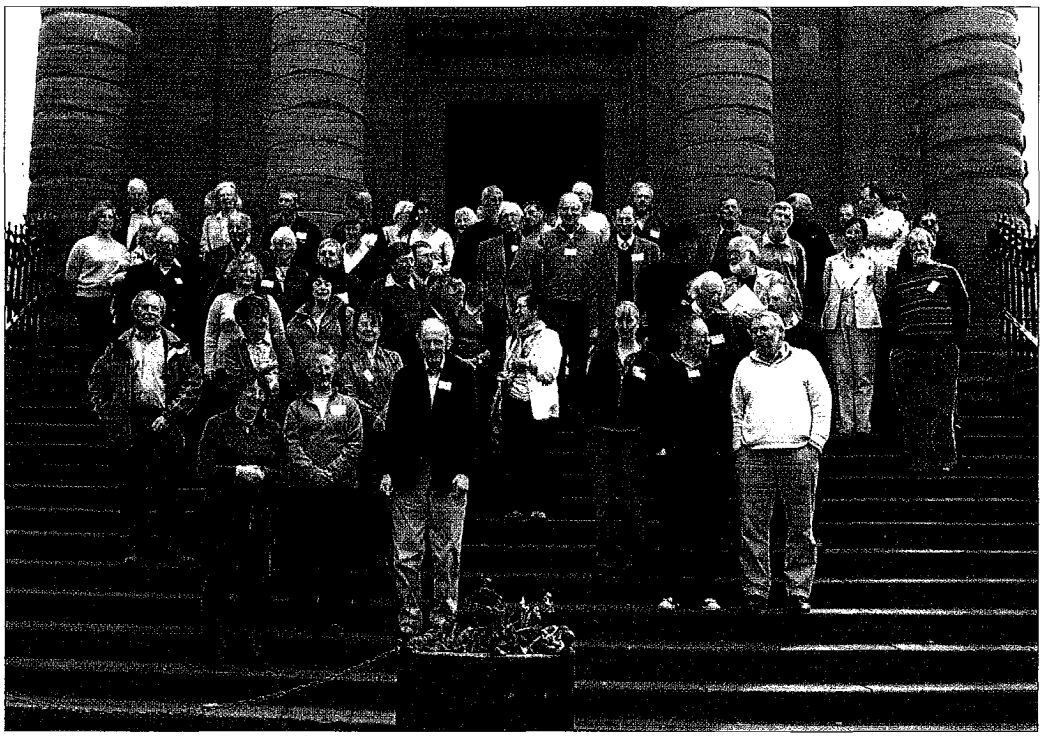
BSBI News

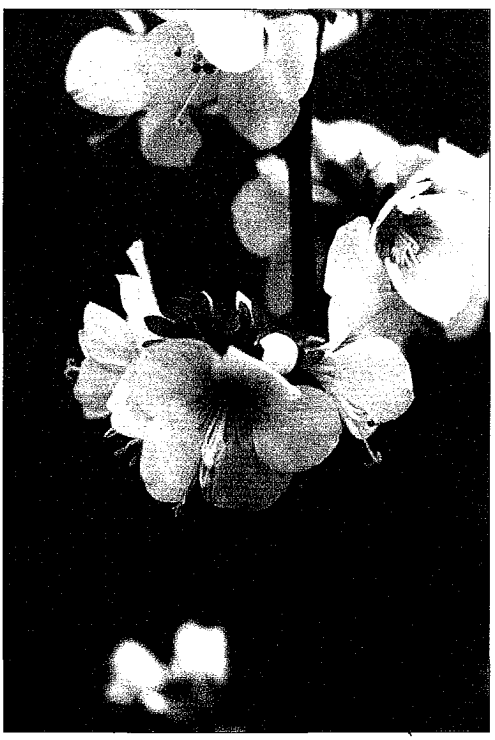
September 2009 No. 112

Botanical Society of the British Isles

Edited by Trevor James & Gwynn Ellis



Group photograph of BSBI members on the steps of the Guildhall, Berwick at the 2009 AGM
(see p. 61)



White-flowered *Polemonium caeruleum*, nr Horton-in-Ribblesdale (v.c.64) with close-up of flowers. Both photos N.A. Thompson ' 2008 (see p. 11)

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Cover picture – *Taraxacum cymbifolium* on steep grassy slope (665m) on Ben Vrackie, Perthshire. Photo M. Usher © 2008 (see p. 3)

EDITORIAL

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What a treat the Spring Conference and AGM at Berwick-upon-Tweed was for the 86 members and guests who attended. The very full Saturday programme included many interesting and informative talks. One which stood out because of it's taxonomic significance was the paper by James Cullen on the taxonomy of *Rhododendron ponticum* (Rhododendron) as naturalised in Britain. This should have been given at the October conference on 'Understanding our alien flora' but had to be postponed because of illness. A summary of this and all the other events of the weekend are on pages 59-64 of this issue. Our President is to be congratulated on organising such a successful event.

The editors would like to commend members on the variety and the overall stimulating interest of things that have been submitted for this issue and to encourage them to continue to do so. Please remember that **all** submissions should be made to the Receiving Editor (TJ), and not to the General Editor (GE). May we also remind all contributors that photos need to be good quality JPEGs, sent as separate files and **not** embedded in emails or documents. We still get quite a lot of these.

We are grateful to new member Colin Jacobs for the following information on 'message-boards' and how to access them.

'I was pleased to see the BSBI mentioned in several threads on the BBC Springwatch internet messageboard during the Springwatch TV Programme at the end of May. I hope that by publicising the Society in this way the BSBI may get many more new members. With over 4 million viewers I expect there were a lot who used the message board. One thread bemoaned the fact that plants are never mentioned on Springwatch but if anyone wants to learn botany the BSBI are a good, if not the best, Botany society to join in the UK. What a great free way of advertising the work of the society.

Go to www.bbc.co.uk/springwatch then to messageboards and register a username. An email will be sent to your address, you click on the link and you can then add to any threads.'

Another new member, Stuart Campbell, put a request in the last issue for some copies of *Watsonia*. He emailed – '*BSBI News* received safely last Friday; members kindly phoned me on the same day (and others over the weekend) and both issues of *Watsonia* secured. The system works!! Thanks to all who responded'

***A field key to the grasses of the East Midlands*:** Barry Dickerson's address for ordering a copy of this key should have read – B. Dickerson, 27 Andrew Road, Eynesbury, St Neots, Cambs., PE19 2QE. Our apologies to anyone who had difficulty contacting him.

Grasses of the British Isles, BSBI Handbook 13, should be published by the time you read this and will be posted very shortly. ***Fumitories of Britain and Ireland*** and ***The Vegetative Key to the British Flora*** were both posted to members in May.

Diary

N.B. These dates are often supplementary to those in the 2009 Calendar in *BSBI Year Book 2009* and include provisional dates of the BSBI's Permanent Working Committees.

7 Oct Records Committee, London
9 Oct Committee for Wales, Aberystwyth
13 Oct Publications Committee, London
28 Oct Executive Committee, London
4 Nov Database Subcommittee, Leicester
7 Nov Committee for Scotland
7 Nov* Scottish Exhibition & AGM
11 Nov Council, London
21 Nov† Annual Exhibition Meeting, London

* Note change of venue (see enclosed lflet)
† Note change of date (see enclosed lflet)

NOTES

Taraxacum cymbifolium in Scotland

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Taraxacum cymbifolium (a dandelion) has been known from a single locality in Scotland. Dudman & Richards (1997) state that this is "at 1,000m (3,200ft) in the south-west corrie of Ben Lawers, Perth, on calcareous schist". The register of rare plants, kept by the Nature Conservancy Council prior to 1991, gave a single 6-figure grid reference, which corresponds with Dudman & Richards' description. *T. cymbifolium* is one of the six species of the genus *Taraxacum* in section *Taraxacum*, all of which are confined in the British Isles to the mountains of Scotland. Three of the species could be described as being relatively widely distributed in Scotland, one with a very restricted distribution, and two have been recorded in only a single 10km grid square (*T. cymbifolium* and *T. clovense*).

T. cymbifolium has a most unusual distribution. As Dudman & Richards (1997) say, "this species shows a remarkable disjunct distribution in the Arctic. The Ben Lawers station is 10° latitude south of any other in Europe". Checking out the species name on a commonly used internet search engine, a number of websites mention the species. These include www.svalbardflora.net, which maps it as occurring on Bear Island, and www.srgc.org.uk, which refers to it as the 'Bear Island Dandelion'. It is, however, given the name 'Ben Lawers Dandelion', both by Sell & Murrell (2006) and in www.biodiversityscotland.gov.uk. It is recorded as being in the IUCN category 'vulnerable' by www.plantnetwork.org, but this classification might be better as 'data deficient'. Sell & Murrell (2006) record the species as occurring in Faeroes, Iceland, Norway and Svalbard (but the latter reference is probably to Bear Island rather than Svalbard *sensu stricto*), and www2.nrm.se also records it from Finland.

Given these comments about the species, it is notable that it is now known to occur in at least a second site in Scotland. On 16th May 2008 MBU was searching for some of the earlier-flowering alpine plants on Ben Vrackie, Perthshire. A number of dandelions were in flower, but he did not attempt identifications in the field. Two specimens of apparently different species were collected, pressed and later identified by JR. As he said in a letter to MBU, "there is no doubt that the crême de la crême is a second station for that most extreme disjunct (Svalbard, N. Iceland) *T. cymbifolium*" (see Front Cover). The specimen is now in the herbarium of the Royal Botanic Garden Edinburgh (E).

The location was at an altitude of approximately 665m, at national grid reference NN950629, on a steep, grassy, herb-rich slope. It was growing in a mixed population with *T. brachyglossum*, and lower down the mountain, at an altitude of about 400m, a second species of section *Taraxacum* was growing (*T. ceratolobum*). Unfortunately MBU did not make a count of the possible number of *T. cymbifolium* in this grassy sward – a further visit in 2009 proved to be too early to find any of the dandelions in flower.

From a conservation perspective, this dandelion species is now known from two sites in Scotland, approximately 34 km apart, and at different altitudes. There appear to be few pressures on these populations, other than by trampling by people searching for the more widely known rare alpine plants. Clearly what is needed is a survey of *T. cymbifolium* in its two localities, and in time an estimate of whether or not the sizes of the populations are changing. There would also be merit in searching for this species in other base-rich communities in the Scottish Highlands and at a variety of altitudes. It is now known from

two localities that are very frequently visited for their rare arctic-alpine plants, and both localities have very base-rich substrates by Scottish montane standards. There remains the possibility that the species, which flowers in May, could be found on other mountains with such habitats and collections of arctic-alpine plants.

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Another site for *Allium schoenoprasum* (Chives) in S. Northumb. (v.c.67)

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Northumberland has long been known to have *Allium schoenoprasum* (Chives) at three sites: Walltown and Great Bavington in the south of the county (v.c.67), and Spindlestone in the north (v.c.68). However, reference was made to an undated record for Winshields Crags in the *Flora of Northumberland* (Swan, 1993). This was attributed to William Robertson, a Newcastle botanist who did his botanising mainly in the Newcastle and Tynedale areas. Living in the early part of the 19th century (he died in in the late 1840s), he entered records as annotations to his personal copy of *The botanist's guide through the counties of Northumberland and Durham* Vol.1 (Winch, Thornhill & Waugh, 1805). In this guide, there were no records at all for *Allium schoenoprasum.* Robertson, however, made two entries for the species (both of which he attributed to J.Thompson), and one of these was for "Winshields Crags, near to Twice Brewed" – a roadside public house. As was stated in the *Flora of Northumberland,* nothing more was known about this site, although, in the Northumberland Wildlife Trust Whin Grassland Survey report in 1980, East Bog Farm was suggested as being the possible 19th century site.

However, in 2001, when cattle and sheep were removed from the countryside because of the foot-and-mouth disease outbreak, the farmer at East Bog Farm (NY7467), on the the dip-slope of Winshields Crags, and some 400m from Twice Brewed, made a report to the National Trust (the landowners) of what he thought was Chives. The following year, Andrew Poad, the National Trust property manager, visited the site with the N.T. ecologist, and confirmed the sighting.

This is quite an exciting 'find', as there are no records for this site in the subsequent county *Floras* (Winch, 1831; Baker & Tate, 1868). In fact, in the latter, the species is stated to be "rarely, or quite extinct in some of the old stations". At East Bog it is to be found on five of the exposed whin outcrops, and in reasonable quantity. On a national basis, of the U.K.'s 3,900+ 10km squares, *Allium schoenoprasum* is to be found in 18, with Nortumberland having three. This now stands at 19 and four respectively.

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'*Juncus fasciculatus* Koch (?)' in Cliffe Castle Museum, Keighley, Skipton

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A *Juncus* specimen in Cliffe Castle Museum (**CCM**), labelled '*Juncus fasciculatus* Koch (?)', from Glamorgan, v.c.41, was of great interest, as the specimen appeared to be *Juncus pygmaeus* Rich. *Juncus pygmaeus* has apparently only ever been known from the Lizard in Cornwall, v.c.1. The authenticity of the specimen may have been in doubt and further steps were taken to discover if the specimen was genuine.

Firstly, the specimen was found by the well known Yorkshire botanist, F.A. Lees (Arnold Lees). The date given was May 1872 and, as can be seen from the label, (fig. 1, p. 7) it describes the location as; 'Sandy moor, near sea between Oystermouth and Pennard Castle, Glamorgan'. The label is actually stuck over the specimen and is in Arnold Lees' own hand writing. The label appeared to be very white, as if modern, but could not be, as the handwriting is Lees' and it has since discoloured, (by taking the specimen out three times), suggesting it was just because it had been in the dark all this time. The name '*Juncus bufonius*' has been written on the sheet in 'ink' in the lower right corner, but no details are given, though it seems to be a modern [in-]correction. One of the doubts surrounding the specimen was to discover if Lees was in Wales at that time and to find out more information on the name, '*J. fasciculatus* Koch (?)'.

The description on the label seems to be fairly specific, at least in the location given, and is clearly not a mistake for anywhere in Cornwall. The issue of whether Arnold Lees was in the area seems to be unquestionable, as *Draba aizoides*, was collected in 1871 by Lees from 'the walls of Pennard Castle', a well known site. Specimens of this latter species have been seen in both **MANCH** and the herbarium at the Leeds Discovery Centre.

The name '*Juncus fasciculatus*' is a complicated situation mostly surrounding the *J. bufonius* agg., with the associated species now part of *Juncus* subg. *Agathyron*, section *Tenageia*; though it has implications relating to *J. pygmaeus* also, which is in *Juncus* subg. *Juncus* section *Ozophyllum* (Kirschner, 2002a, b). However, *J. pygmaeus* is distinct from all taxa in the *J. bufonius* agg., as it has unitubular leaves, whereas those in the *J. bufonius* agg., have bifacial leaves. Largely in the UK, the treatment of the *J. bufonius* agg. has been divided in to three taxa: *J. foliosus* Desf., *J. bufonius* L. and *J. ambiguus* Guss., (Cope & Stace 1978, Stace 1997). Currently, the first two species appear to have been retained under those names, though the latter species has now reverted to *J. ranarius* Songeon & E.P. Perrier in Kirschner (2002b), and is accepted as such here.

Within the *J. bufonius* agg., the name '*fasciculatus*' is also associated with *J. hybridus* Brot., an alien taxon rarely ever seen in the UK. The name '*fasciculatus*' has occurred at various ranks relating to *J. bufonius*, *J. ranarius* (within *J. bufonius* s.l.), and *J. tingitanus* Maire & Weiller, a non-native that is very similar to and in the same section as *J. pygmaeus*. Both these latter two species have unitubular leaves. The names relating to '*fasciculatus*' given in Kirschner (2002a, b) are given below under each taxon they relate to:

Juncus subg. *Agathyron* section *Tenageia*:
J. hybridus: *J. fasciculatus* Bertol., *Fl. Ital.* 4: 190 (1839), *nom illeg.*
J. bufonius ssp. *fasciculatus* K. Richt., *Pl. Eur.* 1: 176 (1890), *nom illeg.*
J. ranarius: *J. bufonius* var. *fasciculatus* Koch, syn. *Fl. Baden* 1: 336 (1857), *nom illeg.*, *non* Thunb. (1820).
Juncus subg. *Juncus* section *Ozophyllum*:
J. tingitanus: *J. fasciculatus* Schousb., ex E.Mey., syn. *Junc.* 28 (1822), *nom illeg.*, non Schrank (1789).

It is worth noting here that the name 'var. *congestus*' is likely to refer to some plants in this group as the name '*fasciculatus*' relates to

having a 'fasciculate' (congested) inflorescence. The name is given under *J. bufonius* and *J. ranarius*, usually at varietal or unranked status respectively (Kirschner, 2002b).

As the Cliffe Castle specimen was from Britain it is unlikely that the name was intended for *J. tingitanus*, (and it does not belong to that species based on the size of the tepals and anthers). The name '*fasciculatus*' is likely to have been applied in error for one of the species in the *J. bufonius* agg. The most likely misapplication of the name by F.A.Lees was for that given under *J. ranarius*, since he was unsure of the authority ("Koch (?)") and it seems the rank also (given as a species by Lees), and *J. ranarius* usually has small clusters of flowers. Even today the most likely error for *J. pygmaeus* would be *J. ranarius* (*J. ambiguus*), which, although part of the *J. bufonius* agg. (only as a variant at the time of Lees), was at that time not separated from *J. bufonius* s.s., although it suggests Lees and possibly others thought it different from *J. bufonius* s.l. Today the separation is clearer for the species in the *J. bufonius* agg., (Stace 1997) (although the group is still a complex of possibly evolving species) and in any case *J. bufonius* and *J. pygmaeus* belong to different Sections, (see leaf types above and Kirschner (2002a, b) for other differences). No species in the *J. bufonius* complex has unitubular leaves. The CCM specimen has unitubular leaves, and the tepal type is that of *J. pygmaeus*. There is no doubt it is that species.

