismore (X/0296) where the tree has

three trunks and is about 2m tall. The other tree, about four years old, grows out of the top of a down pipe of a bungalow in Mayor's Walk (S/6012), Waterford.

I have five records for Co. Wexford: three at the base of walls in New Ross (S/7227 and S/7228) and two on waste ground at Kilmore Quay (S/9603) and in the city of Wexford (T/0522).

Walking around Dublin (O/1536 and O/1537) this year on 27 January, I found cabbage-palm self-sown at the base of two walls. I was also astonished to see a tree growing out of the top of a chimney pot of a house, (Aghadoe House, Nora Terrace (O/152367) where it only had the Jackdaws for company. Judging by its size, this tree is about five years old. It certainly knows how to be street-wise and outsmart the council workers.

Longspine Thorn-apple (*Datura ferox*) in Scotland

G.H. BALLANTYNE, Branksome, 193 Nicol Street, Kirkcaldy, Fife, KY1 1PF

In early October 2005 a fine fruiting Thorn-apple that had appeared in a former cottage garden in Giffordtown, near Ladybank in central Fife, v.c. 85, was brought to me. I kept it in its pot and exhibited it at the Scottish Meeting at Perth on 5th November where, as my only experience of Thorn-apples was a young plant found on an old rubbish dump in August 2004, I labelled it as *Datura stramonium*. But on the day David Pearman told me that the plant was very likely to be *D. ferox* and this was soon confirmed at RBG Edinburgh. However, after some investigation of written and illustrated sources, I wasn't entirely convinced, so I sent photographs to Eric Clement. His reply stated that the plant was certainly not *D. stramonium* ... 'I suspect it is truly *D. ferox* × *D. stramonium*, but

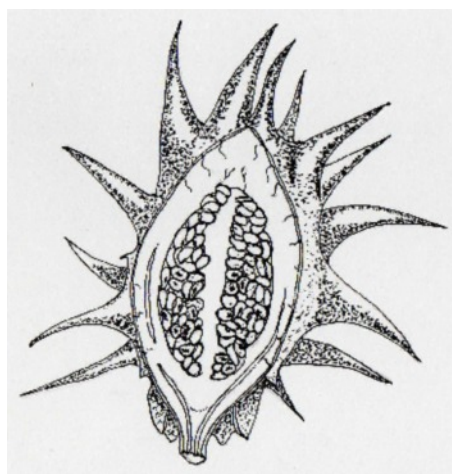
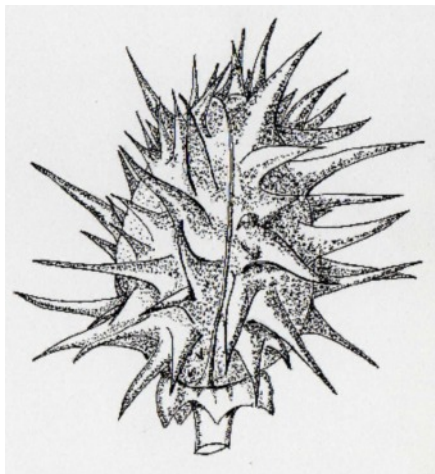
in a form closest to *D. ferox*, and it may be best to record it as the latter!'

Although my doubts seemed to have been justified, Douglas McKean of RBGE next suggested that I send the photos together with some now available seed to Julian Shaw, author of the appropriate section in the *European Garden Flora*. His verdict was that the plant was indeed *D. ferox* and that it could be quite variable; so much so, that recent research had shown 'it may be better to treat *D. ferox* as a variety of *D. quercifolia*', a plant of central America. He also noted that he had grown the hybrid himself and it had rapidly attained a very large size, and that 'natural hybrids between *D. ferox* and *D. stramonium* occur in Australia. It is not impossible that they could arrive in the UK, perhaps as a wool alien'. *D. ferox*, of course, has

been known for some time in that guise in England, especially in Yorkshire. But this could not be the case in Fife, where the possible vector was poultry food, brought in for the hens that were present up to the time the cottages were demolished in 1974. The seeds may well have lain dormant since then until recent excavations brought them to the surface.

A matter for debate, perhaps, is that the common name (when it is given) for *D. ferox* seems to be 'Angels'-trumpets' (e.g. in Stace); however, this would appear to refer mostly to the

related woody *Brugmansias* (formerly *Datura*), and I suggest that 'Longspine Thorn-apple' is more appropriate, as employed in *The New R.H.S. Dictionary of Gardening*, or better still 'Fierce Thorn-apple' as used additionally in Australia. My thanks go to Eric Clement, David Pearman, Douglas McKean, Julian Shaw and especially to Mrs Jill Maillie for bringing me this unusual addition to the Scottish flora. Finally, I hope that some of the seed will germinate in 2006 so that further study may be carried out.



Fruits of *Datura ferox* del. A. Pearman © 2006

Survey of naturalised Rhododendrons – a request for specimens

ARTHUR CHATER, *Windover, Penyrangor, Aberystwyth, Ceredigion, SY23 1BJ*

It has long been known that many of the Rhododendrons naturalised in Britain and usually recorded as *R. ponticum* are in fact hybrids involving North American species such as *R. maximum*, *R. catawbiense* and *R. macrophyllum*. Although this has been proved by molecular studies, no records of actual hybrids ever seem to have been made in the wild, and nothing is known of their abundance and distribution. Dr James Cullen of Cambridge is keen to investigate the problem, and is willing to try to identify, or at least to comment on, any material that can be collected for him. If anyone is able to help with this, it would provide valuable records for the BSBI Hybrid Project, it should be an easy way of getting new VC records, and it should also advance the understanding of the invasive nature of Rhododendrons that is such a headache for conservationists (it has, for example, been suggested that hybridisation with the North American species has produced plants

much more frost-tolerant than *R. ponticum* itself).

The survey should be restricted to *R. ponticum*-like plants (not *R. luteum*), and we suggest that you try to collect naturalised material showing the range of variation (or lack of it) in your area. The main variation will be in leaf shape and size, in length of sepals (from almost 0 to c.6mm), in hairiness (presence or absence of reddish or whitish hairs) and glandulosity of the ovary, and in size and colour of the corolla.

Generally speaking, one typical flowering twig, complete with leaves, should be pressed. A couple of flowers should be detached and pressed separately with the corollas removed, to show the ovary characters, as well as a separate well-grown leaf from a vegetative shoot. The label should be written with a view to permanence in a herbarium, and along with all the usual details it should give the flower colour, especially the colour of the spots. Please indi-

cate in particular the nature of the Rhododendron population, eg. whether it is in old estate woodland and thus probably originating from plantings, whether it is a extensive self-sown population on a hillside, or whatever. Each specimen should be given a unique number, eg. Bloggs 06/29. Keep a copy of the label details (and a duplicate specimen if you want), as this will save having to return the specimens, at least the more interesting of which will be put into the Cambridge Herbarium (CGE). Send the dried specimens, unmounted, with a s.a.e., to Dr James Cullen, Stanley Smith (UK) Horticultural Trust, Cory Lodge, PO Box 365, Cambridge CB2 1HR. He will then send you a list of your numbers with his determinations. It is difficult to suggest how many specimens you should collect, as we have no idea what the response,

and thus the work-load will be, but anything up to ten or twenty specimens, or more if you are keen and think there is sufficient variation, would be reasonable. May is the month over much of the country, and the collecting should be done this year and the specimens sent in as soon as convenient.

This request has already gone out to Vice-county Recorders, but we are repeating it here in the hope of getting an even wider coverage. It could be helpful if you contacted your Recorder to avoid any unnecessary duplication. If, as we hope, someone can be found who is keen to undertake further molecular studies (not easy in the case of Rhododendrons) this present survey should give an indication of populations that would be especially worth further investigation.

***Cotoneasters* please**

JEANETTE FRYER, *Cornhill Cottage, Honeycritch Lane, Froxfield, Petersfield, Hampshire, GU32 1BE*

If any members participating in expeditions are fortunate to see native *Cotoneasters*, please could they think of me and take an extra photo-

graph or two. I would be extremely grateful and would reimburse every penny of the costs involved.

New European Directive?

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The European Parliament is at the point of approving an important new Health & Safety Directive: *Safety in the Floraplace*. Below is a list of some of the more important provisions of the Directive, and it is suggested that all BSBI members concerned with the organisation of botanical field trips take full account of the new requirements or, better, abandon forthwith any plans they might have for such activities:-

1 The brittle nature of glass makes it imperative that anyone carrying a hand lens (or equivalent) *must wear full body armour*, to avoid stabbing injuries should a slip or fall cause a lens to fracture. All hand lenses *must* be carried in shatterproof boxes. On no account may they be worn suspended round the neck by any form of string, ribbon or tape, to avoid the danger of self-strangulation in the event of a slip or fall. It might be the best plan to allow *only one* member of a group to carry and use a lens; the member chosen should be able to give a clear and succinct account to the other members of the party of anything which he (or she) examines using the lens.

2 *All field guides*, from January 1st 2007, must be printed on acid-free paper, to avoid leaching out of corrosive substances during heavy rainfall, which could lead to serious skin burns should these penetrate clothing. At the same time, *all field guides* must be limp-bound, with rounded corners to the covers, to prevent injuries which might be caused should the user for any reason slip and fall on his (or her) *guide*, or should he (or she) deliberately throw himself (or herself) upon it in an attempt to commit Hairy Clary on the discovery that a plant is *not* that rare species which was being searched for.

3 Boots or any other type of footwear *may not be fitted with metallic studs*. Sparks caused by friction on dry rock could cause ignition of surrounding vegetation during dry weather, with possible burn-injuries to participants and also serious habitat destruction.

4 Since many plants are *dangerously poisonous*, none may be handled without the use of protective gloves. These should be removed *following the handling of each plant species encountered*, and carried in an approved pro-

tective container until they can be handed over to a Recognised Botanical Incendiary Centre (RBIC). Similarly, *any item of clothing which has come into contact with live plant material* must be removed for disposal by an RBIC *within thirty (30) minutes of the actual contamination.*

- 5 On no account may any spine-bearing plants be touched, even if gloves are being worn. It is *vitaly important that this instruction be followed, to prevent possible spread of Mad Bramble Disease (MBD).* Sadly, a number of botanists, including senior members of our Society, have been gravely stricken by this dreadful illness.
- 6 Unfortunately, there is often the possibility of injury (or even death) during encounters with local Nationals which might provoke *ethnic*

resentment. Accordingly when naming plant species, *the name must always be given in the local language* as a sign of respect. New editions, produced in accordance with 2) above, are being printed of Davies & Jones, and Clark & Macdonald, as these will be especially necessary where Celtic sensibilities have to be taken into account. (At the same time, plant names *must never be given in Latin or Greek*, to avoid tensions which could develop in the presence of those not privileged to have received a classical education. Any suggestion of elitism could all too readily result in friction which might lead to outbreaks of violence, with consequent injury.)

It is hoped that the above summary (there are 1,342 pages to the *Preliminary Schedule*) will help in informing members of changes to come.

FIELD MEETING REPORTS – 2005

Reports of Field Meetings 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.

South Gower Coast, Glamorgan (v.c. 41) 30th April

MERVYNN HOWELLS

Thirteen people gathered at Port Eynon car park for a walk along or near the coastal path to the west. This coast has spectacular limestone cliffs and was notified as an SSSI for its geomorphological and botanical interest. Immediately west of Port Eynon the South and West Wales Wildlife Trust has five nature reserves, one of which, Sedger's Bank is mostly rocky foreshore that is largely submerged at high tide. The reserves are important for the flora and fauna associated with the foreshore, the cliffs, the limestone grassland and the heathland.

It was a fine sunny day and we set off along a track with sandy banks where we saw good displays of *Geranium lucidum* (Shining Crane's-bill) and *Geranium rotundifolium* (Round-leaved Crane's-bill) as well as an isolated specimen of *Anthriscus caucalis* (Bur Chervil). We then turned off across some sand dunes and found plenty of typical plants such as *Carex arenaria* (Sand Sedge), *Cerastium diffusum* (Sea Mouse-ear), *Cerastium semidecandrum* (Little Mouse-ear), *Cerastium glomeratum* (Sticky Mouse-ear) and the attractive *Saxifraga tridactylites* (Rue-leaved Saxifrage). Along the edge of the beach

we saw *Honckenya peploides* (Sea Sandwort) and very robust clumps of *Cochlearia officinalis* (Common Scurvygrass). After an hour or so we made a small diversion to a patch of relict grassland on Sedger's Bank where we had our lunch and admired the view (we were still within sight of the car park). Close by we saw *Armeria maritima* (Thrift) and some *Atriplex portulacoides* (Sea-purslane). After lunch we ambled along the base of the sand cliff to Port Eynon Point, a rocky promontory that rises steeply to a height of about 70 metres. On the rocky shore above high tide level *Inula crithmoides* (Golden-samphire) and *Crithmum maritimum* (Rock Samphire) were in abundance, unfortunately not in flower. There was also *Limonium binervosum* (Rock Sea-lavender). We scrambled up the steep grassy slope which abuts a sheer cliff to the plateau where plenty of small limestone plants were in evidence. Among these were *Carex caryophyllea* (Spring-sedge), *Erophila verna* (Common Whitlowgrass) and *Myosotis ramosissima* (Early Forget-me-not) which proclaims its presence in a manner remarkable for its size. Masses of *Scilla verna* (Spring Squill) were just begin-

ning to show. On the plateau, which is largely covered by *Ulex europaeus* (Gorse) on the thicker more acidic soil, leaves of *Salvia verbenaca* (Wild Clary) were visible.

We then descended to the improved grassland adjoining the bay called Overton Mere, which gives its name to the reserve. In one corner of this field we saw an excellent display of *Orchis mascula* (Early Purple Orchid). We trudged up another steep slope on to another plateau, noting on the way *Potentilla neumanniana* (Spring Cinquefoil), in flower, and rosettes of *Veronica spicata* (Spiked Speedwell). On the plateau where there is considerable cover of *Ulex euro-*

paeus (Gorse) and some *Erica cinerea* (Bell Heather) we saw *Viola lactea* (Pale Dog-violet).

