

BSBI News

January 2006

No. 101



Edited by Leander Wolstenholm & Gwynn Ellis



Delosperma nubigenum at Petersfield, photo © Christine Wain 2005



Illecebrum verticillatum at Aldershot, photo © Tony Mundell 2005

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Editorial

DR LEANDER WOLSTENHOLME & GWYNN ELLIS

As members will have realised by now, it's all change for *BSBI News*. Not only do we have a new logo but also a larger page size, a full colour cover; a two column page layout, and a different order of contents.

As far as the order of contents go, we (the Editors and the BSBI Publication Committee) took the view that if we were going to change the look of *News*, we might as well go the whole hog and look at the arrangement of papers. It was soon decided that the administrative bits and pieces should move to the back of the journal, and in a complete reversal, the contents page(s) should move to the front, followed by the Editorial and an occasional note 'From the President' before the most important part of *News*, the notes and articles written by you, the members. These will follow roughly the same order as before but there seems to be little point in maintaining a strict division between 'Aliens' and 'Natives' and in future issues these might start to merge much more than here.

After the papers come the Field Meeting Reports, Book Notes, Obituary Notes and then the remainder of the Notices, Offers, Recorders and Recording (which might need renaming – any offers), finishing with Notes from the Officers and the Administration page.

Nothing here is set in stone and all comments on any aspect of the 'New Look *News*' (for or against), will be much appreciated.

There will be occasions when something will appear in the 'wrong' place. This is because we are using new Desktop Publishing software which, whilst having many benefits, does require each page to be set up individually, making it less easy to 'chop & change', and sometimes leaving gaps which may only be conveniently filled by inserting an item out of sequence.

Just before the colour pages went to the Printers we heard of the sad death of Max Walters (see also p. 63) who did so much for the BSBI in the second half of the 20th Century. There was just time to include a photograph of

Dr Walters on the back page and as luck would have it I had a picture taken by Richard Pryce at the launch of the *New Atlas of the British & Irish Flora*. I had thought of cropping the photo to show just Dr Walters, but as he and Dr Franklyn Perring were so closely linked with the first *Atlas* it seemed appropriate to include the full picture, even though a similar photo was included in *BSBI News* 92 (Jan. 2003).

Errata – Phil Smith writes 'Regarding my article on *Herniaria* in *BSBI News* 100: 23-25. The person who first discovered *Herniaria glabra* (Smooth Rupturewort) on the Sefton Coast was the late Audrey Franks in 1980' not P.S. Gateley as erroneously reported in the article.

Commiserations (or should that be Congratulations) to our past President and Hon. Gen. Sec. Mary Briggs who has had to retire from leading field meetings abroad due to failing eyesight. She tells me that in the last 32 years she has led 166 tours to 35 destinations in 29 countries. 1,048 different people have been taken on tour, and such was her popularity that many returned several times so that she actually led 2,677 'people holidays'. Well done Mary!

Apologies to John Harron, who somehow acquired an extra initial during his 30 years of membership. It is now causing some confusion and I am happy to put on record that his name is J. Harron, and not W.J. Harron.

Where are they now? – the following members appear to have moved house but have not let us know their new address. If any member can put us back in touch, please contact the General Editor/Membership Secretary.

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From the President – Richard J. Gornall

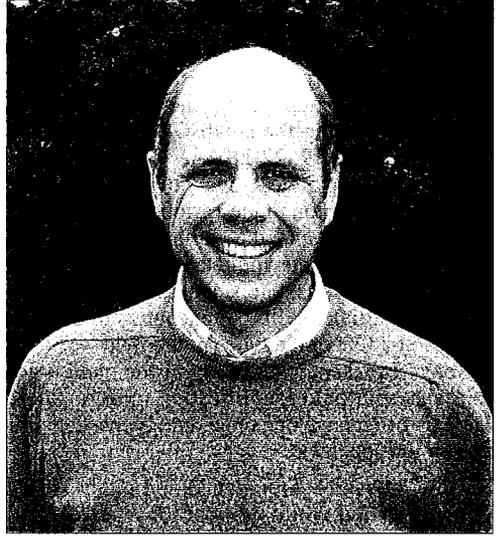
Director of Botanic Garden, Biol. Dept., University of Leicester, University Road, Leicester, LE1 7RH
Tel.: 0116 252 3394; rjg@leicester.ac.uk

BSBI News gets a makeover with the current issue, number 101. The idea to revise its format was not a spur-of-the-moment thing, and it is certainly not change for change's sake. It arose out of an opinion that the old *News* was becoming too cramped and, after what was then nearly 100 issues, needed a fresh look to see if it would benefit from being redesigned. The new format has been two year's in the making and the subject of much discussion and critical but constructive comment at the hard-to-please Publications Committee. I hope you like it. Quite fortuitously, the revamp of *News* overlapped with work being done by our new Director of Development, Gabriel Hemery, in raising the profile of the Society. Part of this brief has involved the creation of a new logo, the origins of which go back to an inspirational session in a pub in Ferryside, during 2005's AGM. Armed with the bones of an idea and subsequent (and inexpensive) input from a design company, the result is before you on the cover of this issue of *News*. I hope you like it too.

At that last AGM, the preceding President, Richard Pryce, retired from office, and I should like to take this opportunity to thank him for all the work that I know he put in, not least of which was attending nearly all of the committee meetings, dealing with all sorts of issues relating to the creation of the post of Director of Development, and writing so conscientiously for *News*. I could not ask for a better role model. So thank you, from one Richard to another.

I think at this point I should tell you a bit more about myself, as I am not exactly well-known in the Society, although I have been a member since 1975, when I joined during my final year as an undergraduate (studying Botany) at St. Andrews. After a short spell in Birmingham I went to the University of British Columbia to do my Ph.D. in plant taxonomy, graduating in 1980. It was there that I developed an interest in saxifrages, an interest that continues to this day. Returning to the UK in 1980, I was appointed to an academic post at the University of Leicester, and have been there ever since, currently Director of the Botanic Garden. With the encouragement of Chris Preston, I have also developed an interest in pondweeds, particularly from the point of view of their population genetics. As far as the BSBI is concerned, I have served on the Publications Committee continuously since

1981, and for ten years was receiving editor of *Watsonia*. For the last two years I have chaired that committee. I also served relatively recently on the Science & Research Committee.



Having been in academia all my working life, I have witnessed first hand the decline not just of taxonomy, but also botany generally, in universities. The BSBI used to be a creative partnership between professional botanists and amateurs (in the non-derogatory sense, of course), the 'gentlemen and players' who featured in Dick David's presidential address (*Watsonia* 13: 173-179, 1980). Over the last twenty five or so years, however, the balance of the BSBI has swung increasingly towards mainly amateur membership. It is my opinion that this state of affairs is unhealthy for the Society as a whole and, in my three-year presidency, I plan to try to do what I can to remedy the situation, to re-engage academics who are not, but should be, members, and also to encourage undergraduates to join. There is much to be gained from a synergy between amateurs and professionals, and I hope that forthcoming initiatives will have some effect. Watch this space ...

Splitting hairs – the key to vegetative identification

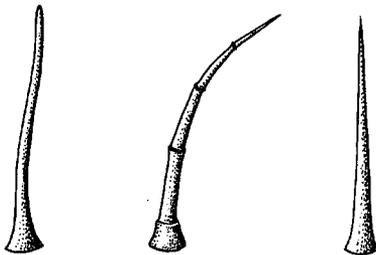
JOHN POLAND, 91 Ethelburt Avenue, Southampton, Hants SO16 3DF; jpp197@alumni.soton.ac.uk

Hairs on the leaves and stems of plants provide one means by which a plant can protect itself from the elements and predation. Consequently, a great variety of structures have evolved as 'plant defence'. Mere presence or absence of hairs is often not a good taxonomic character, but the type of hairs present on the vegetative parts of plants can give reliable clues to the identification of many species. Dr Bob Leaney has already written about the importance of hairs in separating the small *Geranium* species (see *BSBI News* 99: 22-28).

The following notes give no more than the briefest introduction to the various hair types – to list all the types and the families or genera in which they are found would take up most of *BSBI News*! Nevertheless, I hope that the reader, armed with this article, will be encouraged to look closely at a few of the types in the field.

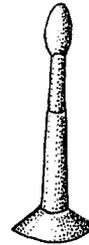
Below I present a summary of the main types to assist with field identification (N.B. a single leaf can often have one or several types, depending on the species).

Simple hairs are unbranched and either **single** or **multi-celled**. Multi-cellular (or **septate**) hairs are distinct as the septa of each individual cell is visible. This is clearly apparent with a $\times 20$ lens, although $\times 10$ will usually suffice. Such hairs can usually be recognised, even without a lens, as they crisp and distort on drying. Septate hairs are a feature of many families, particularly Asteraceae. In contrast most crucifers (Brassicaceae) have single-celled hairs. Additionally some simple hairs can be sharply bristly (**hispid**) and almost piercing to touch. Viper's-bugloss, *Echium vulgare* (Boraginaceae) is one such example.



From l – r: Single-celled (unicellular) hair;
Multi-celled (septate) hair (*Thymus* sp.);
Hispid hair (*Echium vulgare*)

Glandular hairs can be unicellular or septate but always with a swollen gland at the apex (sometimes minute and often disappearing as the volatile oil contained within escapes). Glandular hairs are fairly common across the taxonomic board and are a useful identification feature. Green Nightshade (*Solanum physalifolium*) (glandular hairy) can be readily separated from Black Nightshade (*Solanum nigrum* ssp. *nigrum*) (hairs non-glandular). The term eglandular (= non-glandular) is best deliberately avoided to prevent possible confusion whilst speed-reading.



Glandular hair (stem hair of Corn Spurrey
(*Spergula arvensis*))

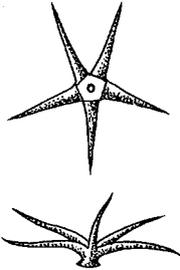
Bifid or forked simple hairs are found in Brassicaceae and some Asteraceae. A rosette leaf with at least some forked hairs and the presence of latex instantly reduces the number of possibilities in the British flora to two species – Rough Hawkbit (*Leontodon hispidus*) and Lesser Hawkbit (*L. saxatilis*)! Furthermore, the two species can be separated by the density of hairs along the leaf margin – an observation passed on to me by Dr David Streeter of the University of Sussex. Within Brassicaceae, forked hairs are mostly confined to the genera *Erophila*, *Draba* and *Arabis*. The basal leaves of Dame's-violet (*Hesperis matronalis*) can look remarkably similar to Boraginaceae, but at least some hairs are forked.



Lesser Hawkbit (*Leontodon saxatilis*)

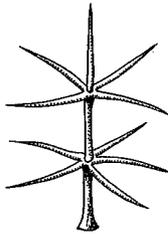
Stellate hairs are branched hairs of which the rays or arms radiate out like a star. They can be found in many families and are a feature of many crucifers (Brassicaceae) e.g. Shepherd's-purse

(*Capsella bursa-pastoris*) in which they are nearly always unicellular. The rays can be flattened or adpressed as in Small Alison (*Alyssum alyssoides*). Malvaceae is a family which typically possesses stellate hairs. Usefully, Smaller Tree-mallow (*Lavatera cretica*) can be separated from the similar Common Mallow (*Malva sylvestris*) on the greater abundance of stellate hairs on the upper leaf surface (also giving a softer touch and often a slightly greyer appearance).



Shepherd's-purse (*Capsella bursa-pastoris*)

Dendritic or multi-branched hairs are a feature of mulleins *Verbascum* spp. The petiole and lower side of the leaves of London Plane *Platanus* × *hispanica* may have some dendritic pubescence.



Mullein (*Verbascum* sp.)

Uncinate or hooked hairs are strongly recurved at the apex, forming a hook or barb. Such hairs are found in all comfrey (*Symphytum*) species (Boraginaceae) and *Picris* (Asteraceae) along with normal simple hairs. The simple hooked hairs of *Symphytum* are most unlike those of *Picris* which are often minutely bifid or trifid (like miniature grapnels). Incidentally the hairs of Bristly Oxtongue (*Picris echinoides*) are often **pustulate** or **tuberculed** (swollen at the base) in contrast to those of Hawkweed Oxtongue (*P. hieracioides*). Hooked hairs are not always easily seen but can easily be confirmed as the leaves readily stick to woolly clothing (unlike Green Alkanet (*Pentaglottis sempervirens*) rosette leaves which often resemble *Symphytum*)!



Comfrey
(*Symphytum* sp.)



Bristly Oxtongue
(*Picris echinoides*)

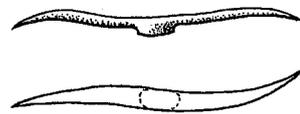
Scabrid hairs, whereby the hair surface is distinctly rough, are rare on stems and foliage and, as far as I am aware, confined to *Papaver* (except the glabrous Opium Poppy (*P. somniferum*)) and all hawkweeds (*Hieracium* (including the closely related *Pilosella*)). Some mint (*Mentha*) hairs are reputed to be scabrid, albeit obscurely so.



Poppy (*Papaver* sp.)

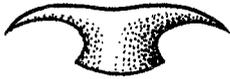
Arachnoid (cobwebby) and cottony hairs have been lumped for simplicity and are a feature of many Asteraceae including Goat's-beard (*Tragopogon pratensis*), Common Fleabane (*Pulicaria dysenterica*) and especially thistles in the genera *Carlina*, *Carduus*, *Cirsium* and *Onopordum*. However strands of mildew mycelia can look similar – observers beware!

Medifixed hairs are held totally flat against the leaf surface and 'bolted' in the middle giving a distinctive appearance. They are found in Brassicaceae and are diagnostic of the genera *Erysimum* (e.g. Treacle-mustard (*E. cheiranthoides*) and Wallflower (*E. cheiri*) and Sweet Alison (*Lobularia maritima*). Additionally, medifixed hairs are present in all *Cornus* species (Cornaceae) and thus rapidly identify this genus.



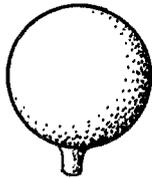
Sweet Alison (*Lobularia maritima*)

Anvil-shaped hairs are confined to Hop (*Humulus lupulus*) where they are undoubtedly act in lieu of tendrils in order to climb and twine. The hairs instantly separate it from the superficially similar Grape-vine (*Vitis vinifera*) or Virginia-creeper (*Parthenocissus* spp.)



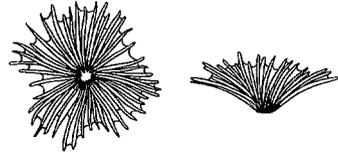
Hop (*Humulus lupulus*)

Vesiculose or bladder hairs characterise the genera *Atriplex* and *Chenopodium* (although absent from some species). These hairs, appearing like rather large sessile glands, often soon rub off so it is best to look at the youngest leaves. The shape is subtly different between the two genera, typically spherical in *Chenopodium* and often, more or less, flattened in *Atriplex*. Bladder hairs may have evolved to rid the plant of excessive amounts of salt in the tissues.



Spherical bladder hair of Fat-hen
(*Chenopodium album*)

Peltate scales. Although not strictly hair, the plate-like armature of the Sea-buckthorn family (Elaeagnaceae) deserves a mention. This is useful in confirming Sea-buckthorn (*Hippophae rhamnoides*) and the widely introduced Oleasters (*Elaeagnus* spp.)



Sea-buckthorn (*Hippophae rhamnoides*)

Incidentally, true aquatic plants are never hairy (like Olympic swimmers!) as the hairs would soon clog with mud and other particles. However they may have a few stiff bristles which are a useful identification aid in their own right (e.g. on the leaf apices of water-crowfoots (*Ranunculus* subgenus *Batrachium*)). In a few species, emergent stems and leaves can become hairy, for example Uruguayan Hampshire-purslane (*Ludwigia grandiflora*).

I am indebted to Delf Smith for providing such superb illustrations at short notice, and to Eric Clement for his useful comments on an earlier draft. Thanks also to Francis Rose for his recent support. As always, I welcome all observations or corrections from readers.

Sheathed Sedge (*Carex vaginata*): an update on its status in the Northern Pennines

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Since the discovery of *Carex vaginata* in the Northern Pennines in Cumberland (v.c. 70) and Westmorland (v.c. 69) in 2002 (Corner 2003), as had been anticipated many well localised additional patches each covering several square metres have been found scattered over a wide area at altitudes over 700m (Roberts 2003, 2004, 2005). This note presents updated information on its distribution in the only area of England where it is known to occur.

In 2004, L.R. discovered a patch on a flushed grassland slope in Knock Ore Gill, the first record

of this species from within the Moorhouse National Nature Reserve with Ron Groom adding a second patch nearby on a later visit. Shortly afterwards F.J.R. and Mike Porter found another small sterile patch in limestone turf at the edge of a limestone sink hole in an enclosure also within the Moorhouse NNR and not far from the former sites. It is significant that these plants had remained undetected by the many botanists who visited this enclosure to examine long introduced species from the Scottish Highlands by the then Nature Conservancy Council.

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Also in 2004 L.R. and R.C., in an attempt to extend its range to the south, visited Meldon Hill (767m) and found a single patch of 8m x 3m and three inflorescences on the north west side in the typical flushed grassland habitat.

In July of the same year a group including R.C. and L.R. searched for the sedge on Little Fell (746m) to the south west of Dufton Fell and within the Warcop Army range. Although the habitat looked favourable below the summit limestone escarpment, disappointingly no plants were found. Another group led by L.R. in 2005 to the same area was also unsuccessful.

F.J.R. was very active on Crossfell in 2005 and discovered three new patches (Roberts 2005). On the north west side of Little Dun Fell at 800 metres, the highest altitude yet found in the area for the sedge, an impressive concentration of many fruiting plants was present on the edge of a peat bank where conditions looked decidedly acid, although there was a slight degree of flushing from above where another smaller patch with a single fruiting stem occurred. The third patch with a single fruiting plant occurred on the north side of Knock Fell where some plants were unusually rooted in *Sphagnum*, a feature previously noted by R.C. in the Ettrick Hills in Selkirkshire (v.c. 79).

It seemed highly likely that Mickle Fell (790m) to the south held plants and in July 2005 R.C. and Geoffrey Halliday made an attempt to find it. After searching they found a patch of 5x3m containing a single inflorescence in poor condition on the north west end in v.c. 69. A hurried examination of part of the northern slopes to the east in North West Yorks. (v.c. 65) failed to reveal any further plants.

It was important to see if the sedge did occur on the Yorkshire part of Mickle Fell so another visit was

organised. Mickle Fell covers a large area and has an aura of botanical inaccessibility not only because of the long walk over guarded grouse moor country but because it lies within the danger area of the Warcop Army firing range. Non-firing days are now few and far between so a visit needed to coincide with a non-firing day. Luckily a non-firing weekend became available in early August at a convenient time and had the bonus of excellent weather conditions as R.C., F.J.R. and L. R. set off on a long day's botanising. Having reached the foot of Mickle Fell they traversed below the south facing limestone cliffs on the Yorkshire (v.c. 65) side and were eventually rewarded most unexpectedly with a large sterile patch of the sedge extending some 30m down and 10m across the flushed grassy slope. This was quite a bonus and a complete surprise to R.C. who thought that it would most likely be limited to the colder north facing side of the fell. Notes were made on a large population of non-flowering Alpine Forget-me-not (*Myosotis alpestris*) and several colonies of Spring Gentian (*Gentiana verna*) as they crossed over to the north side and concentrated on searching the flushed grassland habitats there. After some time a further four sterile patches of the sedge were found towards the eastern end in v.c. 65, two of which were in close proximity. All these colonies appear to be within the Upper Teesdale NNR boundary.

Carex vaginata has the reputation of being 'shy-flowering' but as F.J.R. (Roberts 2004) points out 'erratic flowering' may be more appropriate. Although most of the patches seen had none or very few flowering stems, others had an abundance. L.R. saw a patch on Green Fell with 50 stems, R.C. another on Dufton Fell with 100 stems in an area of 10m x 10m and F.J.R. described the densely fruiting patch on Little Dun Fell. This ability to set seed is in agreement with the findings of French *et al.* (2005) who showed from DNA studies of Pennine and Southern Upland populations that sexual reproduction and seed dispersal was the primary mechanism for the formation of new patches. Plants brought into cultivation do seem to fruit relatively freely and L.R. has noted many seedlings around the plants in her garden. It is also noted to be an early flowerer as plants in cultivation produce exerted stigmas in mid-April, well before the sedges of the Common Sedge (*Carex nigra*) group kept under the same conditions.

It would be intriguing to know if this sedge occurs further south on the higher limestone hills of the Yorkshire Dales or to the east on the Yad Moss/North Teesdale hills. It may however be a speciality of the Cross Fell and Mickle Fell ranges which are higher and have a much greater area over 700m. The hills to the south and east are probably just not high enough to support populations under the present conditions. The absence from Little Fell above Warcop is diffi-

cult to explain as the habitat and altitude seem ideal. It still remains a very local and easily overlooked species within the area and sterile plants need close examination to differentiate them from Stiff Sedge (*Carex bigelowii*) which can grow in close proximity although the habitat requirements generally differ. The usually well defined and localised nature of the patches is noteworthy.

In conclusion, *Carex vaginata* has been found to occur as some 18 patches each covering several square metres in hectads NY 63, 72, 73, 82 and tetrads NY 66.34, 66.36, 70.30, 70.32, 72.30, 74.28, 76.28, 78.24, 80.24, 82.24. in vice-counties 65, 69, and 70. It has been shown to occur from Green Fell in the north to Mickle Fell in the south east, a distance of 19.5km. The altitudinal range is 700m – 800m with the habitats facing all aspects. Flowering is erratic and although many patches appear sterile others have an abundance of inflorescences. More searching within

its presently known range will almost certainly add further populations.

Acknowledgments

Geoffrey Halliday should be thanked for organising the 2004 visit to Little Fell in conjunction with Major T. Campbell the Warcop Range officer and the initial visit to Mickle Fell in 2005.

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A newly reported site for *Gentianella anglica* (Early Gentian) in South Hampshire

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At the beginning of June 2005 I received a report and photographs from Betty Hansell (Conservation Officer for Qinetiq) of an early-flowering *Gentianella* on one of the company's establishments at Portsdown, S Hants (v.c.11). On 8th June I visited the site with a posse of local botanists, when we were made very welcome by members of the enthusiastic site conservation group.

The *Gentianella* was flowering well on that date, having reportedly started to flower in the first week of May, and plants were still coming into bloom. The total count of plants was 120, and we measured 59 plants which had terminal flowers well enough developed to have corolla length assessed. The measurements taken were those described in Rich *et. al.* (1997), and analysis of the results not only confirmed that the population contained *Gentianella anglica* (Pugsley) E.F. Warburg, but also suggested the presence of the hybrid *Gentianella amarella* × *G. anglica* (*Gentianella* × *davidiana* T.G.C. Rich), not previously recorded in Hampshire. I hope to present the findings in a more general review of morphological evidence for hybrids in Hampshire *Gentianella anglica* populations.

The early flush of flowering *Gentianella* was reported to have finished in the third week of June (somewhat undermining the case for hybridization!). I revisited the site on 22nd August to assess

populations of *Gentianella amarella* (Autumn Gentian). There were far fewer plants of this, and I was able to take measurements from just 10 plants. However there was a scattering of *G. amarella* elsewhere on the site, whereas a search of the other suitable habitat in June had revealed no *G. anglica* elsewhere.

The location is a rich piece of chalk grassland within the Portsdown Technology Park on the northern slope of Portsdown Hill, now surrounded on three sides by low buildings and open only to the north. (Readers should note that this is a secure defence industry site with no public access.) There is a mosaic of CG2 *Festuca-Helictotrichon* and CG3 *Bromus erectus* (Upright Brome) grassland, which is by no means pristine: paths have been constructed across it, one section lies over an underground storage tank, part has been terraced and building construction has encroached on several fronts. Yet it preserves a fine flora characteristic of the area including *Thesium humifusum* (Bastard-toadflax), *Hippocrepis comosa* (Horseshoe Vetch), *Genista tinctoria* (Dyer's Greenweed), the eye-bright *Euphrasia pseudokernerii*, many common chalk grassland species and an abundance of orchids including strong populations of *Gymnadenia conopsea* (Fragrant Orchid), *Anacamptis pyramidalis* (Pyramidal Orchid), *Ophrys apifera* (Bee Orchid) and *Spiranthes spiralis* (Autumn Lady's-tresses).

The *Gentianella*, as might be expected, occurs mainly within the CG2 grassland and especially where there are signs of past disturbance and a poorly-developed soil profile. In fact it was particularly abundant in an area where footings for the adjacent buildings have obviously disturbed the soil, despite the fact that this area must now be shaded for much of the spring.

Grazing is not feasible on the site (apart from some low-level rabbit activity) and it is currently mowed late in the season, cuttings being removed by hand raking. It was evident that many of the staff took pleasure and pride in their 'patch'; and now that the site manager understands that he is not expected to let his grounds revert to a scrubby wilderness, he is sympathetic. I have suggested that a programme of occasional disturbance to the sward in limited areas would be beneficial to the *Gentianella*, along the lines suggested in Rich (1997).

In comparison with its status in neighbouring Dorset (Edwards & Pearman (2004)) and the Isle of Wight (Pope, Snow & Allen (2003)), *G. anglica* in Hampshire is less widespread and in general less abundant. It does not enjoy the favourable combination of more or less natural conditions providing short, open turf in those counties, and appears to rely heavily on other forms of disturbance to persist. The best-known sites in Hampshire are those at Martin Down and Vernditch (v.c. 8, SU0.1 / SU0.2) where the main populations are on a former rifle range, on ancient earthworks and along the sides of a bare chalk track; the extraordinary site at Ashley Hole in the New Forest (v.c. 11, SU20.15) where it grows on chalk spoil (possibly from Martin Down) dumped in the middle of a New Forest heath to provide wartime target practice (a literal example of 'X marks the spot'); and Noar Hill (v.c. 12, SU74.31) where it is in old shallow chalk workings. Elsewhere there is a scattering of records on downland across the centre

of the county, mostly in small numbers and none very recent.

On Portsdown Hill it was first reported by M.H. Widgeood in 1913 (unlocalised), cited in Wilson (1999). There appear to be no further records until 1975, when it was reported above the eastern end of Paulsgrove chalk pit (v.c. 11, SU63.06) by M. Bryant, cited in Brewis *et. al.* (1996). The site is not part of the spectacular modern chalk pit, but in older shallow workings above and to the north-east of it. It lies on the other side of the ridge from the new site, only 300 metres from it in a direct line. Surprisingly there have been no records here since. John Norton and I independently made cursory searches in 2005 but without success. However plenty of suitable ground remains here and elsewhere on Portsdown, and a programme of scrub reduction and grassland management by Portsmouth City Council may help to revive its fortunes.

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White Wood-rush (*Luzula luzuloides*) naturalised on Great Dun Fell, northern Pennines, Cumbria

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In May 2005 as I approached the summit of Great Dun Fell in v.c. 69 from Cross Fell to the north, I noticed in the Fescue/Bent (*Festuca Agrostis*) grassland at 840m many quite prominent scattered light green rosettes of a *Luzula* species which I didn't recognise immediately. The penny then dropped that they must be derived from the patches of *L. luzuloides* contained within the fenced off precincts of the Radar station and described by me and Linda Robinson (Corner & Robinson 2002). The rosettes were present up to

80 metres away from the fence and had been partially grazed by sheep. *L. luzuloides* is normally thought of as a woodland plant introduced to the British Isles as ground cover for birds. It had however been introduced around the station during the landscaping period when it was reconstructed in 1986/88 (Anderson (2001)). Seed from these plants must have been carried in the prevailing south westerly wind to the north of the station and germinated in the turf with the milder Winters of recent years having probably helped this process.

This site lies in the centre of the Moorhouse National Nature Reserve and it is worrying that this alien species has escaped from the confines of the station and become established in the reserve. It is unfortunate that alien species were introduced to the station site during landscaping (Corner & Halliday 2002). Colonisation by the *Luzula* outside the station is at an early stage but given time it is possible that it may form extensive beds similar to those of the Great Wood-rush (*Luzula sylvatica*) although it is not as robust as that species. It has already completely dominated the area where it occurs within the station fence where grazing is absent. As far as I am aware none of the other species thought to have been introduced around the station have 'escaped' into the reserve. The situation needs to be monitored

and action taken if the *Luzula* poses a threat to the native flora although the area presently colonised has no plants of special interest. It may however be kept in check by grazing which thankfully has been reduced within the reserve since the advent of Foot and Mouth. At best it may remain a botanical curiosity.

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Plant Rings

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Like, or not so like, a 'Fairy Ring', at SU101.643 on Milk Hill at Pewsey Downs NNR is a clonal ring of *Carex flacca* (Glaucous Sedge). The ring grows in *Festuca-Avenula* pasture (CG2) on a steep south west facing scarp. When seen on May 9th 2005 the ring had a width of around 1m, and the circle it made had a diameter of 19m to its outer edge. The ring was complete except at its north west edge where it had failed to pass through a group of active Badger setts.

This ring can most probably be explained by vegetative growth and death, like the rings often made by other plant species that can spread by vegetative growth. It is, however, remarkable for its size and age. Assuming lateral growth at around 5-10cm per year, the clonal ring at Milk Hill may be 100-200 years old.

More like 'Fairy Rings', and not so easy to explain, is a group of rings seen in a field near Bath. The field slopes gently to the west on limestone brash and the grassland is good *Bromopsis erecta* meadow (CG3). Several rings of varying size were seen when the field was visited on May 1st and June 21st 2005. The largest and most circular ring had a width of 2m and the circle it made had a diameter of 11m to its outer edge.

These rings were not marked by the presence of a plant species, but rather by the absence, or near absence, of two species, Hogweed and Cowslip, that were otherwise abundant across the entire field. Hogweed (*Heracleum sphondylium*), was absent from the rings but was abundant within and outside the rings as juvenile and mature flowering plants when observed on June 21st 2005. *Primula*

veris (Cowslip), seen earlier on May 1st 2005, was present in the rings only as scattered non-flowering smallish plants, but was abundant as flowering and juvenile plants within and outside the rings (see Colour Section, plate 1). The outer edge of the rings was marked, as judged by the presence or absence of plants, by a clearly defined and smooth boundary, while the boundary on the inner edge of the rings was irregular and less clearly defined. This applied equally to the distribution of both *Heracleum sphondylium* and *Primula veris*. Regarding the other species present, it appeared that these were uniformly distributed outside, inside and within the rings, so far as could be seen. These species included *Anthoxanthum odoratum* (Sweet Vernal-grass), *Carex flacca* (Glaucous Sedge), *Bromopsis erecta* (Upright Brome), *Plantago lanceolata* (Ribwort Plantain), *Ranunculus acris* (Meadow Buttercup), *Ranunculus bulbosus* (Bulbous Buttercup), *Rhinanthus minor* (Yellow Rattle), *Lotus corniculatus* (Bird's-foot Trefoil), *Taraxacum officinale* (Dandelion) and *Lathyrus pratensis* (Meadow Vetchling).

These rings had not been noted in previous years, although they may have been overlooked, and there is no evidence that they were due to some physical cause, or to human activity, such as the placing of round bale feeders. They are most likely natural features, possibly an interaction between a soil inhabiting fungus and the two flower species, *Heracleum sphondylium* and *Primula veris*. If this is the case then the ring like growth pattern would suggest that the fungus is more likely to be saprophytic than parasitic, feeding off organic matter distributed

more or less evenly throughout the soil, rather than on scattered individual plants. This is despite the elimination of the two flower species at the point that they came into direct, or indirect, contact with the growing edge of the fungus, or at some point ahead of or behind the growing edge. Accepting the above, and assuming that the nature of the interaction between the fungus and the two flowering plants is constant over

time, it might be presumed that lateral growth of the fungus is rather slow, as mature flowering plants of *Heracleum sphondylium* and *Primula veris* were seen to have re-established in abundance within the rings.

I have not come across rings of this type before and cannot recall or find any reference to such rings, and I welcome any comments or observations that may add to this note.

Observations on acid grassland flora of Thornhill, Southampton

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Thornhill is an eastern suburb of Southampton covering an area of about two square kilometres and bounded by the A334, A27 and A3024. This area varies from 40m (c. 130ft) to 75m (c. 250ft) above sea level. There is higher ground to the north (Thornhill Park) and to the south (Hightown) and these areas have a light, gravelly soil. The same conditions occur on a flat area by the A3024 in the west (at Thornhill Primary School and Donkey Common). In the middle of Thornhill the lower ground overlies London Clay.

One hundred years ago the high ground on the north side (Thornhill Park) was mainly parkland plus mixed woodland. Similar woodland existed on the north-facing slope on the southeast edge of the area (Dumbleton's Copse) with part of the then very extensive Netley (=Sholing) Common extending eastward beyond it to the villages of Bursledon and Hedge End. On the low ground in between these two areas there was a small lake and a tiny stream but otherwise mainly cultivated land. The gravel plateau where Thornhill Primary School now stands was a strawberry growing area. 'Donkey Common' immediately west of Thornhill School still exists. In the 1950s much of the area was built over to create Thornhill estate, which now has a population approaching ten thousand.

Today the only remnant of the woodland/parkland to the north is the 20-acre Thornhill Park Wood but Dumbleton's Copse still exists to the southeast. The lake and the cultivated land have all gone but remnants of acid grassland occur sporadically on shallow roadside banks and terraces within the built up area. At Thornhill Primary School and to the southeast (Hightown) there are some more significant areas of acidic grassland, most notably on the NW facing slope at Hannay Rise and on a flat unfertilised field adjacent to the Eastpoint Community Centre. There are even some significant remnants of dry heath land at Hannay Rise,

although similar heath land at 'Donkey Common' has disappeared in the last 25 years.

To the immediate east of the Thornhill area the largest surviving remnant of the formerly extensive heath land exists. Known simply as Netley Common, much of this area is managed by the Hampshire County Council and even contains a small pocket of valley mire (peat bog).

The main focus of this article is the flora of the unfertilised acid grassland of the Thornhill area. Apart from Netley Common, where a strong population of Rabbits still exist, all of this is mechanically mown. The typical flora is much as would be expected for acid grassland and includes *Ranunculus bulbosus*, *Cerastium diffusum*, *Arenaria serpyllifolia*, *Montia fontana*, *Hypericum humifusum*, *Erophila verna*, *Aphanes inexpectata*, *Ornithopus perpusillus*, *Vicia sativa* ssp. *nigra*, *Erodium cicutarium*, *Geranium molle*, *Centaureum erythraea*, *Prunella vulgaris*, *Plantago coronopus*, *Galium verum*, *Sherardia arvensis*, *Leontodon* sp., *Pilosella officinarum* and *Luzula campestris*. In addition there are several species of both *Trifolium* and *Veronica*. The former include *T. micranthum*, *T. ornithopodioides* and *T. subterraneum* whilst the latter include *V. officinalis* and *V. filiformis*. Amongst these are some species of greater interest, at least to the local botanist:

Moenchia erecta (Upright Chickweed): Found on two grassy banks in the council estate, at Burke Drive and at Medwall Green. Found at four other sites on the estate in 2005. There are currently only three other known sites in inland south Hampshire away from the New Forest.