An examination of plants with the name *Juncus bufonius* var. *fasciculatus* in **LIV** (five plants found) showed that three are *J. ranarius*, one is *J. bufonius* and the other one is *J. foliosus*. This suggests that the congested inflorescence, while typical for *J. ranarius*, is also found in other members of this group. Whether these would grow true or not is uncertain as I have seen no modern records for the latter two species with 'fasciculate' inflorescences. If they were to grow true then perhaps the names 'var. *fasciculatus*' for *J. bufonius* and 'var. *congestus*' for *J. foliosus* would be as good as any!

It seems clear that the specimen in Cliffe Castle is *J. pygmaeus* and, while the provenance and habitat may be disputed, it seems to be a genuine collection of this species, mistaken for a *J. bufonius*-like plant. In **MANCH** a specimen [EM305628] has been seen of *J. pygmaeus* that is labelled; "*Juncus pygmaeus*, Land's End, Cornwall, W. Curnow, 1877 –" and so it may have occurred outside the Lizard on more than one occasion and further validates the possibility of it having occurred in Wales. However, there were two botanists with the name 'W. Curnow' and the name Land's End was often used for the Lizard. Notwithstanding this, there is also another specimen [EM95462] of a W.M. Curnow (written, *W^m Curnow*, as are other specimens of this collector) and this is labelled 'The Lizard, June 6 1877' and suggests that W. Curnow was the other Cornish botanist and the collection may have been genuine for Land's End. J. Cunnack precedes these two in **MANCH** with a 'Lizard' collection of June 1873 [EM305648].

It may be worth looking at other herbarium specimens, particularly those under the names given above for the *J. bufonius* agg., to see if it may have been overlooked and occurred elsewhere. The Cliffe Castle specimen suggests an extension of the range for this diminutive little rush, albeit retrospectively. A search in the area of south Wales might be worthwhile. Like the scattered distribution of *J. capitatus*, since refound in Anglesey (Pearman *et al.*, 2002), and recently re-discovered in Land's End Cornwall by Ian Bennallick (pers. comm.: Rose Murphy), it seems plausible that *J. pygmaeus*, a vulnerable and often ephemeral species, may have once occurred in Wales and Land's End in Cornwall.

Acknowledgements:
Special thanks to Dr Gerard McGowan of CCM, and Dr T. Rich. Also thanks to Drs C.D.Preston, C.A.Stace, and to Clare Stringer (Leeds Discovery Centre-Museum) and Dr Leander Wolstenholme (**MANCH**), staff at **LIV**, and Rose Murphy.

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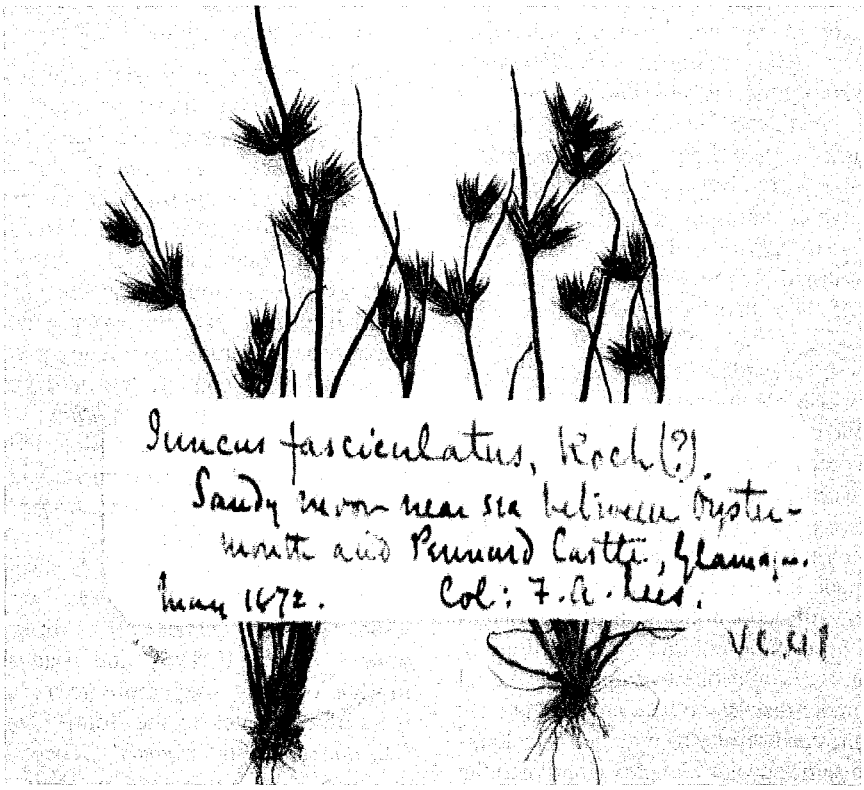

Fig. 1. *Juncus pygmaeus* Rich. Specimen in Cliffe Castle Museum

Juncus acutiflorus

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Juncus acutiflorus (Sharp-flowered Rush) is recorded as a widespread and very common species in most areas. Its hybrid, *J.* × *surrejanus*, with *J. articulatus* (Jointed Rush), is recorded as scattered and much less common, some areas recording it more than others. However, I suspect that the hybrid is more common than the species in many areas, (as I have seen only a few convincing plants of the species). In order to assess these two taxa I would be grateful for specimens particularly (only) of *J. acutiflorus* (although, if you think it is a hybrid I don't mind seeing this as well); but collect from any stand of rushes thought to be one or the other. They need no special pressing, no need for the whole plant, collect from the upper leaf on the stem including the inflorescence. Many plants can fit on A4 sheets loosely sellotaped, as many as you like, save up over the season (Aug-Oct only) to post in one go. Postage paid – I challenge you to find *J. acutiflorus* (please)! Further work might reveal if any partially fertile plants are hybrids or the species as well.

Epipactis leptochila complex in Britain

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In *BSBI News* **111**: 12-14 (April, 2009), Simon Harrap attempts to bring up to date and clarify the present situation regarding several helleborine taxa in Britain, including *Epipactis leptochila* (Narrow-lipped Helleborine), *E. dunensis* (Dune Helleborine), *E. dunensis* ssp. *tynensis* (Tyne Helleborine), *E. sancta* (Lindisfarne Helleborine), and *E. muelleri*. Simon Harrap rightly points out that modern authoritative accounts in general use, such as Preston *et al.* (2002) and Stace (2004) have become outmoded in this regard. A molecular analysis of these taxa (Squirrell *et al.*, 2002) encouraged some Continental authors (Delforge & Gevaudan, 2002; Kreutz, 2007) to subject British populations to taxonomic treatments that have not been publicised widely, although they were discussed in part by Hollingsworth *et al.*(2006).

We agree with Simon Harrap that it is time that the present consensus with respect to these taxa is made known more widely. However, we do not fully concur with all of his conclusions, or those of the Continental authorities. In particular, we would like to emphasise that all the taxa under discussion here are very closely related, and can usefully be regarded as belonging to the same species complex (for which the prior name would be *E. leptochila s.l.*).

Nevertheless, at present this complex has been split, and first we would like to re-emphasise those matters that are common ground, and with which we agree.

- *Epipactis leptochila* and *E. dunensis* are very closely related, but at present are best treated at specific rank.
- *E. leptochila* s.s. is a plant primarily of southern beech woods and does not occur north of Shropshire.
- Plants from wasteland sites in North Lincs., SE Yorks. and South Lancs. (the latter not mentioned by Harrap) are *E. dunensis*, as are plants associated with metal spoil or metalliferous river gravels in northern England.
- *E. muelleri* does not currently grow in Britain (a few individuals that may have been this species were found on the south coast of Sussex in the 1970's)

Populations of '*E. dunensis*' on Scottish bings (re-colonised coal spoil) are more complex. Morphologically there are plants there with the appearence of *E. dunensis*, but there are also plants with intermediate morphologies. Genetic analysis showed that *E. dunensis*-like plants in Scotland lacked the classic homozygous and uniform genetic signature of English *E. dunensis*. Instead they are heterozygous for the same set of alleles as was found in sympatric plants of *E. helleborine* and *E. helleborine* var. *youngiana*. Scottish '*E. dunensis*' may be relict hybrids of *E. dunensis* with *E. helleborine* s.l., or they may represent independent origins of the *E. dunensis* phenotype.

However, there are two taxa discussed by Simon Harrap with which we would take issue. Classic *E. dunensis* from the west coast dunes of Cumberland and Lancashire is morphologically inseparable from plants from metalliferous sites in the South Tyne valley ('*E. dunensis* ssp. *tynensis*'). These two taxa could not be separated by their isozyme profiles, had identical sequences of chloroplast DNA, and differed only by 1 bp (the minimum possible substitution) in the trnL region of nuclear DNA. This was interpreted as 'a single origin followed by a mutational divergence'. We submit that as this is the only detectable difference between the taxa (apart from geography and ecology), no case can be made for the 'Tyne Helleborine'. Inland plants from sites in northern England should be regarded as *E. dunensis*.

The question of the identity of the plants on Lindisfarne, in North Northumberland, is more problematic. These resembled west coast *E. dunensis* in their isozyme profile, but displayed an unique chloroplast DNA

sequence which was unlikely to have derived from other sequences in this group. Nevertheless, the 'Lindisfarne Helleborine' (*E. sancta*) is not as distinct from west coast *E. dunensis*, molecularly, as *E. dunensis* is from *E. leptochila* and *E. muelleri.*

If the 'Lindisfarne Helleborine' were morphologically identical to west coast *E. dunensis*, this would raise the interesting question as to whether two plants of different origins but closely convergent morphology should be regarded as the same or different species. However, it is the opinion of JR that the 'Lindisfarne Helleborine' does not resemble *E. dunensis* very closely, having in particular a less dense inflorescence with fewer flowers, which is relatively longer in relation to the leafy part of the stem. This contention requires detailed analysis, and until this is published, we would welcome the taxon *E. sancta* with some considerable caution. At present, we regard it as a useful 'workname' rather than a proven species.

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On the flora of railway banks

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I have never learnt to drive, so I travel everywhere by train from my home in Surrey, and I am a diligent observer of wild plants from train windows. I have three daughters, who live in Sussex, Birmingham and Lancashire respectively, and I visit them from time to time. I have also visited Scotland 25 times, and have observed many floral delights from the train.

In March and April, en route to Sussex, I see masses of bank-side *Primula vulgaris* (Primrose). This is my favourite wild flower, so obviously the sight delights me. Travelling up to London from my Surrey home there are miles of *Equisetum telmateia* (Great Horsetail) on the banks, and many aliens, including *Artemisia verlotiorum* (Chinese Mugwort), *Senecio squalidus* (Oxford Ragwort), *Conyza canadensis* (Canadian Fleabane) and *Solidago canadensis* (Canadian Golden-rod).

Going to stay at Birmingham, the train travels along a cutting through the Chiltern Hills, and a delightful chalk flora can be seen, including *Thymus* spp. (thymes), *Viola* spp. (violets), *Campanula* spp. (bell-flowers), and *Origanum vulgare* (Marjoram), etc.

On the high-speed train to Lancashire and Scotland, the great speed of the train hinders identification, except when it slows down. One of the first signs of reaching Scotland is *Oreopteris limbosperma* (Lemon-scented Fern), with its yellow-green fronds, but the many other Scottish delights are too numerous to mention.

Car drivers must obviously focus on the road ahead, so they miss most of the roadside plants, and I arrive at my many destinations thinking rail travel is the best method of transport, and, of course, is better for the environment too.

Alchemilla micans at Keepershield Quarry, S. Northumb. (v.c.67)

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Alchemilla micans Buser, previously known as *A. gracilis* Opiz, is the most recently discovered and most localised of the rare lady's mantles of north-east England. It was originally discovered by Professor G.A. Swan at a site known as The Scroggs (NY8972), about 10 km north-west of Hexham in 1976. It has since been recorded in three other sites in the same area. At one, a road-verge, there are only about five plants. The other two sites are close to one another. They are heavily grazed so the plants are very small, and probably contain not more than 150 plants. All the sites are grasslands over shallow soils overlying Whin Sill (dolerite), particularly close to the junction between the Whin Sill and adjacent limestones.

The original site, the Scroggs contained the largest population, which in good (wet) springs could contain several hundred plants, usually very dwarfed by rabbit grazing, drought and low nutrients. Close by, the flat Whin Sill was exposed in horizontal plates, around which a number of other localised species occurred including *Scleranthus annuus* (Annual Knawel), *Trifolium striatum* (Striated Clover), *Geranium columbinum* (Long-stalked Crane's-bill) and *Allium vineale* (Crow Garlic). However in dry years, the population of the alchemilla could become very much reduced. On one occasion I could only find about 20 individuals.

At the Scroggs, *A. micans* occurred together with three other species of alchemilla, *A. filicaulis* ssp. *vestita*, and on deeper soils, *A. xanthochlora* and *A. glabra.* It is readily separable from the last two species by being notably hairy on the upper surface of the leaf. Unlike *A. filicaulis* ssp. *vestita,* the upper parts of the inflorescence (peduncles and pedicels) are glabrous, although a proportion of the urceoles do have some hairs, in contradiction to most published descriptions. With practice it can also be distinguished from *A. filicaulis* ssp. *vestita* by the yellow-green leaf-colour (blue-green in the latter). From the potentially much larger rare species which also have leaves hairy above (although much less so), but glabrous inflorescences, *A. acutiloba* and *A. subcrenata, A. micans* is best distinguished by the narrower funnel-shaped base to the urceole when in mature fruit, longer filiform pedicels (especially in fruit), and the rather erect hairs on the petioles, although the latter character is by no means constant.

The Scroggs was adjacent to a large whinstone quarry, although hidden behind a belt of trees. In the 1990s, the quarry owners, then Alan Davison Construction, reactivated a dormant permission for mineral extraction rights involving the ground to the west of the quarry, including the Scroggs. The quarry then changed hands in 1994 when it was bought by ARC, part of the Hanson group and owners of nearby Swinburne quarry. Hanson consulted with the Northumberland Wildlife Trust (NWT), Natural England, Northumberland County Council and specialist ecologists Humphries Rowell regarding the translocation of the plants and it was agreed that the most interesting plant communities, including all the *Alchemilla micans*, should be transplanted onto bare level Whin Sill within the Keepershield Quarry, in a marginal site that would form part of the final restoration plan for the site and would remain unquarried.

This work was undertaken by Humphries Rowell of Leicester over two years from 1998 to 2000 at a total cost of £70,000. The turf at the Scroggs was stripped and stored, and the shallow topsoil taken to the new site, where the turf was relaid. Separately, all the alchemilla plants were dug up by volunteer students from Germany, potted temporarily, and then replanted in the new site (as only *A. micans* and *A. filicaulis* ssp. *vestita* can be found at the new site, it seems that the students only preserved plants that had leaves that were hairy above).

I confess that I was sceptical about the likely success of this exercise, and thought privately that the main British locality for *A. micans* had

probably been lost. Despite ongoing interest from Natural England, and one early site visit by representatives of NWT, little if any information about the success of the scheme had filtered through to the Botanical community, a process not helped by the considerable security attending access to the Keepershield site. Although it is a priority BAP species, no information as to its current status is found for either the 2005 or 2008 surveys, nor does the Plantlife website reveal any accurate information.

I have meant to visit the site for several years, and finally arranged a meeting with Bruce Lowdon, the Unit Manager for Hanson Aggregates who now own the Quarry, on June 9th 2009. The North-East of England had enjoyed a particularly dry spring, so that although some rain had fallen during the previous week, most Whin sites were sere and the annual communities typical of the shallowest soils were in poor condition.

Bruce Lowdon proved to be very welcoming, and was knowledgeable about the translocation, and indeed many of the plants that had been moved. It would be fair to say that he was very proud of the translocated site, and I thought he had every right to be. The translocated site is about 2 ha in extent. Most of it is high quality Whin grassland with a high diversity, but in which species such as *Sanguisorba minor* (Sald Burnet), *Galium verum* (Lady's Bedstraw), *G. cruciata* (Cross-wort), *Helictotrichon pubescens* (Downy Oat-grass), *Briza media* (Quaking Grass), *Koeleria macrantha* (Tufted Hair-grass), *Carex flacca* (Glaucous Sedge), *Thymus polytrichus* (Common Thyme), *Primula veris* (Cowslip) and *Centaurea nigra* (Common Knapweed) were abundant, while *Orchis mascula* (Early Purple Orchid) also occurred. At one end, limestone rocks had been imported from the limestone side of the original site to form a low cliff, and in this several species of fern had established. Alchemillas in excellent health and vigour abounded throughout the site. These were roughly half *A. micans* and half *A. filicalis* ssp.*vestita*. Although most plants were flowering, many small seedlings of both species could be found. There were not less than 500 flowering size plants of both species present; maybe more.

Cleverly, soil depths, slopes and aspects had been varied at the far (west) end of the site, and here could be found the remains of abundant annual communities, including the locally rare *Geranium columbinum*. Several healthy patches of *Trifolium striatum* were also found, but no *Scleranthus annuus*. The latter species was difficult to find at the original site during dry years, so it may not have been lost.

In my opinion this translocation has been a resounding success, and might well serve as a model should similar exercise prove necessary elsewhere. What has been created from scratch is one of the best examples of a whin grassland still in existence. My only reservation is that the communities have now reached the point at which they would benefit from autumn and winter grazing (at present they are locally strimmed at the end of the season). Bruce Lowdon is well aware of this, and promises to initiate discussions with local farmers. Unfortunately, the adjacent land is presently ungrazed by the tenant.

Bruce Lowdon welcomes prearranged visits by interested parties, and there is much more to admire than just Britain's rarest lady's mantle. He can be contacted on 01434 681893 or 07764241936.

Polemonium caeruleum

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Donald Pigott wrote in the January *BSBI News* (**110**: 23): "My study of native habitats in England had shown them to be almost always on steep, north-facing, often rather unstable slopes, with seepage of water..."

I found the white variety of *Polemonium caeruleum* (Jacob's-ladder) on 19th June 2008. The clump was growing on the roadside verge on the main road from Horton-in-Ribblesdale, far from steep slopes and cliffs (see inside Front Cover).