Some of the party now left us but the remainder were prepared to walk about one kilometre further west to Longhole Cliff Reserve in order to see *Draba azoides* (Yellow Whitlowgrass). It was asking a lot to find any flowers at this time but, remarkably, there were still two solitary flowers to be seen. This seemed a nice way to end our botanizing so we made our way back to Port Eynon, arriving there at about seven o'clock.

I would like to thank Ros Castell for recording the species.

Orkney (v.c. 111) 1-4th July

EFFY EVERISS

After a break of several years a field meeting was held in Orkney over the weekend of 1-4th July. The 10 local members were joined by 15 visitors and 4 guests. In what was one of the worst Orcadian summers in living memory we were blessed by three days of glorious sunshine with only one rather penetrating shower at the end of the first day.

Saturday was spent exploring Hoy which has Orkney's only corries and inland areas of vertical wet rock with a high base status. The montane flora extends to sea level intermixing with the maritime lowland communities to give a wide variety of habitats compacted within a short vertical range. The hill party explored the crags and gullies of Ward Hill. Records included *Dryas octopetala* (Mountain Avens), *Polystichum lonchitis* (Holly-fern), *Poa alpina* (Alpine Meadow-grass), *Saxifraga oppositifolia* (Purple Saxifrage), *Salix myrsinites* (Whortle-leaved Willow), *Arctostaphylos alpinus* (Arctic Bearberry), *Hymenophyllum wilsonii* (Wilson's Filmy-fern). The lowland group visited Berriedale, the UK's most northerly native woodland and the dune slack at Rackwick. Rackwick yielded the typical rich flora of an unexploited sand dune system. *Carex maritima* (Curved Sedge) (see Colour Section, back cover), *Gentianella amarella* ssp. *septentrionalis* (Autumn Gentian), *Parnassia palustris* (Grass-of-Parnassus), *Selaginella selaginoides* (Lesser Clubmoss), *Chara virgata* (Delicate Stonewort). There is a large colony of Ophioglossum to the north of the dune slack. It is probably *O. vulgatum* (Adder's-tongue) but the plants have some characteristics of *O. azoricum* (Lesser Adder's-tongue). This Adder's-tongue has been puzzling local botanists for some time so a specimen was

collected and sent to the Natural History Museum- and we await identification with interest.

On Sunday the group again divided to explore Glims Moss and Durkadale SSSI on Mainland Orkney. The area is a complex mire system with complete graduation from acid to alkaline conditions. Glims Moss is a raised bog, and the lower valley holds the most northerly example of calcareous valley mire in the UK. The plant life of these habitats can be examined after a short walk in from adjoining heathland. The graduation and variety exhibited over a short distance in the bog pools, base rich flushes sedge rich grassland and moorland edge is fascinating. Sedge and other cyperaceous species were particularly well represented and included *Carex diandra* (Lesser Tussock-sedge), *C. curta* (White Sedge), *C. limosa* (Mud Sedge), *C. paniculata* (Greater Tussock-sedge) and *C. riparia* × *C. rostrata* (Hybrid Sedge). The first Orkney mainland sites for *Hammarbya paludosa* (Bog Orchid) and *Carex riparia* (Greater Pond-sedge) were found at Glims Moss.

Next stop was the Broch of Gurness, one of Orkney's best preserved brochs and the Aikerness aeolianite site. Aeolianite is blown sand cemented by calcium carbonate derived from dissolved shell and sub-surface water. Rare and unique to Scotland in the UK the Aikerness site is outstanding (see Colour Section, back cover). Aeolianite supports a sparse but highly characteristic vascular plant and moss flora which included *Catapodium marinum* (Sea Fern-grass), *Botrychium lunaria* (Moonwort), *Thymus polytrichus* (Wild Thyme) and *Euphrasia* spp. (Eyebright).

Finally the group visited the species rich Hill of Dwarmo which has a well developed calcicole flora that included *Asplenium trichomanes*

(Maidenhair Spleenwort), *A. adiantum-nigrum* (Black Spleenwort) (see Colour Section plate 2), *Arabidopsis thaliana* (Thale Cress), *Draba incana* (Hoary Whitlowgrass), *Galium sternerii* (Limestone Bedstraw), *Schoenus nigricans* (Black Bog-rush), *Thymus polytrichus* and *Chara vulgaris* var. *longibracteata* (Common Stonewort).

Monday saw the party once again off to an early start to visit the island of Rousay. Here pronounced terracing of the hills reflects the alternation of hard and soft layers in the Rousay beds of the Orcadian sandstone. This small hilly island has species rich mesotrophic lochs, maritime and wet heath, heather dominated moorland and high altitude plant communities. The area of interest here was the maritime heath of Sacquoy and Saviskaill in the north-west of the island and Wasbister Loch. The first confirmed Orkney record for *Viola canina* (Heath Dog-violet) was established in the maritime heath just north of Moan in an extensive area of *Primula scotica* (Scottish Primrose) (see inside front cover). Sgt. Major Farrell then commanded the group and a line-dance of botanists was mustered to tread the heath and count the *Primula* and *Ophioglossum vulgatum* (Adder's-tongue). There were 3,739 *Primula* rosettes with 120 flowering plants covering an area c.0.5ha. with 1000+ *O. vulgatum* in a muddy hollow.

The Loch of Wasbister is a species-rich eutrophic loch with no fewer than six Potamogeton spp. and three Chara spp. and both *Schoenoplectus tabernaemontani* (Grey Club-rush) and *S. lacustris* (Common Club-rush). The strand line provided specimens of *Potamogeton gramineus* (Various-leaved Pondweed), *P. pectinatus* (Fennel Pondweed) and *Chara aspera* (Rough Stonewort). The more accessible marginal vegetation was well recorded and included *Oreopteris limbosperma* (Lemon-scented Fern), *Festuca arundinacea* (Tall Fescue) and *Ranunculus baudotii* (Brackish Water-crowfoot). To end the day the party dispersed to quickly ex-

plore some of the more accessible cairns for which Rousay excels. A small group chose to climb Kierfea to update the records for *Persicaria vivipara* (Alpine Bistort), *Sagina subulata* (Heath Pearlwort), *Salix herbacea* (Dwarf Willow) and *Saussurea alpina* (Alpine Saw-wort).

The Rousay day was incredible, hot and sunny with a gentle cooling breeze. The group had the unusual opportunity to sit outside on the ferry in comfort and enjoy the spectacular views down Eynhallow Sound, across the mainland and out over the Northern Isles. In the course of one day a very diverse selection of sites was visited from the maritime heath of the north-west side, the alpine flora of Kierfea, the marginal freshwater habitats of Wasbister and the weedy cultivated fields of the lower areas. There was a good walk around the spectacular cliff top perimeter of Sacquoy and Saviskaill Head. They participated in the monitoring of a very large *P. scotica* site, enjoyed a taste of the archaeological delights of the island and to cap it all even managed to allow time to sit outside and enjoy a pint of the local brew whilst waiting for the ferry at the close of the day. A small island – Rousay has it all.

There were many excursions by both the visiting and local botanists before and after the 'official' field meeting adding many records to the Orkney list. *Coeloglossum viride* (Frog Orchid) was recorded from Yesnaby and *Carex maritima* from Bu, Burray and Skaill Sandwick.

The Orkney Field meeting was well attended and over 1716 records were taken, one new for the county and two new for the Orkney Mainland. The meeting was very much a team effort and we would also like to thank the local RSPB staff who also contributed to the success of this meeting. The local BSBI members really appreciated the rare opportunity to be out in the field with the visiting botanists many of whom had travelled a very long way to join us. We very much look forward to doing so again in the near future.

Gronant and Talacre Warren Dunes SSSI nr Prestatyn, Flints. (v.c. 51) 9th July

GORONWY WYNNE and JOE PHILLIPS

Eight members met at Talacre on a sunny, dry day for a circular walk through the sand dune system towards Gronant to locate and identify rare or scarce vascular plant species which are listed on the Flintshire Rare Plants Register.

This SSSI dune system is reasonably intact and is an important part of the local sea defenc-

es. The seaward dunes are in good condition, although visitor pressure sometimes does cause erosion problems throughout the area. This is a situation which is under continuous review and is being addressed by the site managers. Between the end of the 1st World War (1914-18) and the start of the 2nd World War (1939-45), a

number of makeshift shacks were erected in the drier parts of the dune slacks and were occupied on a more or less permanent basis. This continued until the late 1980s when the last dwelling was vacated, the remaining structures being demolished and the area cleared in the early 1990s. During the occupation of these dwellings, some of the occupants developed gardens growing ornamental plant species and vegetables. Many of the plants that are now fully naturalised are a legacy from that time.

During the short time available a small number of the rare/scarce plants were noted, including: *Centaureum pulchellum* (Lesser Centaury);

Eryngium maritimum (Sea-holly); *Euphorbia paralias* (Sea Spurge); *Euphorbia portlandica* (Portland Spurge); *Juncus maritimus* (Sea Rush); *Polypodium interjectum* (Intermediate Polypody); *Sagina maritima* (Sea Pearlwort); *Salix repens* (Creeping Willow); *Samolus valerandi* (Brookweed) and *Trifolium ornithopodioides* (Bird's-foot Clover).

Plants identified from some of the abandoned gardens were: *Alstroemeria aurea* (Peruvian Lily), *Berberis thunbergii* var. *atropurpurea* (Thunberg's Barberry); *Lysimachia punctata* (Dotted Loosestrife) and *Ruscus aculeatus* (Butcher's-broom).

Sleat and Southeastern Skye plus Raasay, North Ebudes (v.c. 104) 16th-19th July

STEPHEN BUNGARD

Three days were spent on Skye extending the tetrad mapping undertaken for the Local Change project. A further day was spent on Raasay to see some of the plants of the east coast cliffs. About twenty members came for all or part of the meeting.

On the Saturday, the party met near Ostaig in Sleat, the southernmost part of Skye. We split into three groups to tackle a tetrad each, though two of these groups also managed some recording in adjacent tetrads. Fourteen new 10 km square records were made and many more records shown as pre-1970 or 1970-1986 in the New Atlas were refreshed. Two plants were recorded that on Skye are only known in this southern end of the island: *Impatiens glandulifera* (Indian Balsam) and *Samolus valerandi* (Brookweed). In the afternoon, we regrouped to inspect the gametophyte of *Trichomanes speciosum* (Killarney Fern) in a sea cave.

On Sunday we started from Isleornsay, with two groups staying close to the meeting place and the third heading out to Tokavaig. Again new hectad records were quite numerous and other Atlas records were updated. At a time when hybrids are especially in our minds, it was good to record *Dactylorhiza ×formosa* (the hybrid between Heath Spotted-orchid and Northern Marsh-orchid) and *Dactylorhiza ×transiens* (the hybrid between Common Spotted-orchid and Heath Spotted-orchid) with their parents. The latter was a first record for the vice-county but no voucher specimen was taken for formal identification by an expert.

Those who felt that they could get no wetter visited one of only two Skye sites for *Lycopodiella inundata* (Marsh Clubmoss) near Loch

Meodal. A search for an earlier record of *Vaccinium oxycoccus* or *V. microcarpum* (Cranberry) was unsuccessful.

On Monday it had been planned to ascend Ben Aslak but the visibility on high ground was such that three lowland tetrads were surveyed instead. Two groups stayed near Breakish whilst the third went to Loch Cill Chriosd. A dozen new hectad records were made including several hybrids. *Dactylorhiza ×transiens* was recorded again plus another hybrid orchid, *×Dactylodenia st-quintinii* (the hybrid between Common Spotted-orchid and Fragrant Orchid). A willow beside the main road through Breakish was later determined by D. Meikle as *Salix ×holosericea* (Silky-leaved Osier), until recently *S. ×smithiana*.

The group had the dubious pleasure of surveying tetrad NG72A which turned out to be less than species-rich with a total count on the day of 74 taxa. This compares with 245 in tetrad NG61W the day before. Despite this limitation one new hectad record, *Agrostis canina* (Velvet Bent) and several Atlas updates were recorded in NG72A.

On the Monday evening some of the group travelled to Raasay for a short talk on Raasay plants followed by a meal in Raasay House. On Tuesday after the remaining members joined those already there, a walk across the Raasay moor to the east coast cliffs was rewarded by a view of *Dactylorhiza lapponica* (Lapland Marsh-orchid), recently subsumed into *D. traunsteinerioides*. Nearby a stonewort was spotted which was later determined by N. Stewart as *Chara vulgaris* (Delicate Stonewort), the first Raasay record since the 1930s.

On the cliffs themselves, *Epipactis atrorubens* (Dark-red Helleborine) was flowering well whilst *Orthilia secunda* (Serrated Wintergreen) and *Dryas octopetala* (Mountain Avens) were in fruit. One or two intrepid members of the party visited the only site in v.c. 104 for *Pyrola rotundifolia* (Round-leaved Wintergreen)

which, as in most years, showed no sign of having flowered.

Thanks are due to those who led groups during the week: Carl Farmer, Lynne Farrell and Jim McIntosh, and also to referees who determined specimens: Heather McHaffie, David McCosh, Alan Silverside plus those mentioned above.

BSBI Glynhir Recording week (v.c. 44) 23rd – 30th July

Leaders KATH & RICHARD PRYCE

The meeting started with lunch for sixteen participants at Glynhir, mostly regulars but including a welcome to 'first-timers', Heather Colls and Bob & Julia Holder. James & Mary Iliff joined us for the day and evening meal. KAP had attempted to allocate rooms fairly, with people who had been in cottages in previous years going into the mansion and vice versa. This meant RDP being persuaded to give up his en-suite and try out a cottage this year which in fact was very pleasant, and possibly superior! KAP was hoping that she would manage the full week at Glynhir this year, having left midweek in the two previous years due to parents falling ill.