Scleranthus annuus subsp. *annuus* (Annual Knawel): There is one site at Holcroft Road on a shallow roadside bank that was still flourishing in 2005. This is probably the only site within the Southampton city boundary and it is a declining in Hampshire generally.

Erodium moschatum (Musk Stork's-bill): This species is listed in *The Flora of Hampshire* (1996) as a very rare native but is now locally common on the lawns and greens of the Hightown area as well as in similar habitats at Millbrook in the west of Southampton.

Linum bienne (Pale Flax): Huge colony (many hundreds or thousands) in western half of the field next to the Eastpoint Community Centre. Also still on Netley Common. In Hampshire this species is rarely found in quantity away from Portsmouth and there no other extant sites within eight miles of Southampton city centre to my knowledge.

Geranium rotundifolium (Round-leaved Crane's-bill): Recently discovered at Warburton Road, Hightown on a shallow grassy bank. This species has only recently spread away from the coast of Hampshire in the last ten years. Also present in Southampton city centre.

Mentha pulegium (Penny-royal): Recently found in quantity on a lawn at Farringford Road although probably originally planted. There are also populations within the New Forest area.

Thymus pulegioides (Large Thyme): Native or established colonies of thyme occur on some garden lawns on the estate. One colony was determined as this species.

Pilosella aurantiaca (Fox-and-cubs): Widely scattered in Thornhill with many small populations usually on garden lawns or by roadsides. Scattered sites elsewhere in Hampshire but unusually abundant in the Thornhill area.

Pilosella flagellaris ssp. *flagellaris* (Shetland Mouse-car-hawkweed): Discovered in 2004 at two sites at Hannay Rise and Warburton Road, Hightown about 300m apart (confirmed by E.J. Clement). In 2005 it was found in at least two other places on the estate i.e. at Lydgate Green (between the first two sites) where it covers a garden lawn and at Cope View (some 400m to the east of Hannay Rise). This scarce alien was last recorded in Hampshire in 1976.

Spiranthes spiralis (Autumn Lady's-tresses): Many thousands of plants on the Thornhill School Playing Fields and also present at nearby Carey Road. Further known sites in Hightown, Thornhill Park and Harefield. There are two huge colonies elsewhere in Southampton. Most populations found to favour soils on River Terrace Gravel.

Carex caryophylla (Spring Sedge): Still extant on a grassy bank at Macefield Green, Thornhill Park. Growing with large quantities of *Montia fontana* ssp. *chondrosperma* (Blinks).

I think I'm going to keep looking down when walking around Thornhill!

A "Lizard" clover in South Devon

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Whilst conducting a survey of the Bolt Head to Bolt Tail SSSI under English Nature's National Volunteer Programme this year, Peter Reay and Wendy Rees found a clover which PR recognised as *Trifolium incarnatum* subsp. *molinerii* (Long-headed Clover). I was asked to visit the site and confirm the identification. I was able to do this within a few days, on 27 June, when PR and I searched similar habitats in the vicinity.

The SSSI, which is owned by The National Trust, consists of mineral-rich Lower Devonian schists forming cliffs rising to some 120m for about 9km, facing mostly south west. The plant occurs principally on thin soils on the cliff edge in short, relatively open, vegetation where there is less competition than in the denser grasslands dominating the higher slopes, i.e. an MC5 maritime therophyte community (see photos in Colour Section, plate 3).

Three distinct populations were found, separated by about 150m and 300m. At the original site, the population extends over 80m where it was sometimes the dominant species over sev-

eral square metres. A fourth very small colony was found in taller, denser vegetation at a fourth site. At this time there were very few flowers remaining and most plants were in seed. Another very small patch was found, nearly 3km to the east of the original find, by PR in August.

Most of the colonies were situated well away from the modern coast path, though a substantial colony occurs within a metre or two of it. It is difficult to understand how it has been missed during the past. However, the populations on the Lizard are subject to considerable fluctuations (Wigginton 1999) and Cornish botanists are saying that this year has been one of the best in living memory for the Lizard *Trifolium* spp. (Simon Leach pers. comm.). This may help to explain the lack of earlier observations in this area.

There are specimens collected in 1855 by E.T. Bennet near Dartmouth in **BM** and another collected by F.A. Brokenshire in 1909 from near Budleigh Salterton in the Hiern herbarium at **RAM**. While these records are not currently

regarded as native, the Dartmouth locality at least, is likely to be on soils similar to those at Halzephron Cliff in Cornwall.

This find amplifies the comparison, made by more than one observer, of the mica and hornblende schists of the Start Point to Bolt Tail area to areas of similar geology on the

Lizard Peninsular. The current thorough examination of the flora could not have been more timely.

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Urban/Suburban Ferns

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I read with particular interest the articles about ferns growing on walls (*BSBI News* 98: 28-30; 99:41; and 100:28-29.), since, in the late 1990s, I noticed plants of *Ceterach officinarum* (Rustyback) growing on a farmyard wall at Singleton in Lancashire (v.c. 60). The yard appeared to be disused and the plants were growing on the SW face of the wall, which adjoined a minor road. The wall was built of engineering or smooth-faced fletton bricks, dull red in colour: it was probably built in Victorian or Edwardian times together with some farm buildings adjoining. The question arises: why does this fern seem to prefer walls built of this type of brick and of a certain age? Previous correspondents have postulated theories.

To quote from E.J. Lowe: 'A local fern, growing on walls and ruins from the sea level to an altitude of six hundred feet'... 'abundant in the west and north-west of England ...Ireland, abundant but local.' and again: 'The *Ceterach* is said to require a rough porous soil of sandy loam, with fragments of limestone, and kept rather dry.' The last three words perhaps give one vital clue: the plant likes a free-draining habitat but with precipitation of rain occurring frequently.

The presence of lime in the substrate is also required or at least is highly desirable, as already postulated by correspondents, but is there also another requirement that some kinds of brick can supply in particular? The plant is not confined to brickwork, but one wonders if the substrate in these other sites have something unusual but in common with the kinds of brickwork mentioned. It may well be revealing to know where the clay for the various bricks was dug out and what the chemical composition of the clays were. In Lancashire engineering bricks for house-building in the 19th century were known as Accringtons – from the town of that name. Where did the bricks of the old chapel in Loftus come from? Alternatively, the sand used in the lime mortar for the brickwork may have contained some special chemical.

If a member wishes to take this matter further, I could provide more details of the Singleton site. Nurserymen/women specialising in ferns may also provide extra evidence.

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Spindles and Dogwood trees

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Spindles (*Euonymus europaeus*) and Dogwood (*Cornus sanguinea*) are usually given the 'shrub' rather than the 'tree' designation (see Table 1). Mud Lane, an ancient track SW of Savernake Forest, has such a mixture of old native woody trees and shrubs that walking it gives the impression of going back to the time of Victorian botany books. There are Hollies, Crab Apples, Buckthorns, Spindles, and Dogwoods of exceptional sizes and ages, many of each achieving 'tree' rather than 'shrub' status, with hefty trunks.

Most surprising were the Dogwood trees, a change from the usual insignificant head-high hedge-fringe shrubs. Such trees occur very occasionally in old lanes around, but not in, Savernake

Forest. They are much taller than the post-war British Flora maxima (see Table 1). More impressive than single-trunk Dogwood trees was a six-trunked one in Mud Lane, but with four trunks killed by ivy. This low-forking tree had a basal bole measurement of 2m circumference at 30cm (1ft) above ground level, the two living trunks with girths of 25 & 40cm at 1.5m (5ft). The trunk base seemed to be one ancient stem rather than coalesced contiguous root suckers, but it might soon split apart from the weight of ivy on the six splayed trunks.

Boulger's book (see Table: Cassel & Co., Victorian but undated) describes in detail the

Spindle-tree, particularly in Forfarshire, where the last greatest concentrations of Spindle trees over 10m (35ft) once grew, with girths of 140cm. Along with the comparably large Dogwood trees, it seems the biggest and best were always taken for turnery, cooperage and numerous other usages until few or none were left, when Holly wood was substituted.

We read of the dangers of genetic impoverishment of tropical rain forest timbers, such as mahogany, because the best specimens have always been selectively removed. This appears to have happened to Spindle and Dogwood in the decades or centuries before the Victorian era in the British Isles. Perhaps we should collect berries from the best Mud Lane tree.

	Boulger, G.S. 'Familiar Trees' (1890?)	Prime, C.T. & Deacock, R.J. British Flora (1948)	C.T.M. British Flora (1989)	Stace, C. British Flora (1997)	Mud Lane (2005)
Spindle (<i>Euonymus europaeus</i>)	Shrubs & Trees. Trees to 10.5m; girth of trunks to 140cm.	Shrubs. To 4.5m	Shrubs & Trees (to 6m)	Shrubs & Trees to 8m	Shrubs & Trees. Over 6m. Girths (at 1.5m) over 60cm
Dogwood (<i>Cornus sanguinea</i>)	Shrubs & Trees. See above. 'Both trees (species) of about the same size' (Spindle & Dogwood)	Shrubs to 2.1m	Shrubs to 4m	Shrubs to 4m	Shrubs & Trees. Over 6m. Girths (at 1.5m) 30-40cm. One tree with a basal circumference (at 30cm) of 2m!

Table 1. Spindle & Dogwood. Comparisons of heights & trunk girths.

A very vulgar *vulgare* ... or 'fascinating fasciation'

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The spear thistle (*Cirsium vulgare*) pictured below was encountered in an extensive, sometimes dense patch of thistles in semi-improved pasture near Redmire in North Yorkshire (v.c. 65). From a distance, it looked like a piece of dead wood; closer inspection showed it to be a single thistle-stem developed into numerous laterally-arranged fibre-like growths of minimal thickness. Many of these had spiny outgrowths of foliage.

This specimen was virtually surrounded by normal forms, and well towards the middle of the field. Chemical treatment thus seems an unlikely cause of this spectacular example of teratology. Presumably, the answer lies in the genes! Irrespective of the origin of this freak, is ten centimetres plus, as evidenced by my plastic ruler, a record for such distortions?



Longevity of botanists: a Lancastrian sample

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It has long been noted that botanical pursuits can contribute to an active, long and healthy life. In earlier times many botanists were trained as doctors, who gained a good deal of botanical knowledge as part of their medical education. They presumably also learned to look after themselves in later life.

While writing a chapter on botanists who contributed to our knowledge of the plants of South Lancashire (v.c. 59) for a forthcoming Flora, I calculated that those treated therein, whose dates of birth and death were known, achieved an average age of 70.55 years. To permit comparison with other professions or pastimes, I have analyzed the

data below. Since my selection of these 111 botanists was somewhat arbitrary, and could have introduced a sampling bias (for example, those dying young may have been unfairly overlooked), one should not perhaps read too much into these figures. They may however reassure the present generation of field botanists about their future prospects, and perhaps even help to recruit some new recorders keen to adopt a botanical lifestyle.

In this account, living botanists have been excluded. Ages have been calculated from the years of birth and death, which slightly over-estimates their actual age.

Half-Century of birth	Longest-lived	Shortest-lived	Average age	Sample size
1601-1650	78	54	66	2
1651-1700	92	55	67.3	3
1701-1750	74	56	65	2
1751-1800	89	53	64.8	24
1801-1850	91	46	66.8	43
1851-1900	87	33	71	33
1901-	96	63	76.3	4

Many botanists who worked in S. Lancashire (v.c.59) were not born in the county. Here are the comparable figures for native-born (v.cc. 59 & 60) Lancastrians:

Half-Century of birth	Longest-lived	Shortest-lived	Average age	Sample size
1601-1650	54	54	54	1
1651-1700	55	92	73.5	2
1701-1750				0
1751-1800	89	53	69.5	19
1801-1850	82	46	71.6	20
1851-1900	87	33	70.2	18
1901-				0

While it would be a major exercise to compare these figures with overall mortality rates, it is instructive to examine the data for 1901, where deaths in that year in England and Wales fell into the following age classes (according to www.statistics.gov.uk/statbase): (see table overleaf)

Category	0-24 yrs	25-34 yrs	35-44 yrs	45-54 yrs	55-64 yrs	65-74 yrs	75-84 yrs	85 yrs +
All	247,831	30,317	38,618	46,238	58,135	66,606	51,233	12,607
%-age	45	5	7	8	11	12	9	2

The figures for botanists are broken down here into the same age classes (though only two of our botanists actually died in 1901)

Category	0-24 yrs	25-34 yrs	35-44 yrs	45-54 yrs	55-64 yrs	65-74 yrs	75-84 yrs	85 yrs +
All	0	1	2	9	25	32	29	13
%-age		1	2	8	23	29	26	12

So while the adult cohort from 65-74 years has the highest percentage of deaths in both examples, 38% of botanists active in Lancashire, compared to 11% of people dying in 1901, survived to the age of 75 or more.

It appears, therefore, that botanists (or more precisely, botanists who supplied plant records for publication) achieved notably more longevity than the general population. Lest it be thought that the figures are skewed by the inclusion of females as well as males, our Lancastrian recorders were overwhelmingly masculine and one of the few females in the sample (Emily Margaret Wood, 1865-1907) clocked up only 42

years. Although Nora McMillan* achieved 96 years (by my method of counting), she only exceeded John Blackburne by two years, and he had the handicap of living mainly in the 18th century.

Finally, if one examines the ages of people who actually compiled and edited Floras of Lancashire (excluding Furness), their average age comes to 70.4 years (range 39-89 years), which is virtually the same figure as for recorders as a whole.

* Who wrote this note: Longevity in conchologists. *Conchologists' Newsletter* no. 25, p. 46. 1968.

Pollen (In)fertility

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The current project to revise *Hybridization and the flora of the British Isles* (*BSBI News* 99: 10-16) will have encouraged members to record hybrids, but their identification can be tricky. Sterility, either partial or complete, is diagnostic for most hybrids but it is often hard to decide whether a plant is able to set seed or not. The fruits may be immature or the plant may be self-incompatible and have no pollen donor within range. It is much easier to assess fertility by examining the pollen under a microscope and the technique is so easy that anyone can do it, provided that they have access to a compound microscope with a x10 (low power) objective.

The technique, which was demonstrated at the Recorders' Conference in September, is as follows: stamens are placed in a drop of stain on a microscope slide and squashed to release the pollen. Fresh or dried material can be used; I have made good pollen preparations from *Potentilla* herbarium sheets more than a century old. If possible the stamens should be taken from a bud rather

than an open flower because it is surprising how quickly all the pollen is shed. A pin or needle is the best tool for extracting stamens, especially if the flower is small, and a hand-lens will probably be necessary to distinguish the anthers from the other bits and pieces. Put only a small drop of stain on the slide (about 5mm in diameter) or the pollen will be diluted out. Pick up tiny stamens on the tip of the needle, having first dipped it in the stain. Squash the stamens gently with any suitable small, blunt instrument and then remove all visible pieces of material from the stain (push them to one side with the needle and pick them up with a piece of tissue). The pollen grains are too small to see with the naked eye and will be left behind in the stain. Add a cover slip. If there is insufficient stain to fill the cover slip add a drop to one side and allow it to move under by capillary action.

Normal pollen grains will be uniform in shape and size, rounded and full of stainable contents. Inviolate grains will be smaller, often irregular and variable in size, usually completely empty

and unstained although sometimes simply paler in colour. Fig. 1 (Colour Section, plate 4) shows normal pollen of *Potentilla erecta* (Tormentil), Fig. 2 the partially sterile hybrid *P. × suberecta* and Fig. 3 the totally sterile *P. × mixta*.

I always use acetocarmine stain* although other biological stains such as lactophenol cotton blue are probably equally effective. The time taken for the stain to penetrate varies with the species. At the Recorders' Conference it was suggested that ordinary food colouring might work just as well. I have tried red food colouring (from the kitchen cupboard) and found that it stained *Viola* pollen just as effectively as acetocarmine but not *Aster* pollen. Fig. 4 shows pollen of partially sterile *Viola × scabra*, stained with red food colouring, whilst Figs. 5 and 6 show an *Aster* cultivar with acetocarmine and food colouring respectively. Note the reverse effect: food colouring fails to stain the normal *Aster* pollen grains but stains the inviable ones pink. If possible, therefore, it is better to use a tried and tested biological stain.

Some final words of caution: a few inviable pollen grains will always be present, even in a good species, and adverse environmental conditions or disease may cause a drop in fertility. Specimens collected late in the growing season should be avoided. Gene mutations may also cause male sterility and allopolyploids (such as *Potentilla anglica* (Trailing Tormentil)) may have an unusually low pollen fertility for a species. Hybrids also vary in their degree of sterility. Some fail to produce any pollen at all whilst a few may have apparently normal pollen. Backcross derivatives are likely to be more fertile than F₁ hybrids. The general advice is therefore to examine the parents as well as the putative hybrid and, if backcrossing seems possible, to look at more than one plant.

* Acetocarmine stain can be purchased from Brunel Microscopes Ltd., price approximately £4 per 30ml bottle, including p. & p. (www.brunelmicroscopes.co.uk; tel.: 01249 462655)

Developing reliable tests for putative hybrids of bizarre parentage: a role for the BSBI?

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I read with considerable interest Julian Shaw's article noting some bizarre hybrid combinations listed in the latest volume of *Flora Iberica* (Shaw 2005). Shaw's main (and, in my view, legitimate) complaint was the lack of formal description or herbarium vouchering to accompany such improbable records as *Dactylorhiza elata × Spiranthes aestivalis* and the three-way combination of *Dactylorhiza elata × [Anacamptis pyramidalis × Gymnadenia odoratissima]*. Of course, such dubious records are by no means confined to Iberia. They also often prove to be a triumph of hope over evidence.

While agreeing with Shaw that herbarium vouchering is desirable, I cannot help but recall numerous occasions when I have been more perplexed than enlightened by examining herbarium specimens of supposed orchid hybrids. In truth, high-quality images of *in situ* plants often convey more information of value in attempted identification (a fact that has not escaped the attention of BSBI members, since the majority of identification requests sent to me now arrive electronically). But however good the visual evidence, the expert's preferred identification is still inevitably a probability statement. BSBI members may on occasion find frustrating the use by their hard-working spe-

cialist referees of 'is probably', 'may be' or 'appears to be' when faced with an especially problematic plant, but all too often such qualification constitutes the only honest reply. The devil tends to be in the adjective as well as the detail.

With the advent of molecular methods of identification, in theory at least, we need no longer suffer these uncertainties. The last year in particular has witnessed what has effectively been a media campaign to persuade funding bodies that we have reached a stage in molecular knowledge when most (some would say all) plant species can be reliably identified using the sequences of bases that are the fundamental units of nucleic acids – an approach termed 'DNA bar-coding' (e.g. BBC and CNN News websites for 10 February 2005). Based on my own experiences of applying these techniques to orchids (Bateman 2001, in press), I would argue that such triumphalism is premature.

Firstly, although many species in the UK flora have now been sequenced for at least one restricted region of their genome, genetic variation has been assessed *within* very few species. Where it has been assessed, considerable variation has often been detected. Further blurring of genetic boundaries is caused by the exchange of

genetic material between species. This is typically viewed as occurring through hybridisation (the primary subject of this note) and subsequent introgression. However, it is becoming increasingly clear that exchange of genetic material can also occur between two species that are very distantly related if a third species, such as a virus, acts as a vector to transfer a fragment of genetic material from one species to another (Bergthorsson *et al.* 2004). Lastly, actively diverging, and recently diverged, species will possess few if any readily detected meaningful differences in DNA sequences, despite being easily morphologically distinguished, because morphological change is far more rapid than most molecular changes (Bateman 1999). In summary, for these reasons, I view the assignment of individuals to species on the basis of sequences from small regions of their genome as being no more than a probability statement. In this sense, DNA bar-coding is no different from herbarium-based identification.

However, once it *has* been successfully demonstrated that the relevant species can be distinguished using specified regions of DNA, the identification of hybrids using DNA is transformed from a probability statement to something approaching a certainty, at least for first and second generation hybrids (e.g. Bateman & Hollingsworth 2004). Since the chromosomes in the nucleus are inherited from both parents, one expects to find in the hybrid copies of specific regions of the nuclear genome inherited from each parent. By contrast, the organelles that occur in every cell of the plant and have their own more-or-less independent genomes – the mitochondria, responsible for respiration, and the plastids, responsible for photosynthesis – are inherited only from the mother. Hence, by sequencing a carefully chosen region of the nucleus, and a carefully chosen region of the plastid, one can identify not only the parents of a hybrid but also which species was mother (i.e. contributed the ovule) and which was father (i.e. contributed the pollen). Indeed, this can also be inferred, albeit less reliably, from the morphology of the hybrid, since intriguingly, hybrid orchids tend to inherit more of their characteristics from their mother than their father (Bateman & Hollingsworth 2004); this phenomenon has been apparent to orchid breeders for some time.

Application of these techniques to European orchids has yielded some interesting results. Often, the morphologically-based inference that the plant was a hybrid is upheld. In almost all such cases, the identities of its two parents have

also been correctly identified, most commonly simply because they were the only likely candidates for parents that occurred in the vicinity of the hybrid (e.g. Bateman & Hollingsworth 2004). But on many other occasions DNA sequencing has demonstrated that the suspect plant was a morphologically aberrant individual of one of the suspected parents, as was the case with the supposed bigeneric hybrid between *Pseudorchis albida* (Small-white Orchid) and *Platanthera chlorantha* (Greater Butterfly-orchid) reported by McKean (1982), which is in fact a pseudopeloric form of *P. chlorantha*. Such mutations occur commonly in orchids, and have considerable evolutionary potential (Bateman & Rudall in press), but they represent a serious threat to confident morphological identification of hybrids. This is perhaps especially true of relatively minor morphological deviations, such as the subtle changes in column morphology in *Epipactis* that reputedly cause a switch from cross-pollination to self-pollination and so permit one particular mode of speciation (Hollingsworth *et al.* in press). Thus, the presently available molecular data suggest that the so-called Young's Helleborine (*E. youngiana*) is neither a distinct species nor of hybrid origin, but simply one extreme of the morphological spectrum encompassed by the widespread *E. helleborine* (Broad-leaved Helleborine). Unfortunately, this realisation has not prevented 'Young's Helleborine' from retaining a tenacious hold on our national conservation agendas (e.g. Cheffings & Farrell 2005).

Molecular techniques have also proven highly informative when applied to suspected cases of hybridisation that occurred further back in time. Most notably, orchids are prone to allopolyploidy – hybridisation combined with duplication of the full set of chromosomes to generate a potentially viable evolutionary lineage. This process is, for example, responsible for most of the taxonomic complexity that is encountered in *Dactylorhiza* (and, incidentally, keeps me occupied as BSBI co-referee for the genus). DNA-based techniques can reveal not only the identities of both mother and father of each polyploid lineage but also the relative times at which the various lineages originated (e.g. Shipunov *et al.* 2004).

It is fortunate that orchids occupy the cutting edge of the drive to molecularly characterise plant species (Bateman 2001), and the resulting data have (as noted by Shaw 2005) been used to redelimit orchid genera to comply with their molecularly-inferred evolutionary relationships (e.g. Pridgeon *et al.* 2001; Bateman *et al.* 2003).

Shaw concluded with the thought that 'maybe ... generic concepts based on cladistic hierarchies derived largely from DNA sequences ... will gain respectability with time.' My response is that maybe they already own that respectability. It is true that the first revision appeared in 1997, just too late to be included in the flora of Sell & Murrell (1996) or the second edition of Stace (1997), which was in turn determinedly followed by the ensuing *Plant Atlas* (Preston *et al.* 2002). However, the new classification, as summarised in *Genera Orchidacearum* (e.g. Pridgeon *et al.* 2001, 2003), has been adopted by the Royal Horticultural Society and the UK Hardy Orchid Society. It also provides the framework for two of the three orchid floras produced for the British Isles over the last year (Foley & Clarke 2005 and Harrap & Harrap 2005; cf. Lang 2004).

More importantly from a scientific viewpoint, these classificatory revisions have subsequently survived a battery of different tests conducted during the ensuing eight years. These tests have ranged from sequencing of other regions of the three plant genomes (nuclear, plastid, mitochondrial) to re-examining the preferred mycorrhizal partners of species and the development of their protocorms following germination of the seeds. These have reinforced all but one of the original revisions (in my view, the jury is still out on whether '*Nigritella*' should be separated from *Gymnadenia*), as well as revealing the necessity of formalising further rearrangements, such as the inclusion of '*Listera*' within *Neottia* (Bateman in press; Hollingsworth *et al.* in press).

Most pertinently from the viewpoint of this article, the new orchid classification has also encouraged re-examination, *en masse*, of previous reports of hybridisation. When this is done sufficiently critically, it soon becomes apparent that truly intergeneric hybrids occur far less frequently in nature than was previously believed. Hybrids between '*Aceras*' and *Orchis* s.s., or '*Coeloglossum*' and *Dactylorhiza*, lose their mystique when for each pairing the former genus is shown to merely be part of the latter (Bateman *et al.* 2003; Bateman in press). Similarly, the apportioning of former species of *Orchis* s.l. among expanded concepts of *Anacamptis* and *Neotinea* is strongly supported by hybridisation patterns that are largely confined to pairs of species within each of the three redefined genera, once unsupported reports have been filtered out of the data (H. Kretschmar *et al.* pers. comm. 2003). For me, the most problematic remaining boundary is that separating *Dactylorhiza* (expanded to include

'*Coeloglossum*') and *Gymnadenia* (expanded to include '*Nigritella*' and the so-called '*Pseudorchis frivaldii*'), as although these genera are natural groups and are readily morphologically distinguished, it is not difficult to find occasional hybrids between these genera in the many places where they coexist.

We now return to the question implicitly posed by Shaw (2005); do natural hybrids occur between such distantly related genera as *Dactylorhiza*, *Gymnadenia* and *Anacamptis*, which together span the full spectrum of variation within subtribe Orchidinae (Pridgeon *et al.* 2001), and *Dactylorhiza* and *Spiranthes*, which are even more divergent, occurring in different tribes within subfamily Orchidoideae (Pridgeon *et al.* 2001, 2003). It has to be admitted that at least some such taxonomically disparate hybrids can be generated artificially (S. Malmgren & R. Manuel pers. comm. 2005), demonstrating that intrinsic barriers to crossing are at best imperfect. However, reports of such 'wide crosses' from the wild usually prove to be misidentifications, reflecting the greater challenges of reaching maturity in a competitive environment. In other words, scientific evidence supports Shaw's implicit scepticism regarding the likelihood that the supposed wide crosses among Iberian orchids have been correctly identified.

It occurs to me that now may be the time to rethink the minimum level of verification required for an accepted, published record of an unexpected hybrid. It has been suggested that the field botanist's pockets will soon contain a portable DNA sequencer, to supplement the GPS devices that have proliferated over the last few years. My prediction is that such a device will take longer to arrive (and will probably prove less useful) than its more optimistic proponents believe. On the other hand, even given existing technology, the cost of extracting and sequencing DNAs for the more commonly studied regions of the genome has been falling rapidly in recent years. Although a partnership with an appropriate academic institution would still be my recommendation, plenty of commercial laboratories are now willing to service any requests from the botanical community. Moreover, there have been concomitant increases in the reliability of the data generated and the proportion of plant species for which 'yardstick' sequences are publicly available.

In other words, DNA sequencing is reaching a level of reliability and affordability when it could in theory be made available to a fieldworker, 'professional' or 'amateur', who en-

counters a particularly interesting or provocative plant and desires a more reliable (if not necessarily definitive) identification. In my opinion, such a verification scheme would preclude further erroneous records from entering, and thus devaluing, the botanical literature. This would in turn prevent systematic botanists from following false leads and conservationists from investing in the preferential preservation of misidentified plants.

I am left wondering whether it is time that the BSBI employed one or more 'molecular referees'. Perhaps we could even collaborate with other organisations more experienced in conducting DNA-based research to establish a sequence-based infrastructure to assist referees, vice-county recorders, and the botanical community in general?

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Orchid genera

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In the last paragraph of his note about new orchid hybrids in *Flora Iberica* vol. 21 (*BSBI News* **91**: 27-28), Julian Shaw comments about the reluctance observed in European Floras to take up the recently proposed generic concepts based on cladistic hierarchies derived largely from DNA sequences. This reluctance is explained on page 17

of the volume he refers to: 'Maybe ... the use of further molecular markers, coupled with a less dogmatic viewpoint which does not exclude paraphyletic genera, will lead to hypotheses which agree better with the morphological data and are therefore more practical.' Hooray! We used to have small genera which were based on single

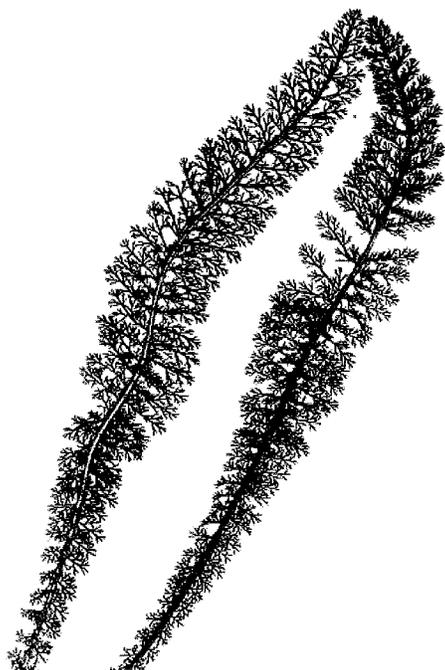
floral characters – lack of a spur in *Aceras*, bur-
sicle simple in *Anacamptis*, stigmas of a distinc-
tive shape in *Neotinea*. If the molecular markers
used so far show that these characters do not
correspond to the genetic realities, let's abandon

those genera, and probably others not in the Brit-
ish Isles, and have *Orchis anthropophora*, *O.*
pyramidalis and *O. intacta*. The names exist al-
ready.

4-Pinnate Yarrow / Milfoil leaves

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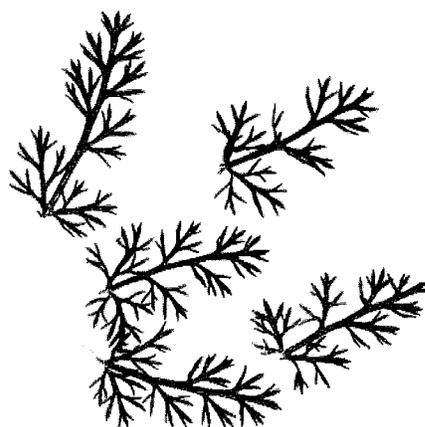
Three miles west of Marlborough, near the A4
road, I spotted a particularly graceful specimen
of *Achillea millefolium* (Yarrow). All leaves
were feathery, the basal ones gently arching,
45-60cm long (see photocopy 1).



Photocopy 1. Part of 2 Yarrow leaves, lengths
50 & 55cm

It seemed worthy of closer scrutiny. Each basal
leaf has about 100 pinnae, the central ones meas-
uring 22-25 mm long (see photocopy 2). These
in turn can be seen to be tri-pinnate, making the

leaves 4-pinnate. Stace favours the Anglo-
Saxon/Dutch designation 'Yarrow', but the Latin
mille folium to French mille feuille to English
'Milfoil' is particularly appropriate for this plant.
The ultimate segments on one basal leaf totalled
over 2,700.



Photocopy 2. Tri-pinnate Yarrow pinnae,
length 2cm

Checks on nine British Floras, texts and/or illus-
trations, gave the following descriptions for Yar-
row leaves: 2-pinnate, 3 :2-3 pinnate, 5:3-pinnate
1. A French Flora said 2-3 pinnate. *Flora Euro-
paea* said 2 (sometimes 3) Pinnatisect. Interest-
ingly, two detailed Czech illustrations showed
Achillea millefolium as 1-pinnate with non-linear
pinnatisect pinnae. Perhaps the Atlantic plants are
more feathery than the continental ones.

I strongly suspect other 4-pinnate Yarrow /
Milfoil plants occur in this part of Wiltshire.

Euphrasia eats quite a lot of things!

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So wrote Alan Showler in reply to my question
(*BSBI News* 100: 52.). He referred me to 'The
Growth of *Euphrasia* in Cultivation' by Peter

Yeo (*Watsonia* 6: 1-24 (1964)), in which Yeo
lists as hosts many species which would be
found growing with *Euphrasia*.

Alan Silverside has also told me that *Euphrasia* is not host-specific. He says it grows particularly well on *Trifolium* and *Plantago*, but it can also grow without a host, but the plants will be small.

But what about other semi-parasitics – *Odontites*, *Pedicularis*, *Parentucellia*, *Bartsia*, *Melampyrum* – and, from a different family, *Thesium* – what do they grow on? May I ask these further questions please?

A Taster of the Flora of Barra and Vatersay

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Barra and Vatersay form the most southerly of the inhabited islands of the Western Isles and have a beautiful and diverse flora. The vice-county census for the Outer Hebrides (v.c. 110) lists an impressive 937 taxa and the Plants Post-code Database (PPD), based on the 1982 Atlas of British Flora, records about half as many native species for Barra, Vatersay, Mingulay and other islands of postal district HS9. Barra itself is only 8 miles by 5 miles and many parts of the island are accessible from the circular 'main' road. In this small area a number of habitats exist: rocky shore, salt marsh, meadows, moorland, small patches of woodland and, a feature of the Western Isles, machair. These coastal grasslands are formed by wind-blown calcareous shell-sand, with dunes nearer the sea and a mixture of sand and peat further inland. Walking across the narrow isthmus of dunes between the white sand beaches Tràigh Eais and Tràigh Mhòr in the north of Barra or Bàgh Siar and Bàgh Bhatarsaigh on Vatersay is a good way to see this environment. The lack of fertility in the soil and the low intensity farming of the crofters results in a glorious mosaic of flowering plants. In July 2005 *Campanula rotundifolia* (Harebell), *Anthyllis vulneraria* (Kidney Vetch), *Galium verum* (Lady's Bedstraw), *Trifolium pratense* (Red Clover) and *Thalictrum minus* (Lesser Meadow-rue) and the semi-parasitic species, *Rhinanthus minor* (Yellow-rattle) and *Euphrasia* micro-species (eyebrights) were among the plants in bloom. Six subtly different microspecies of *Euphrasia* have been recorded on Barra at various times, *E. confusa*, *E. foulaensis*, *E. marshallii*, *E. micrantha*, *E. nemorosa* and *E. scottica*; of these *E. marshallii* and *E. foulaensis* are more localised to parts of the Western Isles, the North Scottish coast and the Shetland Isles. To compound matters, these microspecies hybridise with one another freely. However botanists still wishing to 'cut their teeth' in identifying hybrids as suggested by David Pearman and Chris Preston (2005) might be interested in the profusion of orchids. The vice-county census lists 8 hybrids of *Dactylorhiza* (marsh- & spotted-orchids) as well as a

dozen species and subspecies, the PPD includes 5 species of this genus and 8 other members of the Family Orchidaceae and there are certainly plenty to choose from in mid-summer on the machair. Most iconic is *Anacamptis pyramidalis*, the Pyramidal Orchid with its dome of pinkish-red flowers that are said to have a rather less attractive foxy scent.