New records of *Monotropa hypopitys* ssp. *hypophegea* (Yellow Bird's-nest) on an industrial site at Newport (v.c.35)

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ROGER JAMES, SINEAD LYNCH & STEPHANIE J. TYLER

On 10th July 2009 Trevor Evans (TGE), Stephanie Tyler (SJT) and Roger James (RJ), together with Sinead Lynch from Newport City Council, visited the lagoons and surrounding areas at the former Alpha Steel (now Mir) works at Newport (ST337845) to carry out a botanical survey. In the mid-1980s, Martyn Jones, TGE and SJT had botanised at the site, when thousands of plants of *Epipactis palustris* (Marsh Helleborine) occurred on deposited material around the red lagoons and 500-1000 *Dactylorhiza praetermissa* (Southern Marsh-orchid), *Anacamptis pyramidalis* (Pyramidal Orchid) and *Ophrys apifera* (Bee Orchid) grew in surrounding grassland (Evans, 2007). Much tipping has occurred at the site in the intervening years, destroying much of the immediate surroundings of the lagoons. Areas of grassland have also developed into *Betula pendula* (Silver Birch), *B. pubescens* (Downy Birch) and *Salix cinerea* (Grey Willow) scrub.

We found many fewer orchids – a scattering of *Epipactis palustris* and hybrid *Dactylorhiza fuchsii* × *D. maculata* (Common Spotted × Heath Spotted-orchids), a small number of *Dactylorhiza praetermissa*, and two flowers of *Ophrys apifera*. However, in a narrow strip of scrub woodland carpeted with *Hedera helix* (Ivy) RJ noted some 'broomrapes'. We were excited to see about 100 emerging *Monotropa hypopitys* (Yellow Bird's-nest). Later, at a different location, we found three more *Monotropa* concentrations numbering about 300 plants. SJT then noticed a patch of *Pyrola sp.* (wintergreen) with 10-20 flowering spikes, but all still in bud in denser birch woodland.

Unknown to us at the time, Heather Colls, when taking a botanical walk around the nearby Newport Wetlands Reserve on 7th July had discovered another 100 plant population of the *Monotropa* in scrub birch/willow woodland on ash from the former Uskmouth Power Station.

On 17th July TGE and SJT returned to the Mir site to check the subspecies of *Monotropa* and to see whether the *Pyrola* buds had opened. The *Monotropa* was ssp. *hypophegea*, and it was evident that two areas with *Monotropa* were in the form of a circle around *Salix cinerea* and birch bushes. The wintergreen proved to be *P. rotundifolia* (Round-leaved Wintergreen).

In Monmouthshire (v.c.35) *Monotropa* is a rarity, being confined to limestone woodland under *Fagus sylvatica* (Beech) at Blackcliff (Evans, 2007). The discovery of this species at two former industrial sites near Newport is therefore of some interest and reminiscent of the discovery of *Monotropa hypopitys* ssp. *hypophegea* in 2004 by P. Jones in a fairy ring on pulverised fly-ash under birch and willow trees at Pwll near Burry Port in West Glamorgan. Jones (2008) discussed the relationship between *Monotropa* and *Tricholoma* fungi. Pryce (2005) reported on a visit in July 2004 to see the recently discovered population of *Monotropa* at Pwll. On that visit both *Pyrola minor* (Common Wintergreen) and *P. rotundifolia* were also found. In Monmouthshire, *Pyrola rotundifolia* was known from just one site (Evans, 2007), so the discovery of the species at Mir Works is also of note.

The future of the lagoons and surrounding areas at Mir Works near Newport are uncertain. Foreign investors have bought this area from Mir and presumably intend to develop it. Apart from the species noted above, the site has much else of interest – extensive patches of *Lathyrus sylvestris* (Narrow-leaved Everlasting-pea) and abundant *Lotus glaber* (Narrow-leaved Bird's-foot-trefoil), as well as occasional plants of *Sisymbrium altissimum* (Tall Rocket). More than 140 plant species were found in July 2009.

On the phone Phyl Abbot informed TGE that Grass Wood, Yorkshire, also produced an

unexpected, large colony of *Monotropa* this year. Are there any more surprise populations?

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Progress report on habitat management projects

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Since 2001 the number of voluntary habitat management projects I am involved in seems ever growing. In 2009 some of the projects seem to be paying off.

Arabis glabra (Tower Mustard) has done very well at its site south of Gerrard's Cross in Bucks., with at least 200 rosettes and 26 flowering plants on the 2nd August 2009, in an open disturbed strip that was created for the species back in November 2008 by myself and Dave Shute. Rabbits do occur on the site and some flower heads do get knocked back, but disturbance they create can awaken dormant Tower Mustard seed. I am hoping with help from fellow botanists to create further open strips for this species in late 2009.

Allium oleraceum (Field Garlic) has also done extremely well on the A3400 roadside bank in Warwickshire in 2009. On the 27th July I lost count at around 1032 flowering plants, the best count I have had at this site for this species since I started working on the site back in 2001. Even though the bank is cleared in November by myself and other helpers, it must have been completely cut some time in June this year by the grass cutting contractors. This has not been a bad thing for the species as the vegetation was short on my July visit and the Field Garlic has benefited from this late cutting this year.

Orchis anthropophora (Man Orchid) at Ufton Fields, its only site in Warwickshire, is gradually increasing in number. A few years ago myself and Paul Stanley could only locate one rosette of this species. Since my involvement with habitat management for the species at Ufton Fields, the population is up to 15 rosettes this year, a number of these being juvenile rosettes around more mature ones. There was one nice flowering specimen, much admired by members of the Hardy Orchid Society, who were queuing to photograph it on a meeting I was leading for the society on the 13th June. The Man Orchid areas are caged during flowering time but are opened up during the winter to let the grazing rabbits back in. Any long vegetation is also cut and raked off.

Himantoglossum hircinum (Lizard Orchid) near Bristol in Gloucestershire is doing O.K., even though the number of flowering plants each year drops a bit. Fellow botanists have recorded seven flowering plants this year. However, the number of wintergreen rosettes in February 2009 stood at 36. A number of these were new rosettes, buried in blackthorn scrub, which was cleared to let more light onto these rosettes. The roadside bank for this species is cut and raked off in February each year, which is also a good time to locate rosettes of this species, which need the scrub or rank vegetation cleared away from them. I do hope one year the medium-sized Sycamores on the Lizard Orchid bank do get removed. The large fallen sycamore leaves bury even large Lizard Orchid rosettes quite easily!

Sadly on a number of visits to Brogborough in Beds, I could not locate any plants this year of *Melampyrum arvense* (Field Cow-wheat). I have been involved with this species, co-operating with Graham Bellamy, the Beds. Conservation Officer and others over recent years, trying to get habitat management conditions just right for this species here. I do hope this species is not completely lost from Bedfordshire.

I must thank all the help I have had from fellow botanists and their useful advice over the years.

Squirrel-stripping of native, naturalised, plantation and exotic trees

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"Grey squirrel control has been carried out in Anglesey since 1998." The environmental and economic damage caused by the alien grey squirrel is detailed in chapter 4 of the FARS report (2009), which includes references to studies by more than 30 recent researchers in Britain. "Those tree species that are prone to grey squirrel damage will become less frequent". Economics aside, there are other major impacts on biodiversity, conservation and sustainability in broadleaved woodlands of all ages. The FARS report also discusses the damage to conifer plantations, orchards, market gardens and recreational areas. Deleterious primary and secondary effects on other vascular plants, crops, fungi, other mammals, birds and invertebrates can be serious.

Broadly delineated tree taxa highlighted as vulnerable on a large scale include sweet chestnut, beech, sycamore, oak, pines, larch and spruce. "In time, beech and oak may be lost from the mature woodland canopy". The 1983 Foresty Commission study considered beech and sycamore to be most extensively attacked, followed by oak, ash, poplar, and birch. Hornbeam, Scots pine, Norway spruce, and lodgepole pine are also vulnerable. Thin-barked, but generous-phloem trees are subject to the fiercest stripping assaults.

Four reasons are given for the gnawing and de-barking:

1. Mid-summer food shortage with high density squirrel populations.
2. Agonistic (aggressive) interactions between competing individuals and displacement activity.
3. Specific nutrient deficiencies.
4. Preferential liking for certain saps and habit formation.

Young trees less than 2m high are not normally attacked, but all other ages and all height levels are susceptible. Basal gnawing and de-barking can mimic attacks by rats and rabbits, and is usually more severe and extensive than that caused by ground rodents, when the bases are openly accessible. Within ground cover, squirrels fear ambush by predators. Rob Guest, Deputy Surveyor of the Forest of Dean, warns against comfortable theorising:

> "Squirrels. I am interested in your observations about the unpredictability of damage - which I endorse. There are many myths about resistance between species, and with differing age. In the Dean, squirrels wreck beech, sycamore, chestnut, and even damage species which conventional wisdom suggests do not get attacked, like ash and cherry. I haven't yet seen damage on lime! In the conifers, we have terrible damage on larch and Norway spruce, with the pines also affected. And we have recorded damage from three-year old larch through to 180 year-old oak..."

He considers that damage increases exponentially with population density, grey squirrel populations varying from 2-15 per hectare (pers. comm.).

Clatford Arboretum (2¼ ha)

This was started in 1992, with subsequent bi-annual plantings from 1993 onwards. Pioneer grey squirrels invaded in (2006?) 2007, 2008 and 2009. Stripping occurred at all levels, especially in 2008 (see table (p. 17) and photos). Not all the familiar tree species from plantations or woodlands mentioned above are considered in the table, as either being too young or not represented. *Castanea sativa* (Sweet Chestnut), for instance, dislikes the chalky soil. Thirty tree species, four hybrids and five additional tree taxa (subspecies, varieties and cultivars) were de-barked to varying extents at all levels by tooth and claw-stripping and basal gnawing. Little, if any, bark was eaten, leading me to attribute the squirrel behaviour to category (2) above – fury at the smell or sight of a nearby rival pioneer.

Worst attacks, by quantity, of low-level shredding of bark

The severest low-level (under 10m) stripping was suffered by *Acer pseudoplatanus* var.

purpurea (1), *Cercidiphyllum japonicum* (2), *Juglans cinerea* (1), *Salix acutifolia* (2), *Salix caprea* (2), *Salix irrorata* (1), *Salix pentandra* (4) (see Colour Section, Plate 1). All were wholly or mainly skeletonised down to the tree-guard level. All recovered from below. Despite dense twigginess, the two *Cercidiphyllum* (Katsura) trees were vulnerable. One was wholly ring-barked, but amazingly still is leafy above the ring-barking zone after a full year! (See Colour Section, Plate 1).

Basal ring-barking and deaths

Chamaecyparis thyoides (1), *Cupressus macrocarpa* (1). Grey squirrels were almost certainly responsible for other conifer deaths, due to basal ring-barking, but I cannot wholly exclude contributions from rabbits, hares, rats and voles, all present and keen to sharpen their incisors on the rarest trees. I rescued the largest rare *Paulownia fargesii* before squirrel basal ring-barking was complete (basal circumference 70cm, 60% ring-barked). Two *Populus alba* (White Poplar) trees died after patchy squirrel damage, but there seem to have been secondary infections contributing to their demise.

High ring-barkings and fractured main stems, trees surviving

Populus nigra ssp. *betulifolia* (4), *Populus* ×*generosa* (2), *Salix alba* ssp. *caerulea* (1). Skeletonised 3-5m lengths off the tops of these seven trees were broken by the wind and visible form the A4 road in May 2009. An eighth tree, a *Populus* 'Columbia', was badly gnawed and stripped on one side at 1m. In a subsequent gale, the tree suffered a greenstick fracture at that point and has survived, now at a 60° angle, but supported by willows (see Colour Section, Plate 1).

Conspicuously defended trees in the arboretum

Gleditsia triacanthos (Honey Locust) has its hard, sharp 5-10cm spines in ones and threes, said to be effective in deterring raccoons! *Robinia pseudoacacia* also has sharp thorns set as opposed pairs. The six representatives of the *Crataegus* genus all have twiggy defensive zarebas set with thorny armature. *Prunus* ×*fruticans*, the unpopular local Wiltshire hybrid between Damson and Sloe, has thorns so dense, sharp and hard that they sometimes penetrate tyres. Of the conifers represented, it is hard to imagine how a squirrel could penetrate the defences of *Abies pinsapo* (Spanish/Hedgehog Fir).

Three genera not yet attacked

I have selected for consideration three well-represented but contrasting genera:

Pyrus (pears): six species, eight taxa, 40 individual trees; foliage irresistible to herbivores, but no trees targeted by squirrels; dense, twiggy, tough bark; some weak thorns.

Prunus: 11 species, 13 taxa, 70 individual trees; very few defended by thorns (see above for one); health and safety regulations forbid humans from working with *Prunus laurocerasus* (Cherry Laurel) within any confined space because of release of HCN (Prussic Acid) from the bitter, cyanogenic glycosides in leaves, shoots and bark (Frohne & Pfänder, 1984. It seems likely that other trees from the genus, e.g. *Prunus avium* (Wild Cherry) have similar bitter components in the bark, at least providing some deterrence to squirrels. No arboretum *Prunus* was seen to suffer any obvious experimental bites.

Tilia (limes, basswood): 33 species, 79 taxa, 250 trees, the best-represented genus in the arboretum. So far I have not found or been informed of reports of grey squirrel attacks on these big and beautiful trees (from which the family of Linnaeus had taken their name). Like Rob Guest (see quote above), I have never seen grey squirrel damage to any lime within or beyond the arboretum. Limes all have juicy bark, which is even more easily stripped than willow bark, summer or winter. Pigott (2005) gives details of the use of bast (or bass) by man, the fibrous inner lime bark. There were two squirrel dreys in the arboretum, both situated in high, narrow-angle forks of *Tilia* species – but all stripping and gnawing on other tree species.

Controls

Shooting, poisoning and trapping (squirrel hoppers) are discussed in detail in several publications (FARS, 2009; Forestry Commission, 1996; Pepper, 1990). Most reports are

pessimistic, with the exception of the opportunity of total eradication of grey squirrels in Anglesey. I suspect there could be dangers, uncertainties and impracticabilities in the (re-) introduction of arboreal predators, such as beech and pine-martens. Our cat killed two adult and three young grey squirrels in three days by ambush and raiding a drey, but two other local cats suffered injuries, including eye damage, in tree raids.

Lure crops, (e.g. sycamores and Norway maples) are of very limited value. The table shows that 45 *Acer* were not attacked, whereas 65-72 non-*Acer* trees were damaged. In order to protect some rare tree taxa against deer and grey squirrels, I use a method which would be commercially impractical, and aesthetically inappropriate for specimen trees. Very closely adjacent pear trees (best), apples (too spreading) or hawthorns (too fiercely rampant) act as guard trees and prevent ring-barking and skeletonising. In response to the basal gnawing and stripping by grey squirrels, I have ceased clearing nettles and other tall weeds from around trunk bases.

Summary

With the probable exception of densely thorny species, no tree species can be considered wholly immune from biting and stripping by grey squirrels, which attack trees (over 2m in height) of all ages, and at all levels. The best that can be said is that genera such as *Acer* and *Fagus* tend to be more susceptible than *Tilia* (inexplicably), *Pyrus* and *Prunus*. In this study, the most vulnerable genus by total numbers and percentage of trees damaged or severely damaged was *Populus*. *P. nigra* ssp. *betulifolia* (most trees about 17 years since planting) was, by far, the species suffering the highest number of harmed specimens, usually at high levels. Eleven trees from two *Acer* and five *Salix* species were skeletonised, all eleven recovering from the base; but lesser damage could kill conifers. In 2½ years, 39 different types of tree were damaged, 19 severely so.

Postscript: bridging the gap? – a botanical mystery

Total ring-barking cuts off the phloem and cambium, and kills trees above the level of the ring-barking, whether or not they re-sprout from below. Depending on the weather, the foliage of conifers so-damaged shows evidence within 1-2 months. Ring-barked broadleaved trees wither and die above the ring-barked zone sooner. Sycamores so-damaged show the evidence within days in spring, summer or early autumn, following grey squirrel stripping.

One tree in my arboretum has behaved differently. A *Cercidiphyllum japonicum* (Katsura) was severely stripped in or before May 2008, with total ring-barking of the main trunk for at least 50cm above the tree-guard. An adjacent sister Katsura was also badly stripped, but not wholly ring-barked. Both trees are about 7m tall. There is no strip of continuous bark linking the ring of branches at the bottom of the photo of the ring-barked tree to the peeled strips at the top. After 18 months, the foliage of the top 5m of both trees looks identical and healthy. Not only that, but attached strips and islands of bark above the ring-barked zone show the slightly swollen edges or lips of healing bark tissues, characteristic of wounded tree trunks, or recovery below ring-barked zones.

I still expect the top 5m of the tree to die ("absolutely no chance whatsoever" – independent commentator), but after 18 months it is little different from the sister tree.

Acknowledgements:

My thanks for help from Katy Cena and Rob Guest.