Saturday afternoon's visit to Cwrt Bryn-y-beirdd and the source of the River Loughor proved more rewarding than anticipated, and was further assisted by the warm sunshine. *Rorippa ×sterilis*, (Hybrid Water-cress) was abundant in the ditch through one of the grassy pastures and was the first new county record of the week. *Epilobium ciliatum × E. parviflorum* and *E. ciliatum × E. palustre* (hybrid willow-herbs) were also new county records and made an early contribution to the BSBI hybrids project. Furthermore, *Carex ×fulva* was new for the 10km square and *Eleocharis quinqueflora* (Few-flowered Spike-rush), both growing in the wet heath, was a new record for the site.

We were joined by Roy Vickery for the anticipated delicious Glynhir dinner and after the meal, before retiring to identify the day's specimens, the party enjoyed a short evening walk in the garden where the large *Tilia cordata* (Small-leaved Lime) was admired and its age discussed. It was in full flower and was alive with the constant buzzing of countless bees.

On Sunday, having failed to gain permission to access the MoD establishment at Pendine, we were obliged to re-visit the RAF Range on Tywyn Burrows, near Pembrey, but extensive removal of *Hippophae rhamnoides* (Sea Buckthorn) scrub during the previous winter ensured that the site was very different from when previously visited in 2004. Before entering the

Range some time was spent in Pembrey Forest in the heavy showers, where at the 'Butterfly Ride', *Pyrola minor* (Common Wintergreen), *P. rotundifolia* (Round-leaved Wintergreen) and *Epipactis leptochila* agg. (Narrow-lipped Helleborine) were highlights. Some time was spent here discussing the serious scrub encroachment and possible management strategies which might be employed by the Forestry Commission to maintain the populations of these important species. Next, at a corner in the main track, the single plant of *Scirpoides holoschoenus* (Round-headed Club-rush) was shown to members, noting that it too was becoming very overgrown with scrub. A little further on, in 'The Scrape', *Ranunculus baudotii* (Brackish Water-crowfoot) and *Baldellia ranunculoides* (Lesser Water-plantain), with its strong scent of coriander, were in abundance and RDP collected charophyte specimens for later determination. Dodging the showers, the new ponds within the RAF Range still had some remaining charophytes despite the wallowing cattle (*Tolypela glomerata* had been determined by Nick Stewart from material sent to him earlier in the year) and the disturbed ground by the western control-tower and the area where the *Hippophae* had been cleared had a good variety of ephemeral and ruderal species. A species which confused even the experts for a short time, was *Moehringia trinervia* (Three-nerved Sandwort), a plant which those present did not expect to see on open disturbed dunes but was probably a survivor of the ground-flora under the now-cleared *Hippophae* (see Colour Section inside back cover). Stephen and Ann Coker pointed out an unusual looking caterpillar to KAP, which was duly photographed and later identified as a Vapourer Moth, the first county record since 1909. On the return, a good specimen of *Rosa stylosa* (Short-styled Field-rose), was identified by Graeme Kay in the forest just outside the RAF gates.

Whilst the main party enjoyed their visit to the dunes, Chris Cheffings, Guy Moss and Margot Godfrey preferred square bashing in the Mynydd

Figyn area, near Talley, where they recorded *Euphrasia rostkoviana* (Mountain Eyebright) which was a new 10km square record.

Mike and Kate Jenkins' farm at Felin-y-Coed, Taliaris, provided a diversity of habitats on Monday including an incredibly steep hanging oak wood and the large number of ephemeral species growing on the shoals of the River Dulais, which included *Mimulus × robertsii* (Hybrid Monkeyflower), only the 4th county record. *Rorippa islandica* (Northern Yellow-cress) was also found on the shoals as well as in the flood-meadows, where it was associated with *R. palustris* (Marsh Yellow-cress), and there were also a few plants in the farmyard. It was a thoroughly pleasant visit, the family being so enthusiastically in favour of conservation, knowledgeable themselves but pleased to welcome some additional expertise. The party was provided with tea and cakes before setting off to examine the upper fields of the farm and being joined by two young piglets for some of the way! *Wahlenbergia hederacea* (Ivy-leaved Bellflower) was abundant in the abandoned, revegetated quarry and *Carum verticillatum* (Whorled Caraway) was frequent in the nearby acid, marshy meadows. *Calystegia sepium* subsp. *sepium* forma *colorata* (a form of Hedge Bindweed) was a new county record for the form. *Leontodon autumnalis* var. *coronopifolius* (a variety of Autumnal Hawkbit) (see Colour Section, plate 2) was also a new county record identified by Arthur Chater but the description of the taxon will not be published until the appearance of the forthcoming volume of *Sell and Murrell*. Bob and Julia Holder left after lunch to visit Dynefor Park, being keen to see as much of the county as possible during their week. They collected *Berula erecta* (Waterparsnip) from the Mill Pond.

The Tuesday visit to Ffos-las, a partially restored opencast site near Trimsaran in the south of the county, produced first county records of self-sown *Alnus rubra* (Red Alder) and *Alnus incana* × *A. glutinosa* (a hybrid alder) (determined by Arthur Chater). The shaley spoil had been seeded with an 'engineering seed-mix' which included an abundance of *Lotus glaber* (Narrow-leaved Bird's-foot-trefoil) providing attractive yellow sheets of colour over parts of the site. This is the only currently known location for this species in the county. The old settling lagoons were well vegetated with marginal species including *Iris pseudacorus* (Yellow Iris), *Sparganium erectum* (Branched Bur-reed), *Scutellaria galericulata* (Common Skull-cap) and *Lycopus europaeus* (Gypsy-

wort). Both *Schoenoplectus tabernaemontani* (Grey Club-rush) and *S. lacustris* (Common Club-rush) were present in the old lime-treatment ponds, the former lining the banks and the latter growing in a zone some 10m from the edge, in water perhaps 2m deep.

Tuesday also included a visit to the Pwll Fly-ash Lagoon SSSI, where Sam Thomas refound *Oreopteris limbosperma* (Lemon-scented Fern) near the edge of the now largely scrubbed-over site, which had not been seen here for several years. *Osmunda regalis* (Royal Fern), is locally frequent in company with several other ferns including various *Dryopteris* spp. (Buckler and Male ferns) *Polystichum setiferum* (Soft Shield-fern), *Blechnum spicant* (Hard Fern) and *Phyllitis scolopendrium* (Hart's-tongue). Within the remaining open area in which *Phragmites australis* (Common Reed) and *Agrostis stolonifera* (Creeping Bent) are co-dominants with frequent *Juncus subnodulosus* (Blunt-flowered Rush), five flowering stems of *Cladium mariscus* (Great Fen-sedge) discovered here, new to the county, by RDP & KAP in 2004, were seen. Also in this area *Epipactis palustris* (Marsh Helleborine) has increased considerably since its discovery the previous year but the mats of *Drosera rotundifolia* (Common Sundew), so abundant a few years ago, have almost disappeared. Other species of particular interest included both *Pyrola rotundifolia* and *P. minor*. A brief diversion from looking at the ground came when two Peregrines were seen flying over.

The final visit of the afternoon was to look over the site of the recently completed Burry Port Relief Road, the verges and associated disturbed ground of which were becoming vegetated, mainly with weeds and ephemeral plants. Of particular note were the abundant plants of *Chenopodium rubrum* (Red Goosefoot) and *Mercurialis annua* (Annual Mercury) and occasional *Lamium hybridum* (Cut-leaved Dead-nettle) but the highlight was the first county record of *Apera spica-venti* (Loose Silky-bent) (discovered and identified by Graeme Kay). A Clouded Yellow butterfly was also seen here.

Wednesday brought an early start to inspect the moth trap set the previous evening. 53 species were identified by Barry Stewart who had taken the trouble to come over from Swansea for the purpose, and was rewarded with a free breakfast!

The main party travelled to Glandy Farm in the far west of the county on the lower slopes of the Prescelli Mountains. The party was joined for the day by George Hutchinson and the farm visit was led by Sam Bosanquet who had discovered *Carex dioica* (Dioecious Sedge) in the

fen-meadows on a visit a few weeks earlier. This is only the third site known for this species in Carmarthenshire and was the first time RDP had seen it in the county. Other highlights at Glandy included Arthur's and Sam Thomas' determinations of *Dryopteris affinis* subsp. *affinis* morphotype *convexa* at the farm and *Dryopteris* × *complexa* nothosubsp. *complexa* at the nearby quarry, both first county records. *D. affinis* subsp. *cambrensis* was also found at the quarry.

On the same day, Jean Green and Margot Godfrey went to the National Botanic Garden of Wales, Middleton (NBGW), where they surveyed some unimproved meadows in addition to enjoying the garden, whilst Heather Colls, Bob & Julia Holder and Caroline Tero visited Llystyn Farm at Brechfa and made many new tetrad records, including *Carum verticillatum* and several arable field-margin weed species, including *Stachys arvensis* (Field Woundwort), *Spergula arvensis* (Corn Spurrey) and *Fallopia convolvulus* (Black Bindweed).

Thursday's wet visit to Pen-y-Graig Goch, Llandeusan, near the foot of the Carmarthen Fan (it has rained every time RDP & KAP have been there!) was rather too late in the season to see the rush-pastures and fen meadows at their best but the wooded gorge was of particular interest as unusually, all the *Dryopteris affinis* appears to be subsp. *borreri* (a subsp. of Scaly Male-fern), whereas most woodlands locally include both this and subsp. *affinis*. The woodland also produced a new record for the site of *Polystichum* × *bicknellii* (a hybrid shield-fern), whilst in the fen meadows *Dryopteris carthusiana* (Narrow Buckler-fern), *Cirsium* × *forsteri* (the hybrid between Marsh Thistle and Meadow Thistle) and *Agrostis vinealis* (Brown Bent) were discovered and *Potamogeton berchtoldii* (Small Pondweed) was in one of the small conservation scrapes. Furthermore, Mike Porter (Breconshire Vice-county Recorder) joined the party for the day and recorded the brambles in detail. His finds included the first county record of *Rubus vigorosus*. James and Mary Iliff also joined us for this visit and the evening dinner.

As usual Richard was pressing specimens until late and a discussion on methods of pressing large fern specimens ensued. He is a firm believer in the 'fold it up' method, whereas there exists, a 'cut-it-into-convenient-sized-sections' school of thought. When KAP dared to suggest that cutting up may work better for these large specimens, his response caused even

AOC to back away, saying that fern pressing 'appeared to be a recipe for marital strife!' KAP on later seeing RDP's dried ferns emerge perfectly from the press has to admit that he is right! (on this occasion at least).

On Friday Sam Thomas deserted the gathering to travel straight on to Ireland for a British Bryological Society field meeting, whilst others visited NMGW or the Beacon Bog area west of Carmarthen. But the week's finale for most of the party was the visit to the small arboretum at Cynghordy Hall followed by a walk up the nearby Cynnant valley. The party was joined for the day by Ian Morgan and Nigel Stringer of CCW, and Andrew Stevens. *Rorippa islandica* was growing on the valley access track and *R. ×sterilis* was abundant in a drainage ditch by the ruined farmstead. The abandoned lead-mine proved disappointing from a botanical point of view: it was reputedly working up until the 1960s, and maybe later, which is probably too recent for colonization of the spoil by lead-tolerant species. The highlight was the single very vigorous looking plant of *Huperzia selago* (Fir Clubmoss) growing on the summit ridge of Craig-y-Moch which was the first record for the Carmarthen section of the 10km square.

During the week several varieties or forms of various species pointed out by Arthur Chater proved to be new county records. Some have already been mentioned above but they also included *Veronica scutellata* var. *scutellata*, *Lythrum portula* var. *longidentata* and *Juncus conglomeratus* var. *subbiflorus*. Also the distinctive *Leontodon* plants which included *L. autumnalis* var. *coronopifolius*, *L. autumnalis* var. *autumnalis* and *L. saxatilis* var. *saxatilis* will all be new county records when the taxonomic descriptions are published.

After breakfast on Saturday those who did not have to leave promptly walked down to see the waterfall and the few plants of *Dryopteris aemula* (Hay-scented Buckler-fern) which grow by the path in the very humid gorge. Following this the remainder of the party departed, leaving RDP & KAP to clear the studio of equipment and papers. We felt quite sad, but were pleased that everyone seemed to have enjoyed the week.

The 2006 Glynhir week will be held from Saturday 22nd July to Saturday 29th July and we hope that it will take-on a similar format to the 2005 meeting. Prices will be £329.00 all inclusive or £350.00 en suite (first come, first served!). Please let us know if you wish to make a booking.

Upper Eden & Lune Valleys, Westmorland (v.c. 69) 6th-7th August

JON & SUE ATKINS

Blessed with a bright and breezy day, with no threat of rain, 20 of us duly arrived at that remote and beautiful site which is Sunbiggin Tarn, on the high plateau above Orton in central-eastern Cumbria. Despite the awe-inspiring views, eyes were quickly deflected towards what was beneath our feet, and it was not long before we were examining a nice patch of *Potentilla neumanniana* (Spring Cinquefoil) on the exposed dry calcareous turf. Descending slightly towards damper areas a number of interesting species were recorded, including *Botrychium lunaria* (Moonwort), *Selaginella selaginoides* (Lesser Clubmoss), a mass of *Blysmus compressus* (Flat-sedge), and one or two nice plants of *Pimpinella saxifraga* (Burnet-saxifrage) (previously unrecorded at this site). We were delighted to find a few plants of *Primula farinosa* (Bird's-eye Primrose) in full flower. We made our way towards the 'Tarn Syke' nature reserve, where the warden, Irene Downing told us a little of the reserve's history, and showed us a few spikes of the rare *Carex capillaris* (Hair Sedge). Shortly before this came the highlight of the weekend as the party discovered a fine stand of *Limosella aquatica* (Mudwort) on the muddy edges of the syke – the first Westmorland record. Returning to the locality a few days later I was able to confirm a colony of in excess of 60 plants.