Barra has several other botanical specialities, which like me you might otherwise miss: meadows full of primroses which bloom well into summer; the rare and delicate Irish Lady's-tresses, *Spiranthes romanzoffiana*, flowering in moist meadows grazed by cattle; the Pyramidal Bugle, *Ajuga pyramidalis* with its bright purple flowers and on the small off-island of Fuday a colony of Thyme Broomrape, the somewhat misnamed *Orobanche alba* with its purplish-red stems and corolla.

Pollen analysis suggests the Western Isles have never had many trees since the acid water-logged soils developed after the retreat of the glaciers 10,000 years ago (H.J.B. Birks 1991). Today a few small areas of woodland exist in sheltered locations such as the small valley at the roadside near Loch an Dùin in the north of Barra, although judging by the species present this may have been at least partly planted. In 2004 the Western Isles council initiated a biodiversity action plan to protect the remaining native woodland. The ground flora in this particular wood is mostly ferns; a number of species are native to the islands and survive in places protected from the wind. The dense covering of ferns (*Asplenium marinum* (Sea Spleenwort)) growing on the wall of a first floor corridor of Kisimul Castle is perhaps an extreme example. The castle stands on a rocky islet in Castle Bay and this wall would have been open to the elements before the castle was restored in the 1990s.

Reaching Barra and its botanical treasures is usually quite straight forward; it is only an hour's flight from Glasgow to the cockle strand beach that provides a runway. My journey turned out to be less direct, landing at Benbecula with a tour of countryside and causeways of

South Uist and Eriskay in the school bus to reach the ferry to Barra, this hardly ever happens the locals say.

With thanks to Richard Pankhurst for his guidance.

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Part of a family

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I joined the BSBI in 1967, as a result of listening to conversations about the possible developments at Cow Green in Teesdale whilst sitting in my boss's, Terry Wells, room sorting through bags of cut vegetation. I was intrigued about the discussions regarding the rare plants and communities that grew in the area and of the imminent threat of their being submerged. The people at Monks Wood signed a petition and donated some of their wages to support the defence of this special place. Although I only earned £7 per week, I felt this was a worthy cause and duly signed up to both it and the Society.

A few years later I attended the New University of Ulster and obtained a Biological Sciences degree, and then went to work in Eire surveying various midland counties for An Foras Forbartha. I explored parts of Ireland that many others may not have seen. There were quite a few active field botanists, and a large area to cover, even though it often seemed that Praeger had been there before us. (Botanising in Ireland is summed up by his note saying that he drilled holes in his boots to let the water out rather than continue to walk about all day with the water wishing around inside them.) But even young graduates were welcomed into the ranks, and I was soon pottering about with the knowledgeable and friendly recorders and field workers.

I became closely involved with the daily activities of the BSBI on my return to Monks Wood to work in the Biological Records Centre. There I was on tap to all the VCRs, as well as any other enquirers. The years helping produce the Fern Atlas and the first Red Data Book provided an opportunity to learn about the distribution and ecology of all the British species. It was an excellent training ground.

Dr Perring took me along to the Annual meetings, where I met in person many of the people who wrote or phoned BRC. This enabled me to build up a visual map of botanists throughout Britain and Ireland. Eventually I was encouraged to sit on a few committees, including

Meetings and Conservation. At first I found this daunting, climbing up to the top floor of the Linnean Society past all the portraits of eminent men, and sitting round the great wooden tables with many other famous botanists of the day. It took me a long time to pluck up the courage to add my voice to the discussions. But I remember Mrs Jocelyn Russell welcoming me and saying how good it was to see a new, young, enthusiastic person, and that gave me the encouragement I needed. Eventually I found I could use my knowledge and growing experience to help with the many projects.

Of course, I really wanted to be a VCR, and to contribute to a new Atlas, but I had to wait until 1995 when there was a gap and Peter Macpherson persuaded me that I could tackle Mull, Coll and Tiree – the Mid Eudes – from an Edinburgh base. It is much easier if you live in your vice-county, but I never tire of the wonderful west coast scenery and the possibility that anything may turn up – *Tuberaria guttata* (Spotted Rockrose) for instance! *The Flora of Mull* published by the Natural History Museum was one of the few floras that I did not immediately acquire when it was published. Luckily Clive Jermy was able to unearth a spare copy in the 'dungeons' of the BM. So I embarked on a tetrad flora for Mull. I am still working on it, with over half the 337 tetrads recorded, resulting in many new localities and several new vice-county records for interesting species. In recent years I have persuaded friends to come and participate. If you have not yet visited Mull there is a chance in July 2006 when I will be running a field meeting.

Realisation that I am getting older has dawned now after being sent on a pre-retirement course by Scottish Natural Heritage – only twenty-one months to go now – then I will really be able to pay full attention to the Mid Eudes, other parts of Britain and Ireland, and places further afield. Somehow it does not seem that long ago that I first became a botanist and part of the family.

Maybe it's because I have enjoyed the company, exploration and discovery along the way.

Some people tell me that they are over-awed by the depth of knowledge that many of the BSBI members display. They need not be – anyone can spot a plant even if they cannot name it immediately. Every individual can make a contribution. It is much better to be in the field with other botanists and to learn from them first hand than to dwell on the textbooks indoors. When Jeannette Hall and Ruth Mitchell casually mentioned that their group had found *Spiranthes romanzoffiana* (Irish Ladies'-tresses) in a Local Change square on Mull, I was rather dubious, but some close questioning over dinner made me take the whole group out to the site afterwards – and there were the flowering plants in a totally new locality. All you need is a sharp eye and a willingness to learn.

It took me three years as a botanical assistant at Monks Wood to discover that other people were just as shy as me when it came to talking to others. We received some fascinating visitors there, often for just half a day, and my curiosity to hear what they had to say overcame my

reticence. Who can forget the American worker who 'pegged out' ducks on a washing line in order to wash their webbed feet and see what seeds they were dispersing?

Today there are the usual 153 Watsonian vice-counties with recorders and now 42 of them are women. That is an increasing trend. But do not get worried gentlemen. Every family, in my opinion, needs a father, a mother and some children. Perhaps this article will appeal and help others to become part of the botanical family of the BSBI, in which I feel so totally at home. Start now, and may be one day you will be elected a vice-president, and perhaps even get your portrait hung on the Linnean Society walls, or more realistically, appear in *BSBI News*.

PS The fact that I have been employed mainly as a botanist/ecologist by the official government agencies for over 35 years, and have been given their support in matters botanical, has also provided a secure environment, which has certainly been a positive factor in my career.

A native annual unfamiliar as a garden weed

JOHN OUNSTED, *Apple Tree Cottage, Woodgreen Common, Fordingbridge, SP6 2BD*

My first record of *Fallopia dumetorum* (Copse-Bindweed) in Worcestershire I marked as 'dubious'. But Amphlett & Rea (1909) says 'First certain record near Kidderminster', a little N of my station. My own first certain record was at Hedgerley (Bucks.) in 1950. I didn't see it again until I retired and moved (in 1982) to what now seems to be its headquarters, both sides of the River Avon between Hants. & Dorset. Here there was one well-known site. But recording for the new Floras of those counties I have found unrecorded stations in eight different tetrads. *Fallopia dumetorum* flourishes in disturbed soil where old hedges have been cleared. So after a year or two it disappears, having shed abundant seed. Records are unreliable as it is easily confused with its congener *F. convolvulus* var. *subalatum* (an archaeophyte). Unless you find one over 2m high you must compare the seeds. Incidentally, before flowering, plants may be confused with the perennial unrelated genus *Convolvulus* (Bindweeds). You can at once distinguish them by the *Fallopia* twisting the other way round the plants it climbs up. My

'common name' for it is 'Left-handed Bindweed'.

Anyhow, for the Kew seed-bank I asked if it would be alright to introduce to my garden a few seeds from an amazing native plant in Dorset. They agreed, and the following year I had no difficulty in sending them 10,000 seeds. But it then escaped into my five compost heaps and turns up everywhere that soil is disturbed. My garden, 50×50m, is entirely surrounded by hedges, which it doesn't frequent. It specially likes the flower borders at the bottom of the rose trellis, or below the climbing roses up the cottage walls. It germinates in the cultivated plots and flops feebly except by the Runner Beans and Sweet Peas where it gets the necessary support. My record height so far is some 6m on a compost heap adjacent to a tall (adventive!) Bay Tree.

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Cerastium brachypetalum in a Bedfordshire railway cutting

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Cerastium brachypetalum (Grey Mouse-ear) was first recorded in Britain in 1947, by E. Milne-Redhead, growing on railway cuttings in North Bedfordshire. It was stated to be 'in large quantity over a considerable distance' (Milne-Redhead 1947). A few years later it was said to be 'plentiful for about a mile in the two large railway cuttings' (Dony 1953). Later records, in the 1970s, show that, within this distance of 'about a mile,' the plants appeared in two colonies, one colony in each cutting.

The colonies were on west-facing banks on oolitic limestone, and between 1972 and 1980 usually contained about 1000 plants. The number of plants fluctuated from year to year with one colony sometimes containing many more plants than the other. In 1974 Milne-Redhead (in a letter to English Nature) said 'the plant has declined 100-fold since 1947.' From this, together with the records at that time, the total number of plants in 1947 may be estimated to be up to 100,000.

Also in the 1970s a small number of plants were found further north near the county border and just across the border into Northamptonshire. In the latter station, last seen in 2000, it was speculated that these plants had probably appeared from seeds drawn down from the main colonies by air currents produced by passing trains. (Horn 1993). In this method of dispersal the modest achievements of the *Cerastium* can hardly be compared to Oxford Ragwort (*Senecio squalidus*). In fact the *Cerastium* has poor dispersal abilities and will continue to appear in much the same place, year after year, provided conditions are favourable and the habitat remains open and undisturbed.

The plant requires, *inter alia*, bare soil and an open habitat. In Bedfordshire it does not, as stated in one report, 'typically grow on anthills.' It grows rarely, and does not persist, on anthills. It seems to prefer compacted soil, but according to Milne-Redhead, when he saw the plants in 1947, 'they were growing in loose oolitic soil between grasses and other dwarf vegetation,' (pers. comm.).

There seems no doubt that the huge decline in plant numbers, noted by Milne-Redhead in 1974, was due to a dramatic change in habitat; the railway banks had acquired long vegetation and there had been a gradual build-up of a dead mattress of grass. Almost all of the area in

which the plant formerly grew was now no longer a suitable habitat.

Photographs (in Dony 1953) show the railway banks with very short vegetation. This condition was maintained by the steam trains which at this time caused fairly frequent fires on the banks and, in addition, British Rail burned the banks to reduce the danger of accidental fires which, being uncontrolled, could be dangerous. In the late 1960s came the reduction and then the final phasing-out of the steam trains, followed by the cessation of the periodic burning of the banks by British Rail. The railway banks then started to acquire long vegetation and the habitat soon became unsuitable for the *Cerastium*.

In 1984 the *Cerastium* no longer appeared in the former colonies, having been smothered out by coarse vegetation. However I found some plants growing in a new location further south of one of the former colonies. Most of the plants in this location were growing on the top of a retaining wall at the base of the railway bank. The top of this wall provided a narrow strip of shallow but firm soil suitable for the *Cerastium* but unsuitable for the coarse vegetation. In addition the retaining wall had safeguarded the *Cerastium* against herbicide spraying which had been carried out by British Rail at the base of the adjacent banks.

Sharnbrook Summit Nature Reserve, a County Wildlife Site, is adjacent to the colony of Grey Mouse-ear and, as Voluntary Warden I continued to monitor the plants each year. Accidental fires occurred on the railway banks in some years during the 1980s which prevented the colony from becoming too overgrown. However by 1993, because of the further serious decline in the number of plants, I submitted a detailed report to the Wildlife Trust of Bedfordshire (Horn 1993). It was at this same time that the *Cerastium* was considered to be under threat from the Channel Tunnel Link at its other location in Kent (Rich & Palmer 1994).

Although there seemed little doubt that controlled winter burning on the railway bank would be the easiest and most comprehensive method of management for the *Cerastium*, it was not possible to obtain agreement to this from the Railway Authority. Therefore the method of management adopted involved hand-cutting to remove scrub and coarse vegetation from certain areas to provide the necessary open ground.

Over the last few years the number of plants have fluctuated each year from 30 to about 200 plants. The plants are self-pollinated, but it is possible that occasionally they are cross-pollinated by small flies. The fluctuations are not worrying provided the trend in number is stable or increasing. And, as has been stated, '...clearly, a self-pollinated plant will be able to recover more readily and quickly from a year in which the population is reduced to small numbers, or even to a single individual.' (Proctor & Yeo 1972).

In 1999 a few plants of the *Cerastium* appeared in a completely new location about 300m north of the above colony. This new colony is on the top of the railway bank and just within the boundary of Sharnbrook Summit Nature Reserve. The appearance of these plants in this new location would seem to indicate that a small number of seeds have been drawn down from the earlier colony by wind currents caused by passing trains, thus supporting my earlier hypothesis.

The plants in this latest colony grow on bare, very compact, ground and between 1999 and 2005 have steadily and consistently increased in number up to about 300 plants. In Bedfordshire, therefore, *Cerastium brachypetalum*, a red data book plant, though greatly reduced in number since first recorded in 1947, can no longer be regarded as being in decline.

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Ladies, Roses and Coral Necklaces in v.c. 12

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News on the grapevine, that a new site for *Orchis purpurea* (Lady Orchid) was found in 2005 near Ashbury at SU277.857 in v.c. 22 (Berkshire, but Administrative Oxfordshire) has been confirmed in the new *Flora of Berkshire* (Crawley, 2005). This has prompted me to put pen to paper to record an earlier similar discovery in North Hampshire (v.c. 12). I will take the opportunity to mention some other interesting plants recently found there.

On 31 May 2003 a group of birders visiting the Defence Science & Technologies Laboratories (DSTL) establishment at Porton Down came across a plant of *Orchis purpurea*. It was in open woodland on Isle of Wight Hill, SU251.373, which is in North Hampshire very close to the border with Wiltshire. (Apparently this hill was so named because allegedly it is possible to see the Isle of Wight from it on a clear day). I arrived home from a holiday to find a letter reporting this discovery – new to v.c. 12. A member of the MOD Porton Down Conservation Group kindly arranged access for me and I went to see it for myself on 7 June 2003. There were three flower spikes, plus a dead one from the previous year, all forming a single large clump.

The following year a visit was arranged for members of the Hampshire Flora Group (HFG) to see it, together with numerous other scarce

plants that frequent the remarkable wide vistas of pristine chalk grassland and woodland at Porton Down. During this visit on 29 May 2004 the *Orchis purpurea* was still in fine fettle (Colour Section, plate 3). During this visit we searched unsuccessfully in the adjacent woodland and scrub for any more spikes.

As access is so restricted, and visitors are always escorted, it seems unlikely that anyone could have planted the orchid. However the opportunity was taken to collect soil samples from very close to the clump and from a metre away. As expected, subsequent soil analysis by Ron Allen showed no evidence of foul play. Although one cannot rule out seed being spread deliberately I am inclined to regard it as having arrived naturally as wind-borne seed, either from other British sites or perhaps from across the Channel. The new site in v.c. 22 tends to support this.

Whilst at Porton Down we paid our respects to a well-known colony of *Salvia pratensis* (Meadow Clary) and found some *Galium pumilum* (Slender Bedstraw) nearby. Martin Rand collected a couple of Hawkweeds later determined as *H. grandidens* and *H. sublepidoides* by Rod Stern. Paul Stanley's eagle eye added *Cerastium pumilum* (Dwarf Mouse-ear) and he also found some bushes of what he felt could only be *Rosa agrestis* (Small-

leaved Sweet-briar). This led to a further HFG meeting to study the roses at Isle of Wight Hill on 11 September 2005. During this visit Paul found further bushes of *R. agrestis* as well as the uncommon hybrids *R. agrestis* × *R. micrantha*, *R. agrestis* × *R. canina* and *R. micrantha* × *R. canina*, all since confirmed by Roger Maskew. Martin Rand found some plants of *Euphrasia confusa* nearby (det. Alan Silverside) – somewhat surprising for this chalky habitat.

Hampshire is blessed with a wide range of habitats, and in 2005 an interesting new v.c. 12 record was made on acid heathland. A colony of *Illecebrum verticillatum* (Coral-necklace) was found by Chris Hall growing in profusion along some of the wet, sandy tracks used for military training at Long Valley, Aldershot, SU8.5 (see photo inside front cover). It clearly has been present for many years as there are several thousand plants stretching for 500m, mainly around the edges of puddles. Coincidentally another v.c. 12 colony was found a few weeks later by Clive Chatters and David Rumble 20km away on the MOD heathland at Longmoor, SU8.2. This colony has about three thousand plants scattered over about 100m. Soon after that, Peter Rollinson and June Chatfield navigated across the expanse of MOD Longmoor to the

specified map reference only to come across two other small colonies of Coral Necklace. These are about 1km and 1.5km west of the main Longmoor site, but in the adjacent 10km square, SU7.2, adding a further 10km square for the Atlas update.

In all cases military vehicles that churn up the wet, sandy tracks are evidently spreading the seeds. A Defence Estates representative, Liz Rowan (2005) told me, that she had seen it recently growing abundantly on similar tracks at the 'Brasschaat' Belgian Army Training Area at a site called 'Groot Schietveld' just north of Antwerp. As a British native it is almost confined to parts of Cornwall and the New Forest. An exception is in Berkshire (v.c. 22) where Mick Crawley (2005) tells us it has been known as a native since 1891. Since then it has occurred there at several different sites within SU8.6 and still persists in at least one of them. The four new v.c. 12 sites are between those in the New Forest and Berkshire so I judge them to be native.

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Meum athamanticum in Cheshire (v.c. 58)

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It was a fortunate day when Roy and Marie Beacham decided to take a walk along the Cheshire/Staffordshire border in July this year (2005), for at Mow Cop they came across a plant they did not recognise. Wisely, they took photographs and a map reference which they sent to Julie Clarke, who sent them on to John Hawksford as she thought they were probably in Staffs. John put MapMate to work and found that the plant was actually a few yards into Cheshire, so handed to me pictures which set my pulse racing! I visited the site as soon as possible and there, indeed, to my delight was *Meum athamanticum* (Spigel) within spitting distance of Staffs as they say. There was a single well-grown plant in an unimproved upland pasture at about 300m, frequented by horses and cows (see Colour Section, plate 1). It is in a tiny fragment of a hectare the rest of which is in Staffs and so may have never been studied. Not many botanists visit that area and the flowering period is quite short. Associated species were unremarkable, though some *Cro-*

cosmia × *crococsmiiflora* (Montbretia) plants were growing by the nearby low cliff.

The big question is 'could it be native?' The nearest known sites are in Cumbria and in North Wales where it is both native and a known introduction. Historically it used to grow on the Lancashire/Yorkshire border where it has not been recorded since about 1914. It is available from specialist nurseries, but seems an odd thing to plant in the wild, and if that is the case here, the culprit knew exactly what the correct habitat was. It is unlikely to be a casual chuck-out as it would be quite a walk from the nearest road. It has not spread as is often the case with recent introductions, but the local cattle might cull any seedlings. Informed opinions would be welcome.

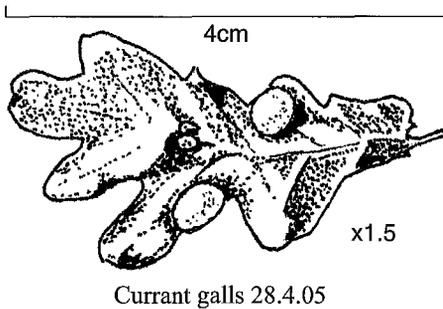
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Abundance of Currant Galls on Oak in Taplow, Bucks. (v.c. 24)

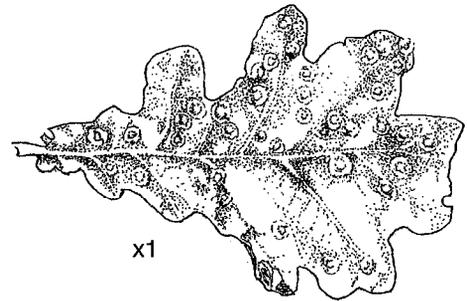
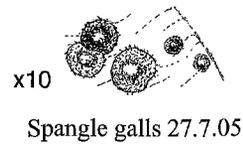
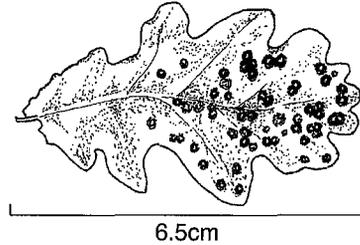
DR PAMELA TAYLOR, *Heathlands, 74 Stomp Road, Burnham Bucks., SL1 7LT*

As the young oak leaves unfurled on a group of scrub oaks in Taplow (v.c. 24), during a few sunny days at the end of April, I was amazed at how many currant galls (*Neuroterus quercusbaccarum*) appeared not just on the catkins but also on the new leaves, particularly along their margins.



The gall wasps which form currant galls and many of the other galls on oaks have extremely complicated life-cycles, often involving alteration of generations. Possibly because of the complicated life-history, the populations of individual galls vary greatly from one year to the next. I should be interested to know whether the abundance of currant galls in Taplow last Spring was just a local phenomenon, or more widespread.

There were few oak apples (*Biorhiza pallida*), and oak marble galls (*Andricus kollari*) on the oaks at Taplow in 2005, but, when they formed in July, both spangle galls (*Neuroterus quercusbaccarum*) and knopper galls (*Andricus quercuscallicis*) were common.



Mature Spangle galls 17.9.05
All drawings del. P. Taylor © 2005

The spangle galls are formed around the eggs laid by the mated females of *Neuroterus quercusbaccarum* from the spring currant galls, hence their abundance probably followed that of currant galls. However, the other part of the life cycle of *Andricus quercuscallicis* develops on the catkins of Turkey Oak (*Quercus cerris*).

Botany in Literature – 38

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Charles Nelson has pointed out to me an interesting fictional would-be botanist in Iris Murdoch's 1978 novel, *The Sea, The Sea*. He is the book's main character, Charles Arrowby, who muses:

'... Pink and white valerian grows around the base of the [Martello] tower, and a kind of purple flowering thyme mingles with the grass and perches here and there among the rocks on the landward side. I examined this, and also a tiny saxifrage, through my magni-

fying glass. I wanted to be a botanist when I was ten. My father loved plants, though ignorantly, and we looked at many things together. I wonder what I would have done with my life if I had not been theatre-mad?'

Later in the book:

'... I lingered for a little while after the toad had gone, and looked at the red-tufted mosses and the flowers, mare's tails which I remembered from my youth, and that weird yellow flower that catches flies. Heather

grows upon the higher ground inland, toward Amorne Farm. I was told by the house agent that there were orchids in the vicinity, but I have seen none ...'

Later still in the story:

'...On several afternoons Lizzie and I walked inland, past the place where in a previous existence I intended to put my herb garden, into the country which I had never explored. The region just beyond was bog, full of outcrops of rock and gorse and little black pools.

There was some scrappy heather and lots of those tiny yellow plants that catch flies, and purple and white flowers that looked like miniature orchids...'

I think I agree with Charles that Murdoch isn't referring to *Utricularia*, but perhaps to *Pinguicula*, where she is actually describing the leaf rosettes, not the flowers.

The novel contains nice descriptions of coastal flora, Charles tells me.

Botany in Literature – 39

Garlic - Dracula - Wolfsbane

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Garlic: unless you are using a garlic-laden breath¹ (in lieu, perhaps, of the dubious gimmick of a spoon oozing plastic melting ice-cream) to secure or save a seat on public transport in the rush-hour, the thought of the unctuous herb may conjure up memorable, if sometimes aggressive, southern European dishes such as Portuguese *Açorda Alentejana* (Alentejo Bread and Garlic Soup), the Spanish *tapa Champiñones al ajillo* (Mushrooms in Garlic Sauce), French *Aioli*,² Italian *Pesce all' agliata* (Fish in Garlic Sauce), or, moving eastwards, thoughts of *Skorthalia* (a North Aegean Islands' garlic sauce known as *od skorthali* in ancient Athens (Aristophanes); c.f. Modern Greek (ó-ĩñääééÜ), Garlic Dip), Garlic Soup (Romania), Dubrovnik Minestrone (Croatia), *Tarator* (a Bulgarian yoghurt soup), or *Muzhdei* (Moldavian Garlic Dressing), all made with the bulb.

Or, if you have botanised in the mountainous region of Transylvania (*Érdely*, Hungarian for 'beyond the forest') in North-west Romania,³ you may simply think of vampires and wolves* and, most obviously of Bram Stoker's famous 1897 masterpiece *Dracula*,⁴ and its eponymous Count with his strong, but pallid, aquiline features and a mouth which 'was fixed and rather cruel-looking, with peculiarly sharp white teeth; these protruded over the lips, ...', and hands, initially 'white and fine', but on close inspection, 'rather coarse - broad, with squat fingers' and with 'hairs in the centre of the palm. The nails were long and fine, and cut to a sharp point.'

But in the following two passages from the novel (pp. 170-71 and p. 213 respectively) two types of garlic (i.e. stem with flowers) are employed to either save the life of Lucy Westenra (friend of Mina, who is the fiancée-wife of Jonathan Harker, narrator of the first passage; Dr Seward narrates the second) or to prevent her

from becoming one of the 'Un-Dead', thus begging the question:

'WHICH SPECIES OF GARLIC POLISHED OFF DRACULA?' ©:⁵

[Hillingham]⁶

(1) ... Shortly after I had arrived, a big parcel from abroad came for the Professor. He opened it with much impressment - assumed, of course - and showed a great bundle of white flowers.

'These are for you, Miss Lucy,' he said.

'For me? Oh, Dr Van Helsing!'

'Yes, my dear, but not for you to play with. These are medicines.' Here Lucy made a wry face. 'Nay, but they are not to take in a decoction or nauseous form, so you need not snub that so charming nose, or I shall point out to my friend Arthur what woes he may have to endure in seeing so much beauty that he loves so much distort. Aha, my pretty miss, that bring the so nice nose all straight again. This is medicinal,⁷ but you do not know how. I put him in your window, I make pretty wreath, and hang him round your neck, so that you sleep well. Oh yes! they, like the lotus flower, make your trouble forgotten. It smell so like the waters of Lethe, and of that fountain of youth that the Conquistadores sought for in the Floridas, and find him all too late.'

Whilst he was speaking, Lucy had been examining the flowers and smelling them. Now she threw them down, saying, with half-laughter and half disgust:-

'Oh, Professor, I believe you are only putting up a joke on me. Why, these flowers are only common garlic.'⁸

To my surprise, Van Helsing rose up and said with all his sternness, his iron jaw set and his bushy eyebrows meeting:-

... 'Oh, little miss, ...; but there is much virtue to you in those so common flower. See, I place them myself in your room. I make myself the wreath that you are to wear. But hush! no telling to others that make so inquisitive questions. ... Come with me, friend John, and you shall help me deck the room with my garlic, which is all the way from Haarlem, where my friend Vanderpool raise herb in his glass-houses all the year. I had to telegraph yesterday, or they would not have been here.'

[Hillingham]

(2) The Professor looked sternly grave. 'Remain till I return,' and left the room. He came back with a handful of wild garlic⁹ from the box waiting in the hall, but which had not been opened, and placed the flowers amongst the others on and around the bed. Then he took from his neck inside his collar, a little golden crucifix,¹⁰ and placed it over the mouth ...

NOTES

1. *garlic-laden breath* : (a) Until very recently, most British and Anglo-Americans regarded the eating of garlic as a filthy foreign habit, garlic-eating adults being asked to leave buses, cafés and other public places (MacClancy, 1992). (b) 'Mama soon began to complain of a smell, which she said was, or at least resembled that of the herb, garlic. Of course when one is abroad, the smell of garlic is *everywhere* ...' (Aickman, 1975 in Ryan: 411). (c) Mina Harker says of the Transylvanians: 'They are *very, very* superstitious ... I believe they went to the trouble of putting an extra amount of garlic into our food; and I can't abide garlic.' (*Dracula*, p. 464). (d) Horace, who detested garlic, considered it 'more poisonous than hemlock' (Grieve, 1988). Note: chewing on a fennel seed or parsley sweetens, if not overcomes, a garlic breath.

2. *the Spanish tapa Champiñones al ajillo* *French Aioli*: note-worthy points are that in *Arroz al horno* (Rice and Chickpeas) the whole head of garlic sitting in the middle, and humorously called in the Valencian dialect the *perdiu*, the partridge, is not consumed; while in the French *Poulet 'aux 40 Gousses d'Ail'* (Garlic Chicken) the 40 garlic cloves are baked whole and unpeeled, resulting in a mellow rather than strident flavour.

3. *Romania* : Until the 1920 Treaty of Trianon Transylvania belonged to Hungary. Inhabitants are Hungarians, Romanians, and Germans.

4. *Dracula* : The name comes from Vlad Bepe^o (Vlad the Impaler). Stoker's original title was

'The Un-Dead'. The vampire myth widespread over Europe, including the Balkans, is undoubtedly derived from the Hellenic concept (as found, for example, in Aeschylus' play *Oresteia*) that the dead do not disappear but continue a kind of shadowy existence in Hades and exert an influence on those who are left alive and, by extension, the belief in ghosts who are driven to persecute the living because they can find no peace until they are avenged.

5. This interrogative phrase is the title of a research paper and as such is copyright.

6 [Hillingham]: a fictitious place, possibly a conflation of the prefix 'Hilling' (as in e.g. Hillingdon, Middlesex), and suffix, 'ham' (Old English for a village).

7. *medicinal*: common garlic is anthelmintic, hypoglycaemic, expectorant, antibiotic and antiseptic among many other attributes. A slice of fresh garlic placed against the inflamed gum of a painful tooth, will cause a temporary surge in the pain (enough to make one's eyes water) which should then subside. This being the case, a dental x-ray (£2.00!) will confirm effectiveness.

8. *common garlic*: i.e. *Allium sativum* L. (*Fokhagyma* [fok-hadj-ma] (Hungarian); *Usturoi* (Romanian); *Knoblauch* (German: *Knob* literally, dice (= the cloves); *Lauch*, allium, leek; c.f. *Schnitt* [= cut] *lauch*, chives)) (Alliaceae): 'worn round neck' (Mabberley, 1989).

9. *wild garlic* : Either (1) *Allium ursinum* L. (Ramsons) (*Ramsel* (German), Wild or Wood (*Ail des bois* (French), *Waldknoblauch* (Ger.)) or Bear's (*Ail des ours* (French), *Bärlauchkraut* (Ger.)) or Hog's Garlic; Gipsyl[']s] Onion [leek herb] (= *Ziguenerlauchkraut* (Ger.)), *Hexenzwiebel* = Witch's Onion (German), also used medicinally (*Allii ursini herba*) (Frohne, 1989), which, like *A. sativum*, also has white flowers' and has a garlic-like odour, especially on bruising. It is found over most of Britain (Stace, 1992), and throughout Eurasia (Stearn, 1980; Fitter *et al.*, 1996; Frohne, 1989); subspecies (a) *ursinum*, growing in West and Central Europe, North and South Italy, (b) *ucrainicum* Kleopow & Oxner, in East and South-east Europe, Central and southern Italy, Sicily. (2) *Allium senescens* L. (subsp. *montanum* (Fries) Holub., (German Garlic); found in Central and southern Europe, including Romania (Stearn, 1980; Fitter *et al.*, 1996); (3) *Allium ericetorum* Thore. Found in the Carpathians (Stearn, 1980; the major forested mountain system extending south-eastwards from southern Poland and the Czech Republic into Romania. As Jonathan Harker's journal records: 'I read that every

known superstition in the world is gathered into the horseshoe of the Carpathians.' (*Dracula*, p.8). Both *A. senescens* and *A. ericetorum* belong to Section Rhizirideum. The outer tunics of *A. ericetorum* and *A. ursinum* (Section Ophioscordon (= Greek *ophio*, snake-like; *scordon*, garlic) respectively become or have parallel fibres, while *A. senescens*, like *A. sativum* (Section Allium), has membranous tunics. In the absence of vernacular nomenclature in *Flora Europaea (sic)*, whether *A. ericetorum* is commonly locally considered as a garlic or not, is, without further research, unknown. Much also depends on the provenance of Van Helsing's second box.

10. *crucifix*: Garlic is not found in every vampire story, neither are crucifixes, but in Ramsay Campbells' short story *The Sunshine Club* the Narrator says to Bent (in Ryan: 575): 'The garlic, yes, and the crosses.' 'Guh! Guh! Garlic!' he cried and shook. 'Why do you fear garlic and crosses?', while in Chelsea Quinn Yarbo's 1980 short story *Cabin 33* (in Ryan: 499), Lorpicar, seemingly impervious to [silver] bullets and 'dead' since 1896, falters when Francisco says: 'Dear me No wonder you believe all that nonsense about garlic and crucifixes.' (crucifix, from Ecclesiastical Latin (13th century A.D.), *crucifixus*, fixed to a cross; c.f. *Cruciferae*, from Late Latin (3rd century B.C.) *crux* a cross, *ferre*, to bear).

The superstition also included, as a means of preventing the 'Un-Dead' victim from becoming a vampire, of cutting off the head, filling the mouth with garlic, and driving a stake through the body, as Van Helsing intends to do to Lucy (p. 259). R. Chetwynd-Hayes' short story *The Werewolf and the Vampire* (1975) reiterates this, but somewhat more humorously, and also without specifying the species:

'From what authority do you quote this information?' the vicar demanded. 'Me 'orror comics,' Willie explained. 'They give all the details, and if you go and see the *Vampire of 'Ackney Wick* you'll see a 'oly father cut off the vampire's 'ead and put a sprig of garlic in it's mouth.'

Vickery (1995) cites the use of both *Allium sativum* and *A. ursinum* as protection against vampires.

* *i.e. Canis lupus*, the grey pack wolf of Europe (and North America) (see especially pp. 21, 22, 41[†], 64, 69 of Stoker; †c.f. Bender (1975, *Die Wölfe kommen zurück*)). Susceptible to the aptly-named Wolfsbane of the genus *Aconitum* (Ranunculaceae), but the nomenclature is confused. The root of the purple-flowered *Aconitum napellus* (Monk's-hood) is called Wolfsbane

Root by the pharmacognocist Evans (1996), while Wolfsbane proper is what Gerard (1994, prius 1597) called *A. luteum*, it's yellow flowers being chewed by the wolf, causing a burning sensation and swelling in the jaws and tongue, followed by giddiness in the head. Hunters also put juice obtained from the root into raw flesh which killed wolves that devoured it. Arrowheads dipped in the juice were also employed and left any wound they made incurable.

The name Wolfsbane is now used for the yellow-flowered *A. vulparia* by some (Stace, 1992; Fitter *et al.*, 1996) although its synonym *A. lycoctonum* (Tutin, 1964; Coombes, 1985) is still used by others (*e.g.* Mabblerley, 1989; Pearsall & Trumble, 1996), which causes confusion. Clearly a further edition of *English Names of Wild Flowers* (Dony *et al.*) is due.