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			Stripping levels ‡								
Genera	Trees harmed	Undamaged: approx. nos.	Under 2m	2-10m	Over 10m	Experimental bites/stripping	Moderately severe stripping	Ring-barking, skeletonising & fractures	No. of Species	No. of taxa	Main target taxa and comments
Acer	7	45	5	6	1	2	3	2	11	19	*A. pseudoplatanus* (3), *A. platanoides* (2), *A. cappadocicum* (2)
Alnus	1	15	1	-	-	1	-	-	5	5	*A. incana*
Betula	2	40	1	1	-	1	-	1	8	9	*B. pendula* (most birches too twiggy to strip easily)
Cercidiphyllum	2	4	2	2	-	-	-	2	1	2	*C. japonicum* (puzzling features – see text)
Fraxinus	1	70	-	1	-	1	-	-	4	6	*F. excelsior* (only 4×6cm. Ash mostly untouched)
Juglans	2	10	2	2	-	-	1	1	3	3	*J. cinerea* (skeletonised above tree guard); *J. nigra*
Malus	1	65	1	-	-	1	-	-	6	7	*M. domestica*
Ostrya	2	2	1	2	-	1	-	1	1	1	*O. carpinifolia*
Paulownia	1-2*	3	1-2*	-	-	1*	1	-	2	2	*P. fargesii* (40×30cm area of base denuded)
Platanus	1	9	1	1	-	-	1	-	1	2	*P. ×hispanica*
Populus	26	100	2	12	22	3	13	10	11	22	*P. nigra betulifolia* (12) *P. alba* (5); *P. ×generosa* (3); *Others* (6). (The worst affected genus)
Quercus	1	40	1	1	-	-	-	1	19	24	*Q. libani*
Salix	18	195	12	13	3	1	8	9	17	29	*S. pentandra* (all 6); *S. caprea* (3); *S. alba caerulea* (3) *S. acutifolia* (2); *S. irrorata* (2) *Others* (2)
Sorbus	1	130	1	-	-	1	-	-	29	34	*S. intermedia*
Zelkova	1	7	1	1	-	-	-	1	1	1	*Z. serrata* (one tree skeletonised, but recovery from base)
Conifer genera (4)	5-9*	115	5-9*	1	-	1-5*	2	2	24	29	*Cupressus macrocarpa* (1-5); *Larix × eurolepis*; *Pinus banksiana*; *Chamaecyparis thyoides* (fractured base)
All 19 affected genera	72-77*	c.850	37-42*	43	26	13-18*	29	30	143	195	12 native Black Poplars attacked at high levels, with 4 skeletonised at their tops and 2 suffering high trunk fractures. All 6 BayWillows damaged, 4 severely

*: numbers of trees indicate possible contributory gnawing by hares, rabbits, rats, voles or deer – damage at low levels or basally. All numbers refer to trees over 2m tall.
‡ Many trees were stripped at different heights

Table 1: Tree genera suffering squirrel stripping at Clatford Arboretum

Rare species at Barry Docks, Glamorgan (v.c.41)

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Barry Docks in Glamorgan has long been known as an interesting site for native and alien species. SJT carried out fieldwork at Barry Docks as part of an Environmental Impact Assessment for a proposed development, mainly along the eastern harbour wall and immediately inland of the seawall, monthly between October 2007 and September 2008, and again from March 2009 until September 2009. TGE accompanied SJT on three occasions. The harbour wall and breakwater, in ST1266, support both maritime and calcareous grassland plants. This note reports on some of the more interesting plants, notably aliens, that were found.

Stace (1991, 1997) noted that the only site in Britain and Ireland for *Echium rosulatum* (Lax Viper's-bugloss) was Barry Docks, where he noted 'it may now be extinct'. In October 2007 SJT found more than 50 plants, many still flowering, along the harbour wall track and the track running from a container yard along the eastern edge of the harbour to the sea wall. In 2008 a similar number of plants was found. On 12th June 2009 SJT counted 35 plants in 30m of the outer harbour wall and another 15 plants in c.120m along the access track on the eastern edge of the harbour. There were also several plants on the seaward side of the tip face and three plants behind the tip face inland of the sea wall. At least three plants were also seen in 2009 along the entrance road to the docks (see Colour Section, Plate 1).

Reseda alba (White Mignonette) was quite frequent in rocks and on soil just behind the sea wall from the harbour entrance eastwards to the edge of the docks, and it was abundant on banks of the coal tip and on piles of rubble. At least 12 plants were found in 2007 along the sea wall, whilst in 2009 the count exceeded 20 plants. Flowers were evident as early as 1st March 2009 (see Colour Section, Plate 1).

A large patch (3×2m) of *Lathyrus tuberosus* (Tuberous or Fyfield Pea) was found in flower by us on 29th July 2008, on a grassy bank at ST127667 (see Colour Section, Plate 1). This pea is also local, with only two records from South Wales depicted in the National Atlas. On 18th June 2009 we noted the same patch in flower and two other patches nearby on the bank along the access track. Other aliens included two interesting grasses – *Cynosurus echinatus* (Rough Dog's-tail), of which two patches were found along the breakwater track, and *Anisantha madritensis* (Compact Brome).

Ruderal vegetation on banks of coal waste was dominated by *Lepidium draba* (Hoary Cress) and *L. latifolium* (Dittander), *Hirschfeldia incana* (Hoary Mustard) and *Dipsacus fullonum* (Teasel), with occasional *Diplotaxis tenuifolia* (Perennial Wall-rocket). Extensive areas of the breakwater bank have been colonised by *Rubus* spp. (brambles), *Buddleja davidii* (Butterfly-bush), *Clematis vitalba* (Wild Clematis) and other shrubs, much restricting the grassland track at the base. Five clumps of *Helleborus foetidus* (Stinking Hellebore) were found on the bank.

The calcareous grassland, restricted to a narrow strip between the sea wall and coal tip, supported a wide range of native plants, such as *Centaurea scabiosa* (Greater Knapweed) and *C. nigra* (Common Knapweed), *Centaurium erythraea* (Common Centaury), *Blackstonia perfoliata* (Yellow-wort), *Linum bienne* (Pale Flax), *Daucus carota* (Wild Carrot) and *Spiranthes spiralis* (Autumn Lady's-tresses), along with taller species such as *Tanacetum vulgare* (Tansy), *Senecio jacobaea* (Ragwort), *S. erucifolius* (Hoary Ragwort), *Foeniculum vulgare* (Fennel), *Picris hieracioides* (Hawkweed Ox-tongue) and *P. echioides* (Prickly Ox-tongue). Alien species, such as *Securigera varia* (Crown Vetch) and *Medicago falcata* (Sickle Medick), were also present.

The maritime influence was evident in the flora by the presence of *Trifolium squamosum*

(Sea Clover), large patches of *Trifolium scabrum* (Rough Clover), *Elytrigia atherica* (Sea Couch), *Carex arenaria* (Sand Sedge) and *Plantago coronopus* (Buck's-horn Plantain), the latter being dominant over large areas of the entrance track and harbour wall track, where the ground is stony. *Catapodium maritimum* (Sea Fern-grass) grew along the harbour wall track and in the shade of some rocks and concrete blocks.

Two other interesting national rarities have been found by Sharon Pilkington elsewhere in Barry Docks.

Triple trouble over *Onobrychis* identification

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The first record of the *Onobrychis viciifolia* Scop. aggregate in Britain is to be found in John Gerard's *The Herball* : 1064 (1597). He describes it as "*Onobrychis sive Caput-Gallinaceum*, upon Barton Hill, fower miles from Lewton in Bedfordshire on both sides of the hill". Also here (p.1062) was *Astragalus danicus* (Purple Milk-vetch). To quote such an obscure locality, it was clearly an unusual find, and not part of a farmer's crop. C.Abbott, in *Flora Bedfordiensis* (1798), still regarded it as rare. Much later, J.G.Dony's *Flora of Bedfordshire* (1953) found it, as an escape, as "common", but for the "native form", just four localities are given. Similarly C.Merrett, in *Pinax rerum naturalium Britannicum* (1666), wrote: "In some mountainous parts of Surrey, plentifully".

The cultivated strain was introduced from France into England in c.1650, under the French name 'St Foyn', which quickly corrupted into 'Saintfoin', and finally 'Sainfoin'. Can Margot Souchier provide us with some early, precise literature references for both countries? I notice that J.E.Smith remarks in *The English Flora* (ed. 2), 3: 293 (1829) that the name 'Cock's-head' "by which it was before known as a native of England is become obsolete", giving way to the crop-plant name "Saint-foin".

This historical record was (unfairly) summarised in Stace's *New flora* (ed. 2): 405 (1997) as: "Possibly native". Surprisingly, the "native form" never attracted a scientific name in Britain (and hence went largely un-recorded) until 2009, when P.D.Sell and G.Murrell's *Flora* **3**: 38-39 provided us with no less than three subspecies of *O. viciifolia*, two of them alien. As few members can afford the work (publisher, please note!), I will quote their key (in a modified, trichotomous format):

Stems robust, ± erect; lflets 15-35 × 4-8mm, oblong to elliptic-oblong; corolla 12-16mm. Hay crop relicts. – ssp. *viciifolia*

Stems slender, decumbent or ascending; lflets 10-30 × 2-7mm, linear-oblong; corolla 10-12mm. Wild flower mixes. – ssp. *decumbens* (Jord.) P.D.Sell

Stems slender, prostrate; lflets 5-15 × 2-5mm, linear-oblong; corolla 8-12mm. Native of broken chalk turf. –ssp. *collina* (Jord.) P.D.Sell

The lack of discrete characters in the key is typical of many *Onobrychis* taxa in Eurasia. But, maybe, more careful field observations may reveal other differences. I strongly suspect that ssp. *viciifolia* has a chromosome number of 2n=28, whereas the other two have 2n=14. If so, this could show up as minute differences in anther, pollen and stomata sizes. Continental literature suggests that the crop plant can be separated from the other two by possessing leaflets becoming ± flat (not persistently V-shaped), with their tips minutely mucronate (not ± acuminate), inflorescence before flowering long-ovoid (not fusiform), peduncles 1-2 × the subtending leaf (not 2-3 ×) and fruit 5-8mm, with 6-8 marginal teeth of 0-1mm length (not 4-6mm, with 4-6 marginal teeth of 0.5-2mm length). Other identification characters may exist in tiny differences in relative petal lengths (the standard, the near-obsolete wings and the keel), and even the stance of the petals (the standard is more strongly rolled backwards in ssp. *viciifolia*?). Flower colour reports are conflicting. I

should add that E.Milne-Redhead (Kew) and others have confirmed the constancy of the native form when in cultivation, and no intermediates (hybrids?) have been claimed.

Unhappily, P.W.Ball, in *Flora Europaea*, 2 (1968): 187-191, and 441 (Index), differs in his nomenclatural choice. He 'lumps' *O. collina* Jord., *O. viciifolia* var. *collina* (Jord.) St.-Lager, *O. decumbens* Jord. and *O. viciifolia* var. *decumbens* (Jord.) Rouy all into *O. arenaria* (Kit.) DC. ssp. *arenaria*, giving a distribution from C. France to E. Europe. This decision is widely accepted, although *O. viciifolia* ssp. *arenaria* (Kit.) Thell. was proposed back in 1912. I hasten to add that, if we all should stick to specific names only, the subspecific 'clutter' all disappears! Use the Group concept that I have proposed in the past.

An author citation of *O. decumbens* Wallr. is given in *Index Kewensis* (1895), with *O. decumbens* Jord. given as a synonym. I presume this has been rejected on reliable grounds.

English names have yet to be selected. 'Cock's-head' already exists, but 'English Sainfoin' may be preferable. 'French (or Cultivated) Sainfoin' seems a good choice (but it appears not to be known as a definite native anywhere in the world – a south-west Asian origin is possible, or is it a cultigen?). That leaves us only with 'Decumbent Sainfoin'.

Whatever the name, we have herein a precious native, and so far removed from other populations that it could be an endemic variant. It demands our attention, before it is lost from yet more locations. Already *O. arenaria* is a protected species in Germany.

Colonisation of the ramparts and walls of Berwick-upon-Tweed by native and alien trees and shrubs

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The pamphlet *A history and guide to Berwick's wild flowers*, published by The Berwickshire Naturalists' Club (2006), comments upon the "fastidious tidiness' which 'has removed most of the weedy species and severely depleted the meadow species" on the northern ramparts of the town since the earliest times of local botanical recording in the first half of the nineteenth century. The Elizabethan ramparts comprise lengths of curtain wall revetment (or scarp) running roughly in an arc of a circle between two terminal mounds – Meg's Mount and King's Mount – and punctuated by three arrowhead shaped bastions – Cumberland, Brass and Windmill Bastions. Each bastion has two flankers which were single storey enclosures with two embrasures for cannon, and functioned as protected gun positions from where to enfilade or fire along the revetment between bastions. On top of the bastions are enormous earth platforms called cavaliers, which were added to the defences in 1639 to mount the main guns. The ramparts provide a variety of habitats, each with its own specific ecological features: the outer ditch, the imposing stone revetment, topped by the steeply-sloping, grassy parapet, and backed by the closely manicured, amenity grass banquettes, along which the main access footpaths run.

In the late afternoon of Saturday, 9th May 2009, as a part of the BSBI Spring Conference on 'Alien trees and shrubs', I joined a field excursion which battled against almost gale-force winds along the length of the ramparts, being unable to give the flora little more than a cursory glance. When Sunday morning dawned bright and calm, I took the opportunity to revisit the ramparts and to make observations on the flora with a lesser risk of being blown from the parapet. I was able to concur with the fastidious tidiness factor (FTF) as playing a major role in determining the relative paucity of the flora, particularly with respect to the colonisation of the revetment stonework by seedlings and saplings of both

native and alien trees and shrubs. The uncommonness is partly due to the nature of the bonding of the large, dressed, sandstone blocks with narrow, well-mortared joints and the comparative lack of weathering of the blocks. The stonework of the flankers is generally built of coarser sandstones and as a result is more prone to weathering and colonisation by bryophytes and higher plants. It also provides better locations than the revetment for perching birds, and hence the dissemination of berried plants. In a total length of over one kilometre, I was able to record only twenty individual plants of nine species, five of which are considered alien by Clement and Foster (1994). The number of individual plants is in sharp contrast with the total numbers recorded on the much shorter lengths of wall around the Parish Churchyard and those of Coxon Lane Car Park, on the site of the former Good Templar Hall, both localities being within 100 metres of the ramparts. Further, the two sites are quite different from each other in terms of both species and frequency of species. For example, *Buddleja davidii* (Butterfly-bush) is rare on the churchyard wall, yet dominant on the car park walls; *Acer pseudoplatanus* (Sycamore) is the most common species on the former, but absent in the latter location. Similarly, Sycamore was the most commonly encountered species on the rampart walls, but I did not see *Buddleja*.

Rampart walls from King's Mount to Meg's Mount (20 plants/9 species/5 aliens): *Acer pseudoplatanus* 6; *Cotoneaster horizontalis* (Wall Cotoneaster) 4; *Fraxinus ornus* (Manna Ash) 3; *Rosa canina agg.* (Dog-rose) 2; *Fraxinus excelsior* (Ash), *Ribes sanguineum* (Flowering Currant), *Rubus fruticosus* agg. (bramble), *Sambucus nigra* (Elder), *Sorbus intermedia* (Swedish Whitebeam) 1, (excluding the population of young Sycamore and Elder growing on the grassy parapet, rather than the northwest revetment of Meg's Mount).

Cromwellian Parish Churchyard Walls (51 plants/6 species/3 aliens): *Acer pseudoplatanus* 17; *Sambucus nigra* 16; *Sorbus aria* (Whitebeam) 8; *Ulmus glabra* (Wych Elm) 7; *Cotoneaster horizontalis* 2; *Buddleja davidii* 1.

Good Templar Hall (Coxon Lane) Car Park (48 plants/7 species/5 aliens): *Buddleja davidii* 27; *Cotoneaster simonsii* (Himalayan Cotoneaster) (+ inderminate plants) 9; *Cotoneaster horizontalis* 7; *Rubus fruticosus* 2; *Fuchsia magellanica* (Fuchsia), *Leycesteria formosa* (Himalayan Honeysuckle), *Sambucus nigra* 1.

Without doubt, the most interesting record in these three samples is that of *Fraxinus ornus*, two individuals of which were seen on the stonework of the eastern flanker of Windmill Bastion and one nearby on its parapet. The seed source is clearly one of two parent trees planted less than twenty metres away as shelter for the formal circle of shrub borders and seats at the western end of The Ditches. One specimen is a mature standard tree, some six metres tall and with a trunk girth at breast height (gbh) of 1.6m; the other is depauperate and cankered at a height of 1.3m where the gbh is 0.7m. No juvenile seedlings and saplings were seen growing beneath the parents or in adjacent shrub borders. Both specimens are hermaphrodite plants and were flowering profusely on 10th May 2009. Considerable research has been recently undertaken by the EU funded project FRAXIGEN (2005) into the breeding biology of populations of the three European Ash species, *Fraxinus excelsior* in northern and central Europe, and *F. angustifolia* (Narrow-leaved Ash) and *F. ornus* in central Europe and the Mediterranean region. Manna Ash is androdioecious, a rare breeding system, in which some populations contain individual trees which bear hermaphrodite flowers and others which are male only, or staminate. Other populations are apparently either wholly hermaphrodite or wholly staminate and, obviously, only the hermaphrodites set fruit. The occurrence of staminate flowers in mixed populations is considered to be an adaptation to increasing the likelihood of wind pollination (Wallander, 2001), but the true situation is far from clear. Working on populations in southern France, a region in which the species

is rapidly expanding its range, Dommée *et al.* (2002) have demonstrated self-compatibility in hermaphrodite flowers, whilst Wallander (2008) notes both anemophily and ambophily, that is, both wind pollination and insect pollination by syrphid flies and small beetles. The fruit (samara) is usually dispersed by wind, seldom to a distance greater than 30m (FRAXIGEN, 2005), but there is strong evidence that dispersal by water is mainly responsible for its rapid invasion along river systems in southern France (Thébaud and Debussche, 1991).

Anemophily, ambophily or self-compatibility, whichever is the case at Berwick, there can be no doubt that this native tree of Mediterranean Europe, north Africa and south-west Asia (Polunin, 1969) produces viable fruits that are able to colonise suitable habitats, at a latitude of 55° 46'. It has long been known to be hardy in Britain, but there seem to be few records of its fruiting and regeneration. It would be interesting to know to which of the five native chloroplast genome haplotypes the plants belong (FRAXIGEN, 2005), or if they are one of the fifteen cultivars listed by McArdle and Santamour (1984), or of an additional four cultivars offered for sale by Barcham Trees of Ely. Whatever, dare one suggest that its regeneration at such a latitude is an indication of climate change? It is a fact that would seem to imply at least three incentives for future action. First, its status in Stace (1997) should perhaps be elevated from the 'other species' category to merit a full description. Secondly, it may be possible to find out from society members whether regeneration from seed has been observed or reported in other parts of Britain and Ireland. One gets the impression that garden and street trees are mainly of the showy, whiter-flowered, staminate type, rather than the more dowdy, greenish-white hermaphrodite type, which is labelled by European landscape gardeners as being a liability on account of its propensity to produce many unwanted seedlings, particularly in samara mast years (Mitchell and More, 1985, FRAXIGEN 2005). If this view is accepted in Britain, then regeneration is likely to be only localised. Thirdly, the question arises whether the regeneration from seed observed at Berwick-upon-Tweed might be encouraged and developed as a small breeding programme which makes use of the private spaces of the unused bastion flankers?