In the afternoon the party moved on, and was treated to a look round the Cumbria Wildlife Trust reserve at Waitby Greenriggs. The reserve lies on a stretch of land formed by the junction of two disused railway lines, and boasts a remarkably fine orchid flora. The warden, Alan Gendle, was on hand to show us some of the reserve's specialities (including a further population of *Carex capillaris* (Hair Sedge) – but nobody could have missed the incredible populations of *Epipactis palustris* (Marsh Helleborine) mainly now in seed. Mr Gendle informed us that this year's 'head count' yielded in excess of 4,000 spikes. A

successful first day was rounded off with a relaxing bar meal at the King's Arms hotel in Kirkby Stephen.

On the Sunday morning the party combed the once rich Sandford Moss for vestiges of mire and bog flora. Unfortunately the drainage effected some years ago had taken its toll, and we were unable to re-record the choicer species. It was good, however, to see a fine stand of *Juncus subnodulosus* (Blunt-flowered Rush), healthy plants of *Carex diandra* (Lesser Tussock-sedge), and one or two *Dactylorhiza* spikes still holding on in the wetter parts. Following through to the sandy railway banks beyond, several plants of *Teesdalia nudicaulis* (Shepherd's Cress) were located in one of their few Westmorland sites. The same area yielded the locally rare *Ornithopus perpusillus* (Bird's-foot), and we were pleased to be able to confirm old records of *Chaenorhinum minus* (Small Toadflax) and *Geranium pusillum* (Small-flowered Crane's-bill) from the railway banks, and *Viola arvensis* (Field Pansy) and *Solanum nigrum* (Black Nightshade) from nearby arable fields.

In the afternoon we toiled up to the limestone sears above Broligh and Helbeck, which are unfortunately still much grazed by sheep. Nonetheless we were rewarded by the sight of some purple *Viola lutea* (Mountain Pansy) in the grassland – and on the cliffs. *Scabiosa columbaria* (Small Scabious), *Hippocrepis comosa* (Horseshoe Vetch), and a single plant of *Epipactis atrorubens* (Dark-red Helleborine). A plant we were keen to confirm was *Carex ornithopoda* (Bird's-foot Sedge), and we were pleased to find a good number of plants on one of the north-facing scars, still with their characteristic flower spikes visible.

It was now nearly tea-time, and we 'called it a day', having achieved much of what we set out to, and enjoyed, in excellent company, a thoroughly stimulating and worthwhile weekend.

Kirkcudbright MOD Training Area, Kirkcudbrightshire (v.c. 73), 9-10th August

DAVID HAWKER

This meeting followed on immediately from the Wigtonshire meeting and drew some of the same botanists, making a group of 8, mostly VC Recorders. The MOD has a local conservation group which had helped to produce an Integrat-

ed Land Management Plan to formulate and progress development and conservation on the Range; however there was no data for the population sizes, and in some cases, no grid references for rare and scarce species. The aim of the

group was to locate and monitor the status of several of these species. The morning of the first day was spent surveying a couple of ponds to try to re-locate populations of *Ranunculus lingua* (Greater Spearwort). The first and second ponds revealed a small clump of *Potamogeton bertholdii* (Small Pondweed) and a thriving colony of *Bidens cernua* (Nodding Bur-marigold) in shallow water of a very muddy pool, while the surrounding semi-improved pastures held good numbers of *Euphrasia nemorosa* (Eyebright). At the third pond, largely overgrown and in need of some clearance, there was a large colony of *R. lingua* amongst a tangle of swamp vegetation including *Equisetum fluviatile* (Water Horsetail). Following this, the rest of the day was spent at Mullock Bay, a boulder strewn shore with patchy saltmarsh, where the party split into two. Between the two parties, populations of *Euphorbia paralias* (Sea Spurge), *Glaucium flavum* (Yellow Horned-poppy) and *Crambe maritima* (Sea-kale), were located and monitored, while there was discussion over the status of the *Limonium* populations with both *L. vulgare* (Common Sea-lavender) and *L. humile* (Lax-flowered Sea-lavender) recorded here in the past. All these species had viable populations in healthy condition. Unfortunately, a pre-1960 record of *Euphrasia rostkoviana* ssp. *rostkoviana* was not re-discovered despite a thorough search by Alan Silverside – the field was too neglected and overgrown to support this species. The old record for *Mertensia maritima* (Oysterplant) could not be re-located – storms too easily remove what is an ephemeral species here, at the eastern edge of its range in the Solway Firth.

The second day was bright and warm and again the party split into two initially to cover another section of beach and under-cliff at Howell Bay. Further records of *C. maritima*, *E. paralias* and *G. flavum* were made, with re-location of *Vicia lutea* (Yellow-vetch), and a suspected *V. tetrasperma* (Smooth Tare) which on critical examination turned out to be *V. hirsuta* (Hairy Tare). Colonies of *Allium scorodoprasum* (Sand Leek) were located in the under-cliff, as was *Trifolium dubium* (Lesser Trefoil). Due to the very dry weather, most of these under-cliff species were desiccated and difficult to locate. Other species included *Ononis repens* (Common Restharrow), *Eupatorium cannabinum* (Hemp-agrimony), *Anthyllis vulneraria* (Kidney Vetch), *Plantago coronopus* (Buck's-horn Plantain), *Silene uniflora* (Sea Champion) and clumps of *Spartina anglica* (Common Cord-grass) which has spread since the leader's previous visit in 2003. The afternoon was spent exploring a managed fishing lake where *Allium carinatum* (Keeled Garlic) occurred in the surrounding woodland, but there were few other notable species. The party finally dispersed, with the leader taking one member of the party a short distance off site to see *Crithmum maritimum* (Rock Samphire) growing at the high tide line in a rock crevice, with a large *Beta vulgaris* subsp. *maritima* (Sea Beet), and numerous *C. maritima* and *Raphanus raphanistrum* subsp. *maritimus* (Sea Radish) growing on the shingle banks.

Thanks are due to all the group members for recording these population details which have now been added to the MOD's files, and will help to achieve conservation benefits.

Vegetative Grass Identification Training Day Box Hill and Headley Heath, Surrey (v.c. 17) 1st October

CLARE O'REILLY (previously COLEMAN)

This field meeting was specifically designed for beginners at grass identification and ecologists, who need to identify grasses in the vegetative state.

The date was moved from that advertised (3rd September) as the leader's sister decided to get married on that date, giving only a couple of month's notice. This meant that a few who originally booked could not make it, but nonetheless a group of 16 attended. We started with a classroom session at Juniper Hall Field Centre, the room kindly provided free by the Field Studies Council. The group included both amateurs and professional ecologists/botanists and

rather surprisingly only 3 or 4 *real* beginners – the rest were all seasoned field botanists who felt that they could do with some vegetative grass id practice. Significantly 4 attendees had joined the BSBI in order to attend the training day and a total of 6 had indicated that they would do so. The mixed abilities in the group made teaching challenging as the programme had been designed for beginners, but everyone exchanged ideas and field observations, so it was worthwhile even for the more experienced.

The classroom session included introducing the key characters used in vegetative grass identification. This was done by using overheads to

illustrate these characters and with guidance on how to observe them using fresh specimens, including some non-native grasses such as *Ceratochloa carinata* (Californian Brome) and *Panicum miliaceum* (Common Millet).

The majority of the day was spent in the field (see Colour Section plate 2), examining very common grasses of a variety of habitats, including chalk grassland, woodland, improved grassland, wetland and acid heath. Hubbard's vegetative grass key is difficult to use but is still the only conventional paper key that is widely available and doesn't place too much reliance on habitat. So we spent a significant amount of time keying out species using Hubbard so that members could become familiar with the characters used and the method – and, hopefully, make a start on vegetative identification on their own. We also demonstrated *British Grasses: A Computer Key to Grasses in the Vegetative State* version 6 by R. J. Pankhurst and J.M. Allinson, which is not easily obtainable and the paper version is long out of print.

Feedback forms provoked an interesting reaction to the idea of training field meetings: an unanimous request for more! Subjects requested for future training meetings include: sedges, *Atriplex* and *Chenopodium*, docks, ferns and identifying plant families – i.e. how to use Stace, from the beginning!!

Although running a teaching meeting does require more preparation than a conventional field meeting, I found it very satisfying to both share my experience and learn from those in the group.

Above all, the day showed that by offering training meetings on plant groups that are difficult (but not too difficult!), potentially the BSBI will become more attractive to ecologists. Many young professionals want to improve their field botany skills and earn some CPD points. More training days would mean that BSBI could offer them this key membership benefit and may encourage some to take part in BSBI recording schemes and our other activities.

Annual Exhibition Meeting 2005

These reports have been edited for publication by:

ALAN SHOWLER, 12 Wedgwood Drive, Hughenden Valley, High Wycombe, Bucks. HP14 4PA

In this annual review it has been usual to print abstracts provided by the exhibitors. This year, however, few chose to provide an abstract, perhaps because the title of the exhibit described very clearly what was on show. There were many posters, series of photographs or of specimens showing quite large numbers of plants, etc., so it is not possible to list all these. For these reasons a more general summary is given this year (expanded in places where an abstract was available).

Posters were in considerable number, prepared for display not just at the Exhibition. and included: **Stephen Jury** – Developing an on-line teaching environmental resource.

Stephen Jury – Plant adaptation for Mediterranean and semi-arid environments: a field course in Spain.

Sandy Knapp – Woody Nightshade (*Solanum dulcamara*), speciation in action?

Fred Rumsey – Alien pteridophytes naturalised in the UK & Channel Isles.

The Natural History Museum – Barcoding the British Flora.

Mark Spencer – Wither the NHM British Herbarium?

Mark Spencer – London's non-native flora

Gill Stevens – Elm map.

These mostly originated from the NHM or Reading University.

Other organisations also illustrated their work, including **Flora Locale** and the **South London Botanical Institute**. The latter was founded in 1910 as a centre for encouraging and facilitating the study of botany, when its founder R. O. Hume, bought a house for this purpose near Tulse Hill station. The SLBI continues to provide facilities for discovering botany, ecology, horticulture, plant conservation and related topics. Its members include amateur and professional botanists and enjoy a varied programme of lectures, field meetings, etc. and may use the Institute's library (which specialises in county floras) and herbarium. A newsletter is published twice yearly. The Institute is open on Thursdays (except Aug.) from 10am – 4pm, and on some Saturdays. Further info. on slbi.info1@btinternet.com.

Lost and found seems a suitable title for 4 exhibits, the first from the **Sussex Botanical Recording Society** reporting on the rediscovery, after 42 years, of *Euphorbia portlandica* (Portland Spurge) on Thorney Is.: an old herbarium specimen and photographs of the newly found plants were on view.

Geoffrey Kitchener & Vincent Jones showed *Epilobium hirsutum* × *E. obscurum*: Its Restoration To The British Flora

Convincing material of *Epilobium hirsutum* × *E. obscurum*, the hybrid between Great and Short-fruited Willowherbs, has been found (by VJ) in Co. Durham, v.c. 66, thus restoring this taxon to the British Flora.

The exhibit reviewed the history of this hybrid, and the serious doubt that attaches to the first claimed discoveries, on which the name *Epilobium* × *anglicum* E.S. Marshall is based. Details of intermediate characteristics as between the parent species were set out, and the importance of distinguishing the similar hybrid, *Epilobium hirsutum* × *E. tetragonum*, emphasised. The likelihood of confusion diminishes outside the main area of distribution for *E. tetragonum*, which is essentially a southern plant in the British Isles.

More hybrids came from **Michael Foley & Mike Porter** with **Two Hybrids in Viola Section Melanium**. Based on field observations in Northern England, the morphological characters which best distinguish the two British Viola hybrids: *V. arvensis* × *V. tricolor* (*V. ×contempta*) and *V. lutea* × *V. tricolor* were presented. Photographs and herbarium specimens were shown. A population of *V. arvensis* × *V. tricolor* from Cumbria was found to occur in various morphological forms including some +/- intermediate between the parents and others closer to one or other parent.

A *Viola lutea* population by the River Tyne also contained plants of the hybrid *V. lutea* × *V. tricolor*. The latter were either close to *V. lutea* in their morphology or else intermediate between the parents. The hybrid was especially identified by its marked increase in vigour and size of parts, its much enlarged stipules with a broadened base, and with the lateral lobes of the stipules positioned higher. This confirmed earlier experimental cytological work carried out during the 1930s by P. G. Fothergill.

Finally, **Nicola Baharrell** asked 'What is *Caryopteris* × *clandonensis*?', showing that this garden shrub from S.E. Asia is actually the spontaneous hybrid of *C. mongholica* and *C. incana*.

More general displays covered various plants groups and places. **Jean Combes** presented a display of grasses ('probably the most important of all the families of flowering plants') and associated wildlife, showing also the recreational uses; this was all closely linked with additional material from **Ashtead Common**, celebrating 10 years as a National Nature Reserve. John Edgington showed pressed specimens of 'Wall-

to-wall Ferns' found in Metropolitan Middlesex since 1988 and his abstract is reproduced in its entirety at the end of the report. **Richard Lansdown & Fred Rumsey** displayed *Callitriche hermaphroditica* (Annual Water-starwort) with specimens, etc. of the 2 subspecies, *macrocarpa* and *hermaphroditica* showing how to identify each one. **Ruth Berry** again displayed 'Art in Nature' with some beautiful photographs in black and white, printed on tinted paper, to emphasize the beautiful and unusual patterns to be found in nature.