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Semi-double *Ranunculus repens* mimicking *R. asiaticus*

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I recently spotted a patch of double-flowered *Ranunculus repens* (Creeping Buttercup) hiding beneath a bed of semi-double *R. asiaticus* in my parent's usually well-ordered garden.

Referring to David Winstanley's photograph of *R. acris* (Meadow Buttercup) growing in Brentwood, Essex, (*BSBI News* 97: Plate 1(4)), these buttercups were unlike David's in having only 3 tiers of petals and were uniformly 1cm in diameter. Subsequently I found illustrations of *R. bulbosus* 'Speciosus Plenus' (Bulbous Buttercup) and, again, there was no resemblance. In any case, vegetatively, the plants were unmistakably *R. repens*.

I have been unable to find reference to a cultivar of *R. repens* described as either 'Flore Pleno' or 'Speciosus Plenus' (not surprising!) so my mind turned (briefly) to the possibility of hybridity. In every character I examined, I found 'perfect' *R. repens* and after waiting a week or so, found full complements of fertile achenes.

This side-by-side occurrence is strangely coincidental and thinking zoomorphistically, it looks like a successful case of mimicry to avoid being weeded out.

In defence of a 'hiccup'

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I read with interest David Pearman's piece in *BSBI News* 100 (September 2005) on the new Red List for Britain. The effort and rigour that has gone into screening almost the whole of the native British vascular plant flora against the revised IUCN threat criteria (IUCN, 2003) is a fine achievement. I was appalled to find that species such as *Myriophyllum verticillatum* (Whorled Water-milfoil), *Oenanthe fistulosa* (Tubular Water-dropwort) and *Groenlandia densa* (Opposite-leaved Pondweed), which aren't even Nationally Scarce, are now recognised as Vulnerable. These species have long been on my personal list of indicators of 'good' freshwater sites, but I had no idea how drastically they had declined. The new Red List drives home the message that all is not well with the British flora.

Each of the successive Red Lists (Perring & Farrell, 1977; Perring & Farrell, 1983; Wiggin-

ton, 1999; Cheffings & Farrell, 2005) has advanced our understanding of threat. A turning point came when the IUCN adopted a radical new approach by publishing the first version of its quantitative threat criteria (IUCN 1994). The initial reaction among botanists was sceptical, so I organised a trial whereby existing plant Red Lists were reassessed using the new system. With a bit of vision, the IUCN approach proved workable (Palmer et al., 1997). The main concern was that some of our rare species would no longer qualify for red listing if the new criteria were used, and there was debate about what to do about these 'rejects', which would no longer have any recognised status. A temporary solution was found by giving these species the label 'Near Threatened'. I felt that we had to move with the times and be in the vanguard of countries adopting the new criteria. In 1995, the Joint Nature Conservation Committee accepted my

proposal to adopt these criteria as the new standard for drawing up British Red Lists.

As I wrote in *BSBI News* 73 (Palmer, 1996) this posed a problem. Work on the third edition of the Red Data Book for vascular plants was well under way in JNCC, and many members of the BSBI had already sent in contributions. The editor, Martin Wigginton, had to readjust his approach, while at the same time trying to keep to prescribed deadlines. Everyone had originally been working on the premise that the Red List would be based on the single criterion of occurrence in 15 or fewer hectads, and now we all had to come to grips with a complicated new evaluation system.

In my piece in *BSBI News* I wrote 'Species occurring in 16 to 100 hectads are classified as Nationally Scarce **unless they qualify for the Red List, for instance because of rapid decline.**' This makes it clear that we expected some species that occurred in more than 15 hectads to fulfil the threat criteria. We didn't anticipate that many of these commoner species would qualify and we obviously failed to get our message across strongly enough, because very few species were recommended by the botanical community and made it to the Red List. However, the inclusion of *Dianthus armeria* (Deptford Pink) and *Centaurea cyanus* (Cornflower) is contrary to David's claim that in the third edition of the Red Data Book qualifying taxa were strictly limited to those in 15 or fewer hectads. It must be appreciated that the *New Atlas* (Preston, Pearman & Dines, 2002) had not yet been published and much of the data was not available for analysis, so the task of assessing decline was much more difficult than it is today. For this reason, and because of lack of time and

resources, it was not possible systematically to check through all the commoner species to assess decline.

I admit that the third edition of the Red List was far from perfect, and that the recent one has come as an eye-opener. However, each attempt at assessing threat builds on previous experience and I prefer to think of the third Red Data Book as a breakthrough, rather than the 'hiccup' described by David.

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Updates on the Gladys Tuck Herbarium – a new acquisition to Bristol Museum & Art Gallery

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Apologies for an error in the article entitled Gladys Tuck Herbarium- a new acquisition to Bristol Museum & Art Gallery, which was published in September's *BSBI News*. The article should have read 'The plants were collected from the Bristol area (v.c. 6 and v.c. 34), particularly from Shirehampton, Coombe Dingle, Blaise Castle Estate and the surrounding areas'. Many thanks to those who spotted this error!

We are in the process of working through our collections in the aim of producing a complete

inventory of the specimens we hold in Biology. We are still in the early stages but more and more of our collections are becoming computerised, enabling searches to be done on, among other things, vice counties and national grid references. If you would like any information or data from this collection, or any others please feel free to contact me on the details above.

Stephen Bishop Herbarium – a new acquisition to Bristol Museum & Art Gallery

JESSICA MARSH, *Documentation Assistant for Biology, Bristol City Museum and Art Gallery*

We have recently finished documenting the Stephen Bishop Herbarium. This collection of plants was donated to the museum in April 1999 by the collector's widow, Mrs Glenda Bishop. It consists of 902 specimens, collected by Mr Stephen Bishop and others through the 1960s and up until the 1990s. The majority of the herbarium was collected from Gloucestershire (v.c. 33/34) with approximately 20% of the collection from other areas, including Leicestershire (v.c. 55), Surrey (v.c. 17) and Sussex (v.c. 14).

Mr Bishop was head gardener at Belgrave Hall, Leeds then Sudley and Warwick Castle. He then became a self-employed nurseryman

and gardener from his weekend cottage in the Forest of Dean. He was co-author of the *Flora of Leicester* and partly involved in the Gloucestershire Naturalists Society, BSBI and the Wildflower Society.

This herbarium is a deliberate scientific study collection. It has particularly strong representations from *Rubus*, approx. 206 specimens; *Hieracium*, approx. 111 specimens; *Salix*, approx. 63 specimens and *Ulmus*, approx. 66 specimens

Enquiries regarding the Stephen Bishop Herbarium can be directed to Sam Trebilcock, Curator of Biology, Bristol City Museum and Art Gallery. Tel: 0117 9223571.

The Dilemma of Introductions

DEBORAH MILLWARD, *Manor House, Thornton Rust, Leyburn, North Yorks., DL8 3AN*

Following rather extensive disturbance replacing a culvert in Thornton Rust quarry five years ago it was decided to re-seed the area with what was supposed to be a mixture of six lime tolerant grasses. So it was quite a surprise to find a proliferation of native flowering species developing over the following five years. I have very mixed feelings about introducing species to an area where it did not previously occur and still think it would have been better to stick to the grasses ordered. However it must be admitted that the spectacular display has been enjoyed by many people. Harebell (*Campanula rotundifolia*) and Common Bird's-foot trefoil (*Lotus corniculatus*) did previously grow there and most of the new plants do occur, either elsewhere in the village, like Wild Marjoram (*Origanum vulgare*), Field Scabious (*Knautia arvensis*), Cowslip (*Primula veris*) and Greater Knapweed (*Centaurea scabiosa*) or elsewhere in the Dale like Kidney Vetch (*Anthyllis vulneraria*) and Dropwort (*Filipendula vulgaris*). The latter flowered for the first time this year and is only the second site that I know of in the Dale, so the natural distribution has been distorted.

But there are three species present for which I have no records at all in the Dale, Wild Mignonette (*Reseda lutea*), Common Fleabane (*Pulicaria dysenterica*) and Wild Carrot (*Daucus carota*), though all three do occur much lower down Wensleydale on the Magne-

sian limestone. In the quarry the first two species are not spreading from their original site of introduction. Though alien to the area they are not likely to cause too much angst to the recording community as their origin has been reported and their proximity to the village should raise suspicions, especially as Welsh Poppy (*Meconopsis cambrica*) and a large patch of double Soapwort (*Saponaria officinalis*) also occur elsewhere in the quarry. (Additionally a hybrid *Sorbus* has recently been planted.)

However wild carrot has taken off and has now invaded the adjacent pasture, a village nature reserve with a plant community which never naturally has wild carrot in it. Wild carrot is a beautiful plant, its delicate flat topped white heads embellished with a single, central, ruby flower are a joy to behold and the seed heads are valued for dried decorations, but it should not be there, it is a contaminant. Nettles (*Urtica dioica*), docks (*Rumex* spp.), Ragwort (*Senecio jacobaea*) and Creeping Thistle (*Cirsium arvense*) are systematically removed from the reserve annually yet they are part of the natural community, there is clearly a case for treating the wild carrot too. Should we grit our teeth and get on with it, zapping the invading Welsh poppy as well, or should we just accept that the flora will inevitably change over time and enjoy what we have?

Abyssinian Mustard, a relatively new crop in Britain

DOUGLAS R MCKEAN, *Royal Botanic Garden Edinburgh, Inverleith Row, Edinburgh, EH3 5LR*

In the summer of 2003 my colleague, Heather McHaffie, brought me an East Lothian crop sample for identification. It was easily recognisable as a Crucifer but which genus? No one in the department had seen it before but a phone call to the Scottish Agricultural Science Agency (SASA) suggested Abyssinian Mustard. Some library research at first gave the name *Crambe abyssinica* but further research gave *Crambe hispanica* L. as the current name with *C. abyssinica* as a synonym. This straggly weedy annual with white flowers and round fruits on long racemes is said to be densely hispid in *Flora Europaea* but the recent *Flora of Ethiopia* says it is quite variable and even glabrous. While the round fruits suggest a *Crambe*, the weedy appearance makes it quite unlike the native *Crambe maritima* (Sea-kale).

A search of the Web gave an address for a *Crambe* seed supplier in Yorkshire. They told me that this plant is grown in set-aside ground which naïve me thought was ground set aside for wildlife. This is where the public can be misled, while set-aside can be ground left fallow, with weeds allowed to flourish, this is not necessarily the case as set-aside can be used to grow industrial crops which are not for human consumption. The *Crambe* is such a crop and is grown as an industrial oilseed and, if grown as

set-aside, it receives the full 'area payment'. There are as yet no reports of the *Crambe* as a casual in East Lothian but Michael Braithwaite found it twice in 2004 by the River Tweed in Berwickshire, which are believed to be the first records for Britain of this plant in the wild. These records are:

11 September 2004, River Tweed at Milne Garden, NT878.445. Several plants at the drift line along the riverside in alluvium with *Gnaphalium uliginosum*, *Malva sylvestris*, and *Heracleum mantegazzianum*. Determined by D.R. McKean.

9 October 2004, Haugh by River Tweed below The Lees, NT854.390. Several plants in flower and in fruit in a sandy deposit left by floods on the river bank with a colony of *Rorippa ×anceps* (*R. sylvestris* × *R. amphibia*) (Hybrid Yellow-cross). A search did not trace the crop which had presumably been grown somewhere in the Tweed valley, possibly in 2003.

I hope this note will help you to recognise this plant when you see it. Duplicate specimens were sent to Tim Rich at Cardiff and Clive Stace at Leicester. [For images of *Crambe hispanica* see <http://images.google.de/images?q=Crambe+hispanica> – Ed.]

Bassia scoparia (Summer-cypress) in Somerset (v.cc. 5 & 6)

S.J. LEACH & E.J. McDONNELL, *English Nature, Roughmoor, Bishop's Hull, Taunton, Somerset, TAI 5AA; simon.leach@english-nature.org.uk*

The colonisation by *Bassia scoparia* (L.) Voss of roadsides in Yorkshire and Lincolnshire has been well documented (e.g. notes by Peter Cook, Paul Kirby & Ray Eades, in *BSBI News* 74: 48-50). Humberside rightly showed up as a 'hot-spot' of records in the *New Atlas*, but unfortunately the map was incomplete. This was partly a consequence of the continued spread of the species between 1999 (the final *Atlas* recording season) and 2002 (publication date), but partly – it has to be admitted – due to the fact that some pre-1999 records were unaccountably overlooked, for example the 10-km square records for Lincolnshire and East Anglia made by Peter Cook in 1997 and reported in *BSBI News* 78: 63.

The magnitude of the spread of *Bassia scoparia* is not entirely clear. After an initial flurry

of interest, there has been a dearth of recent articles on this species in *BSBI News*. Is this because the plant's rate of spread has slowed down? Or has *Bassia* just lost its novelty value, with botanists continuing to record it in new localities but no longer thinking it worth bringing to the attention of fellow recorders? We suspect the latter, since one of us (S.J.L.) noticed great swathes of what looked like *Bassia* growing along the central reservations of the M27 and M3 in S. Hants (v.c. 11) in September 2005, but when we mentioned this to Paul Green we discovered that, in his estimation, *B. scoparia* is now quite abundant on several motorways and dual carriageways in S.E. England. We presume, therefore, that the report of its possible arrival in the London area in the late 1990s (Ray Eades, *BSBI News* 77: 52-53) was

more than likely well founded, and that in S.E. England – as in East Anglia, Lincolnshire and the East Midlands – the *Atlas* map is badly in need of updating.

To this, we can add a further ‘outbreak’ of *Bassia*, this time in S.W. England along the M5. Until now, the only recent record of *B. scoparia* in Somerset was in 1990 “... from disturbed ground in the parking area along sea front [at] Burnham-on-Sea” (Green *et al.* 1997). Nevertheless, in the last year or two the Green twins had begun to notice a *Bassia*-like chenopod on the central reservation of the Bridgwater section of the M5. No one had attempted to collect any material, however, until this autumn, when plants colonising the verge adjacent to the hard shoulder persuaded one of us (E.J. McD.) to ‘stop and grab’ – hazard lights flashing – and, at last, we had confirmation that our mystery chenopod was indeed *Bassia scoparia* (voucher specimen held in herbarium of the Somerset Rare Plants Group).

This species bears a superficial resemblance to *Atriplex littoralis* (Grass-leaved Orache), which occurs only rarely on the M5 in Somerset but is locally abundant, and increasing, further north in Gloucestershire and Worcestershire. *Bassia*, however, does have its own distinctive ‘jizz’ – quite large cypress-shaped ‘bushes’, lime-green in summer and turning a striking red or flame-yellow in autumn – and, once one is familiar with it, one can reliably record the species even at speeds of 50-60 mph.

The current 1-km square distribution of *Bassia* along the Somerset section of the M5 is shown in Fig. 1. All records were made between late September and early November 2005, with locations plotted ‘by eye’ onto 1:25000 maps or aerial photographs using nearby landscape features, especially buildings, cuttings and bridges, or by recording distances from the nearest motorway junction using a car mileometer and pocket Dictaphone.

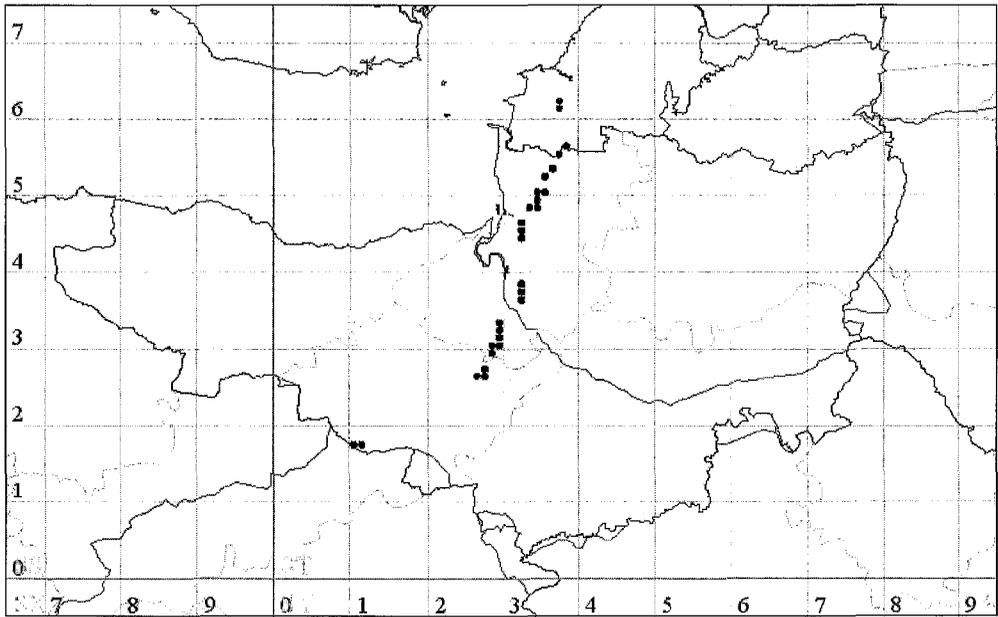


Figure 1. 1km square distribution of *Bassia scoparia* on the M5 in Somerset, September-October 2005 (mapped using MapMate, version 2.0.4. © Teknica Ltd. 2002)

Many of the mapped locations support just small groups (<5 plants) or isolated individuals, and almost all – even those with larger colonies – seem to be restricted to the central reservation of the motorway. Fig. 1 gives a reasonably good impression of the current distribution, but within this we have identified several ‘hot spots’ supporting particularly large or extensive colonies. These are as follows: E of Adsborough

(ST28.29), 10-20 plants; W of North Newton (ST28.30, ST29.30 and ST29.31), 50+ plants; E of Bridgwater, near to ‘Humphrey’, Bridgwater’s much-loved carnival camel (ST32.37), 50-100 plants, including some on the hard shoulder; junction 22, Burnham-on-Sea (ST33.48, ST34.48 and ST34.49), 40-50 plants; about 1 km N of junction 22 (ST34.49), 15-20 plants; Edingworth (ST35.52 and ST36.53), two

colonies of 20+ and 30+ plants; Loxton Gap (ST37.55 and ST38.56), several localities, perhaps 10+ plants in all. The only plants that we have seen to the north of Loxton are in ST37.61 and ST37.62, the most northerly of these being alongside the hard shoulder of the south-bound carriageway at ST378.621, about 500m south of junction 21 (Weston-super-Mare). At the other end of the county, we had thought the southernmost plants were singletons close to junction 25 (Taunton) at ST264.260 and ST270.267, until Steve Parker found it to the west of junction 24, close to the Devon border (ST10.17 and ST11.17).

The role of wind in assisting the dispersal of this shallow-rooted species along roadsides has already been postulated (Ray Eades, *BSBI News* 74: 49), and we discovered through 'googling' that *Bassia* is a major pest in parts of the Australian outback where it behaves as a 'tumbleweed', spreading rapidly and widely through the uprooting and wind-dispersal of whole plants. On 19th October, after a night of heavy rain and strong southerly winds, one of us

(S.J.L.), on his third trip along the M5 in as many days, noted several uprooted *Bassia* plants – including one lying on the hard shoulder of the south-bound carriageway at ST315.403 (north of Bridgwater), almost 2km downwind of the nearest recorded colonies. Had it been growing, undetected, close to where it now lay? Or could it have 'tumbled' there overnight from a more distant place, shedding seed as it went?

We would be interested to hear from anyone who has seen *Bassia scoparia* elsewhere in Somerset, or on other stretches of the motorway network in S.W. England. From our observations this year, we are tempted to speculate that within 5 to 10 years *Bassia* may well rival *Cochlearia danica* (Danish Scurvygrass) as one of the most conspicuous of our salt-tolerant/halophytic motorway plants.

Reference:

GREEN, P.R., GREEN, I.P. & CROUCH, G.A. (1997). *The Atlas Flora of Somerset*. Wayford & Yeovil, privately published.

Echinochloa crus-galli (Cockspur) on roadsides in S. England

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The caption in the *New Atlas* (p. 802) states that *Echinochloa crus-galli* is found '...as a casual of rubbish tips, waste places and cultivated ground, mainly from bird-seed but also from wool shoddy, soya-bean and other sources'. There is no mention of this annual grass occurring, let alone *spreading*, along roadsides; indeed there's no suggestion of it spreading *anywhere*, since the caption also suggests that '...the distribution is now probably stable'.

As I was responsible for drafting that caption, I feel compelled to point out how wide-of-the-mark it now appears to be. Perhaps I relied too much on my own limited experience of the plant; indeed, at the time I had only ever seen it as an occasional bird-seed alien, as a pavement crack/kerbside casual in urban areas, and as a weed (seed contaminant) of maize crops. Had I simply overlooked the fact that this grass also occurred on roadsides? Or is it more likely that *E. crus-galli*, like a handful of other salt-tolerant aliens, has been very much 'on the move', and that it is really only since the *Atlas* that this species has appeared and begun to spread along the central reservations and – to a lesser extent – the outer verges of motorways and dual carriageways in S. England?

As an incentive to other recorders to start looking out for (and documenting the spread of) this grass, I list below those 10-km squares in which I have seen roadside *E. crus-galli* this year; those marked with an asterisk appear to be 'new squares', i.e. there are no 1987+ records mapped for these squares in the *Atlas*. Records are arranged by vice-county, and then by 10-km square. *E. crus-galli* is a late-flowering and rather 'bulky' grass: it is particularly conspicuous in late summer/ autumn when its relatively tall stature, rather 'floppy' yellow-green foliage, and large, heavy – often purple-tinged – seed-laden inflorescences combine to make it one of the easier grasses to identify at speed. It has a 'visibility rating' on a par with roadside *Phalaris arundinacea* (Reed Canary-grass), *Phragmites australis* (Common Reed) or *Calamagrostis epigejos* (Wood Small-reed), and when forming large patches, as it often does, it can be confidently recorded even at 70 mph – once one has learnt the jizz. All the records listed below were made between August and mid-October.

S. DEVON (v.c. 3)

*ST0.1: M5, south of junction 27 (Tiverton).

S. SOMERSET (v.c. 5)

*ST1.2: M5, between junctions 24 (Wellington) and 25 (Taunton); abundant on central reservation near Taunton Deane Service Station.

ST2.2: M5, to north of junction 25 (Taunton), at least six patches between Creech St Michael and Thurloxton/Adsborough.

ST2.3: M5, E. of North Pethererton, alongside hard shoulder of north-bound carriageway and a few patches on central reservation.

ST3.3: M5, junction 24 (Bridgwater).

N. SOMERSET (v.c. 6)

ST3.3: M5, E. of Bridgwater, near the 'Carnival Camel', with *Bassia scoparia*.

*ST3.4: M5, on central reservation just S. of junction 23 (Puriton); four further patches between junctions 23 and 22 (Burnham-on-Sea), including a large stand on E. side of motorway at junction 22.

ST3.5: M5, one patch on central reservation, N. of junction 22, E. of Battleborough (Brent Knoll); a second patch just north of A38 crossing. Several large stands in ST3759, just north of A371 crossing at Banwell.

ST3.6: M5, large stands in ST3760.

ST4.7: M5, extensive patches on outer verge of north-bound carriageway, just W. of junction 19 (Gordano).

*ST5.2: A303, junction with A37, on the Podimore roundabout.

*ST6.2: A303, near Sparkford roundabout, several patches in gravel on outer verge of road.

S. HANTS (v.c. 11)

SU4.1: M27, abundant between junctions 5 and 7, on central reservation and hard shoulder; also at junction 4, and on link road between M27 and M3. On M3 it is abundant, often with *Bassia scoparia* (Summer-cypress).

*SU4.2: M3, abundant between junctions 11 and 14, including some large stands adjoining hard shoulder of north-bound carriageway; *Bassia scoparia* and *Spergularia marina* (Lesser Sea-spurrey) also noted in this square.

*SU5.0: M27, between junctions 9 and 11; very extensive along this section of motorway.

*SU6.0: A3 (M), A27 and M27; some very large and extensive colonies, on central reservation and (locally) both outer verges.

*SU7.1: A3 and A3 (M), south of Petersfield.

N. HANTS (v.c. 12)

*SU2.4: A303, near turning to Thruxton; several patches.

*SU3.4: A303, south of Andover; several patches near junctions with A3057, A343 and A342.

*SU4.3: A34, many patches on central reservation, some on outer verges too; especially abundant at south end of A34 near to junction with M3, some stands more or less continuous over several hundred metres.

*SU4.4: A303 and A34, particularly extensive on central reservation between Sutton Scotney and A303/A34 junction.

SU7.2: A3, Petersfield by-pass; masses of it, several stands 30-50m length, mainly on central reserva-

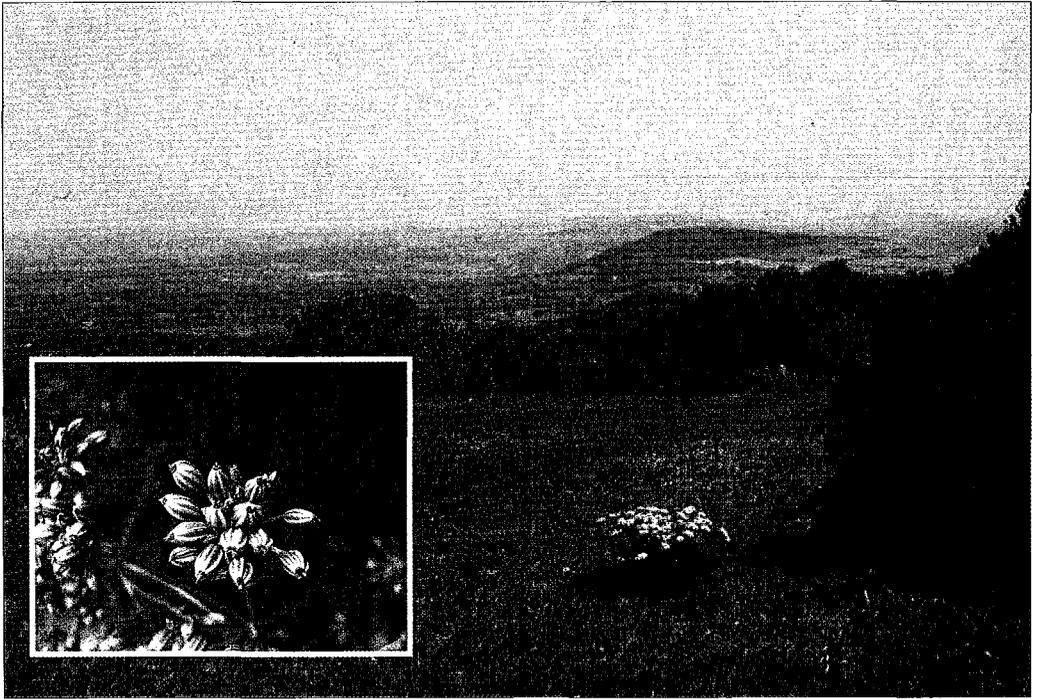
tion, but also a few patches on outer verges and slip roads.

W. SUSSEX (v.c. 13)

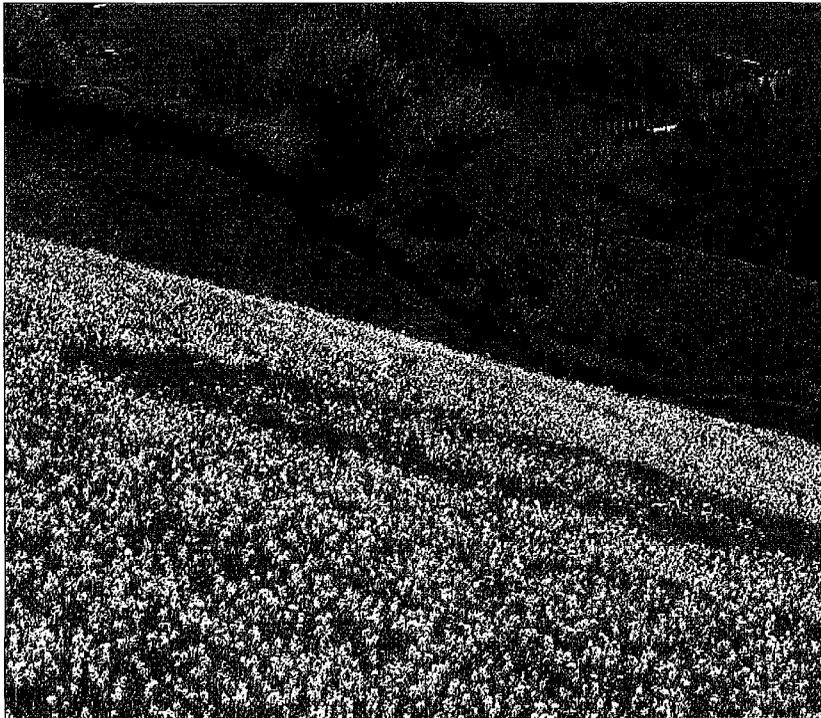
SU9.2: A272, Petworth; one small patch beside *single* carriageway road, near mini-roundabout on northern edge of town.

There seems little doubt that *E. crus-galli* is currently spreading rapidly along motorways and dual carriageways in S. England. How it arrives at these roadside sites is not known, but one wonders whether 'founder' plants may have their origins in seed spilt from lorries transporting agricultural seed (e.g. maize) or bird-seed. Once established on a roadside its phenomenal seed production – said to be up to 40,000 seeds per plant per year – would be more than enough to enable the plant to rapidly increase in numbers and colonise new sites. The seeds are quite large (similar to millet or sorghum seed), but it is easy to imagine individual seeds, inflorescences or uprooted whole plants being picked up and dispersed in vehicle slipstreams, or possibly spread by motorway maintenance vehicles or grass-cutting machinery. It is known to be herbicide-resistant, and this may explain its ability to persist (even thrive) on motorway central reservations and verges where the vegetation is kept in check by use of weed-killers. *E. crus-galli* is thought to be frost-sensitive – it is, as the *Atlas* says, a native of 'warm-temperate and tropical regions of Europe, Asia and N. America' – and its expansion along roadsides at such northern latitudes may only have been possible thanks to the recent run of mild winters. It is also '...tolerant of saline conditions' (www.ibiblio.org/pfaf/cgi-bin), and indeed has sometimes been used in the reclamation of saline soils, especially in Egypt; hardly surprising, then, that it seems to be doing so well on inland road verges, alongside halophytes like *Spergularia marina* and *Puccinellia distans* (Reflexed Saltmarsh-grass).

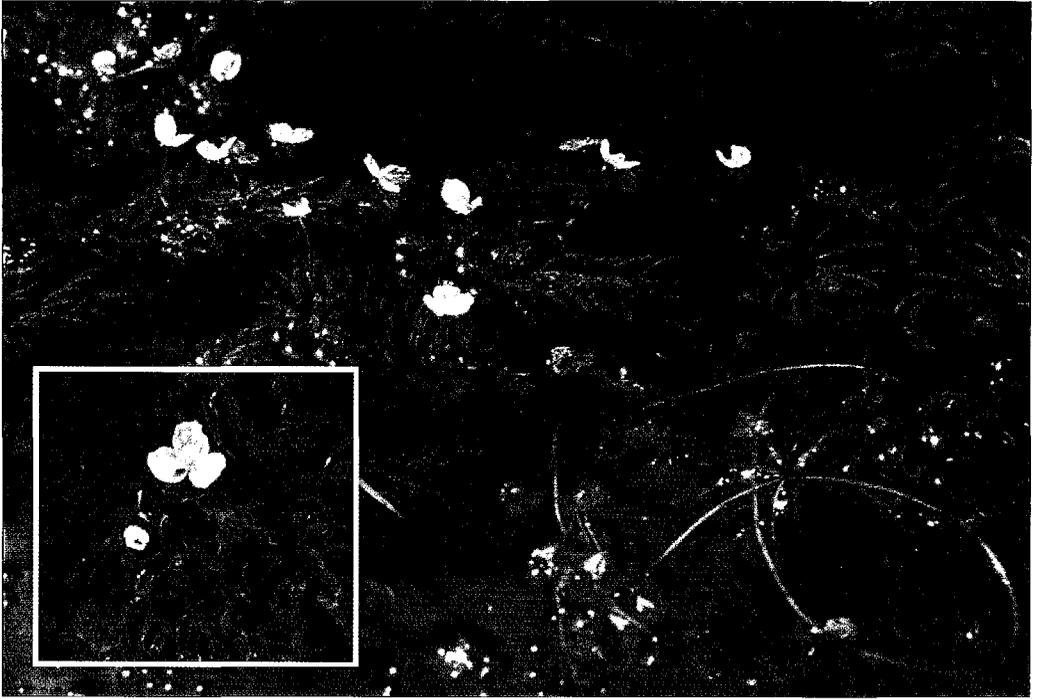
It will be interesting to see if this grass continues to expand its distribution – weather permitting – along British roadsides. It would be worth trying to establish whether it is also increasing as a colonist of other habitats, especially maize fields. In this connection, it should be noted that *E. crus-galli* has acquired a degree of notoriety; indeed, it is now widely regarded as '...one of the world's worst weeds, reducing crop yields and causing forage crops to fail by removing up to 80% of the available soil nitrogen' (www.weedsbc.ca/weed_desc/barnyard.html). One to watch, then?