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Teratology – a revival?

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Introduction

Abnormalities in plants have evoked a wide range of human responses, from fascination verging on adoration to abhorrence at departures from a God-given scheme. Their study achieved some prominence in the 19th and early 20th Century, under the name 'teratology', but has only occasionally been noticed since. The last major work was Worsdell's (1915-16), and Heslop-Harrison (1952) may be the only professional botanist to have published anything on the subject since those early days. Even he offered no particular reason for a revival. The subject has, however, received a recent boost by the initiation of the periodical *That Plant's Odd* by Martin Cragg-Barber (now Martin Barber) in 1993. It has now run to over 40 issues. Out of that work has come a book providing a systematic up-to-date account of the field (Presland, Oliver & Barber, 2009). This article describes a few abnormalities selected from the many in that book and raises some of the associated issues.

Examples of abnormalities

A double-flowered *Centaurium erythraea* (Common Centaury)

Double flowers have the petals or other conspicuous floral parts much increased in number compared with a normal flower. A good example was on a Common Centaury on a steep bank on a protected roadside verge at Winsley in Wiltshire (Colour Section, Plate 2). It had ten petals instead of the usual five, and perhaps an extra two or more below.

Proliferation in *Taraxacum* sp. (Dandelion)

Proliferation is the growth of plant organs in places where they do not normally occur. An additional leaf, flower stalk and flower appeared on what is normally an unadorned flower stem in a garden in Bradford-on-Avon in 2006. A photo (Colour Section, Plate 2) shows the normal and abnormal forms.

Peloria in *Linaria vulgaris* (Common Toadflax)

Peloria is a term coined by Linnaeus for just this abnormality, discovered in Sweden in 1742. It is Greek for "monster". The most useful definition is the development of radially symmetrical flowers in plants whose flowers are normally bilaterally symmetrical. Bilaterally symmetrical (or zygomorphic) means that there is only one vertical line through which cutting the flower in half will produce identical halves (or, to be pedantic, mirror images). The condition contrasts with radially symmetrical (or actinomorphic) in which any vertical cut through the centre produces at least roughly identical halves - as in buttercups. In *Linaria* species, the petals are normally joined into a tube dividing at the top into an upper lip and a lower lip, with a single nectary spur descending from the bottom, the result being a bilaterally symmetrical structure. In a peloric *Linaria vulgaris*, which I found at Winsley (Colour Section, Plate 2), the two lips were replaced by five lobes and there were five spurs at the base. Both these changes can be envisaged as corresponding to five hypothetical petals arranged in a radially symmetrical pattern. The normal form has four stamens in two pairs, again part of the bilaterally symmetrical pattern. In the peloric plant there were five, corresponding to the five hypothetical petals. The orange bulge which is at the top of the lower lip in a normal flower is replaced in the peloric form by one at the top of each lobe, united into a regular circular mouth, looking like pouting lips from above.

A chimera in *Daucus carota* (Wild Carrot)

A chimera is an organism whose tissues are of two genetically different kinds. For instance, the surface tissues may be of one kind and the deeper lying tissues of another (a periclinal chimera), or a sector or sectors of the stem and leaves may be different from the rest of the plant (a sectorial chimera). It is named after a character from Greek mythology that was part lion, part goat and part serpent. A sectorial

chimera on a Wild Carrot inflorescence from Barry Docks in 1986 is shown in the photo Colour Section, Plate 2). One sector is red, one white and there is a pink zone which may be overlap between the two sectors or be a third sector.

What can we learn from teratology?

Masters (1869), in perhaps the best known early teratological treatise, claimed teratology was important because:

- Many cases can be considered reversions to the ancestral form and thus help determine affinities between plants.
- Cases can be the start of new races and species.
- Cases can throw light on the process of development.
- Irregularities may be useful for new garden forms or crops.

Plainly, irregularities may be useful for new garden forms or crops. Garden plants are sometimes deviations from the normal form of the species concerned, which have been maintained by horticulturalists. Though it is more usual for crops to be bred selectively for particular normal variations that are desirable, abnormalities may be useful in some cases.

We know almost nothing for certain about how particular plants species evolved. However, if a number of different species in a family all produce deviations of the same form, it is arguable that this indicates a common ancestry. This could be the case in the Scrophulariaceae, where a number of different species, particularly of *Linaria*, can develop peloria. This may resemble an ancestral condition from which the normal form evolved. We do not need this deviation to tell us that the different species of *Linaria* are related and are likely to have a common ancestor. However, the ancestor is no longer around to be seen, and the peloric flower of, say, the abnormal flower described in *Linaria vulgaris,* may be the nearest thing to it that we are likely to encounter.

It is not clear how abnormalities could throw light on the process of development. A normal *Linaria* has never been peloric, and a normal Cowslip has never been fasciated. Such abnormalities do reflect the plasticity of plants during their development and enable us to document it more thoroughly, but they don't really explain it.

Just as abnormalities can be selected by horticulturalists to become new cultivars, so they could be selected according to Darwin's theory of evolution by succeeding in competition with normal specimens, and thus produce new species. Such an occurrence would be very rare, since most aberrations are no help in survival and often hinder it. However, current views of evolution include the possibility of its occurrence through rare changes of a radical nature. The subject is too large to be taken further here. However, De Vries (2005) claims to have produced new species in the genus *Oenothera* by selective breeding of departures from the normal form. There is, of course, still no satisfactory definition of the concept of a species, so it is not too difficult to claim that a particular form is a new one.

In our book, Jack Oliver notes that most obvious mutants or "sports" are doomed to a solitary existence as transient curiosities. Most are ill-equipped to face competition in the wild. If they can be vegetatively propagated, they need horticultural or agricultural protection or nurturing. However Jack describes six Wiltshire aberrant taxa which defy the trends and show sustained botanical significance rather than existing as "dead-end" phenomena. One of these is the polystachion of *Equisetum palustre* (Marsh Horsetail). Horsetails normally have only one fertile cone at the tip of their central bottlebrush stem. More rarely, *E. palustre* can have one or two smaller cones on branch tips. In Wiltshire and west Berkshire, patches or populations can be found in which the peripheral branch tip cones are arranged in whorls, the whorled polystachions. In the Cotswold Water Park near Ashton Keynes in August 2006, separate patches of 2-whorl polystachions were easily found at different sites. In addition, there were the occasional 3-5 whorl polystachions. A 4-whorl polystachion is shown in Colour Section, Plate 2. We do not know how fertile

the lateral cones were, but the vegetative growth of these uniquely aberrant colonies was often the dominant ground cover in the immediate localities. These polystachions continue to thrive beyond a quarter of a century, can reproduce themselves and can hold their own in the wild against competition. Jack felt that a plant bearing them was a good candidate for varietal taxonomic status. Whatever the rules for classification, it seems to be a good example of potential evolution in action, and Nature breaking her own pre-existing patterns.

To conclude

Teratology is a subject which fascinates many, has horticultural application and may have potential for illuminating some developmental and evolutionary processes. It is more common now for the phenomena it studies to be treated as part of the wider topic of plant variation. Briggs and Walters (1997), for instance, in their textbook on variation, virtually ignore it. Divisions between areas of study, are, however, largely man-made and can change. Those who work with fungi, for instance, used to be botanists but are now mycologists. It is hoped that publication of recent work in the area will stimulate others to look for examples and to record and draw and photograph them or press and dry specimens – whatever the label under which they operate. Contributions of this kind should be sent to the editor of *That Plant's Odd:* Martin Barber, 1 Station Cottages, Hullavington, Chippenham, Wiltshire, SN14 6ET (martin@ worldmutation. demon.co.uk) (tel.: 07800 583999).

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The abortive 'Penguin' *Flora of the British Isles*

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Five years ago (in *BSBI News* **97**: 61), Mary Briggs expressed curiosity about an illustrated '*Flora of the British Isles*' in an astonishing 20 volumes that had received passing mention in the obituary in *The Times* of Frances Partridge, the last surviving member of the 'Bloomsbury Group', who had recently died at the impressive age of 103. She found herself far from alone in having never heard of such a venture or, for that matter, of its would-be author.

In response to her note, however, several members wrote to say that they had known Mrs Partridge personally and were able to confirm that she had continued to be an ardent field botanist till well into her nineties. It also turned out that another member even possessed a proof copy of the first volume of the publication in question, so it must have proceeded at least that far (*BSBI News* **100**: 57-58).

As a full-scale biography was reportedly in preparation, it seemed likely that more would be learned from that in due course about this intriguingly little-known episode in the annals of botanical literature. Four years later, that prospective volume has now duly materialised, with Ann Chisholm revealed as the author; and, sure enough, between pages 203 and 221, at intervals, the sorry inside story can at last be pieced together.

It transpires that the project had its birth in 1944 (not 1942, as stated in the obituary), and

that it was Penguin Books that made the initial approach to Mrs Partridge. As so often happens, some paintings of outstanding quality – in this case of British wild flowers – had come to the notice of a publisher, and it was now seeking someone able and willing to produce a text to accompany them. Although that firm was closely identified with the low-priced paperbacks that had been the publishing sensation of 1935 and were by then already a household name, it could well be that its founder, Allen Lane, hankered after a complement to that success in the shape of beautifully-produced books with ravishing colour plates, of the kind that 19th century predecessors had brought out to lasting acclaim (an ambition which we know his contemporary and rival, Billy Collins, nursed as well). Natural history was a field that traditionally offered excellent scope for that line of publishing, and it may have been no coincidence that only a year or two earlier Nelson had brought out a lusciously-illustrated one-volume work on British birds, at a far from prohibitive price, by re-using the paintings originally produced for a fore-runner on the eve of the First World War. It was, similarly, in the middle of World War 2 that George Lodge and David Bannerman are known to have hatched the idea of their magnificent 12-volume work on the birds of Britain and Ireland that appeared eventually in 1953-1963 from Oliver & Boyd. Perhaps wartime austerity was productive of pipe-dreams in British publishing circles at just around that time. It does appear, at any rate, that the wild flowers project was very much Allen Lane's personal initiative, for it was with him that the author evidently dealt throughout, and it was to her house that he drove to meetings in its connection, instead of the other way around, as would be more usual.

The artist proved to be a young man recently out of art school, a Richard Chopping, and he and Mrs Partridge luckily took to one another at once and became firm friends. "Exquisite" though she found his paintings, he soon turned out to be taking a worryingly long time to finish each one. As the plan was to cover every species of higher plant on the British Isles list, and to accord every painting a whole page, that rate of progress implied it would be 12 years before the intended 20 volumes were completed. When this news was broken to Allen Lane, some two years after the start, he was taken aback. Paper was still in short supply, and conditions continued to be difficult for the book trade more generally; but it may also have been that the publisher had been under a misapprehension that there were roughly as many kinds of wild flowers needing to be depicted and described as there were of birds. His immediate reaction, at any rate, was to rule that the coverage had to be reduced, and the trees were to be the sacrificial victims. Though the other two protested vehemently, they did so in vain. Perhaps fearing that this economy measure would endanger the project's scientific standing, Lane nevertheless suggested they find a professional botanist to act as adviser. As a result, Noel Sandwith, renowned for a first-class knowledge of British flowering plants dating from childhood, was recruited to the team and regularly accompanied the other two on their specimen-hunting forays.

Even so, Allen Lane continued to have misgivings, and, by the summer of 1949, with the publishing trade experiencing a 40% rise in production costs under the impact of the Korean War inflation, he was finally forced to face the fact that the venture was irretrievably uneconomic. By that time, the first volume was in proof and the text for the next four was already written, so the decision to proceed no further came as a shattering blow. Outraged, Frances Partridge turned to the Society of Authors for help, and at least had the satisfaction of extracting £1,500 from Penguin Books by way of recompense for the five years of work she had put in. How much, if anything, the artist received, however, the biography does not disclose.

In retrospect, a multi-volume project had probably been a mistake from the start, given the still high cost of colour-printing at that period. Sixteen years later, George Rainbird

was to show what could nevertheless have been done, if only Allen Lane had thought of compressing all the paintings into just a single volume – as W. Keble Martin had had the forethought to make feasible when he started his own painting of the British Isles flora, many years earlier. With just the one, quarto-sized, portable product to push, with a set of paintings probably hardly less exquisite, and no less comprehensive in their coverage of the British Isles flora, Rainbird succeeded in propelling that through the supposed cost-ceiling for fine colour printing by resorting to every marketing ploy available, to achieve the mass sale that was necessary. The number of copies of 'Keble Martin' that would eventually be bought totalled not far short of a million and a half.

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Symphytum – a corrigendum

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Subsequent to my piece about the genus *Symphytum* in the last issue of *BSBI News* (**111**: 33), it has been pointed out to me that I should have been more precise about the determination of *S. asperum*. There are indumentum characters and calyx characters that have to be taken into account. Also I overlooked the fact that the 'Norfolk Comfrey' (*BSBI News* **105**: 6-9) also has all leaves petiolate.

Gravel weeds by Loch Linnhe (v.c.97)

FAITH ANSTEY, *The Old Smithy, Dalguise, by Dunkeld, Perthshire, PH8 0JX*

Last year we acquired a log cabin by the shore of Loch Linnhe (v.c.97), which was surrounded by about 100 square metres of freshly-laid gravel. This remained untouched until, in July this year, I decided to weed it. Sprouting through the gravel, I found a total of 53 species: six tree/shrub seedlings, 12 grasses/sedges/rushes, one fern (too immature to be identified with certainty) and 34 forbs. The most unexpected of the latter was *Conopodium majus* (Pignut), but as the land had formerly been croft grazing, it was presumably in the seedbank below: interesting to see it just inches away from a clump of *Isolepis setacea* (Bristle Club-rush), for example. The only species clearly of garden origin were *Meconopsis* and a *Cotoneaster*.

'Forensic botany' – a correction

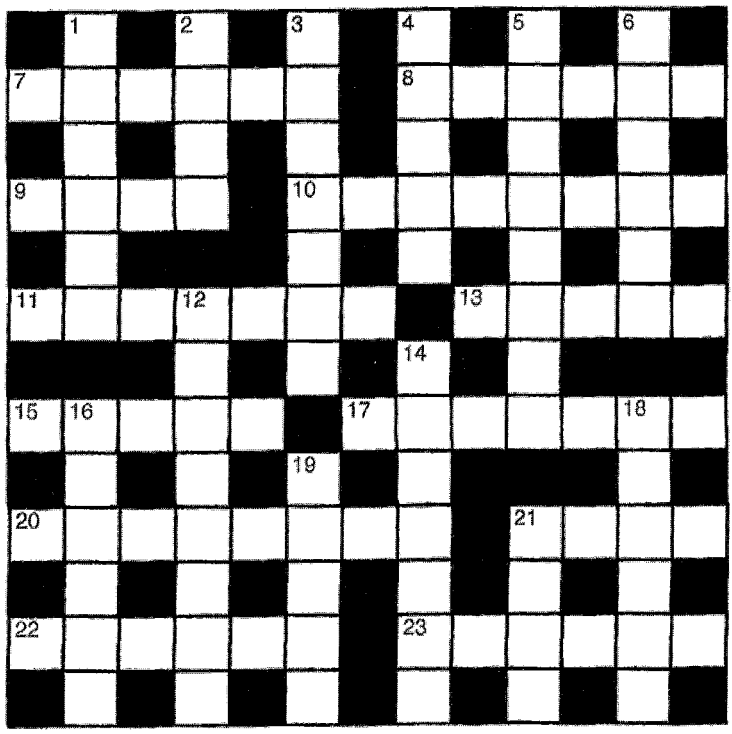
PROFESSOR D.L.HAWKSWORTH CBE, *University of Gloucestershire.*

I just noticed the "Forensic botany" item in *BSBI News* **111**: 21. I think it is most unfortunate that the note did not mention that the "female forensic botanist" featured, Patricia E.J. Wiltshire, is a BSBI member herself of some 16 years standing. With regard to the actual case (murder of Joanne Nelson) referred to in the feature, it was not Mr Jones (the BSBI recorder), but a botanist at the University of Hull who helped in that case. However, Ms Wiltshire has had help from several BSBI recorders and English Nature personnel in the past.

I felt that the record should be put straight.

BOTANICAL CROSSWORD 13

by CRUCIADA



Across

7. Weld a deer's breakage (6)
8. You and I were responsible, it's said, for having removed plants growing in the wrong place (6)
9. Look over leaf through scope (4)
10. Just like paper to injure with debts (8)
11. Filter drug to make able to reproduce (7)
13. Mistakenly exalt a distinction between *e.g. Taraxacum* and *Crepis* (5)
15. Species of rich rock produced by non-flowering plants (5)
17. Offer a bribe for species of Arecaceae? (3, 4)
20. It's about getting head round it, head-like (8)
21. Not on level grass (4)
22. What *Galium aparine* burs may do to your clothes (6)
23. Create hybrid *Potentilla*, for example (6)

Down

1. Further education's prompt to grass (6)
2. Style that's part of leaf (4)
3. Bonnets you will be told to wear, gathering this type of seed (7)
4. Make minor adjustment to hardwood case for whisky (5)
5. Temptress puts fish on wall of fruit (8)
6. Be green, perhaps, over time, like *Callitriche* leaves (6)
12. Fatal at the end (8)
14. Medicine – real dose distilled from *Erica*, for instance (7)
16. Everlasting joy to be had at these gates, maybe (6)
18. A French male comes in behind time, waxing and waning (6)
19. Like conifer seeds in the buff (5)
21. Swollen-rooted plant may exist as alien (4)

ALIENS

Habitat of *Cochlearia megalosperma* naturalised in Britain

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

Cochlearia megalosperma (Maire) Vogt (*Cochlearia glastifolia* L. var. *megalosperma* Maire (Tall Scurvygrass), which is endemic to Morocco and south-east Spain, has been reported in Britain as "well naturalised by road at Humbie Kirk (East Lothian), found 1994, also in cultivated and waste ground in Notts.". It is reported as having first come to be naturalised in Britain by escaping from the Pharmacy Garden on the University of Nottingham campus, to where it had been sent as seed from a collection at Gatersleben. The source of later colonies is not known, but it was being offered for sale by Salley Gardens organic herb nursery, which is not far from the university and had obtained seed from there.