In News from Sark, 2004-5 **Roger Veall** showed photographs or specimens of:

a) 1st. records for Sark – *Acanthus mollis* (Bear's-breech), *Allium ampeloprasum* var. *bulbiferum* (Wild Leek) (previously exhibited as *A. cepa* in error); *A. neopolitanum* (Neapolitan Garlic); *Blechnum cordatum* (Chilean Hard-fern); *Echinops bannaticus* (Blue Globe-thistle); *Nemophila menziessii* (Baby-blue-eyes); *Tetragonia tetragonioides* (New Zealand Spinach);

b) 1st. records outside a garden – *Cerinthe major* (Greater Honeywort); *Helianthus annuus* (Sunflower) planted for wild birds; *Juglans regia* (Walnut); *Lithodora diffusa* (Lithodora); *Lobularia maritima* (Sweet Alison); *Sorbus aria* (Common Whitebeam); *Tulipa gesneriana* (Tall Garden Tulip);

c) Others – *Cotula australis* (Annual Buttonweed), 1st. v.c. record; *Eruca vesicaria* (Garden Rocket), only previous record Alderney; *Vicia lathyroides* (Spring Vetch), only previously from Brecqhou; *Ligustrum ovalifolium* (Garden Privet), 1st. rec. self-sown; *Sparaxis grandiflora* (Plain Harlequinflower), previously only as discarded flowering stem; *Delairea odorata* (German-ivy), full flower in November.

As always, **Martin Cragg-Barber** showed 'Some 2005 Aberrations', These included:

A) From Hullavington, Wilts. -
Acer campestre (Field Maple) with Alchemilla-type leaves; Court Field.
Fraxinus excelsior (Ash), aberrant leaves thickened at base of petioles, Court Field.
Heracleum sphondylium (Hogweed) with proliferation or perhaps the opposite with intense shortening of the first umbel, perhaps due to insect damage; track to Danes Bottom.
Plantago lanceolatum (Ribwort) (1) persistent stamens on 'bomi-noka' type mutation; neighbour's garden and (2) 'Carmen Miranda' type mutation, X-roads.

B) From Lt. Somerford, Wilts.

Acer pseudoplatanus (Sycamore) with fasciated flower stalk producing keys in increased numbers; garden.

Sambucus nigra (Elder) with extra leaflets; cuttings taken & other sites in Wilts.

C) From Nettleton, Wilts.

Rhus typhina (Stag's-horn Sumach) fasciated in response to hard pruning. *Trifolium repens* (White Clover) showing split & doubled 'v' markings on leaves.

D) From elsewhere (BS = collected by Brian Spooner) -

Alliaria petiolata (Garlic Mustard) variegated green & translucent (BS).

Carpinus betulus (Hornbeam) with abnormal leaves, Bath Bot. Garden (BS).

Castanea sativa (Sweet Chestnut) with well-indented leaves, Ewell (BS).

Daphne laureola (Spurge Laurel), fasciated branch; Ashford Hangers NNR. Hants. (from Tony Mundell).

Hedera helix (Ivy) with lateral proliferation of flowers. cuttings taken; Malmesbury, *Larix* sp. (Larch) showing profliery; Genealy. Co. Wicklow, Ireland.

Ononis repens (Common Restharrow) with cream sectorial on leaves; nr. Blyth. N'humberland (photo G. Young).

Prunus lusitanica (Portugal Laurel) with leaves variegated & cut internally - variegation resulting from the cutting; Esher, Surrey (BS).

Robinia pseudacacia (False-acacia) with leaflets spirally twisted: E. Molesey (BS).

Rubus sp. (Bramble) showing periclinal chimeric & marginal variegation to leaf; Combs Wood, Benington, Herts (Kerry Robinson).

The Past was to be seen in 'Faces from the Past' by **David Allen** showing photos from BSBI archives of famous botanists, while **Margaret Perring** had 'Photographic Puzzles' from her late husband Frank's archives.

Roy Vickery showed 'Humphrey Milne-Redhead's Plant (& Bird) Records, 1944-63'. Humphrey Milne-Redhead (1906-74), started his working life in banking, then tried rubber planting in Malaya, before settling down as a general practitioner at Mainsriddle in Galloway in 1947: 'A burly figure, hung about with necessities ranging from vasculum and hand-lens to a cucumber and other victuals suspended on a string.' He had an early interest in birds, but later turned to botany, especially bryology.

The diaries exhibited here were passed to The Natural History Museum by his daughter, Lesley Tregaskes, in 2004. In them he records the flowering plants, bryophytes and birds which he

saw on various walks and longer expeditions between 1 January 1944 and 16 June 1963.

The first volume (January 1944 - July 1947) in particular contains numerous records of phanerogams; bryophytes come to the fore in the second volume (August 1947 - July 1951), and the third volume (January 1953 - June 1963) contains mostly notes on birds which were seen or heard. Plant records for many Vice-counties are included.

Unfortunately H. M-R. did not give the names of the species he recorded, but simply listed a number for each species. Presumably this number was taken from a published list of British plants. H. M-R's library was dispersed many years ago when his widow moved to a smaller property. Consequently it is not known which publication he used, and so far it has not been possible to crack the code. Any suggestions as to where the numbering system might have come from would be much appreciated.

From the very recent past **Richard & Kath Pryce** had photos of the AGM 2005 at Ferryside and of the Glynhir summer field meeting and there were photos too from **Sarah Stille** of the meeting in the Czech Republic from 26 Apr. to 6 May and from **Teresa Farino** of the Catalan Pyrenees meeting in June (both already reported in *BSBI News*). Looking to the future, the hard-working **Jane Croft** gave full details of the 2006 Field Meetings and was asking for offers for 2007 (already!).

Books on sale included the 1-day old 'Checklist of the Plants of Buckinghamshire' by **Roy Maycock & Aaron Woods**, the slightly older 'Flora of Berkshire' by **Mick Crawley** (with all 3 authors present) and a proof copy of 'The Botanist - Botanical Diary of Eleanor Vachell, 1879 - 1948' produced by **Tim Rich & Michele Forty**, a fascinating book to be published shortly. **Summerfield Books** as usual had plenty to tempt everyone and there was a table with secondhand books and BSBI Publications.

Lest anyone felt unwell after the hustle, bustle (and talking!) of the meeting **Roy Vickery** was on hand with 'Ethnomedica: Remembered Remedies' and was even asking for new ones; Ethnomedica is the 6-year old organisation founded 'to record and research traditional British medicinal plant lore'. Initial support came from the National Inst. of Medicinal Herbalists, Neals Yard Remedies, RBG, Kew and the Chelsea Physic Garden. The Eden Project, NHM and RBG, Edinburgh joined later. There have been various problems due to lack of funding but with the steadfast support of Kew it is now more active and hopes to make its findings more

widely available in 2006. So far 2036 records have been entered on its database and a similar number await entry. Every potential record is unique both in place and time and everyone is urged to send in information on any herbal remedies known to them. Further info. on www.rbcikew.org.uk/ethnomedica. 'PlantCultures' too, looked at the many uses of plants – culinary, medicinal, cosmetic and ceremonial.

Last but not least was **Help!**, the table on which to place mysterious and unknown specimens, in the hope that someone will venture an opinion on identity. Run for the past 25 years, **Sean & Ann Karley** these loyal folks now feel they deserve a rest and would welcome a takeover bid. See their letter below. Many thanks from the Society go to them for all their work.

Help Table

SEAN & ANN KARLEY, 30 Harrowden Road Wellingborough Northamptonshire NN8 SBH
Tel. 01933 – 225397; E-Mail seankarley@compuserve.com

This exhibit is intended to give informal assistance with identification of plant specimens which are awkward in some way. This may be because some 'vital' character is absent – such as the fruit – and may be unobtainable – perhaps gathered on holiday – or the book needed is not available, anything. Sometimes it will simply not 'click'; Shepherd's Purse is notorious for this. Specimens are exhibited and suggestions made anonymously (optional).

We started mounting this exhibit in 1981, and it has been running now for a quarter of a century. We have had a great deal of pleasure from running it and we like to think that others have also enjoyed it. We also like to think that it has given some actual help to a few of our botanical friends.

Now that we are both retired we would like to find someone who would be interested in taking it over from us, or sharing it. If you think that you might like to give it a go, please get in touch with us.

The requirements are few. You do not need to be an expert at anything, (why do you think that we have done it for so long?). It is enough to love plants, to lay them out on the day and just keep an eye on things, maybe supply a few bits of paper etc., or receive and return a few plants by post. It would particularly suit a younger person who would enjoy doing something easy for the benefit of the Society and handling a variety of plant material which they might otherwise never see.

BOOK NOTES

DAVID PEARMAN, *Algiers, Feock, Truro, Cornwall, TR3 6RA*; Tel: 01872 863388;
dpearman4@aol.com

For reasons that I cannot explain not a single notice has come my way this spring. The few entries below are all from Sue Atkins at Summerfield books, and I am grateful to her for the details.

Hedgerow History. Barnes, G. and Williamson, T. Pp180, inc 30 col photos, b&w illus. Windgather Press, 2006. Pbk, £18.99.

From the Scots Pine windbreaks of the Brecklands to the ancient earth and stone banks of the West Country, hedges are an essential component of regional landscape character. Drawing upon a unique computerised analysis of hedges in Norfolk, the authors explore how hedges came into existence, and how they have changed over time. They move beyond the myth that a hedge can be dated by simply counting species, and develop instead a much more sophisticated approach, pointing

out marked geographic variations in species content and diversity, and exploring the ecological, economic & historical reasons for these differences.

The Mosses and Liverworts of Carmarthenshire. Bosanquet, S., Graham, J., and Motley, G. 245pp, colour photo section, maps, distribution maps. Privately published, 2005. Pbk, Summerfield price £20.

Substantial bryophyte flora, the first for Carmarthenshire, describing over 600 species, sub-species and varieties of mosses, liverworts and hornworts. Distribution maps for those occurring in more than 5 tetrads. The introductory section discusses the history of recording, habitats, comparison with adjacent counties, and an account of the changing bryophyte flora.

Brampton Wood: A Natural History. Collins, T, Dickerson, B, Walker, P, and Wells, T. 182pp, colour photo section, maps, aerial photos. Huntingdonshire Fauna & Flora Society. 2005. Hbk, Summerfield price £20.

Comprehensive natural history study of this Huntingdonshire wood, with chapters devoted to each aspect, including annotated species lists.

The Black Poplar. Cooper, Fiona. 180pp, 30 col photos, 30 b&w illus. Windgather Press, 2006. Pbk, £18.99.

The full story of the black poplar in Britain: its historic place in the landscape, cultural role in poetry and folklore, uses as timber and in medicine. The author explores how an understanding of the black poplar's genetic make-up can help promote conservation, and examines the famous populations in the Vale of Aylesbury and urban Manchester, the latter of which is under great threat.

Taxonomy and Plant Conservation. Leadlay, Etelka, & Jury, Stephen (eds). 365pp, figs and photos. CUP 2006. Pbk, £35.00.

Illustrates the key role played by taxonomy in the conservation and sustainable utilisation of plant biodiversity. With contributions by many distinguished botanists and taxonomists, it is a tribute to the work of Professor Vernon Heywood who has done so much to highlight the importance of sound scholarship, training and collaboration for plant conservation. Opens with an overview of the place of taxonomy in science and in implementing the Convention on Biological Diversity. Part 2 outlines the theoretical basis of taxonomy, how it is done and how it contributes to measuring diversity. The third part explains how taxonomy is used to establish conservation priorities and actions and the concluding part illustrates taxonomy in the practice and measurement of effective conser-

vation action. Contributors include: Peter Crane, Alan Paton, Tod F. Stuessy, James Cullen, Max Walters, Santiago Castroviejo, R. K. Brummitt, Ghilleen T. Prance, Christopher Humphries, Doug Evans, David Bramwell, T. C. G. Rich, John R. Akeroyd, John Dransfield, Stephen Blackmore, David S. Paterson, Peter Wyse Jackson, Paul Smith.

The Secret Life of Trees. How They Live and Why they Matter. Tudge, Colin. 452pp, drawings by Dawn Burford, figures. Allen Lane 2005. Hbk, £20.50.

What is a Tree? questions the origin and nature of trees; *All the Trees in the World* looks at Conifers, Magnolias and other Primitives, Thoroughly Modern Broadleaves, and so on; *The Life of Trees* discusses How Trees Live, Which Trees Live Where, and Why, and The Social Life of Trees: War or Peace? The final section, *Trees and Us*, speculates on the future.

Handbook of Biodiversity Methods – Survey, Evaluation and Monitoring. Hill, David et al. 573pp, tables, figs. CUP 2005. Hbk, £85.

'The starting point for effective conservation of biodiversity is reliable knowledge of what is there (a survey), how important it is (evaluation) and how it is responding to management and other human activities (monitoring).' Provides an overview of the key principles and standard procedures.

Les Orchidées de France, Belgique et Luxembourg. Bournerias, M, and Prat, D. 504pp, colour photos, IN FRENCH. New edition, 2005, Biotope, France. 45 Euro, Summerfield price £35.

Nearly 100 additional pages, distribution maps, 30 newly described species, and updated information taking account of recent findings.

Reviews of recent BSBI publications (6)

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

There has been a hiatus since the publication of my last list of reviews on pp. 77–78 of *BSBI News* 88 in September 2001, largely because only one BSBI publication has appeared since then, *Illustrations of alien plants of the British Isles*, published last year and now beginning to be reviewed. So here is a further list of reviews that have come to my attention. I am grateful to those who have supplied copies and shall be

glad to receive any others known to members (with full bibliographic references, please).