Meum athamanticum (Spigel) at Mow Cop, Cheshire/Staffordshire border, photo © G. Kay 2005



A plant ring in grassland near Bath, with *Primula veris* in flower, photo © D. MacIntyre 2005



Egeria densa (Large-flowered Waterweed) in ornamental pond (v.c. 17),
photos © J. David & M. Spencer 2005



Putative *Erigeron acer* × *E. speciosus* at
Ainsdale Dunes, photo © R. Burton 1997



Sisymbrium polyceratium, an urban casual in
Nechells, Birmingham,
photo © M. Poulton 2005



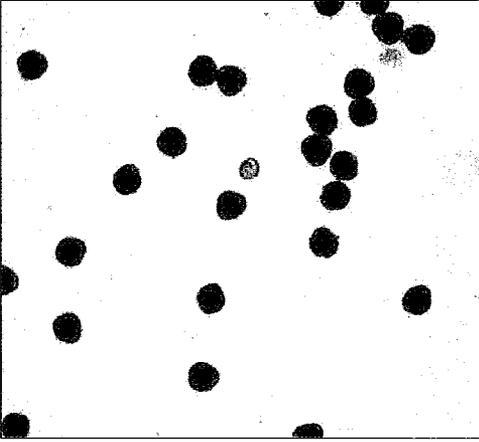
Trifolium incarnatum subsp. *molinerii* (Long-headed Clover) in S. Devon, photo © Roger Smith 2005



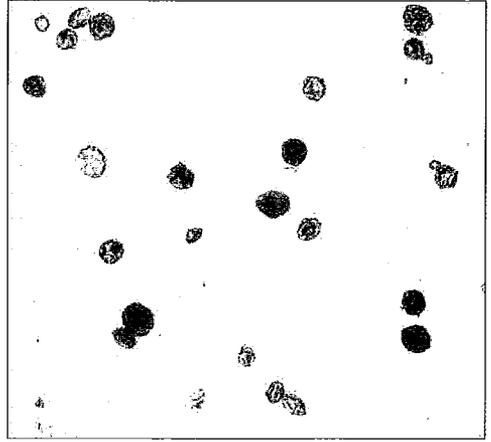
Trifolium incarnatum subsp. *molinerii* on sea cliff at Bolt Head SSSI, S. Devon, photo © Roger Smith 2005



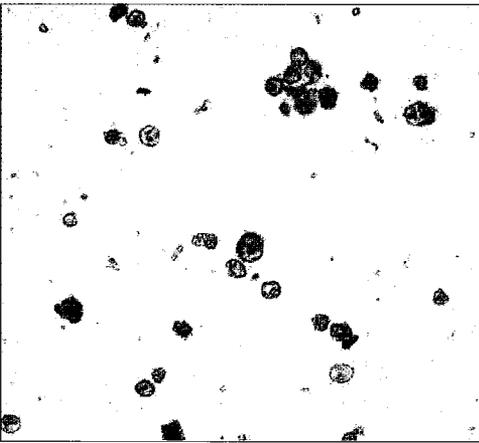
Orchis purpurea at Porton Down, photo © Tony Mundell 2004



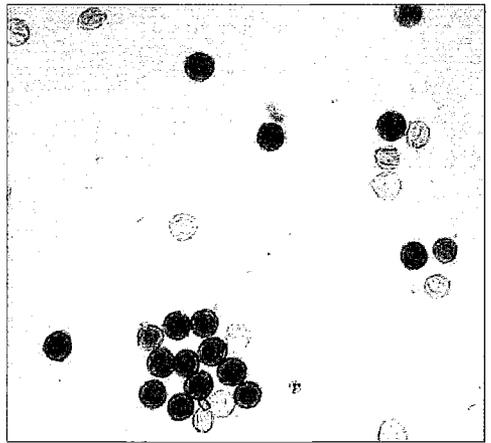
1. *Potentilla erecta* (acetocarmine)



2. *P. x suberecta* (acetocarmine)



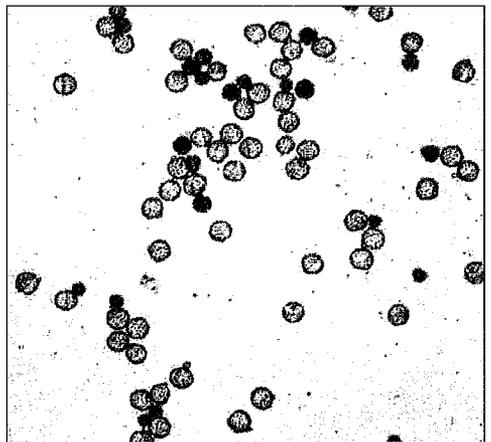
3. *P. x mixta* (acetocarmine)



4. *Viola x scabra* (red food colouring)



5. *Aster cultivar* (acetocarmine)



6. *Aster cultivar* (red food colouring)

All pollen photographed using a $\times 10$ objective
 Photos © B. Harold 2005

Egeria densa (Large-flowered Waterweed) – in flower in Surrey

JOHN DAVID, *RHS Garden Wisley, Woking, Surrey, GU23 6QB*

MARK SPENCER, *The Natural History Museum, Cromwell Road, London, SW7 5BD*

In September 2004 the conspicuous white flowers of this waterweed were observed in a small ornamental pond that receives no water other than rain water and in summer becomes quite stagnant. The pond had formerly been used for fish experiments by the Zoology department of Royal Holloway College, University of London. One of us (M.S.) recognized the flowers as belonging to the rare alien aquatic, *Egeria densa* Planchon, which although naturalized in canals, rivers and ponds in the UK, is generally considered only to flower in well-warmed water. A specimen was taken and is now in Herb. BM [000847984]. This plant closely resembles the much more well-known and widespread *Elodea canadensis* (Canadian Waterweed), but can be distinguished by the longer leaves and by the larger flowers. More technically, the two genera are separated by *Egeria* having male spathes 2–4-flowered and upper leaves usually in whorls of 4 or 5; whereas *Elodea* has single-flowered male spathes and upper leaves in whorls of 2 or 3 (Catling & Wojtas, 1986). Information about this plant is hard to come by and illustrations even fewer. The photographs that accompany this note (Colour Section, plate 2) were taken of the plants we found. Initially discovered in 1953 in S Lancs. (v.c. 59) and SW Yorks. (v.c. 63) (Stace, 1991) it has also been reported from Glams. (v.c. 41) (1988), W. Sussex (v.c. 13) (1990), Middlesex (v.c. 21) (1993) and most recently Caerns. (v.c. 49) (2005). The recent Atlas (CD version) has further records in addition to these but the plant apparently still has a scattered distribution. As far as we are aware this is the first record for this species from Surrey (v.c. 17). It is also known from Eire, Co. Sligo (H28) and flowered in 1993, when trans-

ferred to a pond, at Rathaberna (Reynolds, 2002). The species is dioecious but only the male has been found in the British Isles.

Egeria densa is a native of South America, found principally in Argentina, Uruguay and S. Brazil, whence the name by which it is known in North America, 'Brazilian elodea'. It has been spread around the world, mainly through its importance as a good 'oxygenator' plant for aquaria and subsequently released into water systems. It was found in the US in 1893 and was reported from a canal in Leipzig, Germany in 1910. It is now a major problem plant in both the US and New Zealand where it forms dense mats restricting the flow of water and clogging intake points for electricity generating plants (Western Aquatic Plant Management Society webpage, <http://www.wapms.org/plants/egeria.html>). The genus contains a further species, *E. najas*, separated from *E. densa* in having leaves with prominent serrations or marginal prickles. This species is also grown by aquarists and is starting to be encountered as an alien adventive in North America (Catling & Mitrow, 2001).

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A potential undescribed *Erigeron* hybrid

RODNEY M. BURTON, *Sparepenny Cottage, Eynsford, Kent DA4 0JJ*

Recent events have reminded me of a plant seen more than eight years ago, and forgotten about since. It was at a meeting of the Wild Flower Society in South Lancashire on 4th and 5th July, 1997. On the first day we started from a car park by Ainsdale Lake, and then walked northwards along the landward side of the coast road, on sandhills where aliens *Rosa rugosa* (Japanese Rose), *Populus alba* (White Poplar) and *Hip-*

pophae rhamnoides (Sea-buckthorn) were pestilential. Although there were also unusual native plants about, the octogenarian leader set off at a cracking pace, heading for a slack full of *Juncus balticus* × *J. inflexus* (a hybrid rush). Consequently the group got rather strung out, and my wife and I were near the back of the string when I noticed a group of plants of *Erigeron acer* (Blue Fleabane), one of which was strikingly

different from the others. Its flowering stem had leaves just like those of nearby typical *E. acer* in density, colour and shape, but arose laterally from under a rosette of much larger paler and softer leaves, and had only a single flowering head much larger than those of the typical plants. Unfortunately the rosette leaves are not visible in the one photograph (see Colour Section, plate 2) which I had time to take. My immediate thought was that this plant was a hybrid of *E. acer* and the most commonly cultivated species, the leaves of which are very like the rosette leaves of my hybrid. At the time, I supposed, quite wrongly, that this is *E. glaucus* (Seaside Daisy), but that is a much fleshier

plant. The correct name of the species intended is *E. speciosus* (Meadow Fleabane), and since starting to write this note I have discovered from Clement & Foster's *Alien plants of the British Isles* that this species has been recorded from dunes between Ainsdale and Birkdale.

Does anyone else know of this plant in a well-botanised area? At a guess I would say that its grid reference is SD303.133. Mike Wilcox and Phil Smith have kindly spent some time looking for it. I believe I have discovered *Erigeron acer* × *E. speciosus* new to science, but accept that better evidence is needed before it can take its place in the literature.

Oxalis dillenii: a follow-up

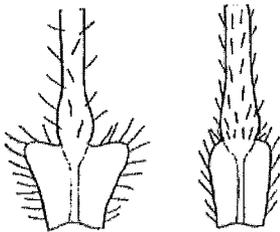
JOHN PRESLAND, 175c Ashley Lane, Winsley, Bradford-on-Avon, Wiltshire BA15 2HR

Identification

In my article in *BSBI News* 98 (Presland 2005), I claimed to have found *Oxalis dillenii* (Sussex Yellow-sorrel) in my garden. The following tale of subsequent woe has brought about some re-thinking relating to my find, and I feel it has wider implications.

Firstly, why did I identify it as *O. dillenii*? Initially, I used the key in Stace's (1999) *Field Flora*, which, I felt, led clearly to this identification. I checked with Mark Watson's 1997 key (Watson 1998). Though the outcome was rather more ambiguous, *O. dillenii* still seemed to be right. Finally, it was confirmed by Eric Clement. I should have had the views of Mark Watson, the BSBI referee for the group, as well, but, for reasons which are nobody's fault, this did not happen at that time.

The trouble began later, when Mark Watson was able to comment and identified my specimen as *O. corniculata* (Procumbent Yellow-sorrel). This was on the grounds that it had auriculate stipules rather than semicircular (see drawings below from Young 1958) and the seeds had greyish white patches on the ridges rather than bright white.



O. corniculata *O. dillenii*

This represents shifts from his 1997 key, which said *O. dillenii* stipules were 'rarely auriculate', thus implying that sometimes they were, and that the patches on the seeds were white rather than 'brown or occasionally grey', i.e. no mention of greyish white or bright white.

If a system of referees is to be meaningful, one must take, for recording purposes, the view of the official referee, so I cannot record my specimen as *O. dillenii*.

Is *O. dillenii* (as per Watson) extinct?

However, the matter does not end there. Firstly, it's back to the original question – is *O. dillenii* (as per Watson) extinct?

An obvious first resort in looking for other recent records is the Biological Records Centre at Monks Wood. It had 9 records for the 1990s and 8/9 in 1987/8, though some of these may be duplicates. I was able to contact the suppliers or local holders of all the records from the 1990s. Surprisingly, 8 of the 9 were denied by their suppliers, who said, thought or implied that their record was of what is now called *O. stricta* (Upright Yellow-sorrel). There was no information available for the other. I am indebted to Graeme Kay and Henry Arnold for helping me towards the realisation that most, probably all, of the 1990s records entered in the BRC database as *O. dillenii* are really *O. stricta*. This occurred because of the change of names of *O. europaea* to *O. stricta* and *O. stricta* to *O. dillenii* about the time of records submission for the *New Atlas of the British & Irish Flora*. It must surely explain the responses I received in my follow-up. I have to conclude that there are no clear records of *O. dillenii* from the '90s.

The remaining BRC record I followed up was from 1988, and that was submitted as what is now called *O. dillenii*. So the erroneous entries may well be restricted to the 1990s. However, the 1988 record was not confirmed by Mark Watson, nor were the crucial criteria he identifies checked. Recent examination of a specimen from the same colony found it did not clearly meet the crucial criteria, though it was like *O. dillenii* in other respects. It seems unlikely that Mark confirmed any of the other pre-1990 records, though these have not been followed up. So we cannot be sure that *O. dillenii*, as defined by Mark, was ever in Britain in the 20th century.

Much more recently, two records have been confirmed by Mark. One of these records was by Julie Clarke in Cheshire, the other by Aaron Woods in London, both in gardens. A number of other very recent records of *O. dillenii* have been claimed, including two in articles in *BSBI News* (Payne 2005, King-Salter 2005), but they have not been confirmed by Mark Watson and it is not clear that they conform to his criteria. Some have been confirmed by other experts, but, as my experience has shown, this is no guarantee of confirmation by Mark. Plainly, however, *O. dillenii*, as defined by him, is not extinct in Britain, but it could be almost so.

More on identification

Julie Clarke has kindly sent me a collection of specimens of confirmed *O. dillenii*, which illuminate both Mark's distinctions and the difficulties involved. Comparing it with the disconfirmed plant in my own garden:

- Julie's plants were entirely upright, even when its fruits were fully ripe, whereas mine had branches varying from upright to trailing. It should, however, be borne in mind that *O. dillenii* is described by Mark as becoming decumbent with age, so Julie's plant was atypical in this respect.
- The patches on the seed ridges were much whiter than on mine, and also much more prominent.
- The stipules did not yield their secrets so easily. At first, I could not see any on Julie's specimens, nor on my own, on which I had seen them the previous year. I then discovered that the stipules are attached to the petiole, so that they may appear as only a thickened and sometimes differently coloured area, sometimes with narrow, hairy and often indistinct wings. I was able to convince myself that these were at least sometimes slightly auriculate on my plant but not so on Julie's. Mine also often had a thick tuft of hairs in the

region where each auricle was supposed to be, which was not found in Julie's specimens.

- Another clear difference between the two specimens was that the leaves were alternate in mine, and clustered in groups arising at the same node on Julie's, and this is supposed to help differentiate the two species, though also variable.

Though Mark's identifications have to be accepted for recording purposes, different opinions on the matter are possible. The determination is, it appears, difficult because of the great variability of *O. corniculata*. Regarding those characteristics which are used to distinguish it from *O. dillenii* in the keys by Stace and Watson and by Mark in correspondence:

- Mark says the stems of *O. corniculata* can, like *O. dillenii*, sometimes be 'decumbent to erect, not or very sparsely rooting' at the nodes, distinctions used by Stace. My own specimen had stems of every type mentioned and no rooting at the nodes, which causes some degree of difficulty for every key I have seen.
- Mark says *O. corniculata* has auriculate stipules, but implies that *O. dillenii* sometimes does too. They are not always clear in *O. corniculata*.
- Mark says *O. dillenii* has bright white patches on the ridges, whereas *O. corniculata* has them brown or grey or at most grey-white, but *O. dillenii* has to be in good condition to show the brightness. One correspondent thought there were seeds with grey-white and seeds with bright white patches on the same plant.

Mark uses a suite of characters for identification, but does multiplying unreliable distinctions result in more accurate identification? I doubt it.

Even if we take the shade of whiteness of the seed patches as reliable, the above raises the question of how to decide where one species begins and the other ends. Firstly, there is Mark's view that *O. corniculata* is very variable and includes all examples except those conforming to his crucial criteria. Alternatively, it could be argued that *O. dillenii* is very variable and that some of the plants identified as *O. corniculata* by Mark Watson are really within the range of *O. dillenii*. Or perhaps we should not regard them as separate species at all, but just part of a range which is better thought of as belonging to one. There is no genetic evidence to throw into the pot, and there seems no clear reason based on evidence for accepting one of these hypotheses rather than another. Mark is quite frank about the distinction being his own

opinion, which is, of course, based on a detailed study of the group.

Are there more?

It would be helpful if BSBI members could look carefully at *Oxalis* plants they encounter and identify them by Mark Watson's key modified as described above. Hopefully, my own comparison above of a specimen of each could also be helpful, though most of the characters are variable and, with the stipules, I felt I was partly observing and partly trying hard to see what the various sources had told me I ought to be seeing.

Acknowledgements

I would like thank the following for their help in enquiries – Mark Watson, Tim Rich, Ron Payne, Tony Smith, Aaron Woods, Graeme

Kay, Henry Arnold, Julie Clarke, Arthur Chater, Paul Harnes, Alan Knap, J Hawksford, Martin Rand, Giles King-Salter and Mike Poulton.

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Some interesting alien plants in v.c. 12

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It seems to be a feature of the countryside nowadays that whilst many scarce native species are gradually teetering towards oblivion, some alien species are rapidly increasing. In late July 2005 I struggled across an extensive area of pure sand, deeply rutted by the frequent churning of military vehicles, on a MOD training area at The Slab, Bordon SU78.35. Here I was amazed at the abundance of a grass new to me growing often half-buried in sand. It was widespread beside many of the tracks in the area, spread very effectively by the speeding army lorries and tanks. Bruno Ryves confirmed it as *Digitaria ischaemum* (Smooth Finger-grass) which I see was prematurely described as 'Extinct – Once a very rare infester of sandy fields' in *The Flora of Hampshire* (Brewis *et al*, 1996).

In moderation such soil disturbance by military vehicles can be beneficial to scarce native plants as well. In v.c. 12, *Crassula tillaea* (Mossy Stonecrop) and *Illecebrum verticillatum* (Coral-necklace) thrive on such treatment and seem to be increasing.

Clive Stace (1997) predicted the likely spread of *Senecio inaequidens* (Narrow-leaved Ragwort) with the words 'perhaps soon to spread as in N France'. This prophecy was fulfilled and it was reported in several counties in England and also in Northern Ireland in *BSBI News* **82**:74; **84**:49, 50 & 68 and **85**:45. Since 2000 it has been found at four sites in South Hampshire, v.c. 11 (see photo inside back cover). I first saw it in North Hampshire, v.c. 12, when Roger Veall reported it in 2003 within one of the Local Change tetrads at Easton. A group of us surveying another Local Change square at Echinswell

found it in the car park of a garden nursery. The nursery owner was as mystified about its origin as we were, but of course its seeds are well equipped for air travel. We also found another increasing alien *Polypogon viridis* (Water Bent) a few yards away, adding to a couple of other locations, though on roadside verges, where I had seen it in v.c. 12.

Plant nurseries are a good hunting ground for aliens growing as uninvited weeds. Paul Green visited Longstock Nurseries, SU367.388, in v.c. 12 on 30 July 2005 and sent me a remarkable list of plants found there as weeds in the pots or in the gravel paths, etc. Here he found *Cardamine corymbosa* (New Zealand Bitter-cress), *Euphorbia thymifolia*, *Polypogon viridis*, *Portulaca oleracea* (Common Purslane), *Veronica peregrina* (American Speedwell) and *Veronica polita* (Grey Field-speedwell).

Arable fields are another major habitat for aliens. Farmers are increasingly sowing many different plants as food or cover for pheasants. Apart from such grasses as *Setaria pumila* (Yellow Bristle-grass) and *Setaria viridis* (Green Bristle-grass) that I often see, I am now getting records on arable land of *Phalaris paradoxa* (Awned Canary-grass) sometimes with *Phalaris aquatica* (Bulbous Canary-grass). The former is remarkably variable in height when mature, ranging from a few centimetres to 1.5m, whereas the latter is always around 1.5m.

Although not strictly qualifying for this article, as it is a few hundred metres into South Hampshire, v.c. 11, an unusual alien plant was found in 2005 in an area of industrial buildings in Petersfield. On a small footbridge across a

railway line at SU740.232 Dr Christine Wain found an attractive member of the Aizoaceae family, and gave me a photograph of it (see photo inside front cover). From the photo Eric Clement tentatively suggested it might be *Delosperma nubigenum* (Hardy Yellow Ice-plant). Martin Rand subsequently let me know that this taxon was the subject of an excellent article by Roy Lancaster in the RHS magazine *The Garden* (Lancaster, 1999). I think that the illustration and description there matches our plant well. I also tried looking on the web and was surprised when a 'Google' search for *Delosperma nubigenum* gave about 600 'hits'. Obviously I only looked at a few of those websites but there were numerous illustrations and descriptions, again convincing me that Eric's initial suggestion was right.

By the time I visited the plant in mid July the flowers were over and it looked very desiccated,

growing in a gap at the edge of the bridge with no apparent trace of soil. As recounted by Roy Lancaster (1999), in its native Lesotho and South Africa it grows at high altitude, and can tolerate desiccation and mild frost. However, I will be surprised if it survives long at Petersfield.

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'*Stipa arundinacea*' in Taunton, S. Somerset (v.c. 5)

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In 1999 I returned home from the local school fête clutching a grass bought for 50p at the plant stall. The label said 'Calamagrostis', but I wasn't convinced. It grew well in our back garden, forming a single large tussock, with graceful arching foliage having a distinctive chocolate brown coloration in the spring, turning olive-green in high summer and a striking orange in the autumn. It had delicate, almost 'feathery' panicles in late summer and autumn, which didn't look quite right for a *Calamagrostis* – so I was relieved when I found the same plant in 2002 on sale at the W.I. Market in Taunton, but this time labelled 'Stipa'. This seemed much more likely, yet if it was indeed a *Stipa* I still had no idea which one it might be.

In 2003 we decided the tussock had outgrown its allotted space in the back garden, so dug it up and dispatched it to the 'recycling centre'. At about the same time, I noticed that several young plants of this mystery grass had become established, presumably from seed, in the 'semi-wild' of the gravel path that runs past our garden (ST235.244), and in 2004 I located several further, more convincingly wild, plants in pavement cracks and kerbsides of neighbouring streets (Gordon Road, ST234.244; South Street, ST236.243; and Holway Avenue, ST237.242). Most of these wild individuals have become well established, some of them this year flower-

ing for the first time, and providing a 'launch pad' for further colonisation perhaps.

Infuriatingly, despite several searches of gardening books and local nurseries, my grass still lacked a proper name; that was, until our next door neighbour returned from a trip to a garden centre with two clumps of the exact same grass, labelled '*Stipa arundinacea* £6.99'. Eureka! An internet search has since confirmed the identification and straightened out the taxonomy: what gardeners, in this country at least, continue to call *Stipa arundinacea*, botanists now refer to as *Anemanthele lessoniana* (Steud.) Veldkamp. It is listed under the latter name in *Alien Grasses* (Ryves *et al.* 1996, p. 11), where it is square-bracketed as a grass known to seed freely in cultivation but yet to be reported from the wild.

Anemanthele lessoniana has had quite an array of names in the past, being included not only within *Stipa* (*S. arundinacea*), but also *Oryzopsis* (*O. rigida*, *O. lessoniana*), *Apera* (*A. arundinacea*, *A. purpurascens*) and *Agrostis* (*A. lessoniana*, *A. procera*) – though never *Calamagrostis* as far as I can tell. The species is endemic to New Zealand, where it is usually known as 'Wind grass' or 'Pheasant's-tail grass'. The Maori name is *hunangamoho*.

Since finding *Stipa arundinacea*/*Anemanthele lessoniana* as a street weed in Taunton, there has been one further report of this species growing in the wild in Somerset, from Liz Mc-

Donnell: in Wedmore, two clumps (one with an inflorescence) at the north end of a narrow footpath running along the backs of gardens, at ST436.476 (specimen in Somerset Rare Plants Group herbarium). It will be interesting to see whether this species increases as a garden escape or throw-out, especially as it is evidently becoming more common in cultivation – along

with an array of other ornamental grasses – and is now easily obtainable from plant nurseries and garden centres (not to mention W.I. markets...).

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Street-wise 'aliens' in Taunton (v.c. 5)

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The articles on urban 'aliens' by Philip Budd and Rodney Burton in *BSBI News* 100: 45 & 48-49) were most interesting, and the possibility of a link between our changing urban flora and 'global warming' – or at any rate the recent run of mild winters and warm, dry summers – seems highly plausible.

In the last few years I have been recording the flora of the Taunton area in a systematic way, using 0.5km squares as my recording unit, and I have noticed a number of (mainly non-native) species becoming increasingly frequent as street weeds during that time. Many of these are 'southern' species, having a wider European distribution centred on the Mediterranean; whilst those originating from further afield still tend to be associated with warm-temperate or tropical climates.

Amongst the grasses, *Polypogon viridis* (Water Bent) is now spreading quite rapidly in Taunton. In the mid 1990s I remember it as being restricted to a few dozen plants in Stephen Street, just south-east of the County Cricket Ground. But it now occurs commonly in pavement cracks, on kerbsides and at the base of street-side house walls in Eastbourne Road, St Augustine Street, Laburnum Street, Haydon Road and Wilfred Street. In 1998 it turned up in our garden in Trinity Street, where it now grows prolifically between bricks in the backyard. Its spread is presumably being helped by the traffic of human feet, and the route between our house and the cricket ground is a well-trodden one which takes in several of the aforementioned streets.

In our garden *P. viridis* shares its living quarters with another Mediterranean grass, *Lagurus ovatus* (Hare's-tail). This was deliberately introduced in about 1999, using seed collected from a wild population at Minehead Warren. *Lagurus* clearly enjoys its backyard habitat, but has been quick to escape into the front garden too, and from there into neighbours' plots and out into

the street: in the last couple of years I have seen it in several places along Trinity Street, and this year at the top end of neighbouring Church Street too.

Other grasses occurring more frequently now than they did a few years ago include *Phalaris canariensis* (Canary-grass) – a common birdseed casual – and *Briza maxima* (Greater Quaking-grass), a garden escape which is well established in a pavement at the northern end of Trull Road, as well as a few plants noticed last year in nearby Westgate Street. I also saw it this year, in considerable abundance, on a road verge near the entrance to the town's recycling centre on the Priorswood Industrial Estate. Apart from *Anemanthele lessoniana* (the subject of a separate article, page 43), the only other 'alien' grass of note so far is *Anisantha madritensis* (Compact Brome), which lines the northern end of the Obridge viaduct. Away from the Avon Gorge, beside a busy Taunton highway, this former *Red Data Book* species (now a 'neophyte') begins to look a little lack-lustre – the botanical equivalent of a B-list celebrity, perhaps?

Other increasing 'aliens' in Taunton include many of those also noted by Philip Budd in Southampton, such as *Diplotaxis tenuifolia* (Perennial Wall-rocket), *Soleirolia soleirolii* (Mother-of-thousands), *Erigeron karvinskianus* (Mexican Fleabane) and *Campanula poscharskyana* (Trailing Bellflower). We also have a lot of *C. portenschlagiana* (Adria Bellflower) and *Pseudofumaria lutea* (Yellow Corydalis), mainly on walls, plus scattered records of *Lobelia erinus* (Garden Lobelia) and *Nigella damascena* (Love-in-the-mist) in pavement cracks – all these species seem to have increased quite markedly over the last ten years. Several *Oxalis* spp are increasing too, including *O. articulata* (Pink-sorrel), *O. corniculata* (Procumbent Yellow-sorrel) and – particularly in the last couple of years – *O. stricta* (Upright Yellow-sorrel).

Erodium moschatum (Musk Stork's-bill) is also spreading: discovered in Trinity Street in about 1996, more recently found in nearby Church Street and Queen Street, and now locally abun-

dant in lawns at the local primary school in South Street, where it was first noticed about three years ago.

***The Plantsman* – a botanical journal**

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Many members are probably unaware of the value, or even existence, of the journal, *The Plantsman*. It can, on occasion, help to name garden escapes, and it always gives good instruction on the more botanical aspects of gardening. Any member having trouble separating the very similar *Scilla bithynica* (Turkish Squill) and *S. messeniaca* (Greek Squill) should refer to the excellent coloured photo in 4(2): 114 (June 2005), where the two taxa lie side-by-side and are captioned with their differences in morphology. Below, I give a brief introduction to this periodical.

The Plantsman (New Series) is published quarterly by the Royal Horticultural Society as their 'premier publication' with each issue, of some 68 pages, printed in full colour giving 'an authoritative and accessible mix of plant profiles, horticulture, botany and garden plant development'. It focuses on ornamental plants grown in temperate gardens and its current editor is none other than our own BSBI member, Mike Grant. See, his smiley face and read his 'First Words From the Editor' in each part! Articles append full details of all references, and even keys are occasionally printed (so loathed by gardeners!).

Recent issues have delved, in great depth, into bulbs, including *Scilla* and *Muscari* (by the master, Brian Mathew). Myrtles of Chile were covered in 4(3): 152-158 (Sept. 2005), more species of which may escape than we realise. In the same issue are articles on *Aster amellus*

(European Michaelmas-daisy) (photos of many cultivars), *Crocus*, *Geranium*, *Ozothamnus* and *Saxifraga*. An article on overcoming seed dormancy is interesting and informative: to simulate passage through the digestive tract of animals/ birds, it suggests (p.161) the novel solution of 'washing them in dilute lemon juice or cola drinks'.

Regular features include a News section, Letters and the valuable Book Reviews (which often cover wild plants, too).

The December 2005 part will tell us about the incorporation of *Smilacina* into *Maianthemum*. Clement & Foster's *Alien Plants of the British Isles* (1994) does list them cheek by jowl. And, Roy Lancaster will review the BSBI's *Illustrations of Alien Plants of the British Isles* (2005) – we hope enthusiastically!

A selection of previous articles can be viewed on-line and subscriptions, currently £29 per annum (£23 for RHS members), can now be registered at: www.rhs.org.uk/learning/publications/pubs_journals_plantsman.asp

The Plantsman is certainly a recommended purchase for the serious botanist or plants-person, and I am unaware of any real competitor, bar the prestigious *Curtis's Botanical Magazine*, now priced at £51.45 per annum.

[A leaflet advertising *The Plantsman* was distributed with *BSBI News* last year, entitling members to £6 off the normal subscription rate. Copies are still available from the General Editor.]

***Sisymbrium polyceratum*, an urban casual in Birmingham**

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Whilst recording for the Birmingham and Black Country Flora Project in an area of Nechells, Birmingham, B19, during June 2005 and thinking of the 1001 places I would rather be botanising, I came across a rather uninspiring row of houses which were completely devoid of front gardens and with front doors opening onto the pavement. A few weeds were struggling to exist in cracks in the paving and along the roadside, but at least it was an improvement on the previ-

ous road I had walked along which had recently been weed-killed. I ticked off the usual roadside species including *Poa annua* (Annual Meadow-grass), *Epilobium ciliatum*, (American Willow-herb) *Sonchus oleraceus* (Smooth Sow-thistle), *Sagina procumbens* (Procumbent Pearlwort) and *Capsella bursa-pastoris* (Shepherd's-purse) and then, to my surprise, I found a yellow-flowered crucifer I did not recognise. A few metres further along the road there were several more

of the same species. All were growing along the crack in the paving where it meets the house and wall. In all there were about twenty plants, ranging from a few centimetres to about half a metre in height. In the last seven years of similar recording I have never found this species anywhere else.

A close examination of the plant revealed that the leaf shape varied from lobed to pinnatifid on the same plant and the clusters of tiny, yellow flowers were formed in leaf axils all the way up the stem, followed by slender, slightly-beaded fruit that curved downwards as they matured. At the tip of the fruit there was a short, persistent style. (see Colour Section, plate 2).

A specimen was collected and sent to Eric Clement for a determination and his conclusion was *Sisymbrium polyceratum* (Many-podded Hedge-mustard), a casual plant in Britain that had not been recorded during the last twenty years as far as he was aware. I have however been informed by John Hawksford, the County Recorder for v.c. 39, that this is the second Staffordshire record in recent years.

I would be interested to know if anyone else has found it recently, and in any comments on this species.

The rise and fall of *Veronica filiformis* (Slender Speedwell)

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30 years ago Slender Speedwell (*Veronica filiformis*) was scarce in the Harrogate (North Yorkshire) area. It then arrived on the Stray, 200 acres of grass in the town centre. It was then spread on gang mowers and quickly colonised all the areas of gang mown grass in the district. A couple of years ago I turned up an old photo showing a large area of the Stray turned blue by the Speedwell. This reminded me that I hadn't seen any recently, so I looked and could only find a few small insignificant patches on the edge of some grassy areas. I spoke to the Corporation officer responsible for the Stray and some of the men actually driving the mowers and they all assured me that the Stray had not been

treated with anything to get rid of it and the mowing schedule had not been significantly changed. I spoke to a friend who has a weekly outdoor article in the local paper and he included an item asking if anyone knew what had happened to the *Veronica*, there was no response.

The Royal Horticultural Society's 'Encyclopedia of Gardening' (1992 reprinted 1996) specifically mentions *Veronica filiformis* as being a lawn weed that may survive several applications of weedkiller.

Is this infestation followed by decline common with *Veronica filiformis* or is the Harrogate experience unusual?

FIELD MEETING REPORTS – 2005

Reports of Field Meetings (with the exception of Reports of Irish Meetings written by Alan Hill) are edited by, and should be sent to: Dr Alan Showler, 12 Wedgwood Drive, Hughenden Valley, High Wycombe, Bucks, HP14

4PA, Tel.: 01494 562082. Potential authors of reports should note that they should not be much longer than 500 words (half a page of *News*) for a one day meeting and 1000 words (1 page of *News*) for a weekend.

New Forest, Hatchet Pond, South Hants (v.c. 11). 24th April

JOHN POLAND

Twenty-three attendees turned out for one of the first field meetings concentrating on the vegetative identification of our flora. Starting at Hatchet Pond, a site well known to botanists, we had a selection of New Forest 'goodies' including *Ludwigia palustris* (Hampshire-purslane)

Galium constrictum (Slender Marsh-bedstraw) and *Ranunculus ×novae-forestae* (New Forest Crowfoot). These rarities were well received by those travelling from distant counties!

The main focus of the day was to demonstrate the ease at which plants can be identified vege-

tatively. One i.d. challenge were three glaucous sedges – *Carex flacca* (Glaucous Sedge), *C. panicea* (Carnation Sedge) and *C. nigra* (Common Sedge) – growing intermixed. Only *C. nigra* has stomata (clearly visible as little white dots through a hand lens) on both sides of the leaves, with *C. flacca* and *C. panicea* having stomata confined to the underside only. These latter two sedges are readily separated by the midrib channel on the upper leaf surface – usually extending to the extreme apex on *C. flacca* but falling short in *C. panicea* (forming the distinct trigonous tip). Additionally, the veins are more irregularly spaced in *C. panicea*. Over lunch, some members keyed out grasses using the first draft of the ‘Vegetative Key’ and others found themselves picnicking on *Poa bulbosa* (Bulbous Meadow-grass) – a new site record!

We moved on to nearby Setley Plain where we had the rare alien *Plagiobothrys scouleri* (White Forget-me-not). This rosette-forming annual, at

first glance, looks incredibly similar to unlobed leaves of *Plantago coronopus* (Buck’s-horn Plantain) but the lack of long hairs at the centre of the rosette was an instant giveaway.

The final port of call was to an established, but rarely flowering, colony of *Luronium natans* (Floating Water-plantain) near Brockenhurst. The ‘ladder-like’ venation of the floating leaves is most unlike any other aquatic plant as the secondary veins connect the midrib to the prominent submarginal vein at almost right-angles. As with floating leaves of any aquatic plant, the stomata are confined to the upper surface – if they were below, the plant would drown!

Thanks to Phil Budd for jointly leading the event, and to those who attended, most notably Eric Clement for his encyclopaedic knowledge of the British flora. Thanks are also due to the Forestry Commission for permitting the collection of material for close examination.

Langton Matravers, Dorset (v.c. 9) 3rd May

EDWARD PRATT

Twenty members of the BSBI and the WFS, together with two recently appointed National Trust staff, had an exhilarating walk in the rainless breeze, serenaded by Skylarks. We were sorry that eight others who had booked failed to show, some perhaps deterred by heavy rain inland. We divided in two with David Leadbetter leading the second party.

The first stop was at Spyway Barn to view the National Trust’s pictorial display of features of the area. We continued southwards on to the SSSI recently named The Purbeck Wares. It consists of Purbeck Limestone grassland and scrub sloping to the south from around 110m to the cliff tops at around 35m. It extends from Durlston Country park in the east to, and including, Seacombe Valley in the west. There are traces of old quarries in the grassland, and Portland Limestone quarries on the cliffs, part of the recently-designated geological Jurassic Coast World Heritage Site.