This species has now been found naturalised by the River Tweed at Tweedmill in v.c.81 Berwickshire (NT84), on rocks dripping with water, apparently at variance with this suggestion of a ruderal habitat, so comment seems called for.

A series of superb images of *C. megalosperma* in Spain is presented in the Flora of Almeria website at http://www.floresdealmeria.com/joyas/cochlearia-megalosperma. html. Here it is depicted growing by a tiny rocky stream in the hills in more or less immediate contact with the water (noted to be a rare habitat in Almeria). This is not unexpected for a plant that can grow as an annual or short-lived perennial to 1.5-2.0m in a season.

The Tweedmill plant was first found in 2006 by Georgina Hargreaves when salmon-fishing with her husband. It could have been carried to this site by the extreme floods in October 2005, but the ghillie's recollection suggests it may have arrived a few years earlier. The excellent photos she sent me in 2008, when she saw it again in greater quantity, showed that it was growing on rocks, but not that they were especially wet (see Colour Section, Plate 3). I did not visit the site until 25th April 2009, when I noted: 'It is rather amazing. There are great patches of the plant, typically 5×1m each along 150m of a dripping, crumbling rock face, cut by gullies, where most of the plants are. The whole is more or less shaded by trees. The plant seems to have been spreading fast, but to have now colonised almost all the suitable habitat at this locality. Associates include *Eupatorium cannabinum* (Hemp Agrimony), *Cardamine amara* (Great Bittercress), *Chrysosplenium oppositifolium* (Opposite-leaved Golden-saxifrage) and *Impatiens glandulifera* (Himalayan Balsam). Stems are already 1m tall and the dead stems from last year are consistent with the height of 1.5 to 1.8m reported to me. This is a rare habitat and there was no sign of the plant in dryer habitats nearby'.

Humbie, v.c.82 (NT46) is not too far away, so I visited the site for *C. megalosperma* on 26th May 2009 to see the habitat there for myself. The plant was up to 2.0m high and just coming into flower, and was growing luxuriantly at the immediate foot of a wall 3m tall (it is the wall of a former walled garden) for about 50m. There was noticeable percolation of ground water in a number of places from the bank behind. These places were just where the *Cochlearia* was growing. There was no spread into the verge adjacent to the wall, which was dominated by *Symphytum tuberosum* (Tuberous Comfrey). There is a wooded dean close by with a variety of good habitats. I saw plenty of *S. tuberosum* there too, but there was no sign of the *Cochlearia.*

The *C. megalosperma* habitat at Humbie, with its dripping stone, thus has many similarities with the Tweedmill site. In addition, both are sheltered and more or less south-facing, so they are places that tend to be warm, and this may favour a plant from southern climes, which needs to ripen seed that will germinate

in the autumn and grow on as a rosette in the winter.

However, the Nottingham colonies described by Julian Shaw are in garden ground and ruderal habitats nearby, so the habitat choice is not clear-cut.

While I might wish to pass over the difficulties I had in identifying this plant, as they stem in part from my custom of using the first edition of 'Stace' (which, unlike the second edition, does not include this species), I must thank those who have helped me, especially Dr Dmitrij German, a specialist in *Brassicaceae* from the Barnaul University in Russia, who identified the plant correctly as belonging to the *Cochlearia glastifolia* aggregate, but also Petr Pysek and Jiří Danihelka in the Czech Republic, Teresa Farino in Spain, Prof. Mark Williamson in York, Tim Rich in Cardiff, Douglas McKean in Edinburgh and Helen Jackson in Musselburgh.

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Stranger on the shore

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In June 2006 I discovered a patch of a crucifer growing strongly at the top of the shore near Armadale on the Isle of Skye. Since it was unknown to me and I couldn't key it out from any literature in my possession, I sent images of the plant and its distinctive fruits to various fellow botanists, including at least one with a special interest in crucifers. However, this drew a complete blank.

I took pressed specimens and large photographs to the Scottish Annual Meeting in Edinburgh that year and was delighted when Ian Hedge identified it as a *Peltaria* (a Shieldwort). There was some doubt about whether it was *P. angustifolia* (Narrow-leaved Shieldwort) or *P. alliacea* (Garlic Cress). A photograph and further specimen taken in 2009 allowed Ian Hedge to confirm that the plant is *P. alliacea*.

Correspondence with Eric Clement provided no information of previous records in the British Isles. This plant is native to eastern Europe and I have seen it described as an invasive weed in north America. How it came to be on Skye is something of a mystery, but it can be bought from nurseries, and local sources suggest that it has been grown in hotel grounds in Portree, about forty miles from the site. The shore at Armadale has some other plants of garden origin (e.g. *Aquilegia* & *Gunnera*) so the *Peltaria* seems most likely to have come from a garden, either by seed or as a throw-out.

The three photographs (see Colour Section, Plate 3) show the general appearance of the plant; a fruit, which explains why members of this genus are called shieldworts; and the diagnostic upper stem leaves, which are sessile, cordate and sagittate.

Planted aliens

ALAN C. LESLIE, *109 York Street, Cambridge, CB1 2PZ*

Am I the only member to be concerned about the way planted aliens are being indiscriminately recorded and claimed as 'new county records'? Increasingly, I see in county records lists plants which are acknowledged as clearly planted, but which are haled as new to their counties. Whilst I understand the desire to be aware of and identify all that one finds, and

that a great deal more than is often admitted is actually planted, I feel it is devaluing our historical records of alien plants in our flora to lump evidently planted individuals with records for plants of the same species that have succeeded in reproducing themselves, by whatever means, out of cultivation. One can argue of course about where cultivation begins and ends, and it is not always easy to be sure about status. But it seems we have let these difficulties weigh so heavily that we have given up even trying to distinguish the most obvious cases. If, as can happen, recorders then do not state that the record is clearly of planted origin, we have no chance of picking up and following the naturalisation of new species in our flora. By all means record what one finds planted, but surely we do not have to make them part of our formal lists and claim new British records every time a local Council gets hold of some novelty to plant on a village green or along the local bypass. If I go and plant the Balearic endemic *Carex rorulenta*, which thrives in my garden, onto the dry, sunny bank in my local park, can I then write that up as new to Britain? Surely not, yet in effect that is what is happening. These remarks come from someone as keen an alien recorder as anyone, but I and all the alien plant enthusiasts I have known would never claim new records if they were not convinced the plant they saw had got there other than by the deliberate hand of man. It may seem a fine line to draw but I find fellow enthusiasts have no trouble understanding its value. Without it one might just as well list everything you grow in the garden, and if a species is missing from your county flora, just go out and plant it on a local roadside and hey presto you can put it on your list.

Indeed I think this uncritical attitude towards alien records has led many into a ready acceptance that it does not really matter how any plant gets to where we find them and thus the recent trend to promote so-called wild flower mixes being sown everywhere, whether of supposed local origin or not, is again making a nonsense of plant distributions and our ability to interpret and draw conclusions about their ecology. We should not be condoning such practices in the countryside.

Vegetative identification of *Buddleja* species

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Since the publication of the *Vegetative Key to the British Flora* (Poland & Clement, 2009), inevitably a few more vegetative characters for separating similar species have come to light. Some of these include the identification of naturalised *Buddleja* species. Although everyone will be familiar with *B. davidii* (Butterfly-bush), fewer may be familiar with the widely planted *B. globosa* (Orange-ball-tree) unless in flower. Below is a simple vegetative key based primarily on the rugosity ('wrinkliness') of the leaves. The hybrid (*B. weyeriana* (Weyer's Butterfly-bush)) is intermediate in all respects (including flower characters not included in this key). A third species of frequently planted *Buddleja*: *B. alternifolia* (Alternate-leaved Butterfly-bush), is quite distinct in having alternate leaves, as the name suggests, and consequently is not keyed out here. *B. fallowiana*, *B. lindleyana* and *B. spectabilis* are considered too rare to be included.

Shrub evergreen (or ± so). Lvs opp., toothed, white- or yellow-felted below with stellate hairs

- Lvs strongly rugose above, with 3° veins raised below, yellow- or white-felted below, crenate. Twigs mostly without interpetiolar stipules..... **Buddleja globosa**
- Lvs not or weakly rugose above, with 3° veins not or weakly raised below, white-felted below, serrate. Twigs mostly with interpetiolar stipules..... **Buddleja davidii**

Botanical delights at Seafield Park, Fareham (v.c.11)

PHIL BUDD, *488 Bitterne Road East, Bitterne, Southampton, SO18 5EP*

During the course of the spring and summer of 2008, I was contracted to carry out an invertebrate survey for Fareham Borough Council in south Hampshire (v.c.11). My survey covered four public sites, including an area of about 10ha of scrub, rough grassland and amenity land close to the Solent coast at Seafield Park, Stubbington (SU550020). Historically the site was an area of cultivated land dug in World War 2 as part of the 'Dig for Victory' campaign, and then maintained as allotments for a relatively short period, extending into the 1950's and possibly 1960's. Since then the area had grassed over and turned into patchy scrub.

In 2007 contractors working on behalf of Fareham Borough Council cleared a large area of invading mixed scrub to try to restore a more open grassland habitat. This scrub consisted of *Rubus fruticosus* agg. (Bramble), *Ulex europaeus* (Gorse), *Cytisus* sp. (Broom), *Spartium junceum* (Spanish Broom), *Cortaderia selloana* (Pampas-grass), *Pyracantha* sp. (Firethorn), etc. Later that summer one of the rangers noticed some very attractive, but unfamiliar, flora emerging in one particular cleared area adjacent to a footpath.

On 15th July 2008, during preparations for a public moth event nearby, I noticed some unusual flora in an area about 15x30m in extent. I noticed the odd sprig of *Lactuca sativa* (Lettuce), as well as *Centaurea cyanus* (Cornflower), something pink that looked like *Clarkia*, and various other annuals still in leaf. When I questioned the ranger she said that most of the unusual plants that she had seen in 2007 were in this same area.

On 28th July, during a break in the invertebrate surveying, I examined the area more closely. Although many of the unfamiliar species were yet to flower, I did recognise the sage *Salvia viridis* (Annual Clary), *Nigella damascena* (Love-in-a-mist), *Lavatera trimestris* (Royal Mallow) and *Coreopsis tinctoria* (Annual Tickseed). In addition a very attractive 'Chrysanthemum' was later named as *Ismelia carinata* (Tricolour Chrysanthemum) two different *Clarkia* species were found, as was a scarlet-flowered flax that turned out to be *Linum grandiflorum* (Crimson Flax).

A follow-up visit to the site with Eric Clement on 11th August revealed further species now in flower, including three plants of *Ammi visnaga* (Toothpick Plant), *Consolida ajacis* (Larkspur) and also *Gypsophila elegans* (Annual Baby's-breath). In addition, the two *Clarkia* species were determined as *C. amoena* (Godetia) and *C. unguiculata* (Clarkia). *Rudbeckia hirta* (Black-eyed Susan), *Callistephus chinensis* (China Aster) and *Xeranthemum annuum* (Immortelle) were amongst the new species identified, but still not in bloom. Eric was very impressed with the array of flora in this small area, and since many of these plants are varieties and species rarely seen in gardens today, he thought it likely that they had germinated from buried seed that had remained viable for perhaps as long as half a century.

By 31st August both the *Callistephus* and the *Xeranthemum* were in flower. For those not familiar with it, *X. annuum* is a somewhat silvery-greyish cornflower-like annual with carnation-pink flowers. By 7th September both pink and white flowered varieties of the somewhat more familiar *Cosmos bipinnatus* (Mexican Aster) had appeared a short distance away, and some of the *Nigella* had come to fruit and could be re-determined as *N. sativa* (Black-cumin). Around this time, Eric Clement visited the site with Mike Shaw, who took the excellent photographs that accompany this article (see Colour Section, Plate 4). On 16th November I noticed that the *Xeranthemum annuum* and *Coreopsis tinctoria* were still in bloom, despite the early frosts.

Three of the species were certainly new to SU50, *i.e.*: *Ammi visnaga, Callistephus chinensis* and *Cosmos bipinnatus*. According to the database held by Martin Rand (v.c.11 recorder), the *Ammi visnaga* is only the second Hampshire record, the first being dated 1970.

One of the other species seen, *Xeranthemum annuum* was so unusual that it was not recognised by 'MapMate', and may well have been new to Hampshire altogether. Unfortunately I have not yet found time to see what has come up here this year. On last year's evidence it may be better to wait until August or September before doing so.

Urtica membranacea Poiret in Cambridgeshire, v.c.29

ALAN C. LESLIE, *109 York Street, Cambridge, CB1 2PZ*

Two sites for the annual Mediterranean nettle *Urtica membranacea* have recently been discovered in the city of Cambridge. The details of these finds are as follows: a) numerous plants in crack between pavement and the front wall of the Sir Isaac Newton public house and the adjacent hair salon ("Lyndsey McDermott"), Castle Street, Cambridge, (52/44415933), 22nd March 2009, A.C. Leslie – later discovered to be in smaller quantity in car parks behind these buildings; b) numerous plants in cracks between pavement and the brick wall of a house on the east side of Herbert Street, at its southern end (the building is actually the side of 187 Chesterton Road), Cambridge, (52/45465955), 29th March 2009, A.C. Leslie (**CGE**), also scattered on either side of Herbert Street as far as numbers 16 and 17, as well as around the base of an *Acer negundo* (Ashleaf Maple) planted in the pavement at the south end of the street.

In *BSBI News* **103**: 29-30 (2006) Ann Boucher and James Partridge described apparently the first British record for this alien nettle, made in April that year from a street in Warwick (v.c.38), in circumstances clearly very similar to those described here. In the Cambridge sites, the species seems naturalised; both populations are best developed at the base of warm, west-facing walls and their early flowering may mean they have a fighting chance of setting seed before the first wave of Council spraying. There is no evident source for the plant in either place and the spread of plants locally suggests they have been in each site for a couple of years at least. The illustrations in *BSBI News* **103** show the characters of the plant well. The following is a description taken from the Cambridgeshire material:

An erect monoecious annual; stems 3-40cm tall, simple in very small plants but otherwise often with spreading-ascending branches from the base, often purple in full sunlight, with sparse, simple, rather weakly stinging hairs. Leaves broadly ovate, up to 77×75mm (but often much smaller), truncate to cordate at the base, deeply and sharply toothed, a rather deep almost glossy green above, ciliate, the upper surface with sparse, spreading, long, stinging hairs and rather more numerous, very short simple hairs, much less hairy below; petioles from about half as long as the blade to longer than the blade in mid-stem leaves. At the nodes, on each side of the stem, is a pale, ovate stipule, up to 7mm long, sometimes bifid at the tip, which is interpreted as the result of fusion between stipules from each opposing leaf. The clustered, unbranched, erecto-patent, terminal male racemes much exceed the petioles and are often tinged purple, making them conspicuous, especially when contrasted with the white anthers; the male flowers are borne unilaterally on an expanded, pale green membrane (hence the specific epithet); on vigorous stems there will be whorls of male racemes at one or two nodes below the apex and these can be longer and curve downwards. The much shorter, spreading to sharply reflexed, female racemes are borne below the male flowering nodes. Flowering March to April.

Despite searching the area around and between these two sites no other plants have been found. However it seems likely that this species may be overlooked elsewhere both within Cambridgeshire and elsewhere in the British Isles. A hybrid with *U. urens* (*U.* ×*tremolsii* Sennen) is claimed in Spain and might be the next target to aim for!

First British record for self-sown *Melica altissima*?

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

In *BSBI News* **111**, an article by Jonathan Shanklin and Alan Leslie: '*Melica altissima* found in Cambridgeshire (v.c.29)', reports that the *Melica altissima* L. 'Atropurpurea' Jonathan found appears to be the first British record of self-sown plants of any form of this species.

I can report that I found the same form self-sown on the roadside outside Ascog Garden (NS1072.6297) on the island of Bute (v.c.100), on 27th August 2005. Also seeded onto the roadside was *Verbena bonariensis* (Argentinian Vervain). Both were growing in Ascog Garden, where, I take it, they had both escaped from.

Reference:

SHANKLIN, J. & LESLIE, A. (2009). *Melica altissima* found in Cambridge (v.c.29). *BSBI News* **111**: 38

SMALL PROJECT GRANT REPORTS

Plant communities of urban river walls and embankments

ROBERT A. FRANCIS, *Department of Geography, King's College London, Strand, London, WC2R 2LS*

River walls in urban areas have been observed to support vegetation, but no studies have looked at the plant species that are found on river walls, or the biodiversity of such plant communities. This may prove of interest, as urban river walls may represent one of the few remaining habitats for riparian plant species in highly urbanised systems. As an initial investigation of the plant species found on the walls of a heavily engineered urban river, field surveys of plant species growing on the walls and embankments of the River Thames through central London took place in August 2008. 92 walls over 16 sites along the Thames between Mortlake and Woolwich were surveyed, with 500m of wall frontage surveyed at each site. A total of 90 plant species was found, most with low frequency and abundance, with a few notable exceptions (*Buddleja davidii* (Butterfly-bush), *Conyza sumatrensis* (Guernsey Fleabane), *Lycopus europaeus* (Gypsywort), *Parietaria judaica* (Pellitory-of-the-wall) and *Rumex hydrolapathum* (Water Dock) were all frequent on the walls).