1. *Sea Beans and Nickar Nuts* by E. Charles Nelson (2000)

The Island Naturalist: The Bulletin of the Friends of Skokholm & Skomer No. 42: 30 (Winter 2001) probably by David Saunders ('Now here is a book which should appeal to all those who potter along our strandlines';

- 'The history and folklore chapters are fascinating.')
Natur Cymru: A Review of Wildlife in Wales No. 2: 38 (Winter 2001) by Andy Jones (black-and-white illustration of front cover; 'So long as your bookseller hasn't completely misunderstood what nickar nuts are, this book should be shelved under 'Natural History'. Then again, it could be placed under 'Hobbies', 'Gardening' or 'Magic and the Occult'. ... in a class of its own'; '... will actually be enjoyed by beach-combers of all ages (and perhaps those with a heated greenhouse in particular) but it will not, of course, guarantee a find.'
- The Naturalist* 126 (1038): 159–160 (July–Sept. 2001) by PJC ('a bibliography containing more than 200 references spanning 350 years, demonstrating [Dr Nelson's] depth of historical research'; 'about 40 [seeds and fruits] are superbly illustrated'; 'the likelihood of ever finding a viable seed appears to be very remote'; '... the possibility of our native coastal flora being supplemented by viable drift seeds' [with four examples])
- The Pharmaceutical Journal* 267: 444 (29 Sept. 2001) by 'Onlooker' ('Beans on the beach' – a brief piece mentioning an 'article in *New Scientist* for 21 July' [actually 28 July: see previous list, in *BSBI News* 88] and containing facts clearly derived from *Sea Beans and Nickar Nuts* but not mentioning it!)
- 2. Illustrations of alien plants of the British Isles by E.J. Clement, D.P.J. Smith & I.R. Thirlwell (2005)**
- British Wildlife* 17 (1): 73 (Oct. 2004) by Peter Marren ('something of a one-off'; '400 drawings by no fewer than 43 artists. All are drawn from fresh, British specimens.')
- Ecos* 26 (3–4) (2005) by Martin Spray ('The selection is opportunistic: it uses drawings accumulated since the sixties, ...'; 'The selection is also a little eccentric – it is what was available ...'; 'It is thus in no way comprehensive, and not entirely representative.'; 'Even so, it is a fascinating collection, and helpful.'; 'And it might help to bridge the persistent gap between wild-plant and garden-plant enthusiasts.')
- Irish Naturalists' Journal* 28 (4): 180 (2005) by Brian S. Rushton ('The illustrations themselves are excellent ...'; 'A book well worth waiting for.')
- The London Naturalist* No. 84: 46 (Dec. 2005) by David Bevan ('This new publication makes a huge, and most welcome contribution to filling the gap.'; 'Thirteen individual artists have contributed plates, and it is remarkable what a uniformly high standard of work has been achieved.'; 'This splendid book has arrived at an opportune time.')
- The Plantsman* n.s. 4 (4): 246 (Dec. 2005) by Roy Lancaster (illustration of cover; 'The drawings, the majority of which are based on living specimens and all of which are published for the first time, are well executed and will be of value to all plantsmen with an interest in identifying these plants in the British flora.'; 'If I have one tiny regret it is that ... there are no accompanying descriptions, nor even brief notes on countries of origin, ...')
- BSBI Handbook No. 7, *Roses of Great Britain and Ireland* by G.G. Graham & A.L. Primavesi, first published in 1993, was reprinted (with corrections) last year as an A5 book, incorporating the improved key in *Plant Crib 1998* and with a much more attractive dark pink cover. It is available from BSBI Books; the members' price is £10.00.

Third supplement to the *List of Vascular Plants of the British Isles*

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The third supplement (by Clive Stace) to D.H. Kent's *List* is now available from Summerfield Books, price, £2.50 including post. It covers the additions and emendments to the flora of the British Isles that have come to notice since August 2000, when the previous supplement was issued. It brings the list up to date as at 31st January 2006 and was published on 23rd February 2006. *Supplement 3* does *not* include all those changes in taxonomy that are now being indicated by recent advances in molecular systematics, e.g. the re-separation of

Nasturtium and *Rorippa*, the transfer of *Cardaminopsis* from *Arabis* to *Arabidopsis*, and the reclassification of groups such as *Orchis* and *Festuca* and their allied genera. These and very many other changes must await a second edition of the *List*, which might also incorporate an extensive family re-alignment and the adoption of the authority abbreviations in Brummitt & Powell (1982) rather than those in Meikle (1980) as at present. For this reason it is unlikely that further supplements will be issued.

A new edition of the Wild Flower Key

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Anyone who teaches plant identification courses will be aware of the importance of *The Wild Flower Key* by Francis Rose (WFK). It is twenty-five years old, yet still the only colour guide to bridge the gulf between picture books and Stace's *New Flora of the British Isles* 2nd Edition 1997 (Stace). The more I became involved with teaching field botany, the more I heard comments about the WFK along the lines of 'oh why can't someone update the scientific names?' and 'why isn't Goat's Rue in here?' as well as 'this is such a great book!' So I contacted the publisher, Penguin (who now own Warne) and Dr Rose, to see if a new edition was planned. It wasn't, but would I consider taking on the revision project myself.....?

The purpose of this note is to enable users of the WFK to understand the scope of the new edition and to be encouraged to contribute to future editions.

First and foremost, this is not a new book. For the new edition to be commercially viable, the text had to be completed in 6 months, allowing the bulk of the project for the re-design of the layout. The original aim was simply to update the classification and nomenclature, correct known errors and add widespread non-natives like *Solidago canadensis* (Canadian Goldenrod) and *Buddleja davidii* (Butterfly Bush). The family order now follows Stace but because of the number of cross-references, the order of the genera and species within families could not be changed. Picking up on existing errors was a challenge as, in 25 years, no one had sent corrections to Dr Rose. I suspect that users of the book merely blamed themselves when they found that, for example, various vetches kept keying out to *Vicia bithynica* (Bithynian Vetch)! Most of the diagnostic characters used in the WFK are based on *Flora of the British Isles* by Clapham, Tutin and Warburg (CTW) and many of these characters are reliable, therefore I did not want to re-write the book following Stace; nor could I realistically amend every measurement to follow Stace in the time available. The resulting compromise was to pick out and amend the details that were most likely to result in misidentifications. I aimed to involve experts for difficult groups and many agreed to either write new keys or check my amendments. I ended up managing a team of botanists and artists and I am very grateful to everyone who

assisted (too many to name here) in what became a much bigger task than originally envisaged. A final proof read to check the numerous corrections was not possible, the text having been sent to China for printing without my knowledge. So **please send corrections to me** – some of them I will know about (e.g. some of the original *Fumaria* sepal illustrations are incorrectly airbrushed yellow and others left green; all were requested to be creamy-white) but others will only emerge once the book is used.

The most controversial aspect of the project was deciding on which taxa to add to the book, bearing in mind the need to keep the book portable. In consultation with Dr Rose, a list was drawn up based on a set of criteria. In outline, all plants with 300 or more 10km square records (counting all date classes) in the *New Atlas of the British and Irish Flora* by Preston, Pearman and Dines (2002) got in, along with all natives omitted in the original edition, such as *Vaccinium microcarpum* (Small Cranberry). Those non-natives with between 50 and 299 records were considered but only included if they met certain criteria, such as being easily confused with widespread native species, invasive or rapidly increasing their range. All species listed as threatened in *The Vascular Plant Red Data List for Great Britain* (Cheffings & Farrell 2005) (Red Data List) were included. Therefore, for example, the relatively frequent *Bupleurum subovatum* (False Thorow-wax) is omitted as having only 155 records but *Bupleurum rotundifolium* (Thorow-wax) with only 15 post 1970 records (but 288 records in total) is included as it is on the Red Data List. Examples of difficult decisions included *Vicia villosa* (Fodder Vetch), with 152 records, which is included as it is easily confused with *V. cracca* (Tufted Vetch) and increasing, despite being very rare or absent in much of the country. Casuals like *Vicia faba* (Broad Bean) and *Alcea rosea* (Hollyhock) get in because beginners often do not recognise these widespread plants (both with over 300 records each). In 1568 William Turner was able to say 'This pulse [*Vicia faba*] is so well known that it needeth no description' but today few people grow vegetables so can't make the link between the frozen beans and the flower. We also decided to retain the rare non-natives in the original book and

extinct plants that may re-occur, such as *Euphorbia pepelis* (Purple Spurge). Ultimately, space restrictions meant that we could not include or illustrate many taxa that are currently rare (or under-recorded) but rapidly increasing, such as *Senecio inaequidens* (Narrow-leaved Ragwort). I may attempt to rectify this in a future edition as unfortunately at present the only illustration of this species in a field guide (Blamey *et al.*, 2003) shows a completely different plant (it is accurately illustrated in Clement *et al.* (2005) and on the inside back cover of *BSBI News* 101!). I would be pleased to hear from anyone with suggestions for other candidates for inclusion in future editions.

When commissioning new illustrations, I had no idea how the layout would end up or where there would be space. The slight southern bias in the original book is addressed – widespread northern plants like *Alchemilla alpina* (Alpine Lady's-mantle) and *Silene acaulis* (Moss Campion) are now illustrated. I wanted to include more line drawings of diagnostic features, like those in Stace, and also of characters that beginners find difficult, such as the difference between 'blunt' and 'pointed' *Viola* sepals. Delf Smith started out doing these extra illustrations and ended up as Art Editor. His involvement became crucial to the success of the project. Delf not only managed the entire plate design process (while I was doing my MSc exams!) but also kept doing extra illustrations to fill the emerging gaps. Delf produced some fantastic colour portraits, redesigned many of the plates and redrew all of the scale bars. A major grumble about the old edition is that the text and keys are often not opposite (or even near to) the relevant illustrations. We tried hard to address this issue but ultimately there is simply too much text, as it was not written to fit pre-drawn plates. I did not wish to shorten the text as another key feature of the book is that it has much fuller plant descriptions than any other pocket guide. The plate design process took over a year and cost Penguin a fortune, despite both Delf and myself working on a not for profit basis (neither of us get royalties). Unfortunately we did not have any input into the choice of font or the general layout, the design team insisting on a contemporary look even though it lengthened the book, making it about 1cm thicker.

In general, the classification follows Stace, and the nomenclature the BSBI 2003 list (published on the BSBI web site), but there are a few exceptions. The book does contain some taxo-

nomic points that Dr Rose felt should be included. We also chose not to adopt a phylogenetic classification of Orchidaceae (orchid family) (Bateman *et al.* 1997, 2003). British authors (unlike some continental authors) seem to be in favour of using this new classification, for example, it is adopted in the new Red Data List (Cheffings & Farrell 2005). However, it is perhaps difficult to justify using the latest phylogenetic classification in a book like the WFK for one family but not others, i.e. why should orchids be a special case? Phylogenetic classification based on molecular and morphological studies is resulting in many other changes at family and genus rank and the work is on-going. To see what we mean, refer to the latest update from the Angiosperm Phylogeny Working Group (APG II 2003). Therefore we decided to wait and see what Stace does in his third edition before re-writing the orchid family in the WFK.

I have tried to make the WFK as useful as possible for ecologists and those who work in the conservation sector. It also goes beyond what most would consider 'suitable' content for beginners, referring users to Plant Crib, the BSBI Handbooks and Stace, in the expectation that some will progress to these texts. As one botanist who helped with testing the new keys put it: using the WFK is like navigating around your local town; using Stace is like navigating around London! I hope that the WFK continues to help many more find their way to becoming competent field botanists.

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Wild Flower Key 2nd Edition: corrigenda and addenda March 2006

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Details of important corrections to the *Wild Flower Key* are set out below. These were omitted by the publisher in order to meet the dead-

line for publication. Please send any additional corrections to Clare O'Reilly.

- Page 7
Flora of London – replace with Flora of the London Area
- Page 94 couplet 6
Spartina angelica – replace with *anglica*
- Page 106
Add text: The shape of the nectary (found on the inside base of a petal) is often used for identification. However, this character is sometimes unreliable and therefore is not used in this book.
- Page 119
Sepals on illustrations Ea, B and Ca should be whitish tinged green, as in illustration H.
- Page 132 C
Sharp-toothed lvs (**A**) – replace with (C)
Add text: and seed shape (see *New Flora*)
- Page 156 A
Add text: stamens (or staminodes) **10**
Add text: seeds (Ab) usually with
- Page 156 B
Add text: stamens **2–7** (-10)
- Page 172 C
(*R. × neumanii*) – replace with *L.*
- Page 243 C
WO(NI) ****Ire (NI)** – Delete extra NI
Page 259 E.1
and is nearly sterile – replace with partly
- Page 363 A
Add text and bold font: Nutlets black-**brown, shiny, smooth**
- Page 364 E
Add text: Nutlets with **minute bumps, dull**
- Page 384 Water-starwort Family
Add text: Plant classification and names in this book follow the *BSBI Callitriche Handbook*, rather than the *New Flora*.
- Page 410 B
Add text: spur (**Ba**)
- Page 410 D
Common Bladderwort – replace with **Greater**
- Page 433 Daisy Family Flower Head
Add text: ∩ (to label achene)
- Page 434 couplet 7
~~*Hypochaeris*~~ – replace with *Hypochaeris*
- Page 450 D
~~**Shaggy Soldier**~~ replace with **Shaggy-soldier**
- Page 472 E
~~**Common Blue-sow-thistle**~~ – replace with **Blue-sow-thistle**
- Page 472 E
~~**Alpine Blue-sow-thistle**~~ – replace with **Blue-sow-thistle**
- Page 476 ID Tips Hawk's-beards
Add text: Smooth and Marsh Hawk's-beards are the only common *Crepis* spp that are ± hairless (except on the involucre bracts and sometimes on the lf underside midrib)
- Page 480 D
sticky gland tipped hairs (~~**Da**~~) – replace with (**Db**)
- Page 497 ID Tips Duckweeds
Common duckweed (*L. minor*) is bright green and ~~**oval**~~ – replace with obovate
- Page 497 Key couplet 5
green, ~~**ovate**~~ – replace with obovate
- Page 525 ID Tips Helleborines
Add text: Green-flowered, Narrow-lipped, Dune and Young's
- Page 552
~~**Laminar**~~ – replace with **Lamina**
- Page 561
~~*Rhamnus catharticus*~~ – replace with *cathartica*

Updating the *Plant Crib*

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One of the great advantages of the *Plant Crib* is that it has the ability to integrate the expertise of so many people into one place. Whilst we were compiling the first edition of the *Plant Crib* during the BSBI Monitoring Scheme 1987-1988 I thought it would be useful to have a 'loose-leaf' flora that could be regularly updated with individual sheets of paper, rather than having to wait for a whole new edition of a book to be published. The Internet has now made this possible with the ability to rapidly disseminate new or updated accounts of particular plants

groups, as well as being able to select accounts of taxa relevant to a particular area.