The first species of interest was *Rumex pulcher* (Fiddle Dock) in leaf. Next we saw *Cerastium pumilum* (Dwarf Mouse-ear) on an-thills on top of an overgrown spoil heap, together with the first few *Ophrys sphegodes* (Early Spider-orchid), a species which appeared at frequent intervals during the walk, sometimes in many hundreds. Turning down the slope beautiful patches of *Polygala calcarea* (Chalk Milkwort) appeared, and the differences with *Polygala vulgaris* (Common Milkwort), which

was seen later in the walk, were described. Entering White Ware the party enjoyed the large colony of *Orchis morio* (Green-winged Orchid), and then plenty of *Brassica oleracea* (Wild Cabbage) also in full flower on the cliff top. Under the east side of a stone wall the leaves of *Arum italicum* subspecies *neglectum* (Italian Lords-and-ladies) were seen, but no flowers. The leader wonders whether at least some of it is the hybrid with *A. maculatum*.

We moved west passing Dancing Ledge, and came to a colony of *Valerianella eriocarpa* (Hairy-fruited Cornsalad), just north of the Coast Path. Several new colonies of this species have been found in Purbeck Limestone and Chalk grassland in recent years, showing that Purbeck is its British headquarters. Though usually in flower by early May, this year it was late and only buds were seen. The party then descended by an easy path into Hedbury Quarry, best known for its one cannon left over (it is said) from the Napoleonic Wars. There we stopped for a late lunch. When the second party arrived they told of seeing *Gentianella anglica* (Early Gentian) and *Thesium humifusum* (Bastard-toadflax) on the slopes. The first party tried to counter with the Little Owl which had flown off as they had entered the quarry! The friendly rivalry continued after lunch when the parties met after viewing *Asplenium marinum* (Sea Spleenwort) and other species at opposite ends of the quarry. One said ‘We’ve seen two

Wall Lizards', to which they received the reply 'We've seen two Wall Lizards too'. (This continental species was introduced to one of the cliff quarries a few years ago, and has found the habitat to its liking, spreading all along the limestone cliffs). The first party did see the *Gentianella* in a different site later in the day.

Another smaller colony of *Orchis morio* was visited to see albinos together with a remarkable piebald specimen. On the way back up the slope Steve Clarkson spotted an unrecorded clump of

the *Arum italicum*. Also on the return route we visited a pond to see *Ranunculus trichophyllus* (Thread-leaved Water-crowfoot) in flower and *Lotus glaber* (Narrow-leaved Bird's-foot-trefoil) in leaf.

The Purbeck Wares are open country. I would like to record our thanks to the owner, The National Trust, and to their farming tenants for that part, Paul and Tricia Earley, for the splendid condition of The Wares.

BSBI AGM, Ferryside, (v. c. 44) 13-15th May

KATH PRYCE

On our way to the National Botanic Garden of Wales where many BSBI members were to meet for lunch, Richard and I put the final touches to the AGM preparations, calling at Ferryside Education Centre to tie 'BSBI' direction notices to strategic posts at the entrance. The weather forecast was not good and he had a few extra indoor activities in mind as contingency should the rain be torrential (it is Wales!). However, the weather turned out to be remarkably fine and sunny for the whole weekend.

After lunch (where we wished Trevor Dines Happy Birthday and realised just how old we were – or how young he is), we were met by Rhodri Griffiths, Director of NBGW, followed by various 'behind the scenes' tours to the corridors beneath the Great Glasshouse and to a small part of the farm estate, then inside the propagation greenhouses and to the Walled Garden. I was asked to photograph several large self-sown plants of *Lactuca virosa* (Great Lettuce) outside the greenhouses (the 1st record for Carms.) and *Oxalis exilis* (Least Yellow-sorrel) growing as a weed inside. I don't know what the staff thought of the fact that many BSBI members seemed to be more enthusiastic about the weeds than the exotic species planted in the gardens, greenhouses and Great Glasshouse!

Members then drove to Ferryside and settled in to their accommodation. By this time more people had arrived and, as well as meeting old friends, we were finally able to put faces to some of the names we had booked-in over the past weeks. The evening meal was a good social start to the event and members were able to meet the incoming President, Dr Richard Gornall, and the newly appointed BSBI Director of Development, Dr Gabriel Hemery.

This was followed by a walk along the foreshore, after which some members investigated the local pubs. The choice was somewhat limit-

ed: either a pub with a tiny room used for karaoke or the local Rugby Club which proved to be very popular – the Rugby Club proprietors were obviously keen for people to attend, as a custom made notice appeared at the Education Centre entrance pointing us in the right direction!

Saturday offered two alternative morning meetings, to Burry Port Harbour (led by RDP) or to Waun-y-Gwial Fach farm (led by Andrew Stevens). At Burry Port two spikes of *Anacamptis (Orchis) morio* (Green-winged Orchid) were seen east of the harbour at a new site and the *Silene gallica* (Small-flowered Catchfly) was in full flower on the dock wall at its only Carms. locality – a very good display (see photo inside back cover). Near 'Turbine Hall Pond' many plants of *Linaria supina* (Prostrate Toadflax) were growing amongst the crushed-concrete rubble derived from the demolished power-station which once occupied the site. Andrew showed the other party the acid, heathy fields which he manages at his farm. These are good examples of Carmarthenshire coalfield rhes-pastures and support a rich variety of characteristic sedges and other plants.

After lunch, the AGM was convened. The first and very pleasant task was for RDP to present the President's Prize for the best botanical publication of 2004 (judged and awarded jointly by the Presidents of the BSBI and Plantlife) to Dr Alison Averis who represented the six authors of *An Illustrated Guide to British Upland Vegetation*. She was warmly congratulated and thanked for her attendance, having travelled from Scotland. Before welcoming Richard Gornall as new President, Gwynn Ellis presented him (RDP) with a pre-publication copy of Clement, Smith & Thirlwell's *Illustrations of Alien Plants of the British Isles*. He warmly thanked those present for this unexpected gift and, although relieved at standing down after

his busy three year term, was very appreciative of all the assistance he had received from the officers and members and was very grateful for having been given the chance to serve the Society in such an elevated role.

Following a short break for tea, RDP gave an illustrated talk on the botanical highlights of Carmarthenshire which was somewhat marred by only two of the colour channels working on the Centre's digital projector! We also had presentations from David Pearman, Bob Ellis and Gabriel on Local Change, the proposed Hybrids Project and what the future holds for the Society.

Following the evening meal, some members went botanising, walking along the lane and onto the bank of the River Tywi at Morfa Uchaf, north of Ferryside. This proved to be an enjoyable short excursion with a chance to see *Fumaria capreolata* (White Ramping-fumitory) in local hedges at the edge of the village, an unfamiliar plant to many present. Characteristic species were noted on the saltmarsh with much discussion being generated over the discovery of the possible hybrid *Cochlearia anglica* × *C. danica* (English Scurvy-grass × Danish Scurvy-grass). The party was eventually defeated by the fading light and many retired to the bar of the Rugby Club on the return to the Centre!

Sunday was fine and sunny and the alternative field meetings were to Pembrey Burrows (led by RDP) or Carmel Woods National Nature Reserve (led by Dr Nigel Stringer).

The Carmel Woods party were first shown the limestone collapse feature at Pwll Edrychiad before walking through the disused Glan Gwenlais Quarry and its associated calcareous woodland, then passing the Pentregwenlais Turlough before finishing the afternoon by examining the *Equisetum variegatum* var. *wilsonii* (a variety of Variegated Horsetail) and

E. ×rothmaleri (a hybrid horsetail) at Pentregwenlais Quarry.

Pembrey Burrows is a Local Nature Reserve administered by Carmarthenshire County Council where thousands of *Anacamptis morio* plants were seen in flower with occasional *Botrychium lunaria* (Moonwort) in the dune hollows (see photo inside back cover). A new 10km square record (for the vice-county) was made for *Ballota nigra* (Black Horehound) in the abandoned car-park and many people remarked on the attractive displays of *Viola tricolor* subsp. *curtisii* (Dune Pansy) and *Viola canina* (Heath Dog-violet) (see photo on back cover). We ate our packed lunches by the pond which had been created several years previously when a start was made on the control of *Hippophae rhamnoides* (Sea Buckthorn), a species introduced for sand stabilization by the Forestry Commission in the 1920s and 1930s but which is now an aggressive colonist of all the dunes in the area. Noteworthy species included *Eleocharis uniglumis* (Slender Spike-rush) and the stoneworts *Chara vulgaris* var. *papillata* and *C. vulgaris* var. *hispidula* (subsequently confirmed by Nick Stewart). Amongst the party were some Lepidopterists and species recorded included Green Hairstreak, Small Blue, Grizzled Skipper and Dingy Skipper.

By mid afternoon many people had departed for long journeys home and the few remaining were local or staying an extra night at Ferryside. We gave one member a lift back to Ferryside, RDP choosing the coastal road. It was most refreshing to hear him say how wonderful the scenery was and how much he had enjoyed the weekend especially as he had only recently joined BSBI. Back at Ferryside we gathered that most people thought that the weekend had been a most successful AGM, much to RDP's relief!

I am very grateful to Ailsa Burns for her help in encouraging those who still owed money to pay, to avoid the need for chasing them later!

Castle Hill and Mt. Caburn, East Sussex. (v.c. 14). 14th May

T.P. BARTLETT

Although billed as a joint LNHS/BSBI Meeting, a large majority of the 19 Members who attended belonged to the latter Society, though several were common to both.

The areas visited are wonderful examples of antique chalk downland, sandwiched between arable fields, and are administered as National Nature Reserves by English Nature. Hence we were very lucky to have Malcolm Emery, EN's Site Manager with us, to share his detailed knowledge, and I was sorry that he disappeared

over the hills at lunchtime without being publicly thanked.

Castle Hill is not easy of access, and the stiff climb along the South Downs Way from the village of Kingston-near-Lewes was chosen as being potentially the most interesting approach. The date was chosen with a view to catching the last part of the flowering season of *Ophrys sphegodes* (Early Spider-orchid), together with the start of the wonderful array of flowers to be seen in summer in good chalk grassland. The

latter largely failed to materialise in the dull, cold and damp weather but the huge population of orchids was worshipped and photographed.

An exciting find by one member was a single flowering plant of *Gentianella anglica* (Early Gentian), which had been known from the site but had not been seen for many years. Another interesting chalk plant seen in good numbers, and one which has a very limited distribution, was *Tephrosieris integrifolia* (Field Fleawort), while *Lepidium campestre* (Field Pepperwort). and *Carex caryophyllea* (Spring Sedge) attracted some interest.

Several participants sloped off during the day, to 'spend more time with their families', leaving

only seven members to enjoy the best part of the day, when we visited Mount Caburn. The temperature had risen, the wind had dropped, the sun was almost shining, and the vegetation in the sheltered valley was much more advanced.

Plants seen included *Arabis hirsuta* (Hairy Rock-cress), more *Tephrosieris*, *Hippocrepis comosa* (Horseshoe Vetch), various *Violas*, and much *Cynoglossum officinale* (Hound's-tongue). Opinion was divided as to whether this plant smelled of mice, or curiously, of peanut butter! And to finish the day on a high note, there was a fine display of *Orchis* (or should I say *Neotinea* now?) *ustulata*, the Burnt Orchid.

Cuckmere Valley, East Sussex (v.c. 14) 25-26th June

ALAN KNAPP & HELEN PROCTOR

The purpose of the meeting, was to introduce members to plants special to the lower Cuckmere Valley and to record for the proposed new Flora of Sussex. 20 members of the BSBI and Sussex Botanical Recording Society assembled in the car park at the Seven Sisters Country Park, Exceat, near Seaford and listened to a short introductory talk given by the Park Manager, Robin Thorpe. Owned by East Sussex County Council, the Park is managed for recreation in the valley, education, and conservation in the remoter areas. Habitats include chalk grassland, brackish water, saltmarsh and shingle. The Country Park lies partly in four tetrads, which necessitated close attention to detail with the G.P.S.

As the party left the car park, a large plant of *Centaurea calcitrapa* (Red Star-thistle) was noted. Possibly native in Sussex (Briggs, M., 2004, *Sussex Wild Flowers*. Henfield) it occurs frequently on disturbed ground in the Country Park and by the Cuckmere river as far inland as Litlington. Large amounts of *Ruppia cirrhosa* (Spiral Tasselweed) were found in brackish water. Seen in flower a week earlier by the leaders, the fruiting stems were now clearly coiled. This is the only known site in East Sussex. (Briggs, M., ed. 2004. *The Sussex Rare Plants Register*. Henfield). Also common in Sussex, *Carex distans* (Distant Sedge) had colonised the bank of a ditch. A detour was made up the hillside to study an area of *Bromopsis erecta* (Upright Brome) chalk grassland which had benefitted from winter grazing. *Phyteuma orbiculare* (Round-headed Rampion) was just coming into flower. Also known as 'Pride of Sussex', this plant was recently nominated as the County

Flower of Sussex. 12 plants of *Orchis ustulata* (Burnt-tip Orchid) were seen together with *Gymnadenia conopsea* (Fragrant Orchid) and *Anacamptis pyramidalis* (Pyramidal Orchid).

The planned route took the party along a raised footpath through the saltmarsh near the river. Two more plants of *A. pyramidalis* were unexpectedly seen on the bank above the saltmarsh. Several plants of *Raphanus raphanistrum* subsp. *maritimum* (Sea Radish) and *Crithmum maritimum* (Rock Samphire) occurred by the path. *Crambe maritima* (Sea-kale) and *Glaucium flavum* (Yellow Horned-poppay) were abundant on the shingle. Patches of formerly grazed turf had a varied flora including *Sagina maritima* (Sea Pearlwort) and *Geranium columbinum* (Long-stalked Crane's-bill). Recent recording of five 2m quadrats had produced a list of 39 species. *Lotus glaber* (Narrow-leaved Bird's-foot-trefoil) was flowering profusely, providing a dense yellow 'carpet'. This area, just behind the shingle bank had been swept completely clean by a storm in 2000.

On Sunday, members met in the car park at 'High and Over', between Alfriston and Seaford. The group walked downhill to see *Marrubium vulgare* (White Horehound). A very scarce plant in Sussex, two colonies were found lower down the hill than before, where the burrowing activities of rabbits had caused extensive soil disturbance. About 20 plants of *Hyoscyamus niger* (Henbane) were also seen here. Scattered plants of *Ranunculus parviflorus* (Small-flowered Buttercup) in fruit were evident in short turf. The party crossed the road to Cradle Hill, another National Trust owned site. A dewpond contained several aquatic plants including *Strat*

tiotes aloides (Water-soldier), *Ranunculus tri-chophyllus* (Thread-leaved Water-crowfoot), and *Callitriche obtusangula* (Blunt-fruited Water-starwort). Long established chalk grassland on steep slopes produced a large species list of typical Downland plants including two colonies of the late flowering form of *Orchis ustulata*. One plant of *Gentianella amarella* (Autumn Gentian) was already flowering. Many hundreds of plants of *Thesium humifusum* (Bastard-toad-flax) were seen over more than 100 metres of

hillside. Lower down the hillside, former arable land had been allowed to revert to chalk grassland, allowing a comparison to be made of the floral composition of the two areas. Two plants of *Valerianella dentata* (Narrow-fruited Cornsalad), a rare plant in Sussex, were found here.

The meeting was blessed with dry, mild weather on both days. A total of 562 records were collected and participants were able to see several plants of particular interest in Sussex.

E. Norfolk & E. Suffolk (v.cc. 25 & 27) Grass & sedge identification weekend, 11-12th June

ARTHUR COPPING

Twenty-one members and one guest, in addition to the leader, met at the Sea Mere Study Centre, Hingham, on the morning of 11th June where they were welcomed by Mrs Judy Watson who briefly described the function of the Centre and the features of the surrounding area. Sea Mere itself is a 20 acre circular lake formed by glacial action enclosed by 50 acres of deciduous woodland and 35 acres of marsh (Turf Meadows). After a brief introduction to the structure of grass and sedge plants by the leader in which *Anisantha diandra* (Great Brome), *Alopecurus pratensis* (Meadow Foxtail), *Lolium perenne* (Perennial Rye-grass), *Carex riparia* (Greater Pond-sedge), *C. acutiformis* (Lesser Pond-sedge), *C. divulsa* subsp. *divulsa* and subsp. *leersii* (Grey Sedge) and the non-British *C. vulcani* were used for illustration, the party set off for Turf Meadows where approximately three hours were spent exploring a rich and diverse habitat. The meadow margins consisted of damp grassland with gentle slopes leading to a permanently wet, sedge dominated centre where most prominent were swathes of *Carex acutiformis*, large tussocks of *C. elata* (Tufted-sedge), and abundant *C. disticha* (Brown Sedge) and *C. hirta* (Hairy Sedge) at the edges. Of particular interest was a boggy arm of the meadows, flanked on three sides by willow carr, which contained *Carex appropinquata* (Fibrous Tussock-sedge) and *C. lasiocarpa* (Slender Sedge). The grass flora was secondary at Turf Meadows, but of special note was a large colony of *Catabrosa aquatica* (Whorl-grass) in a stream and an almost circular patch of *Glyceria ×pedicellata* (Hybrid Sweet-grass) growing nearby. Both parents, *G. fluitans* (Floating Sweet-grass) and *G. notata* (Plicate Sweet-grass) were also found here and there.

After lunch the party transferred to Church Green, Old Buckenham, a large grassy common from which an annual hay cut is taken in late summer. There was considerable variation in the composition of the vegetation cover across the common with tall *Arrhenatherum elatius* (False Oat-grass) dominating communities at the margins and a shorter turf containing *Festuca rubra* (Red Fescue) and *Anthoxanthum odoratum* (Sweet Vernal-grass) in the centre. Recognition of the diagnostic features of the common pasture grasses was the principal theme here with *Schoenoplectus lacustris* (Common Club-rush) planted in a pond, *Carex ovalis* (Oval Sedge) beside paths and a small colony of *Agrostis canina* (Velvet Bent) the only unusual species of note. One surprise, both here and at Sea Mere, was the vast quantity of *Poa trivialis* (Rough Meadow-grass), which in places grew to the virtual exclusion of other plants, and the extreme scarcity of *P. pratensis* s.l. (Smooth Meadow-grass). This led to speculation about whether the balance in numbers between these taxa was shifting with time in favour of the former. *Cynosurus cristatus* (Crested Dog's-tail) was another unexpected rarity, apparently totally absent from Old Buckenham.

By 5.00p.m. the Green's potential seemed exhausted and Bob Ellis suggested transferring to the nearby New Buckenham Common for the final hour, a site previously unexplored by the leader. This proved instantly rewarding and added ten new taxa for the day, including *Festuca filiformis* (Fine-leaved Sheep's-fescue) which seems to be much commoner than *F. ovina* (Sheep's-fescue) on many East Anglian heaths, *Danthonia decumbens* (Heath-grass), *Carex muricata* subsp. *lamprocarpa* (Prickly

Sedge), *Glyceria declinata* (Small Sweet-grass), *Alopecurus geniculatus* (Marsh Fox-tail) and the much rarer *A. aequalis* (Orange Foxtail).

On Sunday 12th the party met at Landguard local nature reserve, Felixstowe, an area of consolidated shingle and dune, where we were joined by the reserve manager, Malte Iden, who accompanied us for the day. Inland Norfolk and Suffolk had experienced adequate rainfall so it was a shock to find large areas of Landguard desiccated by drought and totally brown. This site had been visited during the 2000 BSBI Grass Identification meeting and contains many rarities, many of which were refound (see *BSBI News* 86: 68). Among these were *Cynosurus echinatus* (Rough Dog's-tail), *Vulpia ciliata* subsp. *ambigua* (Bearded Fescue), both in quantity, *Parapholis incurva* (Curved Hard-grass), *Anisantha madritensis* (Compact Brome), *Vulpia fasciculata* (Dune Fescue) and *Carex divisa*

(Divided Sedge). The 2000 meeting had been held later in the month and unfortunately the *Elytrigia* hybrids which are to be found at Landguard were too immature to be identified in 2005.

By the end of the meeting we had seen 22 sedge and 63 grass species, the latter number representing more than 40% of those illustrated in the first edition of Hubbard's Grasses. Additionally we added a new record for the intensively botanised Landguard LNR, a splendid solitary plant of *Ophrys apifera* (Bee Orchid).

Finally, the Society thanks Judy Watson for allowing us access to the Sea Mere site, Judy and Malte Iden for permitting us to use the classroom facilities at Sea Mere and Landguard respectively, including the provision of tea or coffee to accompany our packed lunches. Thanks are due too to Mrs J. Getley who gave consent for us to use the Old Buckenham Village Hall car park.

Field Meetings at Welsh AGM at Lampeter, Ceredigion (v.c. 46) 17-19th June

ARTHUR CHATER & ANDY JONES

The first outing was after dinner on the Friday evening when our aquatics tutor, Richard Lansdown, demonstrated to a large group some of the techniques of sampling and identification in the Afon Dulas, a well vegetated stream conveniently flowing through the grounds of Lampeter College where we were staying. *Callitriche obtusangula* (Blunt-fruited Water-starwort) was showing a profusion of yellow anthers on its floating rosettes, and *C. brutia* subsp. *lacustris* (*C. hamulata*) (Intermediate Water-starwort) was mixed with it, its flowers submerged, and with deflexed styles on the developing fruits and bicycle spanners on the leaf tips; other clumps lacked any of the diagnostic features and were left as *C. brutia* sens. lat. *Ranunculus penicillatus* subsp. *penicillatus* (Stream Water-crowfoot) was growing in abundance, enabling Richard to demonstrate the various leaf characters, length in relation to internodes, numbers of divisions and the development of laminar leaves. The submerged form of *Oenanthe crocata* (Hemlock Water-dropwort), *Sparganium emersum* (Unbranched Bur-reed) and *Fontinalis antipyretica* (Great Water-moss) were among other aquatics there. We were alarmed to learn that the distinction between *Lemna minor* and *L. gibba* (Common and Fat Duckweeds) was by no means as clear as we

had imagined. As the light began to fail we walked up to the churchyard to inspect more straightforward plants among the rich grassland flora on the site of the demolished medieval building, including three calcicole grasses uncommon in the county, *Briza media* (Quaking-grass), *Trisetum flavescens* (Yellow Oat-grass) and *Brachypodium pinnatum* (Tor-grass), the latter probably the true *B. pinnatum* rather than *B. rupestre*.

On Saturday morning half the members went to Denmark Farm nearby at Betws Bledrws. Richard Williams told us something of the history of its origins as a nature reserve and demonstration conservation centre under the inspired management of Neil and Barbara Taylor, and its evolution into and continuing work as the Shared Earth Trust. This has provided much original and valuable monitoring work showing how the rye-grass desert of the early 1980s was enabled to revert to species-rich pasture and marsh, and has also involved and given guidance to the local farming and landowning community. In keeping with the theme of the weekend, we concentrated on the water bodies of which there were ten. Richard Lansdown, clad in chest waders, was able to demonstrate *Potamogeton natans* and *P. polygonifolius* (Broad-leaved and Bog Pondweeds); a fine-

leaved species, material of which was collected from the old farm pond and several of the scrapes, was later confirmed by sectioning the stipules to be *P. berchtoldii* (Small Pondweed). *Callitriche brutia* s.l. and *C. stagnalis* (Common Water-starwort) were also collected for study indoors. We wound our way through the very colourful pastures visiting each scrape in turn and listing their aquatics. The profusion of damsel flies and dragonflies was remarkable. The comparatively large 1980s lake was disappointing, adding only *Hypericum elodes* (Marsh St John's-wort) to the list, apart from *Iris pseudacorus* (Yellow Iris) which is, apart from trees in an area of woodland and some hedge trees, the only introduction on the site.

On Sunday half the members went to the lower end of the Cors Caron NNR by kind permission of the CCW warden, Paul Culyer. We met at Pont Eion, and spent the next few hours along a short stretch of the meandering Afon Teifi with Richard, again half submerged in his chest waders, teaching us how to identify especially the often bewilderingly similar submerged forms of many species here. These included *Schoenoplectus lacustris* (Common Club-rush), *Sparganium erectum* Branched Bur-reed), *Potamogeton natans* (Broad-leaved Pondweed) and *Luronium natans* (Floating Water-plantain), all with long linear underwater leaves or phyllodes of various textures, colours and cross sections. The *Potamogeton natans* plants here showed a whole series of intermediate structures between the phyllodes and the floating leaves and was thought to be a good candidate for *P. ×gessnacensis*. Other aquatics included *Myriophyllum alterniflorum* (Alternate Water-milfoil), *Elodea canadensis* (Canadian Waterweed), *Callitriche brutia* s.l., *Ranunculus penicillatus* subsp. *penicillatus*, *Nuphar lutea* (Yellow Water-lily) with its crinkly submerged leaves, and *Persicaria hydropiper* in the deep part of the channel. *Apium inundatum* (Lesser Marshwort) was flowering on the exposed shingle. Behind us on the species-rich horse-grazed pasture a few plants of *Platanthera chlorantha* (Lesser Butterfly Orchid) were in flower. Further up-river at the flash Richard showed us *Callitriche brutia* subsp. *brutia* and *Elatine hexandra* (Six-stamened Waterwort) flowering and fruiting on the expanse of dried mud, there were dense stands of *Carex aquatilis* (Water Sedge) and *C. vesicaria* (Bladder-sedge), and *Potamogeton berchtoldii* was in an adjacent ditch. We dispersed soon after lunch, having learnt from Richard over the weekend not only some difficult species, but also various unfamiliar

forms of various aquatics, and more importantly what techniques to use in identification. Perhaps most useful of all was his repeated demonstration that some even common aquatics are often just unidentifiable and that, however much it may go against the grain, we should be more sparing and critical in our identifications.

The other Sunday excursion went to the very scenic Teifi Pools, at the headwaters of the Teifi catchment, to investigate the flora of nutrient-poor upland lakes. At Llyn Hir – one of the smaller and least modified of these lakes – members observed the distinct zoning of submerged and emergent vegetation in response to water depth, different substrates and the prevailing wind. The fringe of *Carex rostrata* in shallow water seemed to be most tolerant of wave-action (where it incorporated the supply of finer gravels) with *Equisetum fluviatile* at greater depth, whilst flowering *Lobelia dortmanna* and *Potamogeton polygonifolius* were evidently restricted to the more sheltered sites. A quick search of the driftline along the north-east shore revealed detached fragments of nearly all the species we were to find *in situ* later on – but with the slightly surprising absence of *Luronium natans*. Submerged flowering *Subularia aquatica* was also only found in very shallow water over gently shelving mud and coarse gravel – and here mainly along the lee shores. These spots, however, showed the greatest richness of 'Littorelletean' vegetation, with a range of species including *Littorella uniflora*, *Juncus bulbosus*, *Callitriche hamulata* s.l. and *Myriophyllum alterniflorum* assuming very different deep water and emergent forms. Members admired the inflorescence of terrestrial *Littorella* (resembling a reduced *Plantago* with enlarged anthers) but, in the absence of any flowering *J. bulbosus*, could not explore the status of '*J. kochii*'. Despite careful searches of several suitably sheltered sites, both *L. natans* and *Elatine hexandra* were also very elusive (perhaps both obscured by fairly thick filamentous green algae) and all of the numerous quillwort specimens we examined proved to be *Isoetes echinospora*. Andy Jones then demonstrated the use of polarising sunglasses (for cutting out surface reflections), chest waders and a bamboo cane with wire hook to rake up deep-water 'isoetid' plants of *Luronium natans* and at least one plant of *Isoetes lacustris* – although this was only confirmed later under the microscope. Our subsequent visit to Llyn Egnant made a slightly disappointing comparison, with the vegetation around its artificially raised water levels dominated by *J. bulbosus* and *Lit-*

torella, no *Lobelia* and only scant *Sparganium angustifolium* and *P. polygonifolius*. A few detached fragments of *M. alterniflorum* and *Isoetes* sp. on the northeast shore, however, helped

to demonstrate (in deteriorating weather) the presence of very different vegetation at depths and the general principle of localised species' distributions in a superficially uniform habitat.

Harlestone Firs, Northamptonshire (v.c. 32) 18th June

BRIAN LANEY

8 members and friends turned up on what was to prove a very warm but successful meeting. First stop was Harlestone Firs, just NW of Northampton. It was at one time, I would imagine, our only heathland site in Northamptonshire. Sadly, this is not now the case, the site being planted with conifers and famous with Northampton dog walkers. However, a large cleared area near the sawmill is turning up many goodies coming up from the seedbank. Notable species included Bird's-foot (*Ornithopus perpusillus*), one Bee Orchid (*Ophrys apifera*) in flower, Trailing St John's-wort (*Hypericum humifusum*), Sand Spurrey (*Spergularia rubra*), Water Purslane (*Lythrum portula*) and Wood Sedge (*Carex sylvatica*), to name just a few. We also had Small Cudweed (*Filago minima*), which I re-found for v.c. 32 last year; previously recorded about 1953! Blinks (*Montia fontana*) had gone for the year by the time of the meeting. This is also a plant I had re-found, last seen in the county in 1930. Excellent! It was in very good numbers in the spring.

Next stop was the disused Harrington airfield near Lampert; some parts of the large airfield have not been destroyed by modern agriculture. Before entering the runway, we had on the roadside Grass Vetchling (*Lathyrus nissolia*) in flower and Bee Orchid. Once on a superb, botanically rich area of the runway, species that were seen included, of course, Bee Orchid, Southern Marsh-orchid (*Dactylorhiza praetermissa*) (one plant), Narrow-leaved Bird's-foot-trefoil (*Lotus glaber*) and Twayblade (*Listera ovata*). Further along we came across hundreds of Common Spotted-orchids (*D. fuchsii*) in full

flower and in one area nearby about 10 *Ophrys apifera* var. *belgarum*. I had found this variety new to Northamptonshire back in 2001 and it was good to see it still doing well and increasing.

Moving on, we visited the Brampton Valley Way, near Oxendon tunnel (not far from Market Harborough) close to the county boundary. The Way was a disused railway line but is now a cycle way between Northampton and Market Harborough. Luckily no one was run down by bikes but we did find Grass Vetchling in flower again. However, just 2 weeks before this meeting I had discovered, new for Northants. along this line Wall Whitlowgrass (*Draba muralis*) and I managed to show everyone a good stand well in seed on a bare lump of clay by the old line. I think a couple of people were not too impressed by the dead stems but they can be re-educated!

Sadly, the heat was getting a bit much but the few who carried on were taken to a large, old, derelict quarry just N of Kettering on the A43. Sadly, John Prescott's vision of a second London in East Anglia is getting ever closer and threatening the quarry. Much of it has now been filled in, with in one part conifers growing on it. On the edge of a track there is a row of cypress trees and underneath one section of these on the barer, shorter turf were about 26 flowering yellow Bee Orchid (*Ophrys apifera* var. *chlorantha*). This variety is on the increase here since I first saw it at this locality in the early 1990s. Let's hope it is still here for future visits by botanists.

Many thanks to all who came along.

Braunton Burrows, Knowstone Moor & Hares Down, N. Devon (v.c. 4) 2-3rd July

BOB HODGSON

Twenty-two of us met at the Sandy Lane car park at Braunton Burrows on 2nd July. The party divided into two groups. The first, led by John Breeds, the Warden, went down to the southern end of the Burrows and the other party led by Mary Breeds and Bob Hodgson took a more local route. However in general both groups saw much the same species.

Braunton Burrows is the largest area of sand dune and slack in south west England and is home to a number of rarities apart from a very rich flora. It is owned by the Christie estates and mostly managed by the MOD. There is some evidence that many of the slacks have become drier over the last few years although the cause is not clear. The north party made its way via

various slacks towards the sea. A number of orchids were seen on the way including *Dactylorhiza praetermissa* (Southern Marsh-orchid), *Dactylorhiza incarnata* subsp. *coccinea* (Early Marsh-orchid) *Listera ovata* (Common Twayblade), *Anacamptis pyramidalis* (Pyramidal Orchid) and abundant *Epipactis palustris* (Marsh Helleborine). Braunton specialities included *Juncus acutus* (Sharp Rush) *Equisetum variegatum* (Variegated Horsetail), *Teucrium scordium* (Water Germander) though not in flower, and *Trifolium fragiferum* (Strawberry Clover).

In a slack near the sea abundant *Pyrola minor* (Common Wintergreen) was noted as well as *Polypogon viridis* (Water Bent).

We then reached the sea and on the strand line found *Salsola kali* (Prickly Saltwort), *Atriplex laciniata* (Frosted Orache) and the Braunton specialty *Matthiola sinuata* (Sea Stock). Notable plants seen on the return included *Ophrys apifera* (Bee Orchid) and two special Braunton introductions, *Linaria arenaria* (Sand Toadflax) and *Rumex frutescens* (Argentine Dock).

The southern party also found *Hyoscyamus niger* (Henbane), *Marrubium vulgare* (White Horehound) *Glaucium flavum* (Yellow

Horned-poppy) and *Erodium lebelii* (Sticky Stork's-bill).

On Sunday the party met at Knowstone Inner Moor which is part of a large block of culm grassland with moorland affinities. The site became progressively wetter as we moved downhill. There were abundant *Dactylorhiza maculata* (Heath Spotted-orchid) although just past their best. Typical plants of this habitat were *Lychnis flos-cuculi* (Ragged-Robin), *Menthanthes trifoliata* (Bog-bean), *Pedicularis palustris* (Marsh Lousewort), *Cirsium dissectum* (Meadow Thistle), *Hypericum elodes* (Marsh St John's-wort), *Pinguicula lusitanica* (Pale Butterwort), *Genista anglica* (Petty Whin), *Carex hostiana* (Tawny Sedge) and *Rhynchospora alba* (White Beak-sedge).

After lunch the party divided in two and recorded in two adjacent areas Knowstone Outer Moor and Hares Down. In general the flora was very similar to Knowstone Inner Moor but a little less rich. However *Dryopteris carthusiana* (Narrow Buckler-fern) was found in both areas.

Many thanks are due to John and Mary Breeds at Braunton and to Jeremy Ison at Knowstone Moor.

Aberdeen City, Aberdeenshire and Kincardineshire (v.cc. 91-3) 9-10th July

IAN P. GREEN

15 members met on a glorious hot sunny day to explore Forvie National Nature Reserve (v.c. 93). The dry sandy areas produced *Teesdalia nudicaulis* (Shepherd's Cress). *Viola canina* (Heath Dog-violet) and our first hybrid of the day *Viola* × *intersita* (*V. riviniana* × *V. canina*). On the dry heathland a small patch of *Antennaria dioica* (Mountain Everlasting) was seen. A single plant of *Mertensia maritima* (Oysterplant) was found on a sandy beach. On the rocky cliffs above a few plants of *Ligusticum scoticum* (Scots Lovage) were spotted. A grassy slope produced our second hybrid of the day *Rumex* × *propinquus* (*R. longifolius* × *R. crispus*).

An Osprey tried showing off its fishing skills in the River Ythan to us, but after about 20 attempts it gave up and flew off. Several moths were seen including Wood Tiger. Six-spot Burnets and a Poplar Hawk as well as a lot of Dark Green Fritillary Butterflies.