The majority of species had ruderal and/or competitor functional strategies, and were mainly species that occur in urban waste grounds or gardens, with the exception of a low number (11) of riparian/aquatic species. Plant diversity was significantly higher on brick walls than on sheet piling, though the majority of walls surveyed supported some plant species, regardless of construction material. Plant establishment and diversity were primarily linked to fractures in the wall surface, or gaps where mortar had degraded and formed gaps for seeds to lodge and roots to subsequently develop. Species diversity was also higher on those sections of the wall above the mean high tide line, presumably due to the lack of flow disturbance. Urban river walls therefore support a range of plant species and may represent suitable habitat for novel habitat improvements. A paper summarising the findings of this survey has been submitted to *Landscape and Urban Planning*, and hopefully a more descriptive report will follow in *Watsonia*.

BOTANY IN LITERATURE – 51

Arthur Conan Doyle's 'The Adventure of Wisteria Lodge' - *eine kleine Botanik* - (and very few plants ...)

MARGOT É. SOUCHIER, *26A Dryden Avenue, London, W7 1ES*

'The Adventure of Wisteria Lodge', the first of the Sherlock Holmes stories in the volume *His Last Bow** (1917), was completed by Conan Doyle on the 17th of April 1908, with a view to its being published in the *Strand Magazine* Summer issue of that year, but, instead, it was kept back, appearing in two parts in the September (1. The Singular Experience of Mr John Scott Eccles) and October (2. The Tiger of San Pedro) issues. Set deep in the Surrey countryside, between Esher and Oxshott, it is *A Study in Scarlet* (see Conan Doyle 2001a; Souchier, 2007a) type of adventure, entering into the Conradian world of immigrants and their policies, and thereby telling of an act of revenge being carried out for crimes and injustices committed in distant lands. This time the tyrant, Don Murillo, hails from Spain, as does the avenger, Garcia, although he is acting at the bequest of an Englishwoman, the governess, "Miss Burnet", whose proper name, as widow of a Spaniard, is Signora Victor Durando. In creating his characters, for what Holmes admits to Inspector Gregson is "on the face of it" a "not very complex" case, Conan Doyle drew on details from his own personal life. John Scott Eccles, the staunchly Conservative Englishman coming from Lee, an area of Blackheath where Conan Doyle's second wife, Jean Leckie, had family, and the name of Durando, being derived from the Italian runner Dorando Pietri, whose case of disqualification from the Olympic Games held in London in July 1908 Conan Doyle took up. Thus, whether from casualness, or a deliberate attempt to hide the origin of the name, Conan Doyle gave an Italian name to a Spaniard, and, changing the name, as he did, in proof [seemingly] misspelt it (Lycett, 2007).

Wisteria Lodge itself, as we learn, is an old tumbledown fair-sized house "standing back from the road, with a curving drive which was banked with high evergreen shrubs". In a marked state of disrepair, with a grass-grown drive, and a "blotched and weather-stained door", it is hardly the grand English manor, so it is perhaps not surprising that it is in actual fact *sans* the Wisteria (or at least no mention is made of it). Garcia, the tenant of the lodge, all too rapidly befriends Eccles, and invites him to stay at the lodge, in order, it later turns out, to provide himself with an alibi. The story is told conventionally enough by the narrative of Watson, but it is due to the lack of any striking action on the behalf of Holmes, which perhaps marks it, if one is to be candid, as a less than satisfying Holmes adventure. This may be due to the fact that Holmes good-naturedly shares the limelight with Inspector Baynes of the Surrey Constabulary, "a stout, puffy, red man, whose face was only redeemed from grossness by two extraordinarily bright eyes, almost hidden behind the heavy creases of cheek and brow", who chuckles and flushes with pleasure when Holmes praises him for his methodical and clever work. Thus, although Holmes actually solves the mystery, it is simultaneously done so by Baynes, with the result that Holmes is somewhat compromised and the reader deprived not only of Holmes's glory, but, as it is, in a sense, we who sit comfortably in Baker Street, "competent and assured", and "it is ourselves who are there, full of a tremendous capacity for wisdom, complacent in the presence of our humble Watson", (and it is therefore "*our* tobacco in the Persian slipper") with the "swirling fog without and the acrid smoke within" (Edgar W. Smith quoted by Anonymous in Conan Doyle, 1976), we too are deprived of the glory.

There is also, as already intimated, a certain lack of precision, which, as the following extract shows, makes the story less convincing (although no less of "a tangled skein"), and

thus less riveting than some of the more well-honed adventures:

> One morning he [Holmes] spent in town, and I learned from a casual reference that he had visited the British Museum.[1] Save for this one excursion, he spent his days in long and often solitary walks, or in chatting with a number of village gossips whose acquaintance he had cultivated.
>
> "I'm sure, Watson, a week in the country will be invaluable to you," he remarked. "It is very pleasant to see the first green shoots upon the hedges and the catkins on the hazels once again.[2] With a spud,[3] a tin box,[4] and an elementary book on botany,[5] there are instructive days to be spent." He prowled around with this equipment himself, but it was a poor show of plants[6] which he would bring back of an evening.

Notes:

1. *British Museum*: It is not until the end of the story, when Holmes enlightens Watson (in customary fashion) as to the significance of "The torn bird, the pail of blood, the charred bones, all the mystery of that weird kitchen?", that he reveals that the purpose of his visit to the British Museum was to consult "Eckermann's *Voodooism and the Negroid Religions*". The Museum (BM), which opened in Bloomsbury, London, in January 1759 in Montague House from the bequest of Hans Sloane, also features in *The Hound of the Baskervilles* in respect to Stapleton (a.k.a. Vandeleur; by way of clarification, this name is derived from "the respected African explorer and Irish Guardsman Lieutenant-Colonel Cecil Vandeleur" (d. 1901) (Lycett, 2007)) as an authority on Entomology (see Conan Doyle, 1999: 138; Souchier, 2007b: 28).

   The setting of a room as a museum is used by Conan Doyle not only in *The Hound of the Baskervilles* (*ibid.*: 132-3; Souchier, *l.c.*), but in 'The Adventure of the Three Garridebs' (Conan Doyle, 2007: 387 (*Case-Book*), viz.:

   The room was as curious as its occupant. It looked like a small museum. It was both broad and deep, with cupboards and cabinets all round, crowded with specimens, geological and anatomical. Cases of butterflies and moths flanked each side of the entrance. A large table in the centre was littered with all sorts of debris, while the tall brass tube of a powerful microscope bristled up amongst them...

   (For a further Watsonian reference to a microscope note 'Sherlock Holmes had been bending for a long time over a low-power microscope' (Conan Doyle, 2007: 504 (*Case-Book*) and for details on microscopes generally, see Souchier in *BSBI News* **111**: 46-49 (2009)).
2. *green shoots upon the hedges and the catkins on the hazels once again*: The story is set in March, hence, as Watson relates, apropos of a nocturnal expedition, there was a sharp wind and a fine rain beating down upon our faces..."
3. *a spud*: Gardeners, and ostensibly amateur botanists, are known to insert the blade of their knife into a potato as a means of safeguarding themselves from injury. There are, however, other uses.
4. *a tin box*: An essential item for the Victorian naturalist for carrying botanical specimens in. Such a box is used by Stapleton in *The Hound of the Baskervilles* (Conan Doyle, 1999: 55; Souchier, 2007b: 28).
5. *an elementary book on botany*: It is doubtful whether one would take precisely such a volume outside; more likely a field guide would be employed to greater advantage.
6. *a poor show of plants*: Not a single plant, at least botanically speaking, is mentioned in the episode. Of course, this maybe explained by Holmes's avowed confession of his true purpose: "My first days in the village were devoted to a series of walks, in which in the intervals of my botanical researches I made a reconnaissance of all the large houses and an examination of the family history of the occupants". However, in *A Study in Scarlet*, Watson's list (Conan Doyle, 2001a: 18; Souchier, 2007a: 23) reveals Holmes's knowledge of Botany to be "Variable". In 'The Resident Patient' (Conan Doyle, 2001b: 416 (*Memoirs*)), Watson states of Holmes

> "Appreciation of Nature found no place among his many gifts, and his only change was when he turned his mind from the evil-doer of the town to track down his brother of the country", a sentence which is repeated verbatim in 'The Adventure of the Cardboard Box' (Conan Doyle, 2007: 46 (*His Last Bow*)). Yet, as part of the development of his character, which I have already remarked upon (Souchier, 2007b: 27), when, in 'The Adventure of the Naval Treaty' Holmes exclaims "What a lovely thing a rose is!", Watson comments "He walked past the couch to the open window, and held up the drooping stalk of a moss rose, looking down at the dainty blend of crimson and green. It was a new phase of his character to me, for I had never before seen him show any keen interest in natural objects".

Perhaps it is that the retired Holmes in 'The Adventure of the Lion's Mane' provides an answer to the conundrum himself when he says, narrating his own adventure on this occasion: "It occurred after my withdrawal to my little Sussex home, where I had given myself up entirely to that soothing life of Nature for which I had so often yearned during the long years spent amid the gloom of London". (Conan Doyle, 2007: 462 (*Case-Book*)), and proceeds in accordance with this declaration to solve the mystery, whereby the miscreant, which "can be as dangerous to life as, and far more painful than, the bite of the cobra" is actually scientifically named via an extract from a book by the author of "*Out of doors*", the "famous observer, J.G. Wood":

> If the bather should see a loose roundish mass of tawny membranes and fibres, something like very large handfuls of lion's mane and silver paper, let him beware, for this is the fatal stinger, *Cyanea capillata*. "Could our sinister acquaintance be more clearly described?"

(Conan Doyle, 2007: 484 (*Case-Book*)), previous to which Holmes has cried out "Cyanea ... Cyanea! Behold the Lion's Mane" (which is via the zoölogical vernacular more fully known as Lion's Mane Jellyfish, although it is to *Cyanea lamarckii* Péron & Lesueur, which it closely resembles, other than in colour, (*C. lamarckii* being blue-white, instead of *C. capillata*'s brick-red-yellow), that the cautionary note "It can inflict severe stings" is appended (Campbell, 2005: 87), thus raising the question as to whether *C. capillata* (Linnaeus) also stings or whether Conan Doyle, in choosing the species with the vernacular (and a memorable one at that), confused the facts.

Perhaps, one might argue, Holmes is better off producing his monographs on various topics (see Souchier, 2007a: 24), including bee-keeping and the volume *Practical Handbook of Bee Culture*, a copy of which, when posing as the Irish-American Altamont in the adventure 'His Last Bow', he presents to the German Van Bork, who was then "gripped at the back of his neck by a grasp of iron, and a chloroformed sponge was held in front of his writhing face". (Conan Doyle, 2007: 229 (*His Last Bow*)): Holmes at his best!

*The problem of pronunciation presented by the clever double-entendre of *bow* is solved very nicely by Conan Doyle himself: "I fear that Mr Sherlock Holmes may become like one of those popular tenors who, having outlived their time, are still tempted to make repeated farewell bows to their indulgent audiences". (Conan Doyle, 2007: 247 (*Case-Book*: preface)).

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SOUCHIER, M.É. (2007a). Botany in Literature - 45: Conan Doyle's *A Study in Scarlet* - Sherlock Holmes and Botany - Affinities with Freud. *BSBI News* **105**: 22-24.

SOUCHIER, M.É. (2007b). Botany in Literature - 45 [sic]: Sir Arthur Conan Doyle - Botany and Botanists in (1) *The Hound of the Baskervilles* and (2) *The Lost World and Other Stories* - Naturalism and Doyle's oscillation between Botany, Zoölogy (and Entomology). *BSBI News* **106**: 27-29.

REQUESTS & OFFERS

Volunteer Co-ordinator needed for new survey of alien plants

PETER BROWN, *34 Longfields, Ely, CB6 3DN*
(petermjbrown@googlemail.com) (Tel.: 01353 610668)

A new survey focusing on non-native species is being launched in 2010. The BSBI is helping with this web-based project, which will involve the public in recording a small selection of non-native species. The project is a collaboration between the Biological Records Centre, the National Biodiversity Network Trust and the GB Non-native Species Secretariat, and involves the recording schemes for various plants and animals.

The two primary aims of the project are to inform the public on non-native species, and to gather additional useful data on the distribution and ecology of the chosen species. Two plant species and four animal species will be the initial focus of the project, but further species may be added later.

Members of the public will be asked to submit records of either of two easily-identified non-native terrestrial plants (species to be confirmed but see Colour Section, Plate 3) via an online recording form, with the facility to upload a photograph of their sighting.

A keen co-ordinator for the new survey is required, with work starting in spring or early summer 2010. The role would be carried out from home, involving a few hours a week, and will involve dealing with the processing of records via a secure webpage. The position is voluntary (unfortunately no funding is available for a paid position).

The basic requirements of the post are:

- Plant identification skills - identification from photographs will be needed.
- Basic computer proficiency.
- Access to a computer, with use of the internet (ideally broadband).
- A few hours spare time per week.

No handling of plant specimens will be required. If you are interested, please get in touch with me, the project organiser, by early October 2009, for further information.

BSBI journals for free

FRANK SLATER, *38 Kilfield Road, Bishopston, Swansea, SA3 3DN*
(slater.frank@btinternet.com)

Anyone interested in a complete set of *Watsonia* from Vol. 11, Part 3 to now *i.e.* Vol. 27, Part 3, including indices, plus *BSBI News* and *Welsh Bulletin*? They can be picked up from my Swansea home - postage would no doubt be expensive.

Echium rosulatum (Lax Viper's-bugloss) © 2009

Lathyrus tuberosus (Tuberous Pea) © 2009

Reseda alba (White Mignonette) © 2008

All photos taken at Barry Docks (v.c.41) by T.G. Evans (see p. 18)

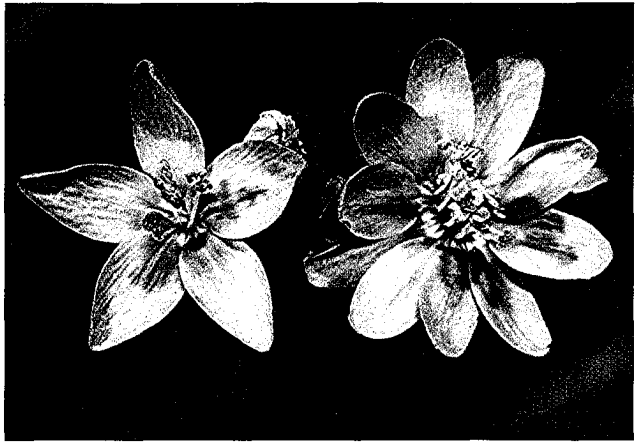
Bay Willow, verticals partly skeletonized by grey squirrel stripping (see p. 15)

Katsura Tree, grey squirrel ringbarking (see p. 15)

Zelkova serrata, grey squirrel stripping (ringbarked near base) (see p. 17)

Populus 'Columbia', grey squirrel not beaver damage! (see p. 15)

All photos taken at Clatford Arboretum, Wilts. by J. Oliver © 2008

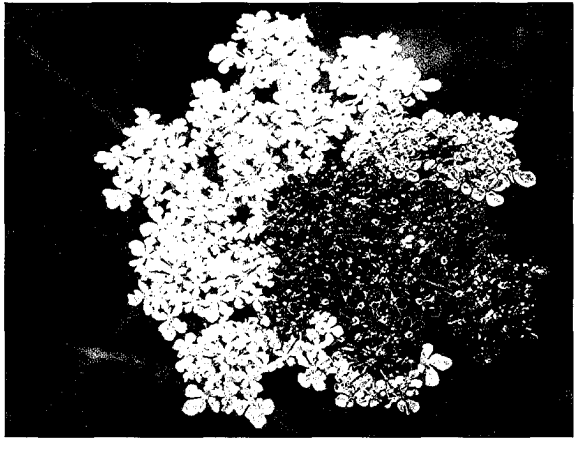


Normal and double flowers of Common Centaury, roadside verge at Winsley (v.c.7). Photo J. Presland © 1995 (see p. 23)

Proliferating Dandelion in garden in Bradford-on-Avon (v.c.7). Photo J. Presland © 2006 (see p. 23)

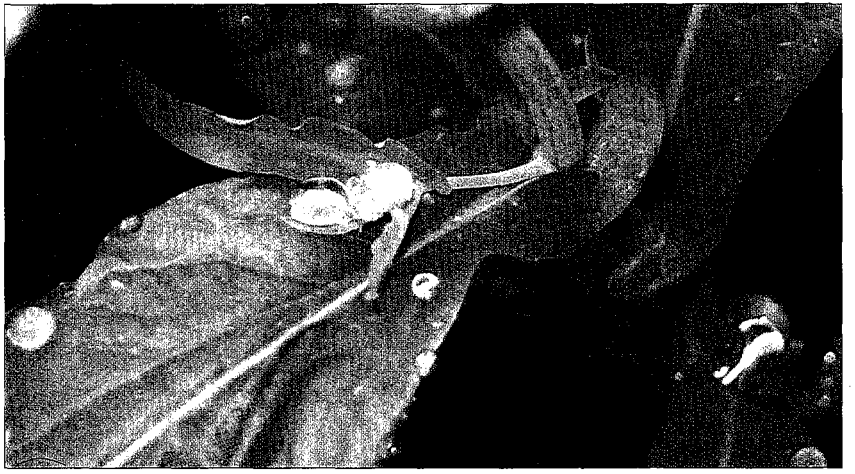
Four-whorl polystachion of Marsh Horsetail in Cotswold Water Park near Ashton Keynes (v.c.7). Photo P. Woodruff © 2006 (see p. 24)

Peloric Common Toadflax, Winsley (v.c.7). Photo J. Presland © 1993 (see p. 23)



Chimera on Wild Carrot in Barry Docks (v.c.41). Photo J. Presland © 1981 (see p. 24)

Blysmus compressus, Cockburnlaw (v.c.68). Photo F. Aungier © 2008 (see p. 45)



Peltaria alliacea at Armadale, Isle of Skye (v.c.104) with fruit inset © 2006 and detail of leaf base © 2009. All photos S Bungard (see p. 9)

Cochlearia megalosperma at Tweedmill (v.c.81) with close-up of flowers and fruit. Both photos Mrs G. Hargreaves © 2008 (see p. 29)

Potential plant for public participation non-native species survey: *Lysichiton americanus* (American Skunk-cabbage). Photo © GB Non-native Species Secretariat (see p. 38)

Ammi visnaga (Toothpick Plant)

Callistephus chinensis (China Aster)

Clarkia amoena (Godetia)

Clarkia unguiculata (Clarkia)

Ismelia carinata (Tricolour Chrysanthemum)

Lavatera trimestris (Royal Mallow)

Rudbeckia hirta (Black-eyed Susan)

Salvia viridis (Annual Clary)

All photos taken at Seafield Park, S. Hampshire (v.c.11) by M. Shaw © 2008 (see p. 32)

Publications for disposal

JOHN OSLEY, *30 Ffordd Tan'r Allt, Abergele, Clwyd, LL22 7DQ*

The following publications are surplus to my requirements. If anyone wishes to have them before I send them for recycling (deadline one month from the date of this *BSBI News*), they are either welcome to make arrangements (via e-mail: johnthebot@yahoo.co.uk or j.osley@ccw.gov.uk) to collect, either from my home address in Abergele or office address in Mold or for the cost of postage (mainland UK only):

Plantlife Members' Magazine 1990 (1) to 2006 (44) in three green binders.