We have begun the process of putting accounts from the *Plant Crib 1998* onto the BSBI website (some trial accounts are already posted there). Several stages are involved. First, we are scanning the illustrations and re-integrating them into the text to produce electronic versions, and adding the corrections (this stage is nearly complete). The accounts will be as A4-sized pdf files, organised by genus or group so they can be downloaded in small parts as required. The pagination

often does not work as well as for the paper version which you can open to see two pages at a time, and the quality of the printing depends to some extent on the quality of the printer, though they usually look fine on screen.

Second, we will revise the accounts in consultation with the original authors, and produce new accounts. The new accounts may include abstracts of recently published papers, accounts of hybrids to help towards updating Stace's *Hybridization* book, vegetative identification hints, etc., and aim to complement rather than

duplicate things adequately published elsewhere. I have about 20 ideas for new accounts, and have written about half of them already. We may be able to add links to useful information elsewhere on the web, include colour photographs, and updated maps.

Third, we aim to publish a 3rd edition of the *Crib* in 2008 on paper, as I still think a book in the hand is worth ten on the web.

So I would welcome any corrections to *Plant Crib 1998*, new accounts (preferably in electronic format) and help with proof reading.

Wiltshire Botany

JOHN PRESLAND, 175c Ashley Lane, Winsley, Bradford-on-Avon, BA15 2HR

Issue No. 8 of this journal is now published. It is a special issue devoted to a presentation and analysis of the most important plant records since recording for the 1993 Wiltshire Flora ceased at the end of 1991. It includes a list of over a thousand taxa which were uncommon or absent in the county at the time of the Flora recording, and lists all the new tetrads in which they have been recorded since. The list also notes the tetrads recorded during the Flora recording period for taxa for which this information was not provided in the Flora itself, thus facilitating before and after comparisons. The outcome could be regarded as a sort of "flora" for the taxa covered over the period from the early 1980s to the end of 2003.

The analyses of the data are presented in a way designed to allow before and after comparisons, both between the two sets of records and for future records. To this end, there are separate sections on

- Taxa in the 1993 Flora with a distribution map
- Taxa in the 1993 Flora with no map
- Taxa not in the 1993 Flora
- Rare taxa

The usual annual selection of records is included - for 2004.

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. 8 and some earlier issues are available from Rosemary Duckett, 50A The Butts, Westbury, Wiltshire BA13 3EX (Tel 01373 858296; email; rosemary.duckett@virgin.net). The cost is £5.00 post free. Cheques should be made out to Wiltshire Botanical Society.

OBITUARY NOTES

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

With regret we report the following deaths:

Mr R.W. Barker of Pencaitland, East Lothian, a member since 1957; Mr K.J. Cavalot of Rugeley, Staffs., a member since 2000; Mr J. Coleman of Stroud, Glos, a member since 1972; Mrs A. Hall of Ponteland, Newcastle upon Tyne, a member since 1992; Mr L.H. Pinkess Bsc of Edgbaston, Birmingham, a member since 1963; Mrs A.D. Poyser of Holt, Norfolk, a member since 1985; Mr R. Sherlock of Guildford, Surrey, a member since 1984 and Dr G.D. Watts MA MSc PhD of Northleach, Cheltenham, a member since 1969.

We also regret to report the death of a one-time member of the BSBI, Stella Ross-Craig, who

died within a few weeks of her 100th birthday. See the next page for a full tribute.

One of the brothers of **Richard Palmer** for whom we published an Obituary in *Watsonia* **26(1)**: 102-3, has edited an interesting memoir: *Richard Palmer: A life in letters* (52 pages). Dr Palmer tells me that he has quite a few spare copies, and that he will be pleased to send one to members who knew or worked with Richard. There is no charge, but friends of Richard should write to: Dr Bernard Palmer, 15 East Hill, Charminster, Dorchester, Dorset, DT2 9QL, sending 2 × 1st class stamps.

Stella Ross-Craig

The distinguished botanical artist, Stella Ross-Craig, died on February 6th, 2006. She would have been 100 on March 19th, and plans were apparently well underway to celebrate this. I imagine that many BSBI members would have used her excellent series of black and white illustrations of British Plants – to me they were, and still are, the best in the field, and, as line-drawings, to me at least, preferable to any other medium. I grew up on them and have used nothing else ever since, though I admit I was too

young for the earlier drawings of Fitch, Butcher & Strudwick and Butcher. Obituaries have appeared at least in the Times and the Telegraph, but I liked the article that I had seen in the *New Plantsman* a few years back, which was able to be more informative. I am very grateful for permission to reproduce it from the author, the well-known garden writer, Ursula Buchan, and from the current editor, Mike Grant from the RHS. Some abridgement has been made, but no other alterations. D.A. Pearman.

Stella Ross-Craig, Botanical Artist

BY URSULA BUCHAN

Stella Ross-Craig is one of the most admired botanical artists alive, thanks to a monumental project which she initiated herself and took 25 years to complete. *Drawings of British Plants*, which appeared in 31 parts between 1948 and 1973, has been called the ‘single most useful illustrated account of British flora ever produced’. Yet this work was done almost entirely in her spare time. Truly, a labour of love.

Stella Ross-Craig’s childhood seems to have been a happy and serious-minded one. She was born in Aldershot in Hampshire on 16th March, 1906, one of three children of a Scottish chemist

and his wife. From time to time in her childhood, they moved to different towns in the south-east. She remembers the country walks in Hampshire and Surrey, accompanying her father who, as a chemist, was well versed in botany and would show her the wild flowers. She was first taught how to paint by her brother, when she was only four years old. She seems to have been a clever, precocious schoolgirl, who won a scholarship to study at the Thanet Art Schools when she was 18. There she received a thorough grounding over four years, but managed to find time to attend botany classes in the evenings as well.



ALL PHOTOS BY KIND PERMISSION OF THE ROYAL BOTANIC GARDENS KEW

Stella Ross-Craig photographed painting at the Royal Botanic Gardens Kew in the 1940s

In 1929, she joined the staff at the Royal Botanic Gardens, Kew. At the same time, she did some work for the Royal Horticultural Society as well, painting plants which had won awards at shows. She still remembers a water-colour she painted at Chelsea Flower Show of 'an enormous paeony' belonging to Sir William Lawrence. She was to remain at Kew for her entire working life, and it was there that she met her husband, the botanist Joseph Robert Sealy. Between 1932 and 1980, she contributed an astonishing 333 plates to *Curtis's Botanical Magazine*; indeed, volume 182 (1978-80) was dedicated to both her and her husband. She also provided 400 illustrations for *Hooker's Icones Plantarum*, and 75 for the Flora of Tropical West Africa. There are no fewer than 3,000 drawings and paintings by her in the Kew collections, an invaluable archive for research. These also include 60 paintings of orchids which had belonged to Gerry Colman (of the mustard-making family); these had been left to Kew after his death. The combination of an artist's and a botanist's training proved ideal. She always worked either in watercolour or in pen-and-ink. 'I tried oils once, but they're messy things!'

Now a widow, Stella Ross-Craig lives quietly in a retirement home in Kew, a few hundred yards from the gardens to which she still feels she very much belongs. Although a little deaf and not able to walk easily, her mind is clear and she is a charming companion. Her disadvantage, as far as any interviewer is concerned, is her self-effacing modesty. She is not keen to enlarge on her achievements, saying only that 'it was fun'. Nevertheless, she has received the Kew Medal, as well as a Gold Veitch Memorial Medal from the Royal Horticultural Society in 2002. Her work has been displayed at Kew, Edinburgh and the Rijksherbarium, Leiden, and appears in *Asiatic Magnolias in Cultivation* (G.H. Johnstone, 1955), *A Study of the genus Paeonia* (E.C. Stern, 1946), *Supplement to Elwes' Monograph of the genus Lilium* (Grove and Cotton, 1938-40) and *A Revision of the genus Camellia* (J.R. Sealy, 1958).

However, she has never gained the recognition she deserves beyond those specialists and keen amateur wild flower enthusiasts, for whom *Drawings of British Plants* is practically a Bible. The reason must be that she never sought commercial success: 'I didn't want to sell pictures; I just wanted them to be done as records.' Her loyalty to the institution of Kew is impressive, but it is reciprocated by the high regard in which she is held there.

The simple title *Drawings of British Plants* gives little clue to the majestic completeness of this work, which lacks only grasses and sedges, and extends to 1,286 drawings, all now in the Kew collections. These drawings were meant to be used for reference: 'I worked out what size they would need to be, to be useful; this was 7 in by 1 1/4 in, rather larger than was usual. The volumes originally cost six shillings each. They were reprinted in 1978. Each part now commands at least £5 second-hand.

She was very much helped in this work by her husband, Robert (Bob) Sealy. They would spend their weekends looking for wild flowers, with a friend, Brian Burt, known as Bill, who was also a botanist at Kew at the time, though he subsequently went to RBG, Edinburgh. They would take home plants in a vasculum for her to draw. Many were found on the Surrey Downs but they also went further afield, notably to Ireland, where once they had to cross over a bog using stepping stones, in order to find a particular heather. 'One step and you'd be into the swamp!' She would complete nearly two of these drawings a week, using a small microscope where necessary, as well as a pair of compasses. 'I had to get on with it, seeing how many I had to do.' 'Accuracy', she says, with admirable understatement 'was never a problem'. 'I tried to make sure I was showing the important things'. Where live plants were not available, she would work from herbarium specimens. First she would do an 'indication' of where she wanted to put the various parts of the plant, to make sure it would all fit, and then 'I would just go ahead with it'. As William Stearn noted in *Flower Artists of Kew* (The Herbert Press, 1990): 'They [the drawings] portray with unimpeachable accuracy not only the habit and floral details of flowering plants growing naturally in the British Isles but also their fruits and seeds, the latter at magnifications of six to 20, a most valuable feature as information about these is often hard to find. For completion of this immense self-imposed task..... she has earned the lasting gratitude of botanists concerned with the European, flora.'

When Wilfrid Blunt published his seminal work, *The Art of Botanical Illustration* (Collins, 1950), more than fifty years ago, he reproduced the account sent to him by Stella Ross-Craig of her methods of working. So precise and matter-of-fact is this, that it repays reproduction in full:

'When making a water-colour painting of a living specimen, I first study the plant from all angles – as a sculptor might study a head when making a portrait – to grasp its *character*. To understand the structure of the flower it is some-

times necessary to use a magnifying glass. The most pleasing aspect having been decided upon, I sketch in the composition – lightly, but accurately as regards the measurements. Leaves are adjusted, within scientific reason, to make an agreeable arrangement, and flowers that have been damaged in the post or are, for any other reason, defective, are replaced in the drawing by perfect specimens. When a flowering stem is to be drawn, and room has to be left for the addition later of leaves and fruit, it may be necessary to consult herbarium specimens in order to judge the space required. At this stage consideration has to be given to the spacing of enlarged dissections of parts of the plant, if these are to be included in the plate. It is, incidentally, a great pity that so little attention is paid nowadays to the underground parts of plants; sixteenth-century artists were well aware of their importance.

The sketch completed, I work up the “portrait” in detail, beginning with fugitive parts such as quickly opening buds. Plants that change or wither rapidly present a very difficult problem to which there is only one answer – speed; and speed depends upon the immediate perception of the essential characteristics of the plant, a thorough knowledge of colours and colour mixing, and perfect co-ordination of hand and eye. Crocuses are especially awkward to manage when working indoors, for a bud one moment is an open flower the next, and it is necessary to move them at frequent intervals into a darker, or a cooler, place to restore them to their original condition. It must also be borne in mind that a painting made for scientific purposes must be completed before the plant withers, since the actual specimen figured must be dried and preserved for the Herbarium.

I find that hot-pressed Whatman paper is the most suitable for water-colour paintings of plants, as there is no ‘surface texture’ to contend with and the finest detail can be shown. An HB pencil is usually hard enough, but it is sometimes necessary to use an H for very delicate work. When a painting is to be worked up in full colour, I avoid pencil shading, which tends to produce muddy tones. Life-like solidity is obtained by the use of the minimum amount of water, together with the correct choice of colours for mixing to give the required degree of opacity.

Drawing from dried specimens has both advantages and disadvantages. The artist gains, of course, in not having to work at high pressure for a short period; but on the other hand there is the difficulty of creating the illusion of three

dimensions. This can only be overcome by a *thorough knowledge of botany and of perspective* [my italics]. When the specimen to be drawn (and it should be typical of the species) has been decided upon, the angles of the various branches and flowers must be calculated as the drawing proceeds, all measurements being accurately checked. The position of the main stems, branches etc., having been determined, flowers, and any other parts that are difficult to see with the naked eye, are boiled – or, with very fragile material, gently soaked – to facilitate microscopic dissection. The true character of such parts is thus revealed, accurate measurements are established, and perspective drawings can be constructed.

It is, of course, undesirable (for reasons of accuracy) to use colour when working from a dried specimen, and in my opinion, line-drawing is the most satisfactory method of illustration; the use of a screen in the block-making is thereby avoided, and consequently no detail is lost. I work on Bristol Board, which allows a certain amount of correction to be made, and use for preference a Gillot 290 lithographic pen, which is extremely flexible and gives a wide range in breadth of line.