The sun was out again for the Sunday but only 10 members met on the north side of the mouth of the River Don (v.c. 92). *Allium scorodoprasum* (Sand Leek) was plentiful on the sandy

banks of the river. *Carex aquatilis* (Water Sedge) was found along the wetter parts of the river bank. The sandbar had a good number of plants of *Polygonum oxyspermum* (Ray's Knot-grass). The south side of the river has a small reed bed mainly made up of *Phalaris arundinacea* (Reed Canary-grass). Here we had come to look at a *Rumex* which I had found in 2004, and thought was *Rumex crispus* subsp. *uliginosus* (Curly Dock) but had only seen it early and late in the year, but we found July was still too early to be sure which subspecies it might be. (Later in the year it was determined as the above subspecies). This is the first record for this *Rumex* from Scotland. The second stop of the day was at Nigg Bay (v.c. 91); here the plan was to see if we could locate the *Lathyrus japonicus* (Sea Pea), which after sometime we did. The plants were small, but flowering and fruiting nicely. We also saw lots of plants of *Mertensia maritima* and a few plants of *Polygonum oxyspermum*. The last stop of the weekend was to look at *Cystopteris dickieana* (Dickie's Bladder-fern) in a sea cave at Cove Bay (v.c. 91), which was looking very good.

North Norfolk *Rubus* Meeting (v.c.27) 15-17th July

ALEX BULL

A 'recce' visit was paid to Fulmodeston Severalls 3 days before we were due to visit, as it was hoped to plan a route round this large wood to take in the best brambles. We had the owners' 'kind permission' following a visit during 2004, since when felling and replanting operations had been accompanied by a removal of almost all rideside vegetation. A frantic telephone call to a friend at English Nature revealed that the Honey Buzzards were not nesting at Swanton Novers Great Wood this year so he would use his good offices to get us a pass. This wood is a National Nature Reserve managed by English Nature in conjunction with the owners, the Astley Estate. By 9.30 next morning, I had been put through to the Estate's summer warden who instructed me to look for our pass on Saturday morning, under the old car battery outside his caravan.

With these preliminaries out of the way, seven of us were welcomed to Greshams School at Holt by Dr. Tony Leech, in the Biology lab. where he regaled us with tea and biscuits before having to rush off as he was organising an exhibition to celebrate notable inventors who were old pupils of the school, as part of the school's 400th anniversary celebrations.

Our excitement for the evening was to be found 3 miles from Holt and right beside the coast on Salthouse Heath. Parked first at the back of the heath, with *Rubus polyanthemus*, the second commonest species in Norfolk, and *Rubus gratus*, abundant at this site, the first 'goodie' was only a few yards further on, this being *Rubus neumannianus* which had been named '*Rubus cromerensis*' until it was realised that it was this, then recently named, continental species. Then followed *Rubus pruinosisus*, *R. flexuosus*, *R. nemoralis*, *R. lindleianus* and *R. plicatus*, the latter frequent on the heath as it is in many such sites in the county. Now we moved the cars to the top of the hill and walked along a track to inspect the only known East Anglian colony of *R. incurvatus*. Could it have arrived here, bird sown, from the only known colony in Denmark?

Before giving up for the evening, three of us went to see the, rather bracken-smothered at this season, very large colony of *Maianthemum bifolium* (May Lily), long past flowering of course. This colony was discovered about 4 years ago following the clearance of birch scrub, and may also have arrived from Scandinavia courtesy of

migrating Thrushes – some while back as the colony measures at least 20×5m.

Why we did not see one of Norfolk's 'big' species at Salthouse is a mystery, but *Rubus boraeanus* was soon spotted at Swanton Novers Great Wood next morning after our pass had been collected, with 9 members present. Another Norfolk speciality, first collected from the county by Rev. E.F. Linton, was *R. criniger*, whilst 2 plants of more northern and western inclination which have strong Norfolk populations, were *R. hylocharis* and *R. mucronulatus*. A plant that was frequent in the wood and was causing some debate was finally named by Alan Newton as *R. lintonii*. This was more shade grown than the leader was accustomed to seeing, and was also met with at our next two stops. Another plant which was almost an ever present throughout the weekend, was *R. amplificatus*, whilst records of *R. pyramidalis* and *R. sprengelii* were 'scattered throughout the weekend'. Finally at Swanton Novers, stands of *R. nessensis* towering up through other bushes to a height of some 3m were much admired.

In addition to brambles, we also saw White Admiral and Purple Hairstreak butterflies, the latter species being seen again after lunch at Sheringham Park. As we set out after lunch, Trevor James pointed out a plant new to several of us, in the car park entrance. This was the alien *Senecio inaequidens* (Narrow-leaved Ragwort). New brambles found at Sheringham were *R. pamosus* and *R. glareosus*, whilst the two members not with us on Friday evening had the opportunity to examine *R. neumannianus* which was also present. This species, *R. glareosus* and *R. lintonii* were also present at our next brief stop, Pretty Corner, also in Sheringham, which is home to the only known but quite extensive colony in Norfolk of *Rubus leucostachys*. Our final stop on Saturday, was at nearby Felbrigg Park where not many species were present, but where the local endemic *R. villosior* dominated the cattle grazed park area, the shaggy, white flowered panicles scrambling up into and over the branches of some of the smaller trees. An unknown member of the group *Hystrix* was also studied, but remained so.

Seven of us met again on Sunday morning in the car park at Bacton Woods picnic place near North Walsham. When the recce was done in July 2004, 14 species were named round the picnic area. Of these, two were not refound this

time, one unfortunately being the regional endemic *R. gariannensis*. In 2004 it was noted to be having a struggle with a vigorous bush of *R. adamsii* and it would appear that the latter won! There is more *R. gariannensis* in the wood, but that was unfortunately temporarily out of bounds. By the time we had made our way round the picnic place on this occasion, we had actually named 15 species and found 4 more that were not nameable. Specimens of one of these were gathered for further study as it seemed to be a particularly interesting plant.

In addition to some fine bushes of *R. adamsii*, everyone was impressed by the large spreading panicles of *R. norvicensis* cascading down over a thicket of that plant, with a mass of white flowers almost to the ground and up to 2m high.

R. insectifolius was new for the weekend and a good quantity of the old forest bramble *R. angloserpens* was seen. At present, this is the only Norfolk site for this. Interestingly, Forest Enterprise are engaged in removing the conifers from 50 hectares of the wood to return it to traditional Oak woodland as it had been in the past. A further ancient woodland indicator, *R. nessensis*, was also present here. Packed into two cars, the party made the 5 mile round trip to Crostwight heath with the express purpose of visiting the only known colony of *R. poliodes* in the north east corner of the county, then back to Bacton Woods where we found the car parking spaces had all been filled in our absence, so we went on to our afternoon stop and ate lunch when we got there. This was Bryant's Heath,

Felmingham, just the other side of North Walsham. Bryant's Heath is a very special place for the Batologist. In fact, Alan Newton described it as 'a gem that needs sympathetic management' because of the concentration of members of *Rubus* subgenus *Rubus* formerly called the Suberecti; i.e. those brambles of ancient sites which do not have a tip rooting facility and are thus easily and irrevocably wiped out by unsympathetic management. Of these, we found *Rubus vigorosus* to be one of the dominants all over the parts of the Heath that we visited. *Rubus plicatus* was frequent and a good number of bushes of both *R. fissus* and the nationally-rare *R. arrheniiformis* were seen. For the leader, who had long been aware of the importance of the site for this group, the 'gem' appeared when he spotted a single bush of *R. bertramii*, a bramble with only one old record in the county, and bringing the number of members of subgenus *Rubus* up to 5 from a British total of only 32.

Our final stop of the weekend was just a mile down the road at Lord Anson's Wood on the Westwick Estate. The wood contains quite large open areas of heathland which may well have joined up with Bryant's Heath at some time in the past, so it was no surprise that we again found *R. vigorosus*, *R. plicatus* and *R. arrheniiformis* in small quantities. We also found one last new species in *Rubus platyacanthus* to bring the weekend total to 36 species.

Thanks have been sent accompanied by lists of species found, to all landowners who gave permission for us to visit.

Ysgolion Duon, near Bethesda, Caerns. (v.c. 49), 23rd July

WENDY MCCARTHY & SAM THOMAS

Ysgolion Duon (Black Ladders), on the north side of Carnedd Dafydd, presumably named because of its dark dolerite formation, has long been visited by notable botanists. Reaching these floristically rich cliffs, described by Penant as 'the most horrid precipice that thought can conceive', involves a lengthy walk in through the attractive valley of Cwm Llafar, and we set off with a list of species in need of updating. As we approached the dark cliffs, on some massive boulders we found *Festuca vivipara* (Viviparous Fescue) and two hawkweeds, one (appropriately) the spotted-leaved *Hieracium carneddorum*, the other awaiting determination. Soon we were following the mountain streams up the grassy slopes towards the cliffs and ledges, seeing *Saxifraga oppositifolia* (Purple Saxifrage) and *Silene acaulis* (Moss

Campion) which had flowered earlier, *Oxyria digyna* (Mountain Sorrel) and *Thalictrum alpinum* (Alpine Meadow-rue). Sam Thomas was able to tell us why the fern growing so luxuriantly on a mossy ledge was *Dryopteris oreades* (Mountain Male-fern), later enabling some of us to recognise it for ourselves. Here too grew *Geum rivale* (Water Avens), *Phegopteris connectilis* (Beech Fern), *Oreopteris limbosperma* (Lemon-scented Fern) and *Hymenophyllum wilsonii* (Wilson's Filmy-fern). The more energetic of the party were by now climbing higher and soon Mark Kitchen called down that he had found *Saussurea alpina* (Alpine Saw-wort) and *Epilobium alsinifolium* (Chickweed Willow-herb). Continuing upstream, we came to some dripping rocks where *Juncus triglumis* (Three-flowered Rush) grew amongst the bryophytes

and a Red Fescue with abundant white hairs was perhaps *Festuca rubra* subsp. *arctica*, but this needs further investigation. In the distance, a fine stand of *Trollius europaeus* (Globe-flower) was just visible on a high ledge, along with lowland species such as *Leucanthemum vulgare* (Ox-eye Daisy) and *Silene dioica* (Red Campion).

Possible safety issues of mountain meetings were brought home to us as we sat enjoying lunch in the sunshine, when a huge boulder hurtled past us from above, with no apparent visible source of disturbance, reminding us of Pennant's words.

After lunch we searched for *Carex bigelowii* (Stiff Sedge) eventually finding a few plants on a high corner, and were able to examine its glaucous stout stems and dark inflorescences, so often grazed off by sheep when within their

reach. As we moved among the cliffs, we found further good quantities of *Epilobium alsinifolium* and *Saussurea alpina*, the latter always on high ledges and frustratingly almost out of camera reach. We were delighted to find a very few plants of *Poa glauca* (Glaucous Meadow-grass) one of the 'most-wanted' species on the list. By now, it was late afternoon and as we had explored almost all of the wetter cliffs, we started the long descent, looking under boulders for *Dryopteris expansa* (Mountain Buckler), finding lots, and possible hybrids with *D. dilatata* (Broad Buckler). A small colony of *Gymnocarpium dryopteris* (Oak Fern) was a pleasing end to the day.

My thanks to go to all participants for helping to up-date important records in somewhat difficult terrain.

Traeth Lligwy, Anglesey (v.c. 52), 3rd September

NIGEL BROWN

11 attendees enjoyed Indian Summer weather and some interesting hybrid horsetails and Polypody ferns when they visited the N.E. coastal region of Anglesey under the guidance of Nigel Brown and Ian Bonner, joint county recorders for v.c. 52. We met at Traeth Lligwy, a sandy bay at the confluence of sedimentary rocks of Devonian and Carboniferous ages. Relatively low rocky cliffs to the north and south of the bay reveal cyclical variation of conglomerate, sandstone and limestone, all overtopped by much more recent boulder clay of glacial origin and additionally a small scale post glacial sand dune formation. Acknowledging the geological background reminded us that many of the lower plant groups we enjoy looking for and studying at the present day were flourishing 300-400 million years ago when the underlying rocks of this part of Anglesey were laid down in shallow coastal zones; a fossilized stem fragment from a Carboniferous horsetail collected locally was ample proof that we were actually 325 million years too late to appreciate horsetails at their best! – the specimen provided was part of a tree size horsetail.

Equisetum telmateia (Great Horsetail) occurs here in discrete colonies, such as the cliff-top site we visited first to clarify the general structure and characteristics of the horsetail group. Growing 1.5m in height this was to be the tallest (living) species of the day and easily coped with overshadowing, *Salix* scrub – indeed it may well have gained some protection from salt laden

winds from such a close association. A few metres away in more exposed conditions there stretched a fairly dense colony of *Equisetum arvense* (Field Horsetail) and we spent some time comparing the distinct mat green, roughly ridged, coarsely branched shoots, of this smaller cousin of *E. telmateia*. Determined pulling of the shoots of both species easily exhumed small sections of their dark coloured, relatively thin underground rhizomes and in each case incipient buds were observed and considered to represent next season's precocious, colourless fertile shoots or strobili.

Our next stop was the base of a low boulder clay cliff at the southern end of the beach and a colony of rather yellowish green, semi-decumbent, well-branched horsetails sprouting from patches of partially bare ground just above the high tide level. Here was the hybrid between the two species of horsetail we had found on the cliff top, discovered and described five years ago by Trevor Dines and Ian Bonner in this very spot which is now recognised as the type locality for the new hybrid taxon named *E. ×robertsii* in honour of R.H. Roberts, lately v.c. recorder for Anglesey and an acknowledged authority on *Equisetum*. The discovery takes the total known number of hybrid horsetail taxa found in the UK to 10. What is so pleasing about *E. ×robertsii* is that it is usually seen to be intermediate between its parents in so many characters ranging from the macroscopic (shoot, colour, stem surface, length of first branch internode) to the microscopic (stem stomata density, stem

anatomy). We noted how abundant the hybrid is at this station and how well it appears to compete within a species rich and luxuriant grass and bracken scrub community. *E. arvense* was found growing closely with the hybrid in several places along a 200m stretch of low cliff allowing close comparison, *in situ*, and with practice the hybrid proved easy to spot – for example even at a distance the more upright branches of *E. arvense* contrasted with the more spreading and somewhat weaker looking side branches of *E. ×robertsii*. The ecological tolerance of the hybrid does not appear to stretch to open, mobile strand line communities as seen in *E. arvense* at this site.

Feeling confident now of our ability to find and explain hybrid horsetails we set off to explore the small sand dune system in the mid section of the bay. 100m back from the shore a moribund stand of *Salix cinerea* subsp. *oleifolia* (Grey Willow) marks a damp stabilized area which supports a thriving colony of *E. ×font-queri*, discovered by R.H. Roberts in 1989. The colony proved very easy to find and we examined a number of characteristic features of this hybrid, again mostly intermediate between the parents, in this case *E. telmateia* and *E. palustre* (Marsh Horsetail). *E. ×font-queri* is an elegant plant with a fresh yellowish green stem (up to a metre tall) and slender branches, the stem leaves bear markedly scarios margins and intermittent branches may bear small dark terminal cones. Although neither parent species of horsetail grows close to this hybrid a search of damp grassland some 300 metres north revealed small quantities of *E. palustre* and some dense stands of *E. telmateia*.

After lunch we drove a mile inland to Lligwy woods and turned our attention to ferns. This site is well known for its fine colonies of *Polypodium* which were studied in great detail by R.H. Roberts. Ian Bonner brought along some notes made by Mr. Roberts about the *Polypodium* complex and herbarium specimens of the range of Polypody taxa collected from Lligwy Woods in January 2005. We discussed the current understanding of the 5 cytotypes present in the UK, all of which are represented on Anglesey. Here at Lligwy the Polypody ferns are generally associated with a dramatic escarpment outcrop of uniform blocky carboniferous limestone sheltered by a dense deciduous woodland canopy dominated by *Fraxinus excelsior* (Ash), *Acer pseudoplatanus* (Sycamore), and formerly *Ulmus glabra* (Wych Elm). Limestone blocks at the base of the escarpment cliff support fine colonies of *Phyllitis scolopendrium* (Hart's-tongue) and *Polypodium interjectum* (Intermediate Polypody), whilst the ground between is home to reasonable sized *Dryopteris dilatata* (Broad Buck-

ler-fern), *D. filix-mas* (Male-fern) and *Polystichum setiferum* (Soft Shield-fern). At the base of the cliff we are able to appreciate why Lligwy is so special as suddenly *Polypodium cambricum* (Southern Polypody) is abundant; both on fallen boulders and on rocky bluffs and even the sheer sides of the cliff above. Against the afternoon sun which filters through the canopy here and there the semi-transparent nature of the frond of *P. cambricum* is plain to see, as is its generally rather broad frond outline and slender pinnae. Several plants show markedly serrate pinnae margins and sometimes random extensions of them, as well as inverted or upward directed basal pinnae. No mature sori were found as this taxon is the latest of the cytotypes of *Polypodium* in the UK to develop its spores, which are consequently often released during the winter.

A short distance from the *P. cambricum* colonies we were able to admire a population of *P. ×shivasiae* hanging from a near vertical section of cliff, its broad but elegant, arching fronds subtly different in shape and aspect from either *P. cambricum* or *P. interjectum*, the parents of this scarce hybrid. Finally, Sam Thomas expertly spotted two isolated clumps of *P. vulgare* (Common Polypody) below the general cliff line and we were able to contrast the distinctly mat coloured, parallel-sided frond of this tetraploid cytotype with the hybrid tetraploid *P. ×shivasiae*, noting that despite their equal chromosome count they do not share the same genome reflecting their quite different and distant origins. The tidy bicoloured sporangia of *P. vulgare* were the only mature reproductive structures of *Polypodium* we saw all day.

And it was Sam Thomas's familiarity with *Dryopteris* that highlighted another fascinating, vigorous hybrid on the outskirts of the woodland – *D. ×complexa*, the product of crossing *D. filix-mas* with *D. affinis* subsp. *affinis* (Scaly Male-fern), both of which were noted and examined nearby. The hybrid has the appearance of a particularly robust *D. affinis* but with less truncated pinnules.

The excursion benefited from the happy and fruitful contributions made by all involved and hopefully highlighted the significance and fascination surrounding naturally occurring hybrids amongst our native ferns and horsetails. We are grateful to John Aron for kind permission to visit Lligwy Woods.

References:

- DINES, T.D. & BONNER, I.R. 2002. A new hybrid horsetail, *Equisetum arvense* x *E. telmateia* (*E. ×robertsii*) in Britain. *Watsonia* 24: 145-156
 ROBERTS R.H. 1990. *Equisetum ×fontqueri* on Anglesey. *Pteridologist* 2: 17-18

BOOK NOTES

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The comments are mine, though I am grateful to Sue Atkins for some of the details.

I have stopped entering ISBN numbers as my own experience is that they are never used.

Plant Atlas of Mid-West Yorkshire. P.P. Abbott. 2005. Pp 248. Yorkshire Naturalists' Union. £21. Hbk.

The Flora of Berkshire. Michael J. Crawley. 2005. Pp xv +1375. Brambleby Books. £50. Hbk.

A Checklist of the Plants of Buckinghamshire (including Milton Keynes and Slough). R. Maycock & A. Woods. 2005. 48pp +4pp plates. Milton Keynes NHS. £2. Pbk.

New Flora of Attingham Park. S. Whild & A. Lockton, eds. 2005. Pp23 + map. University of Birmingham & Shropshire Botanical Society. Pbk. Available on line at www.shropshirebotany.org.uk.

Frank Perring's 1975 *Flora of Attingham* was based on work done by him from 1969 to 1972. This repeat survey is based on the same area and compartments and gives gains and losses and some reasons for the changes.

The Flora of Walls and Buildings in the Isle of Ely. R.M. Payne. 2005. Offprint from *Nature in Cambridgeshire No 47*: 43-58 + 4pp plates. £3.

A summary of six years recording in the old administrative entity that always was part of v.c. 29, but is now part of Cambridgeshire. The survey covers 750 sites, and, in addition to a list of the 299 species recorded, covers comparative frequency in various habitats and notes on methods of dispersal, urban and rural species and methods of dispersal.

A Check-list of the Flowering plants and Ferns of the Island of Bute. A.C. Hannah. 2005. Pp 43. Buteshire NHS. £3. Pbk.

This is apparently only the second list for the area, which is part of v.c. 100, Clyde Isles, and the first since 1906. (The rest of the v.c. comprises the Isle of Arran, for which several editions of a recent check-list have appeared, and the islands of Great and Little Cumbrae). It is based on recent recording and in particular systematic work by the author from 2002 to 2005. It covers 700 species giving a short note on each and the number of occurrences in the 115 recording units used.

Flora of North America Volume 5: Magnoliophyta: Carophyllidae, Part 2. Flora of North

America Editorial Committee. 2005. OUP. £75. Hbk. (Summerfield will supply this for £60)

The Naming of Names. The search for order in the world of plants. Anna Pavord. 2005. Pp 472. Bloomsbury. £30. Hbk.

A history of the struggle to assign names to plants, from Theophrastus to Linnaeus. I feel ambivalent about this, and if I had not found a copy for £9.99 I would have hesitated. It is beautifully produced, written in a journalistic style that I find difficult, though the publisher's blurb that this is a thrilling adventure into botanical history is a welcome touch of glamour to our profession! Somehow the central theme is outshone by the characters and

Flora of Egypt - Volume Four: (Alismataceae-Orchidaceae). Boulos, Loutfy. Al Hadara Publishing, Cairo. 2005. 617 pp, map, 128 plates of line drawings, colour photo section; full descriptions and keys to the genera and species. £80 (from Summerfield). Hbk

The last volume in the series covers 29 monocot families of native and naturalised plants, and includes Gramineae (284 species), Cyperaceae, Hyacinthaceae and Alliaceae. There are annexes with additions and corrections to vols 1-3, keys to major divisions and the 128 families treated in the four volumes; Latin-vernacular and vernacular-Latin names; and a cumulative index.

Wild Flowers of Britain and Ireland. Rae Spencer-Jones, & Sarah Cuttle. Kyle Cathie Ltd. 2005. Pp256 colour photos, many displaying similar-looking plants together against a plain background. Botanical Consultant Barry Tebbs. £25. Hbk.

'A photographic field guide to over 600 species'. Grouped by colour, each featured plant is described with notes on habitat, distribution and flowering time as well as interesting comments on names, habits and uses. It includes a chapter on gardening with wild flowers. Rather large and heavy to be classed as a field guide, but could fill the gap for beginners requiring a photoguide, though I do not feel enthusiastic.

Lapland - A Natural History. Derek Ratcliffe. Poyser. 2005. 352pp, colour photos, illustrations by Mike Unwin, maps. £40. Hbk.

An in-depth look at the ecology of Lapland, its flora and fauna, and habitats including

- Boreal Forests, Lakes and Rivers and Coastlands.
- The Genus Sorbus*. Hugh McCallister. The Royal Botanic Gardens, Kew. 2005. A Botanical Magazine Monograph. 252pp, colour photos, paintings by Josephine Hague, maps. £30. Hbk.
- The author has been studying the genus for nearly 30 years, and this long-awaited work covers over 60 species using chromosome numbers and living material to devise an evolutionary classification. Note that it does not cover cultivars and does not deal with Section *aria*.
- Alpine Plants of Europe*. Jermyn, Jim. Timber P, 2005. 320pp, excellent close-up colour photos. £25. Hbk.
- Although subtitled 'A Gardener's Guide', and with garden-worthiness as the main focus, this is nonetheless a plantsman's tour through The Pyrenees, The Western and Central Alps, The Eastern Alps, The Balkans, and The Carpathians.
- Long-term ecological change in British Woodlands (1971-2001). A re-survey and analysis of change based on the 103 sites in the Nature Conservancy "Bunce 1971" woodland survey*. K.J. Kirby *et al.* 2005. Pp139. English Nature Research Reports, no 653. Available free of charge from EN Enquiry Service, Peterborough.
- As the title suggests, this is a major dataset, and the results seem to be significant. They suggest a considerable decline in the richness

of the ground flora, particularly in 'woodland specialists'. The effect of lack of management, warmer and earlier springs and eutrophication causing, *inter alia*, higher shade levels, are all thought to be contributory features. The findings repay closer study.

Audit of non-native species in England. Mark Hill *et al.* 2005. Pp81. English Nature Research Reports, no 652. Available free of charge from EN Enquiry Service, Peterborough.

This report covers all taxa that are found in the wild (i.e. animals, bugs, molluscs etc as well as plants), (2721 in total of which terrestrial plants account for 1798 species) and summarises these in terms of their numbers and impact on biodiversity. The short discussions cover pathways and dates of introduction and persistence, habitats and economic and ecological impacts, trends and conclusions. The language used is admirably factual and eschews emotive comments.

Biodiversity: taxonomy, genetics and ecology of sub-arctic willow scrub. Scottish Montane Willow Research Group. 2005. Pp32. RBG Edinburgh. Pbk. Availability and price unknown.

This is an excellent little summary of the work done by the group on this habitat which is extremely threatened in Britain. The aim was provide the underpinning scientific research in order to determine the most appropriate management strategies for recovery programmes.

Botanical Cornwall 13 (2005)

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

Though I live here, I have nothing to do with this excellent publication, but please excuse any parochialism! This issue, edited by Rose Murphy and Ian Bennallick, has 112 pages, packed with items that will be of interest to botanists in most other counties. The progress report includes notes about new species and the rarer plants found in Cornwall, such as *Lavatera cretica* and *Festuca longifolia*. Also included are a summary of the BSBI Local Change survey for all tetrads chosen for the survey; information concerning arable plants; a progress report from ongoing recording effort; hybrids in Cornwall; notes about the Cornwall Rare Plant Register; the new JNCC Red List for Vascular Plants in relation to species found in Cornwall, with a list of species affected; and a summary of

bryological meetings held in 2004 and 2005. 28 pages of notable records made from 2003 to 2005 have been collated, and for the first time there is a list of plant notes and records from the Isles of Scilly by Rosemary Parslow.

Botanical Cornwall No. 13 is published by and available from: Environmental Records Centre for Cornwall and the Isles of Scilly, Five Acres, Allet, Truro, Cornwall, TR4 9DJ, UK. Price £8.00 (if collected from the address above) plus £1.50 postage & packaging if sent (cash or cheques – payable to 'Cornwall Wildlife Trust' - acceptable). Back issues (1-12) also available – Please contact Ian Bennallick on 01872 240777 ext. 244 or email ian@cornwt.demon.co.uk for more details.

The Teesdale rarities

DR MARGARET E. BRADSHAW, *Lady's Mantle, Hill Top, Eggleston, Barnard Castle, Co. Durham, DL12 0AU*

A very important paper on the original discoverer of many of the rare species of the 'Teesdale Assemblage' has been published in the *Teesdale Record Society Journal* by Dr F. Horsman. The Introduction to this paper is reproduced below.

'The credit for the discovery of most of the rare plants of Upper Teesdale. the "Teesdale rarities", has variously been accorded to the Quaker Backhouses, James Backhouse Senior (1794-1869) and James Backhouse Junior (1825-1890), the lead miner John Binks (bur. 1817 aged 51 years), and The Rev. John Harriman (1760-1831), curate of Eggleston, or a combination of two or more of these individuals. Horsman (1998) has

established the roles actually played by the various participants, and has demonstrated that William Oliver (ba. 1761 - 1816), surgeon apothecary of Middleton in Teesdale,³ discovered most of the "Teesdale rarities". To all intents and purposes Oliver is unknown. This article seeks to redress this ignorance.'

If any member would like to obtain a copy of 'The Teesdale Record Society Journal 2005' Third series, Volume 13, they should send a cheque for £5 incl. p&p. (made payable to 'The Teesdale Record Society' to Dr W.F. Heyes, High Dyke House, Middleton-in-Teesdale, Barnard Castle, Co. Durham, DL12 0RR.

A checklist of the plants of Buckinghamshire (including Milton Keynes & Slough)

ROY MAYCOCK, 17, Osborne Street, Bletchley, Milton Keynes. MK2 2LU

G.C. Druce published his *Flora of Buckinghamshire* in 1926, The Vice-County Census Catalogue (published by the BSBI in 2003) has many records for the County but they are listed amongst all other records for each taxon. An updated list of plants for the County has now been compiled by Roy Maycock and Aaron Woods and published by Milton Keynes Natural History Society. As well as the list (with Latin name, English name, national and local status and brief notes) for over 2000 entries, there is a

short introductory text, map, gazetteer (of place names not on the map), lists of erroneous or dubious taxa and coloured photographs. We have been generously sponsored to cover the cost of publishing the book by several Local Authorities, the Chilterns Conservation Board and others. This means that we are able to offer the 48 page book for the low price of £2.50 (including package and postage) - available from me at the address given above or from Summerfield Books.

OBITUARY NOTES

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

* indicates an obituary will appear in *Watsonia*. Sadly we report the deaths of:

***Richard Fitter**, an Honorary member who joined in 1952.

Many members will have known him through the Collins Fitter & McClintock *Field guide to British wild flowers*, the very popular field guide used by a generation of field botanists as an introduction to field botany. Richard also came to many BSBI Conferences and field meetings.

Stan Beesley, a member since 1974 from Carrickfergus, N. Ireland. Paul Hackney writes: 'Stan Beesley was born in Darwen, Lancs in 1926 and died on 1 August 2005 in Belfast. For many years until recently, Stan was the BSBI's

county recorder for H39 Antrim and at the time of his death was preparing a Rare Plant Register for the county. In the 1980s he was the organiser of the BSBI's Monitoring Scheme in Northern Ireland. He had a strong interest in aliens and urban weed flora and is a co-author of *Urban Flora of Belfast* published in 1997 by Queen's University, Belfast.'

Michael Hickey, a member since 1965, was known to members mainly through his joint authorship with Clive King of books on Families of Flowering Plants, published by Cambridge University Press, and also their *Cambridge Illustrated Glossary of Botanical Terms*. Michael was a botanical illustrator who

tutored courses in this subject at the University of Birmingham. Sylvia and Dennis Sutton write: 'The following acknowledges Michael's work in Gloucestershire: Michael organised and taught botanical illustration from the 1970s until the beginning of the current year. He taught in a number of locations including the university of Gloucestershire and his own home. His great skill in this context was to take total, often unconfident, novices to competence and in many cases great skill; several RHS medal winners were members of his classes. A particular feature of Michael's teaching was his ability to take his students beyond the art to the background botany. Feeling privileged to be taught by a person of such academic distinction, many of his students became very interested in the scientific aspects of plants.'

Michael was instrumental in establishing the Gloucestershire Society for Botanical Illustration. He was founder chairman and chairman for the subsequent ten years. Over the years he organised an annual exhibition by the members, many excursions to other exhibitions, botanic gardens and other gardens of interest. The summer botanical walks Michael organised locally in the Gloucestershire countryside were always popular. He could talk at length about any plant we encountered in a language which was accessible to the amateur but also included some new information for the more experienced. We all learned more each year about our local flora and had enjoyable social contact – in a pub afterwards, if possible – at the same time. Michael is sadly missed in Gloucestershire.'

Frank Penfold, a member since 1954 has died at the age of 92. He was an outstanding figure in the conservation of wildlife in the counties of Sussex. He had a long association with farming as a supplier of farm machinery (he introduced combine harvesters to Sussex farming). Frank was well-known for his active championship of high-grade habitats, and for his local knowledge of sites of plants of special interest. He was chairman of the Sussex Wildlife Trust for many

years, and he was a founder committee member of the *Sussex Flora Society* which co-ordinated the recording for the *Sussex Plant Atlas*, P.C. Hall (1980). More recently he launched in Sussex the Black Poplar Survey (following on from E. Milne-Redhead's BSBI Survey and studies) which then became a nationwide project. Frank will be sadly missed in Sussex.

We also record the sad loss of **Miss K Benson-Evans** of Bridgend, Glamorgan, a member for over 50 years; **Mrs J Congreve** of Market Drayton, Shropshire, a member for 25 years; **Dr O L Gilbert** of Sheffield, a member for over 50 years; **Mr L S Harris** of Cheltenham, Glos., a member for 5 years; **Mr R H Raper** of High Wycombe, Bucks., a member for 15 years; **Dr D Wise** of Keswick, Cumbria, a member for over 50 years; and **Mr C P Watson** of Bishop's Stortford, Herts., a member for 10 years.

*As we go to press we are saddened to hear of the death of **S. Max Walters**. Honorary member, Past President, and member since 1944, Max guided BSBI policy through many recording schemes and conservation projects – most notably the Teesdale Inquiry and, with Franklyn Perring, the *Atlas of the British Flora* (1962). The colour photograph on the back cover of this issue of *News* is included in memory of, and thanksgiving for, both these remarkable men.

The '**Francis Partridge Flora**'. Many thanks to BSBI member Rufus Sweetman, who in response to the request for information on this project in *BSBI News* 99 & 100, has written sending a reference to the booklet *Lost Causes* published by the *Penguin Collector's Society*. This includes a chapter on her text for the first 5 volumes of the *Flora* by Francis Partridge; a chapter by Richard Chopping, the commissioned artist for the *Flora*, and a chapter by Allan Lane explaining the project as originally for a Natural History of Britain. Further information on the fate of the cancelled publication will follow in a future *BSBI News*.

NOTICES

BSBI Postcards

DAVID PEARMAN, *Algiers, Feock, Truro, Cornwall, TR3 6RA*

I forgot to remind members that these are still available. There are 16 different views in a set, both of plants or plants in their habitat, and they are all from photographs kindly made available to

us by Dr Bob Gibbons. They are on thick card, are miles better than anything else in the field, publicise the BSBI and are amazingly cheap!!

They are available from:

Mrs Margot Godfrey, 3 Castleton Avenue, Barnehurst, Kent, DA7 6QT, and cheques must be made payable to her, **NOT** BSBI.

Prices: 1 pack £2.90 + 60p p&p = £3.50
 2 packs £5.60 + 80p p&p = £6.40
 3 packs £8.00 + £1 p&p = £9.00

Future Developments in the Natural History Museum's (BM) British Herbarium

MARK SPENCER, *The Natural History Museum, Cromwell Road, London, SW7 5BD*

First, I would like to take the opportunity to introduce myself. My name is Mark Spencer and I have recently been appointed to the post of Curator of the British & European Herbariums at the NHM. There are many challenges and opportunities ahead in my new role, but a priority for me is to ensure that the British herbarium, once more, becomes a vibrant focal point for British botany. To help me in this task, I am keen to hear the ideas and opinions of individuals (particularly recorders and referees) and organisations that have an interest in helping shape the future development of the herbarium and British botany. In particular, we would welcome comment on the proposed projects outlined below and suggestions for alternative priorities.

The collection of native and non-native plants of the British and Channel Islands currently housed at the NHM is due to undergo major change over the next decade. The Museum considers British biodiversity and the herbarium to be one of its major priorities for the future. By the end of 2008 the herbarium will move from its current location in the main Waterhouse Building to a new facility within the Darwin Centre (phase two) on the other side of the Museum that will highlight British Natural History. This move to new premises will safeguard the future of the collection and improve accessibility for users.

We also aim to reinvigorate and expand the collection during this period; our activities will be concentrated on non-native taxa from urban environments, and taxa and regions that have been relatively neglected in recent decades. Individual curatorial projects to be undertaken in the near future are:

- The reorganisation of the herbarium around the arrangement of latest BSBI checklist.
- A detailed curatorial appraisal of the Asteraceae.
- The conservation and curation of the important *Potamogeton* collection, much of which remains fire damaged from WWII.
- Expansion of the current project databasing the Museum's v.c. 21 (Middlesex) specimens; starting this year we aim to include v.c.'s 16 (West Kent) and 18 (South Essex). These datasets will be accessible to BSBI members.

The proposed projects will largely depend upon the contribution of voluntary work. The NHM will provide volunteers with the opportunity to develop skills in herbarium curation, British botany and database management. We need your support!! If you would like to comment on the proposed projects or volunteer at the Museum please e-mail: m.spencer@nhm.ac.uk or tel. 020 7942 5787.

Rare Plants Group of the Ashmolean Natural History Society: Basic and Advanced Identification Courses

SUE HELM, sue@shelm.co.uk; Tel.: 01993 851842

Following the success and popularity in recent years of the identification courses run by the Rare Plants Group of the Ashmolean Natural History Society of Oxfordshire, the range of courses continues to develop and the programme for 2006 is now available.

The main aim of the identification courses is to teach the use of plant ID keys, using Stace's *New Flora of the British Isles* as the core reference. The Basic course has been highly acclaimed by past students, who have appreciated the high tutor /student ratio and friendly class.

This course, split into six Saturday morning sessions from April to September, is suitable for students of any ability or background. Individuals can progress at a comfortable pace and discuss problems with tutors as they encounter them.

Using binocular microscopes (available in the classroom) and hand lenses the course begins with families of plants that are easy to identify, and progresses to more difficult groups throughout the summer. To gain most from the course students are expected to do some work between

sessions, and to discuss with tutors any difficulties they may have had.

Two advanced courses, each of one session, on sedges and on ferns, will be open to alumni or those with equivalent experience.

For 2006 there will be an exciting new course on digital photography for botanical purposes. This two session course is open to those with some basic understanding of computers and of photography.

For more information contact Sue Helm by email or phone as shown above.

'Cherishing Churchyards'

2 day National Conference on 23rd and 24th May 2006

Organised by 'Caring for God's Acre'

YOLANDE HESLOP-HARRISON (*Trustee CFGA*) and SUE COOPER (*Project Manager CFGA*)

This is just a reminder of a conference to be held this year, based in and around Ludlow, Shropshire. All those interested in the conservation and management of flora and associated fauna in a churchyard or burial ground are invited to attend. This is only one of the many topics to be discussed, but workshops with feedback and chances for plenary

discussions are being organised, and posters and displays are welcomed. For further information please see the website: www.caringforgodsacre.co.uk or register for an application pack at CFUA 6 West Street, Leominster, Herefordshire, HR6 8ES Tel: 01568 611154.

OFFERS

BSBI News – Much in Demand

RAYMOND SKERRETT, 364 Rocky Lane Great Barr Birmingham, B42 1NH

You kindly published for me, in the September issue of *BSBI News*, an offer of back numbers of BSBI publications. An hour after receiving my copy of the *News* through the post, I was gratified to have received a phone call and agreed a handover (is this a record?). In the following days, however, I received phone calls, letters and e-mails from an appreciable number of people and institutions, keen, even desperate, to

obtain back numbers. Can I, therefore, through *News*, make this appeal: if you have, over the years, accumulated shelves of BSBI publications, and your husband/wife/cat has made it clear that it's them or the *Watsonias*, consider helping a keen young botanist or worthy institution by handing on your collection. There's somebody out there who wants them!

I have heard recently from two long-standing members who, for various reasons, have resigned their membership and have back numbers of various BSBI journals that they wish to dispose of and their details are given below.

Dr P.M. Gough, 39 Whitford Road, Bromsgrove, Worcs., B61 7ED wishes to dispose of copies of *Watsonia* and *BSBI Abstracts* from 1975 to date; 'free to anyone who could collect or pay carriage'.

Miss P.C.J. Primmer, 16 Lea Road, Otterton, Budleigh Salterton, Devon, EX9 7JH wishes to dispose of *Watsonia* 15(1) (Jan. 1984) to date, and *BSBI News* 36-100.

As a matter of interest, I can still supply back numbers of all issues of *BSBI News* (some as photocopies) for £1 per issue incl. p&p. I also have some copies of more recent issues (from about 80 onwards which are available for the cost of postage only).

GENERAL EDITOR (RGE)

Gofynne seed list 2006

ANDREW SHAW, *Gofynne, Llanynis, Builth Wells, Powys. LD2 3HN*; andrewshaw@hotmail.com

A small quantity of seed from any of the following species is sent free upon receipt of a SAE.

Actaea spicata
Adonis annua
Apium repens
Artemisia campestris
Campanula patula
Carex depauperata
Carum verticillatum
Damasonium alisma
Eleocharis parvula
Euphorbia serrulata
Isatis tinctoria

Melittis melissophyllum
Petrorhagia nanteuillii
Pilosella flagellaris subsp. *bicapitata*
Pilularia globulifera (sporocarps)
Polygonum maritimum
Polygonum oxyspermum
Potentilla rupestris
Primula scotica
Rumex rupestris
Saxifraga cernua (bulbils)
Silene noctiflora
Sonchus palustris
Trifolium incarnatum subsp. *molinerii*

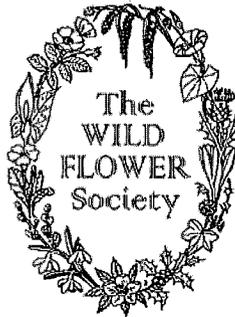
Seeds from Ware 2005

GORDON HANSON, *1 Coltsfoot Road, Ware, Herts., SH12 7NW*; gordon27@tesco.net

Please send labelled packets or small envelopes and a S.A.E.

Achillea distans (Italy)
Adenocarpus foliosus (Tenerife)
Allium ampeloprasum var. *babingtonii* (ex Dorset)
Amaranthus hybridus (wool alien)
Arabis caucasica (Turkey)
Arabis glabra (ex Herts.)
Arthraxon quartianus (Costa Rica)
Bidens pilosa (La Gomera)
Bupleurum heldreichii (cultivated)
Centaurea africana (cultivated)
Chaerophyllum azoricum (cultivated)
Chenopodium foliosum (ex Turkey)
Clinopodium vulgare (Turkey)
Coronilla varia (Turkey)
Cynoglossum creticum (Turkey)
Cyperus fuscus (ex Middx.)
Eleusine indica (Tenerife)
Emex spinosa (Cyprus)
Erodium chium (Cyprus)
Erodium cygnorum (Cyprus)
Erodium gruinum (N. Cyprus)
Erodium malacoides (Cyprus)
Eryngium giganteum (cultivated)
Ferula communis (cultivated)
Helianthemum salicifolium (Cyprus)
Herniaria scabrada (cultivated)

Hieracium sabaudum (ex N. Wales)
Hieracium scullyi (cultivated)
Hymenocarpus procumbens (Cyprus)
Hyparrhenia hirta (Cyprus)
Inula magnifica (cultivated)
Ipomoea hederacea (Soya bean alien)
Knautia macedonica (cultivated)
Kundmannia sicula (ex Madrid)
Lavatera tauricensis (cultivated)
Leontodon crispus – pink form (Turkey)
Lepidium perfoliatum (Turkey)
Morinia afghanica (cultivated)
Nicandra physalodes (Herts.)
Petrorhagia nanteuillii (Italy)
Phlomis lanata (Crete)
Phytolacca americana (Italy)
Picnomon acarna (Turkey)
Pimpinella major (Italy)
Potentilla intermedia (ex Hants.)
Potentilla recta (Turkey)
Pterocephalus plumosus (Turkey)
Salvia transsylvanica (cultivated)
Salvia viridis (ex Turkey)
Scabiosa rotata (Turkey)
Seseli montana (cultivated)
Sigesbeckia serrata (wool alien)
Silene noctiflora (cultivated)
Sphaeralcea grossulariaefolia
Xanthium echinatum (Turkey)
Ziziphora capitata (Turkey)



Beginners Botany in 2006!

**Why not make a date for a special weekend away
to see some wild flowers?**

We have some exciting **Early Stagers** fielding meetings, ideal for beginners and improvers and located in botanical hot-spots around the country.

These field meetings are about learning to identify familiar flowers as well as seeing new plants and include some teaching sessions.

Alpines in Snowdonia 2nd – 4th June

Grasses, Sedges & Rushes plus Fell Flora in the Lake District 22– 23rd July

Wetland, Coastal & Dune Plants in Somerset 26 – 27th August

Further details of these meetings are on the WFS web site:

www.rbge.org.uk/data/wfsoc

WFS field meetings are free to members. To join, call 01223 830665.

See WFS Spring 2006 magazine for details of how to book. If a field meeting is over-subscribed, participants are selected by ballot.

RECORDERS AND RECORDING

Panel of Referees and Specialists

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

As usual there have been a number of changes of address in the Referees Section, and more Referees now have email addresses. Please

could Referees let me know of address changes, and I would be glad to know if others would like their email addresses included.

Panel of Vice-county recorders

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

Recent changes since *Year Book 2005*. These are mostly reflected in the new *Year Book*, but are listed below for ease of reference.

Changes of recorders

Vc 31 (Hunts.) Mr K.J. Walker to be joint recorder (*all correspondence to Mr T.C.E. Wells*)

Vc 47 (Mons.) Dr A.K. Thorne to be joint recorder (*all correspondence to Mrs M. Wainwright*)

Vc 71 (Man) Ms L. Moore, 38, Market Street, Peel, Isle of Man, IM5 1AE

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

Vc 105 (W. Ross) Dr J.H.C. Fenton, Wester Lairgs, Farr, Inverness, IV2 6XH to be the sole recorder. Prof D.M. Henderson has

retired after 44 years as recorder of this extremely large and remote vice-county, and we are very grateful for all his work here.

Vc H28 (Co. Sligo) Dr D.C.F. Cotton, Rathrowan House, Rathaberna, Co. Sligo, Ireland and Mr M. Archer (*all correspondence to Dr Cotton*). Dr S. Parr steps down.

Change of address

Vcc 5 (S. Somerset), H6 (Co Waterford) & H12 (Co Wexford) Mr P.R. Green. New address: 46 Bewley Street, New Ross, Co. Wexford, Ireland

Vc H2 (N. Kerry) Dr P.S. Wyse Jackson. New address: c/o National Botanic Gardens (Dublin), Glasnevin, Dublin 9, Ireland. Dr M.B. Wyse Jackson. New address: 14 Armstrong St, Harold's Cross, Dublin 6, Ireland.

Flora Hibernica

DAVID PRICE, 43 Wonastow Road, Monmouth, Mons., NP25 5DG

On a recent visit to Connemara I collected *Sorbus hibernica* from three sites on the shores of Lough Mask (Co.s Mayo & Galway, v.cc. 17 & 26) for Dr Tim Rich at the National Museum of Wales (c.f. *Watsonia* 25(4) August 2005). Wanting to bring home fresh material I had them vacuum packed (and I express my gratitude to Connemara Fisheries of Cornamona and Tom Ryan, butcher, of Gong) and can recom-

mend this procedure as preserving specimens *in vivo* (or maybe *in morte*) for a week or so. I can also heartily recommend the smoked salmon and beef-steaks from these excellent providers of good Irish food.

Moreover, the shores of Loughs Mask & Gorbrib are abundant with *Spiranthes romanzoffiana* (c.f. Horsman, *Irish Naturalists' Journal* 28(2) 2005, *et hic pers. comm.*).

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

Peter Thomson filled this post for 10 years and I find it difficult to report to Council and take the minutes. This is a chance for an interested member to attend Council meetings and feel at the heart of the Society! There are only two proper meetings a year, in March and November, and they always take place at the Linnean Society in Piccadilly, at 2.00pm midweek. It would also be nice to meet a new face, so please contact me if you might be prepared to help.

Hybrid project

This autumn has seen real progress made. Clive Stace and Chris Preston have produced a model species layout, and shown how the maps of hybrids plotted against the distribution of their parents might look. Alan Forrest at Edinburgh has started to write to selected Herbaria for the genera we want to see, and Alex Lockton, aided by Quentin Groom, has collated the records in the BRC database, those in the Vice-county Census Catalogue, and begun to circulate v.c. recorders with queries, asking for additions at the same time. The initial results are very encouraging – the maps and species accounts are clear and both the Herbaria and the v.c. recorders are producing plenty of extra records.

Data extractor at The Natural History Museum

In connection with this we urgently need somebody to extract data at the Natural History Museum. We are collecting herbarium specimens of *Epilobium* and *Rumex* for Geoffrey Kitchener to agree or redetermine, and the details of these need either to be entered onto recording cards, or, better, but not essentially, straight onto a computer. There are too many for Geoffrey to determine and enter, and it would be really helpful if a member could volunteer to help in this way. Apply to me or 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.

Autumn meetings

A Recorders (and other interested members) Conference was organised by Alex Lockton and Sarah Wild at Shrewsbury in mid September.

In fact I felt this was the most successful for sometime, thanks to their organisation and the facilities kindly made available by the University of Birmingham and the Field Studies Council. The programme concentrated on the preliminary results of the Local Change project (more on this on p. 71) and the proper launch of the Hybrid project with some really excellent talks on problem groups.

I was able to attend the Scottish Exhibition Meeting at Perth (and won the prize for the longest journey!) which was a really successful day. About 70 members came, including v.c. recorders representing 36 of the 41 Scottish vice-counties. Whether because it was held in a smaller venue than the excellent facilities in Edinburgh and Glasgow, there was a real sense of occasion and we are very grateful to Alistair Godfrey and the Perthshire Natural History Society for organising a really good day.

The Annual Exhibition Meeting in London, at Baden Powell House was another success, with over 170 members coming and going throughout the day. This is less of an inclusive event than the Scottish and Welsh Meetings, and more of a chance to meet and talk to colleagues.

Publications

Atlantic Arc conference report. This is now at the printers, and we hope to have it out early February.

Sorry for any delay.

New Cyperaceae Handbook. If there is not a flier in this issue (I am writing this in mid-December) it will definitely come in the April *News*, ready for the summer's fieldwork.

Insects, plants and set-aside. This was the report that arose out of an interesting conference held jointly with the Royal Entomological Society in April 1994 (see *Watsonia* 21(2): 211 (1996) for a review). We would like to dispose of our stocks and can offer these for £2 to cover p&p only. Please order from Summerfield Books (address on page 76), who have kindly offered to handle this for us.

From the Director of Development – *Gabriel Hemery*

BSBI Director of Development, c/o Department of Plant Sciences, University of Oxford, South Parks Road, OXFORD, OX1 3RB; Tel: 01865 275050; g.hemery@bsbi.org.uk.

New look BSBI

I am sure no reader will have failed to notice the first use of our new logo on the front cover of this issue of *BSBI News*. It is based on the colours and form of the bluebell *Hyacinthoides non-scripta*. This maintains a link with our past logo and recognises the bluebell as the nation's favourite flower. The design is modern and, in its abstract form, expresses our interests in plants of every size and description.

You will recall that I wrote a piece in September *News* and asked for members' views on an early version of our logo. I received 25 written responses and had numerous discussions with members over a number of weeks. I was saddened by letters from two members who felt moved to offer their resignation given that the Society was even considering a new logo. I sincerely hope that these members, and those of you who did not get around to writing, approve of the final version and appreciate the need for the Society to modernise and operate with higher profile. The final design was taken through nine operating committees, Executive and finally Council, and unanimously approved!

I am delighted by the excellent work of our *News* editors, Gwynn Ellis and Leander Wolstenholme, in producing our new look *News* and I congratulate them. Plans for this transformation were underway before my appointment and I have since worked closely with them in incorporating our new logo and colours.

Volunteers in Nature Conservation

During my work to forge closer relationships with those who rely on the Society's data, the role of our volunteers and their connection with the 'centre' of BSBI is foremost in my mind. What motivates our volunteers to collect information, what does the Society offer in return, how can we maintain the 'spirit' of BSBI while making our data and expertise better available to our partners?

The work of the members of this Society and other natural history and wildlife voluntary organisations not only forms the bedrock for nature conservation policy and strategies but also provides the majority of the workforce required to implement these various strategies and action plans. If I thought our readers could stomach a flow chart, I would present this as a progression of effort from volunteer, paid, paid, paid, to

volunteer! I would go as far as to argue strongly that the nature conservation 'industry' would collapse without volunteer input. Are BSBI members fully aware of how their data are used and their importance for nature conservation? I believe that the Society needs to promote these points more strongly to its members.

The subject of relationships in the conservation sector was recently addressed by social scientists at Lancaster University, in partnership with the Natural History Museum and English Nature, culminating in a report '*Nature: who knows?*' In November, I attended a workshop with some other BSBI members, alongside those from a wide cross section of voluntary organisations, academics and Government. The report and workshop provoked some interesting discussions and highlighted the culture gap between different players in the nature conservation sector. It also stressed that there are many public servants who also volunteer, and indeed we are lucky in BSBI to have members in all the conservation agencies. Principally, it has raised the need for us to continue to collaborate together but we must ensure we receive due recognition and support. I hope that English Nature under its new guise *Natural England*, will consider some of the issues raised by this project and work closely with us and other voluntary Societies in the future, or to use the appropriate speak: '*define a road map to fulfilling participatory unity*'.

Sharing our data and expertise

Following on from this, I have reported previously on my work to build close relationships with key Government organisations. The Society wants its data to influence conservation action. I believe we will reap rewards by taking an open stance to sharing our data even more readily, and in return gain a higher standing by informing nature conservation action and priorities, and receive support for our core work. I am currently holding discussions with executives in the Joint Nature Conservation Committee, seeking support for our own efforts to improve our data management capabilities, and to undertake new surveillance activities – more on this in the next issue of *News*. Our challenge is to fulfil these ambitions whilst meeting the needs of our members. It is a delicate balancing act.

The future BSBI

We should celebrate the huge array of our current activities, still undertaken largely by volunteers on a shoe string budget, which deliver a social function, botanical training, scientific publications and important biodiversity data. A quick glance through this issue of *News* or our website is testament enough.

The Society's Council and Executive appointed me to deliver on a number of areas within an agreed development plan. Their preferred approach now that I am in post is to observe my actions, assess their outcomes, and to periodically review – or in modern parlance take an 'organic' approach.

To date I have concentrated on the Society's scientific activities and needs. I intend to start work on our training and education activities in the New Year, working closely with the Training and Education committee and key volunteers.

In the last issue of *News* I expressed my intent to conduct a membership survey. Unfortunately I have not been able to implement this but hope to soon. Our membership needs are the third key area in the Society's development plan. If you have an opinion on any of the issues I have raised here I would like to hear from you. I want BSBI members to have a strong voice in the future development of the Society.

From the Volunteers Officer – Bob Ellis

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VolunteersOfficer@bsbi.org.uk

Local Change – facts and figures

While the rest of the world has moved on, I have seem to have spent most of my time getting intimate with the Local Change data. Work on the report is approaching the closing stages and publication is planned for April 2006. It would be premature to discuss the results here, but I thought I'd run off a few statistics – not in anticipation of a special edition of *Trivial Pursuit*, but to emphasise again the immense contribution that BSBI members made to the project.

Some 740 individuals took part in the fieldwork. This is an underestimate because records were also received from 24 recording groups where the data was not attributed to individuals.

The final tally of field records received was 324,007. Again, this is an underestimate as a number of tetrads were merged onto master cards before being entered onto the computer. When consolidated, these records produced 196,792 'map dots' (i.e. unique tetrad/taxon records).

The top 10 taxa recorded, probably unsurprisingly, were as follows:

A total of 768 tetrads were visited (of a possible 811). Approximately 3,850 field visits were undertaken. The average number of visits per tetrad was 5 but distribution of visit numbers was skewed because a few tetrads were visited on a large number of occasions, so the median of 3 visits per tetrad is probably a better statistic.

The top 10 tetrads in terms of the number of taxa recorded were:

Tetrad	V.c.	Taxa
SU89A	24	653
SO98A	37	648
SO98W	37	618
SO95J	37	561
SU89J	24	551
TQ46W	16	548
SU89W	24	546
TQ16A	17	542
SU56W	12 & 22	540
SU86J	22	539

The average number of taxa per tetrad was 259 compared to 219 in the 1987-88 Monitoring Scheme. Of course, the Local Change figures include some crop plants and planted trees and some increased recording of introduced species. I don't think I'll be giving anything away if I mention that the taxon with the largest absolute net gain was *Narcissus* aggregate!

Thanks once again to all who took part and I hope the report, which will be entitled *Changes in the British Flora 1987-2004*, will do justice all the hard work you put in gathering and entering the data.

Taxon	Tetrads
<i>Plantago lanceolata</i>	724
<i>Trifolium repens</i>	719
<i>Taraxacum</i> agg.	717
<i>Cerastium fontanum</i>	716
<i>Ranunculus repens</i>	714
<i>Holcus lanatus</i>	709
<i>Bellis perennis</i>	695
<i>Poa annua</i>	692
<i>Rumex acetosa</i>	692
<i>Urtica dioica</i>	686

From the Scottish Officer – Jim McIntosh

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Working with VCRs

In the September BSBI News, I mentioned that I had applied to Scottish Natural Heritage for funding to help computerise the paper records of four Scottish Vice-counties. I am pleased to report that the application was successful, and that SNH has kindly offered a grant of £15,000 to help computerise records from Roxburghshire (v.c. 80), West Lothian (v.c. 84), Mid-Ebudes (v.c. 103) and North Ebudes (v.c. 104). I say 'help' computerise as the Vice-county recorders (VCRs) have agreed to prepare their record cards making everything absolutely clear, prior to data entry by the contractor, and will check the records once computerised against the original cards. Both of which are vitally important steps in the project. In September I invited applications from BSBI members for the MapMate data entry work, and four contractors have now been appointed; one for each dataset. They are Ian Green, Malcolm Ogilvie, Andy Amphlett and Carl Farmer (respectively). A condition of the publicly funded grant is that the records should be made accessible and this will be done via the NBN Gateway website: www.searchnbn.net. SNH will also have access to the data in their day to day work to protect and conserve important plant populations. I should like to thank to all those involved in the project, but particularly Jennifer Davidson of SNH (and recent BSBI recruit) for her support and help with this project, and I wish her well in her new post.

My advert in *BSBI News* in September for a new VCR for Easternness, was partially successful. I now have a volunteer who would be happy to take it on a joint basis only, due to other commitments. I am therefore looking for one half of a joint VCR. If you might be interested – please get in touch.

Rare plant surveys

During 2005, the BSBI in Scotland was involved with an ambitious program of rare plant survey work (Site Condition Monitoring) on 20 Scottish SSSIs. The fieldwork is complete and the volunteers have now filed their reports. These have been checked, queried if required, and recently forwarded to SNH. One final but crucially important task remains to be completed: SNH have promised to provide copies of Site Condition Monitoring reports for all 150 vascular plant sites for dissemination to the relevant VCRs. The records they contain will be

particularly useful for VCRs who are working on Rare Plant Registers.

Declining species

Last year I helped to co-ordinate a small project to understand the apparent dramatic decline of *Carex maritima* (Curved Sedge) populations between the two Atlas recording periods. Initial results of this work were reported at the Scottish Annual Meeting. During summer 2006, instead of the Site Condition Monitoring work, I intend to extend this type of project to a short list of other species which are or were relatively widespread in Scotland but which have also experienced dramatic declines. I am currently drafting a shortlist of species and will be looking for volunteers in the spring. This is the type of small project in which BSBI excels and one which I think will appeal to VCRs and members alike. I will keep you posted!

Scottish BSBI Webpages

Thanks to the help of Jane Squirrel, an RBGE colleague and BSBI member, we are hoping to launch the Scottish pages of the BSBI website in January. There will be a Scottish News page and pages on the various BSBI Scottish projects, the Scottish Officer, Scottish meetings and workshops. I recently produced a 'glossy' Annual Report covering my first year's activities in some detail, which will also be available on the website. Look out for the link to the new Scottish webpages on the BSBI website home page!

Educational Field Meetings

In the *Year Book*, you may notice that I have organised a small programme of educational field meetings. Members who are keen to learn, and who have perhaps not been on a BSBI field meeting before, would be particularly welcome on these meetings:

Friday 9th – Monday June 2006

Gairloch, Wester Ross (v.c. 105)

Sunday 18th June 2006

Keltneyburn, Mid-Perthshire (v.c. 88)

Sunday 2nd July 2006

Birks O' Aberfeldy, Mid-Perthshire (v.c. 88)

For further details please see the individual entries in the *BSBI Year Book 2006*.

Grants from the BSBI: advice on how to prepare an application

DR PETE HOLLINGSWORTH, *Royal Botanic Garden Edinburgh, Inverleith Row, Edinburgh, EH3 5LR*

Scope of the scheme

The Science and Research Committee of the BSBI run a small grants scheme to support research to enhance knowledge of the flora of the British Isles. The topics that can be funded are:

- Floristic and distributional surveys (e.g. what grows where);
- Taxonomy, systematics and evolution;
- History of botany in the British Isles;
- Population biology;
- Ecological genetics;
- Conservation biology;
- Ecology, including autecological, physiological and phenological studies;
- Plant/animal interactions, including plant biochemistry.

Floristic studies are an important part of the remit of the BSBI and fall within the remit of this scheme. However, we will only fund routine recording or herbarium computerisation where it can be demonstrated that they relate to a clearly stated line of enquiry (see *Tips* ... below).

Activities eligible for funding include: travel and subsistence for field-work, visits to herbaria, botanic gardens and other scientific institutions; specimen preparation; scientific equipment, consumables and laboratory services; purchase of hardware and software for data handling; publication costs (preparing camera-ready copy, preparation of illustrations, printing).

Activities *not* eligible for funding include: attendance at conferences/scientific meetings; direct contributions to student grants/salaries.

Tips on preparing an application

All applications should be set in the context of a research question, viz. a clear statement of what the problem is and how the applicant plans to tackle it. This does not necessarily require a formal hypothesis and does not exclude e.g. floristic studies, or recording, or herbarium computerisation. For example, the latter could reveal interesting things about the collecting habits, itineraries or whatever of important botanists in the past. But this should be a clearly stated line of enquiry, with an indication provided as to why it is important to know about such things.

- Describe the background to the study.
 - Clearly state the problem or reason for the study.
 - Describe what you are going to do, giving an idea of the size of the job where relevant (e.g. sample sizes, etc.)
 - If not already obvious, describe the significance and outputs of the work, i.e. what new things we will learn from the study, or what the benefits to the botanical community will be.
 - Provide a budget showing exactly what you want to use the funding for.
- and all on one side of A4!

If this approach is not followed, the resulting application may suffer from lack of focus or contain ambiguities or omissions which will lower its chances of getting funding. If you are in any doubt about how to go about the task, the SRC plans to host an advice desk at forthcoming Exhibition Meetings for anyone who is planning to prepare a proposal.

Application procedure

Approximately eight grants per year will be awarded, typically around £500 each (max £1000). From 2006 onwards there will be one closing date per year (6th Feb). Awards will be announced within 10 weeks of the closing date.

A completed application form (available from www.bsbi.org.uk) together with one side of A4 detailing the project aims, background, methodology, planned outputs and budget breakdown, should be sent to P.Hollingsworth@rbge.org.uk, or as hard-copy to Dr Pete Hollingsworth, Royal Botanic Garden Edinburgh, Inverleith Row, Edinburgh, EH3 5LR. Successful applicants will be expected to produce a final report outlining the outcomes of their research and to acknowledge the BSBI in any publications stemming from the grant. Applicants need not be members of the BSBI; details on joining the BSBI are available on the society's web-page, www.bsbi.org.uk.

Projects funded in 2005 were:

- David Cann, Status of *Sorbus devoniensis* in Ireland
- Darach Lupton, Biogeography and conservation biology of *Spiranthes romanoffiana*
- Melvin Smith, Diversity and adaptations of Mediterranean crucifer, *Hirschfeldia incana*, that promotes invasibility and spread in the UK

- Mary Dean, The distribution and origins of *Carex salina* Wahlenb. (Saltmarsh sedge) in mainland Britain
- Rachel Hacking, The plant communities of disused railway ballast in Britain
- Marian Yallop, The effect of sediment characteristics and lake-bed morphology on Charophyte persistence in flooded gravel pits

Guide to contributors

DR LEANDER WOLSTENHOLME (Receiving Editor)

GWYNN ELLIS (General Editor)

BSBI News appears three times a year, in the middle of January, April and September. Copy for inclusion in any issue should be sent to the editor at least 6 weeks before that issue is due to appear.

PAPERS

The success of a journal like *BSBI News* depends on the editor receiving many relatively short contributions of topical interest. There must be lots of members who have something interesting, informative or just plain amusing that they would like to share with others and this journal is meant to be the place for the 'ordinary' member to express her or his opinions. So please do continue to send in your notes or letters and we will do my best to publish them. We are prepared to accept copy in any form but it is so much easier for us if this can be sent typed or printed and by email. The following recommendations will, if followed, make the editor's job that much easier.

- Keep it short! Preferably to less than two pages of finished print. Longer articles can be accepted but it may be more difficult to fit them in quickly. As you will see by looking through any issue, many contributions are half a page or less.
- It is nice to have typed copy but if you don't have access to a typewriter or computer, just write it out making sure that your handwriting is **legible**, especially for names of persons and places which cannot easily be checked.
- The Editors would prefer to have computer produced copy as a printed page and on disc.
- If you have access to the Internet, save your copy as a Word document (either .doc or .rtf) and send to Leander.Wolstenholme@Manchester.ac.uk
- When typing or printing, please use double (or 1½) line spacing and ensure that the image is dark.
- To make it easier to scan accurately, any corrections to a typed or printed page are best confined to the margins using a **pale-blue** pencil, but do ensure that the instructions are clear. If necessary, send two copies, one with, the other without corrections.

- Where emphasis is required, mark the words to be in *italic*, **bold** or underlined fonts in the normal way or print them using the correct fonts. There is no need to put Latin names in italics but it would be a help.
- Latin names must conform to Stace's *New Flora of the British Isles* edn 2, Kent's *List of Vascular Plants of the British Isles & supplements*, Clement & Foster's *Alien Plants of the British Isles* or Ryves, Clement & Foster's *Alien Grasses of the British Isles*. No authorities are needed for names in these books but if the taxon is not included in any of the above then an authority should be given.
- English names should also conform to Stace, Clement & Foster or Ryves, Clement & Foster and if available **must** be given when a species is first mentioned in the text except sometimes in long lists of species.
- Titles of papers and author's names should be in upper and lower case, **NOT** capitals
- **Keep formatting to a minimum.**

PLEASE NOTE: to save postage, contributions will not be acknowledged when first received, unless accompanied by an S.A.E.

All contributors will receive, if time allows, a proof for checking, so that you will be able to see what your note looks like before it is printed and will have the opportunity to alter anything at that stage. Any contributions received, which appear to be more suitable for inclusion in *Watsonia* as a 'Short Note' will be passed on to the editor of that journal.

Suitable illustrations accompanying notes, in the form of line drawings, black and white or colour negatives, prints, slides, or especially colour digital photos are also welcomed. These may be sent as 'hard copy' or as digital images on disk, CD-Rom or over the Internet but, **PLEASE**, **always** send a separate copy of the illustration (in bitmap, jpeg, or tiff format), especially if you have embedded it in your Word document.

A Guide to Illustrators will appear in a future issue.

DIARY

N.B. These dates are often supplementary to those in the 2006 Calendar in *BSBI Year Book 2006* and include provisional dates of the BSBI's Permanent Working Committees.

Permanent Working Committees

25 Jan Records Committee, London
 1 Feb Meetings Committee, London
 9 Feb Publications Committee, London
 18 Feb Committee for Wales, Aberystwyth
 22 Feb Executive Committee, London
 11 Mar Scottish Committee
 16 Mar Council Meeting, London (note change of date)

2006

19-26 March Excursion to Western Portugal
 (see p. 50 last issue)
 23-24 May Cherishing Churchyards?
 (see p. 65)
 20-26 May Excursion to Jersey (see p. 50
 last issue)

See also pages 64 and 67 for further dates

COLOUR SECTION

The cover of *BSBI News* from now on will be in full colour, with a 'stunning' photo on the front. I trust you will agree that the cover photo of bluebells in Scotland by Jim McIntosh is a worthy first.

The editors need your help in providing these 'stunning' images. Ideally they should accompany a short item, and this could just as easily be a field meeting report as a paper. Some of the photos on the back cover of this issue are linked to some Welsh field meetings and were taken by Richard Pryce. They have been chosen not just for their quality but also because Richard kindly provided us with a CD of hundreds of photos from which to choose. There must be many other members who take photographs at various field meetings who could do likewise. You don't have to be the leader of the meeting or author of the report to provide photographs! We look forward to a bumper crop of photos from which to choose the next selection.

As usual, the colour section had to go to the Printers before the text was finalised so the pages to which the photos are linked are given below

Inside front cover: *Delosperma nubigenum*, Petersfield (p. 42) and *Illecebrum verticillatum*, Aldershot (p. 26). **Plate 1:** *Meum athamanticum*, Mow Cop (p. 27); Plant ring, Bath (p. 10); **Plate 2:** *Egeria densa*, pond (v.c. 17) (p. 39); Putative *Erigeron* hybrid, Ainsdale dunes (p. 39); *Sisymbrium polyceratum*, Birmingham (p. 45). **Plate 3:** *Trifolium incarnatum* subsp. *molinarii*, S. Devon (p. 12); *Orchis purpurea*, Porton Down (p. 26). **Plate 4:** Pollen grains (p. 16). **Inside back cover:** *Silene gallica*, Burry Port (p. 48); *Senecio inaequidens*, S. Hampshire (p. 42); *Botrychium lunaria*, Pembrey Burrows (p. 48). **Back cover:** Max Walters, Franklyn Perring, *et al.* (p. 2 & 63); *Viola tricolor* subsp. *curtisii*, Pembrey Burrows (p. 48).

CONTRIBUTIONS INTENDED FOR *BSBI NEWS* 102 should reach the Receiving Editor before March 1st

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Silene gallica at Burry Port (v.c. 44), photo © R.D. & K. Pryce 2005



Senecio inaequidens in South Hampshire,
(v.c. 11), photo © Tony Mundell 2004



Botrychium lunaria on Pembrey Burrows
(v.c. 44), photo © R.D. & K. Pryce 2005



Max Walters (1920-2005) who sadly died on December 11 (*l*) with Trevor Dines, Chris Preston, David Pearman and Franklyn Perring (1927-2003) (*r*) at the launch of the *New Atlas of the British & Irish Flora*, photo © R.D. Pryce 2002



Viola tricolor subsp. *curtisii* on Pembrey Burrows (v.c. 44), photo © R.D. & K. Pryce 2005