The crucial words are ‘speed’, ‘accuracy’ and ‘perfect hand-eye coordination’. To the onlooker, the delicacy, the sureness of touch and the feeling which is expressed, both in the watercolours and in the line drawings, is not far off being magical. In *Drawings of British Plants*, it is wonderful the way that ink strokes are used to give depth to a flower or leaf, or denote the most precise botanical diagnostic feature like hairs on an anther filament. And the composition on the page, which includes many elements at varying magnifications, shows impressive artistry. For example, in one of the illustrations for *Drawings of British Plants*, the long fruit capsule of the Yellow-horned poppy (*Glaucium flavum*) arches from bottom-right to top-left in a most attractive way. When drawing a lemna, which is a water plant, she was forced to use a hundred-year old herbarium specimen. She didn’t like to use it, she recalls, but felt that it was much more use if it were drawn and then published. As she says of working with herbarium material: ‘I could make it live again’.

In May this year [2003], the distinguished art critic, John McEwen, wrote an admiring review of the current Kew exhibition in ‘the Spectator’, entitled appropriately ‘Meticulous artistry’. He called for the *Drawings of British Plants* to be republished, and for Stella Ross-Craig’s name to appear in the Honours List. Amen to that.

RECORDERS AND RECORDING

Panel of Referees and Specialists

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

John Poland was appointed the first ever vegetative identification referee by Records committee last year. He is very anxious to receive specimens and writes 'I am hoping that specimens coming to me this season will help strengthen the keys and cut down travel'.

The entry in *BSBI Year Book 2006* (p. 23) and his address are given here for convenience.

PLANTS IN A VEGETATIVE STATE

General: John Poland, plants sent fresh in sealed plastic bags; label 'store cool'. Sender retains duplicate. Notes on life-form (annual, rhizomatous, etc.) extremely helpful.

Poland, Mr J.P., 91 Ethelbert Avenue, Swaythling, Southampton SO16 3DF; jpp197@alumni.soton.ac.uk

Panel of Vice-county recorders

DAVID PEARMAN, *Algiers, Feock, Truro, Cornwall, TR3 6RA*; Tel: 01872 863388; dpearman4@aol.com

Recent changes since *Year Book 2006*.

Changes of recorders

Vc 6 (N. Somerset) The new joint recorders will be Mr R.D. Randall & Dr H.J. Crouch. However Mr I.P.Green will continue for this season only, and all enquiries should be addressed to him as before.

Vc 104 N.Ebudes Dr S.J.Bungard, Ceolna-Mara, West Suisnish, Isle of Raasay, by Kyle, IV40 8NX to become sole recorder. Mrs C.W. Murray retires after 40 years. She

has been responsible for three editions of the *Botanist in Skye*, and has looked after her far-flung parish with enthusiasm, energy and tact. We thank her very much indeed for all her efforts.

Changes of address

Vc 71 (Man) Ms L. Moore to 2 Lake Lane, Peel, Isle of Man, British Isles, IM5 1AU

Vc 75 (Ayr) Mr D.A. Lang to Flat 3/3, 6 Windsor Street, Woodside, Glasgow, G20 7NA.

NOTES FROM THE OFFICERS

From the Hon. General Secretary – *David Pearman*

Algiers, Feock, Truro, Cornwall, TR3 6RA; Tel: 01872 863388; DPearman4@aol.com

Minuting Secretary and Data extractor at The Natural History Museum

I had no response at all to either of these requests, which is a disappointment.

The first was a chance for an interested member to attend Council meetings and feel at the heart of the Society! The second was for somebody to extract data at the Natural History Museum, which would have meant access and involvement with the collections.

Apply to me or for the second direct to the new Curator of the British & European Herbariums, Dr Mark Spencer, NHM, Cromwell Road, London SW7 5BD, email m.spencer@nhm.ac.uk.

Linnean Prize

I omitted to congratulate Dr Pete Hollingsworth for the award in May 2005 of the Bicentenary Medal, which is awarded to biologists under the age of 40. Previous recipients in the last 20 years include Dr Richard Gornall, Prof. Richard Bateman and Dr Mike Fay.

Scottish officer

Please note the change of Edinburgh phone number to 0131 248 2894.

Archivist

Sadly, Mary Briggs has had to give up this task, due to further problems with her eyesight, for which we send our commiserations and very best wishes.

Sarah Whild, through the University of Birmingham, has very kindly offered to house these at the Gateway in Shrewsbury, where there is already a room with BSBI books and other files. We are grateful for this.

Publications

Local Change report. A flyer is enclosed. All V.c. recorders will of course receive a free copy. Publication will be by 26th April, but the pre-publication offer will be open until the end of May.

Atlantic Arc conference report. This attractive and interesting volume is now out, and though

the offer is over the price remains modest, thanks to the subsidy from English Nature.

New Cyperaceae Handbook. The whole volume is now ready for final editing which will be complete in the next few months and the flyer will definitely be in the autumn *News*. Promise!

Current Taxonomic Research on the British & European Flora. Gwynn Ellis, who is preparing this conference report for the press tells me that the book should be with the printers by the AGM, with publication in late May or early June and offers his apologies for any delay.

From the Director of Development – Gabriel Hemery

BSBI Director of Development

Director of Development post

In order to emphasise the positive progress made by the Society on so many fronts I must start my report with some less positive news. With some considerable regret I have decided to resign from my position as the Society's Director of Development. When I leave in early May I will have been in post for a little over one year, and during this time I can honestly report that I have never before had the pleasure of meeting and working with so many dedicated and enthusiastic people. Chief amongst these I must record my sincerest gratitude to David Pearman, Michael Braithwaite, Richard Gornall and Sarah Whild, and to my fellow staff Alex Lockton, Bob Ellis and Jim McIntosh. I have been fortunate, and indeed the Society, is privileged to have the close support of Andy Jones (CCW), Chris Cheffings (JNCC), Jill Sutcliffe (EN), Ro Scott (SNH) and Trevor James (NBN). I will be taking up a new post in the environmental sector where I will keep a close eye on the development of the Society and wish it every success.

Annual Report

You will have received a copy of a new publication for the Society in our *Annual Review 2005*. We hope you enjoy reading about the incredible range of activities undertaken by the Society and celebrate the successes of the year. The achievements of the Society are impressive, even before the voluntary nature of the organisation is considered. This success is down to you our members – THANK YOU!

Local Change

A wonderful example of BSBI's success can be seen in *Local Change*, our latest project to reach fruition. You can read more about the project

elsewhere in *News* and I hope that our work to promote the project jointly with Plantlife at the end of April, will help initiate interesting public debate on the issues raised and raise the profile of the Society. I also know that policy makers in the conservation agencies have already expressed their interest in the project. Once again, the Society has produced a work of great and lasting value and I congratulate the authors and many contributors.

Working with Government

I am pleased to report that our work over the last year to build a close and strategic relationship with the country conservation agencies has borne fruit. We are currently undertaking a thorough review of our data and capabilities with a view to producing a report for the JNCC and other agencies. It is hoped that this will unlock lasting support and funding for our continuing work. The report will be a blueprint for the Society's development over the next few years and should enable BSBI to receive the support it deserves from those who rely on the work of the Society.

On a similar vein, I met with CCW's Chief Scientist, David Parker, in late March. I am pleased to report that it seems that CCW and BSBI are both keen to work together in developing a new post supporting plant activities in Wales, along the lines of our very successful Scottish Officer (Jim McIntosh) in Scotland with SNH.

Gabriel's office at the Department of Plant Sciences in Oxford was closed as of the end of March. He can be contacted by email (g.hemery@bsbi.org.uk) or mobile telephone (07759 141438) until his departure on May 5th.

From the Volunteers Officer – *Bob Ellis*

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

The publication of *Change in the British Flora 1987-2004* in April brings a major period of work to a close (see Michael Braithwaite's article on page 3). I will now be able to focus again on my wider duties as Volunteers Officer for BSBI. During 2006 I will be working on a

major project supporting some of our Vice-county Recorders in the production of *County Rare Plant Registers*. This work, and indeed my post this year, is being financially supported by English Nature and I look forward to working closely with them.

From the Scottish Officer – *Jim McIntosh*

BSBI Scottish Officer, c/o Royal Botanic Garden, Inverleith Row, Edinburgh, EH3 5LR;
Tel: 0131 2482894; j.mcintosh@rbge.ac.uk

Current BSBI Scottish Computerisation Project

Currently some 100,000 BSBI vascular plant paper records from four Scottish VCRs are being computerised by BSBI contractors. The work is almost complete and the first datasets have been handed back to the VCRs with the others to follow shortly. The BSBI is very grateful to SNH for the £15,000 funding for the project, and for the painstaking diligence of the contractors and Vice-county Recorders alike.

Proposed BSBI Scottish Computerisation Project

Enthusied and excited by the success of the current project, I am planning a further, even more ambitious project to help computerise over half a million paper Scottish BSBI VCR records over 3 years, using a similar approach. An application for SNH funding is currently being prepared with the help of VCRs.

Scottish BSBI WebPages

The BSBI Scottish WebPages were launched in January and can be accessed from a link on the BSBI home page. If you have not already seen them, log on and check them out! They include Scottish BSBI news, details of Scottish field and indoor meetings, abstracts from the Scottish Exhibition Meeting and a whole page about the Scottish Officer, including his 2005 Annual Report. If you drill down deeply you may even find Scottish Committee and Scottish Officer Steering Group documents!

Site Condition Monitoring

The BSBI has just delivered the last of 27 Site Condition Monitoring reports to SNH. Over the past two years BSBI volunteers have been involved in this project to monitor the condition of SSSIs designated to protect vascular plants. The work entailed trying to refind populations of nationally rare or scarce 'target' species and reporting on their precise location and size, and whether there is evidence of regeneration or damage, using GPS, photographs, sketches and forms.

BSBI volunteers' involvement contributed greatly to the project – particularly with their expert botanical knowledge and familiarity with many of the sites. In total volunteers contributed 150 days of their time. Roughly two thirds of this was spent by 'lead' surveyors: and this was split equally between fieldwork and paperwork (report writing). A further one third were contributions made by BSBI volunteers who helped with the fieldwork. In many cases, site managers and SNH staff were also involved in the fieldwork, and this made the days very sociable – and educational!

A full analysis of all SCM vascular plant results remains to be completed, but an initial examination of the BSBI results, shows that a very high percentage of all target species were refound. Excluding a number of unsound records, 80% of target species were refound. However, only about 50% related to populations which were judged to be in favourable condition using SNH's criteria. At first this seemed rather disappointing, but there are many possible reasons for this. For example, some of the populations may never have met SNH's 'favourable condition' criteria, and even if they had, they may not have been favourable when the site was designated.

Many thanks to all the volunteers who helped with the project and to SNH for their advice and support – including financial support to cover surveyors' costs.

Change of Scottish Annual Meeting venue to Edinburgh in 2006

We have been unable to secure our usual accommodation in Glasgow this year and have therefore had to change our venue to the Royal Botanic Garden in Edinburgh. The date is remains Saturday 4 November 2006. However, in response to feedback from members attending last year's Annual Meeting, the Scottish Committee is currently considering revising the usual running order and content. More details will be announced nearer the time.

Publications changes

PAUL SMITH, 128 Llanccayo Street, Bargoed, Mid Glamorgan, CF81 8TP, pasmith@enterprise.net

I was pleasantly surprised by the new format of *BSBI News*. Having expected to at least have to acclimatise to the changes, I found the new ordering logical and the extra space from the larger page and the two-column format pleasing. Full marks for an update which seems to have lost none of the character of *News*.

Unfortunately I am not so enamoured with the change to a two-column format in the latest

Watsonia. This seems terribly fussy, because it is frequently interrupted by diagrams and tables which have to take up the width of the page. I also preferred the clarity of the abstract set clearly at the top of the first page. While the references remain handily separated on in the whole width at the bottom, this just makes the format look inconsistent. So in this case, please can we have the old page-width format back?

Good homes needed for various BSBI journals

I am offering the following journals free to anyone who can collect or pay carriage.

BSBI News complete run 1-100 (inc. index); *BSBI Proceedings* 7(1-4); *BSBI Abstracts*: 1-29; *Watsonia*: 6(4+6), 7(1-3), 8-25 (inc. index) – (except 25(3) – which I still hope to find); *BSBI Year Book*: complete run 1991-2005.

MICHAEL ARTHURN, 279 Wendover Road, Aylesbury, Buckinghamshire, HP21 9PB Tel. 01296 424768

I am short of space and would be happy to give my

back numbers of *Watsonia* and *Abstracts* to anyone who would collect them.

Watsonia 13(3)-25(4); *Watsonia Indexes* 13-24; *BSBI Abstracts* 11-29.

MARJORIE STODDARD, 1 Private Walk, Chester, CH3 5XB Tel. 01244 329183

BSBI News 49-100 available free but buyer collects or pays postage.

KEITH HYETT, 1 Tremcellynog, Rhandirmwyn, Llandoverly, Carmarthenshire, SA20 0NU; Tel 01550 760346

STOP PRESS

Dr Francis Rose will hopefully be signing copies of the 2nd edition of the *Wild Flower Key* at The Kew Bookshop, the Royal Botanic Gardens, Kew on Saturday 29th April 2006 from 1pm.

As Dr Rose is unwell, he may not feel able to attend, but in any event copies signed by him

will be available for purchase.

Please note that there is rather limited parking at Kew so either arrive first thing (the Gardens open at 9.30 am) or come by train and tube! See www.kew.org.uk/visitor/visitkew.html for more details and directions.

CONTRIBUTIONS INTENDED FOR *BSBI NEWS 103* should reach the Receiving Editor before August 1st

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Moehringia trinervia (three-nerved Sandwort), Towyn Burrows, v.c. 44. Photo R.D. & K. Pryce © 2005 (p58)

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Aikerness aeolianite site, Broch of Gurness, Orkney. Photo Effy Everiss © 2005 (p. 55)



Carex maritima (Curved Sedge) Orkney. Photo Effy Everiss © 2005 (p. 55)