Bulletin of the British Mycological Society Volume 8 (Spring 1974) to Volume 20 (October 1986).

Mycologist (A5 format) Volume 1 (January 1987) to Volume 7 (November 1993) and (A4 format) Volume 8 (February 1994) to Volume 20 (part 3) (August 2006).

Field Mycology Volume 1 (2000) to Volume 7 (2006) (parts 1& 2 only).

Bulletin of the British Bryological Society Volume 51 (February 1988) to Volume 81 (July 2003).

Field Bryology Volume 82 (March 2004) to 96 (October 2008).

Journal of Bryology (medium format) Volume 16 (1990) to Volume 20 (1998) and (large format) Volume 21 (1999) to Volume 30 (2008).

Spare copies of BSBI journals for disposal

DR VALERIE LIVESEY, *Y Felin, Cwmrheidol, Aberystwyth, SY23 3NA*
Tel: 01970 880564; v.livesey@btinternet.com

I have a good range of *Watsonia*, *BSBI Abstracts*, *BSBI News* and *Welsh Bulletins* for 'rehoming', due to shortage of space. Too many books and journals and no more room for bookshelves! Collection preferred, as there are rather a lot. Or could split into bits to post perhaps, if postal charges are refunded.

Watsonia Vol **13 (3)** Jan 1981 - Vol **26(3)** Feb 2007

BSBI Abstracts Part **11** (July 1981) - **29** August 2001

BSBI News No. **27** Apr 1981- No. **105** Apr 2007

Welsh Bulletin No. **44** Winter 1986 - No. **80** June 2007

West Cork B & B

MRS SUSAN COBLEY, *Ravens Oak, Derryishal, Bantry, West Cork, Ireland*
(Tel: 00353 2753809) (info@ravens-oak.com) (www.ravens-oak.com)

Owned by BSBI member, all modern facilities and lovely garden. Convenient, scenic location 10 minutes from Bantry and central for exploring West Cork.

Flowers and Photography Holidays in Menorca

PHILIP DUNN, *'Treesbank', Tongland Road, Kirkcudbright, DG6 4UU*
Tel: 01557 331343, http://www.inspiration-holidays.com/botany-holidays

BSBI Vice-county Recorder David Hawker & professional photographer Philip Dunn have teamed up to offer Flowers and Photography Holidays in lovely Menorca. The 2010 date is 7th – 14th May. Learn more about the wild flowers of Menorca and how to photograph them.

Small discount for BSBI members.

NOTICES

2010 Winston Churchill Travelling Fellowships

We have been asked to draw people's attention to the call for applications for these Fellowships. These are available for UK citizens, to enable them to travel overseas "to undertake study projects related to their profession, trade or particular interest". The current round has ten categories, and applications need to be made by 6th October. The categories most likely to be relevant to botanists might be: 'Adventure, exploration and leaders of expeditions', 'Education, and vocational training', 'Environment, food and rural affairs', and 'Science, engineering and enterprise'. Grants average over £5,000 each, covering travel and living expenses for a visit of 4-8 weeks. Further information can be found at www.wcmt.org.uk or by contacting the Winston Churchill Memorial trust, 15 Queen's Gate Terrace, London, SW7 5PR (020 7584 9315) (email: office@wcmt.org.uk).

Excursion to Almería - April 2010

TERESA FARINO, *Apartado de Correos 59, 39570 Potes, Cantabria, Spain*; (Tel.: +34 942 735154) (teresa@iberianwildlife.com)

A one-week field meeting in south-eastern Spain is proposed for spring 2010, to run from Thursday 15th April to Thursday 22nd April.

Almería is perhaps the most arid region of Western Europe, experiencing more than 3,100 hours of sunlight and just 250mm of precipitation annually. Not surprisingly, the vegetation is very distinctive, harbouring many endemic species. Of the thousand-odd species of vascular plant known to occur in the Cabo de Gata natural park, for example, around 12% are unique to Iberia.

From our base in the fishing village of San José, in the western sector of the Cabo de Gata park, we are ideally placed to explore all the principal habitats of the region. Coastal sand-dunes harbour clumps of *Ziziphus lotus* and several endemic species of *Salsola*, parasitized by the curious *Cynomorium coccineum* (Cynomorium), plus *Mesembryanthemum nodiflorum* and *M. crystallinum* (Ice-plant), *Otanthus maritimum* (Cottonweed), *Frankenia corymbosa*, *Limonium sinuatum*, *Thymelaea hirsuta* and *Andryala ragusina*, while stony steppes behind the shore boast *Limonium lobatum*, *Genista umbellata*, *Haplophyllum linifolium* and the endemic, winter-flowering *Androcymbium europaeum*.

We will also explore the volcanic hinterland of the park, where the vegetation includes several plants known only from Cabo de Gata – *Ulex canescens*, *Teucrium charidemi* and *Antirrhinum charidemi* – as well as *Periploca laevigata*, *Maytenus senegalensis* (Maytenus), *Phlomis purpurea* ssp. *almeriensis*, *Phlomis lychnitis*, *Withania frutescens* and the cactus-like *Caralluma europaea*. Excursions further inland will take in the badlands of Tabernas – the backdrop to many a 'Spaghetti Western', where notable plants include *Euzomodendron bourgaeanum*, *Limonium insigne*, *Cistanche phelypaea* ssp. *lutea* and *Lygeum spartum* (Albardine) – as well as the nearby Sierras of Gádor and Los Filabres, where enclaves of more typically Mediterranean vegetation can be found.

We will be staying at the Hotel Santuario in the fishing village of San José, where all rooms are en suite and most have a terrace or balcony. The cost will be 1,075 € per person, plus a single-room supplement of 125 €, to cover half-board accommodation, picnic lunches, transport by hired minibus throughout, all entry fees and the services of the leaders (Teresa Farino and James Parry), but excluding flights to Almería and travel insurance (obligatory). Deposits can be paid in sterling, and the balance converted to sterling at the time it is due, using www.oanda.com. For further details, please contact me by post, phone or email, as given above.

BSBI trip to Mallorca - approximate dates 21st - 26th April 2010

DR JOHN BAILEY, *Biology Department, University of Leicester, LE1 7RH* (jpb@le.ac.uk)

Richard Gornall and myself have been taking parties to Mallorca to study the wildlife there for many years, and have a good knowledge of the plants and where to find them. Accommodation will be full board in the 3-star Hotel Pollensa Park Hotel in Puerto Pollensa, which is on the coast of northern Mallorca and close to the historic town of Pollensa. The north of Mallorca abounds with spectacular limestone mountains and gorges, which in turn are host to some very rare and extraordinary species. Special attention is given to the Balearic endemics. We would expect to see up to five species of *Ophrys*, five hedgehog plants, *Dracunculus muscivorus*, *Cytinus*, the famous *Naufraga balearica* and a host of other interesting and attractive plants. We also plan a visit to the idyllic Botanic Garden in Soller. In addition to the tonic of the Mediterranean in the spring, this trip also offers excellent bird-watching opportunities. Whilst no climbing is required, there will be some walking up and down hillsides on uneven ground, so a reasonable level of fitness is required.

If interested in joining this excursion please contact me at the address above.

Estonia: bogs, fens & mires! July 5th - 15th 2010

Leaders: IAN BENNALLICK AND PAUL GREEN

Lahemaa's atmospheric landscape of bogs, forests and unspoilt bays, with still traditional fishing villages, has been spared the ravages of the 20th century by dint of being the first national park designated in the former Soviet Union. 34 out of 36 of Estonia's orchids occur on the limestones of Saaremaa Island. Dark Red Helleborine and Fly Orchid are widespread and we'll see the Baltic endemics *Dactylorhiza longifolia* and *Dactylorhiza ruthei*. We will find Fen Orchid and *Dactylorhiza curvifolia* amongst fine displays of Marsh Helleborine and Musk Orchid. Colonies of Silver-studded and Large Blues live amid a colourful mosaic of bellflowers, campions and cinquefoils. Of particular interest will be the extensive complexes of mires, fens and raised bogs made accessible by a series of trails and boardwalks. A rich and distinctive community makes this its home, from Sundews and One-leaved Bog Orchids to the endemic *Rhinanthus osiliensis* and the skullcap *Scutellaria hastifolia*. Estonia has a wealth of sedges probably unmatched in Europe. British rarities such as *Carex flava* and elegant *Carex buxbaumii* sit alongside less familiar species such as *Carex rhynchophysa* and *Carex globularis*. *Chamaedaphne calyculata* will be going over but other Ericaceae will be in full bloom including Bog Rosemary, Labrador Tea and both species of Cranberry. Paths through lichen and Cowberry under open pine forests will reveal Creeping Lady's-tresses, and lovely Twinflower are no less attractive than seven Wintergreens, whilst roadsides are awash with stands of four species of Cow-wheats, among them colourful Crested Cow-wheat and the garish purple and yellow *Melampyrum nemorosum*.

The focus of the holiday is the flora; also dragonflies and butterflies. Walking is relaxed and easy; up to three or four miles a day and always at a slow pace, perfectly suited to photographers. Included in the price are all flights, all transport, meals and accommodation in Estonia and the services of the leaders. Drinks, tips and items of a personal nature including insurance, are not included. Group size: minimum five and maximum 15. Only one leader will accompany a group of six or less. Accommodation, for the first half of the tour is at the 16th century Kohala Manor. Set in peaceful countryside with ponds, rivers, woods and fields, there will be plenty of fauna and flora to interest us. All rooms have *en suite* facilities. The climate is warm and sunny with occasional evening thunderstorms. Flower, dragonfly, butterfly, bird and mammal checklists are available.

For further information and a tour itinerary: call 01298 83563 or visit www.greentours.co.uk

FIELD MEETING REPORTS: 2008-2009

Reports of field meetings are collated by Dr Alan Showler, and copy for these should be sent to him direct, not to the editors of *BSBI News*. His address is: 12 Wedgwood Drive, Hughenden Valley, High Wycombe, Bucks., HP14 4PA (tel.: 01494 562082). Copy for day meetings should generally be up to 500 words, and for weekend meetings, up to 1000 words.

2008

Lindisfarne area, N. Northumberland (v.c.68), 13th - 17th August

CHRIS METHERELL (v.c. Recorder) and MARY SMITH

Wednesday, 13th August

On a sunny afternoon a substantial number of botanists gathered in the car park at Warkworth Dunes for the first afternoon's stroll of what was to prove both a profitable and sometimes exhausting week! Looking around it was obvious that we had an excellent mix of local botanists and those from further afield. Maps and hit lists were handed out and off we set. We were split into five teams to allow a wide coverage of the ground.

Erigeron acer (Blue Fleabane) was found in four sites ('sites' refers to 10m square records throughout), *Allium oleraceum* (Field Garlic) in two and *Calystegia soldanella* (Sea Bindweed) in three. This last had not been seen here since 1977 and so were particularly useful finds. Regrettably, we failed to confirm old records of *Lathryus japonicus* (Sea Pea), *Eryngium maritimum* (Sea-holly) and *Atriplex praecox* (Early Orache), though we were probably too late in the year for the last one. We had more success with *Dianthus deltoides* (Maiden Pink), famous in the dune slacks, seen in six sites, and with *Parapholis strigosa* (Hard-grass) at one of its only two sites in v.c.68. Martyn Stead also spotted *Lathyrus latifolius* (Broad-leaved Everlasting-pea), last recorded here in 1987, despite it being a well-botanised area.

In all 70 sites were accumulated, 39 being new records for NU2505, the least recorded 1km square within the area.

En route to Lindisfarne, the convoy of cars stopped to admire and photograph *Asplenium* ×*clermontiae* (Maidenhair Spleenwort × Wall-rue) at its only station in the UK (and possibly Europe?). The single plant was flourishing this year, after a couple of poor seasons.

On arrival at the Lindisfarne Hotel we were greeted by Michael Braithwaite, who had found *Cardamine corymbosa* (New Zealand Bitter-cress) in the hotel car park! This was not new to the vice-county but new to the island.

Those who did not already know each other became acquainted over dinner, which was enlivened by some bottles of wine.

Afterwards several of us went on a dusk walk. The most remarkable alien for those not familiar with this area was *Acaena novae-zealandiae* (Pirri-pirri-bur). We soon got to know it, and cursed it often. Assorted *Euphrasia* (eyebrights) were found and debated. This complex group became a sub-theme of the trip for Chris.

Thursday, 14th August

On another bright day three groups set out to record the northern and central sections of Ross Links. The SE section of the dunes had already been visited in 2008, but that left a very large area for which there were few localised records.

The north end of the links was visited by two groups. Strangely we found very little *Equisetum variegatum* (Variegated Horsetail), which had been recorded in the past; however we accumulated eight sites for *Astragalus danicus* (Purple Milk-vetch), a TPP species, and an excellent find was *Carex viridula* ssp. *viridula* (Small-fruited Yellow-sedge), last recorded here in 1968, the only site found during the week. Another RPR species, *Cynoglossum officinale* (Hound's-tongue) was recorded

from 86 sites. Similarly, *Salsola kali* (Prickly Saltwort) was found in 43 sites. Two *Gentianella* species: *G. amarella* ssp. *septentrionalis* (Autumn Gentian) and *G. campestris* (Field Gentian), feature on the RPR, and were well-recorded during the day. *Samolus valerandi* (Brookweed) was last seen here in 1991, but we had to wait until the end to find one large patch around a pond.

Other RPR species recorded were: *Erigeron acer* (1 site), *Euphrasia confusa* (1 site) and *Euphrasia tetraquetra* (3 sites).

Several species from old records were searched for: *Anagallis minima* (Chaffweed), *Pyrola rotundifolia* (Round-leaved Wintergreen), *Radiola linoides* (Allseed), *Apium inundatum* (Lesser Marshwort), *Botrychium lunaria* (Moonwort), and *Hyoscyamus niger* (Henbane), but they all eluded us, if they were there at all.

However, both Bob Ellis's and Kevin Walker's survey teams made single records for *Ornithopus perpusillus* (Bird's-foot), although Bob is not now sure that this was not an error for *A. danicus*. If correct, this is a particularly exciting find, as the plant is very rare in v.c.68, with only one old site many miles away from Ross Links. Additionally, Michael Braithwaite noted possible *Viola canina* (Heath Dog-violet) hybrids.

We accumulated 120 sites, an amazing total and a grand record total of 520 taxa, of which 331 were new records for one or more of the 1km squares making up the larger site.

Meanwhile John Richards visited Dunstanburgh, providing, amongst a long list of sites, several for *Torilis nodosa* (Knotted Hedge-parsley) and *Euphrasia tetraquetra*, both TPP species. However, John was also able to report a number of species, previously known in the area, which could not be refound, or for which no suitable habitat now existed. For example, a pond known to have contained *Potamogeton coloratus* (Fen Pondweed) had been drained, and suitable habitat no longer existed for *Scleranthus annuus* (Annual Knawel).

Another dusk walk followed dinner for a few of us. We wanted to see if we could find *Epipactis sancta* (Lindisfarne Helleborine), now accepted as a separate endemic species. We got rather wet in the subaquatic slacks, but eventually we saw some chicken-wire 'hats', in most of which were brown remains of orchids, which we assumed were our targets. We were underwhelmed, but the other orchids (*E. palustris* (Marsh Helleborine), *Dactylorhiza fuchsii* (Common Spotted-orchid) and *D. purpurella* (Northern Marsh-orchid)) were beautiful.

Friday, 15th August

Today the group was split into three teams, each heading in a different direction. The main body set off up Cheviot, specifically intending to visit the Hen Hole Corrie (different geology) to do some square bashing. The route proved interesting, both the drive into the College Valley Estate and especially the ascent through thigh-high rushes and grasses, slippery with recent rain, and no path after the first 100m. This was exhausting or exhilarating, depending on one's fitness. At the rocky outcrop at 700m altitude we were allowed to eat lunch, in the rain and mountain-top wind, at 2:15pm. Descending into the watersmeet of Hen Hole Corrie was even more exciting or terrifying, but one of us slid down on her butt, which was much easier and safer than trying to walk. Although a relatively well-recorded area, records needed to be added to the existing list for the main tetrad, NT8.2V, whose taxa rose from 41 to 127. We also bashed NT8.2W to a lesser extent, whose taxa rose from 13 to 129, including a single site record for *Myosotis stolonifera* (Pale Forget-me-not), an RPR target. We were particularly pleased to record *Carex bigelowii* (Stiff Sedge), another RPR species, although we did not have time to conduct an extensive search for more. Several sites for *Diphasiastrum alpinum* (Alpine Clubmoss) were accumulated. Regrettably, poor time management by the leader (!) meant that we did not have sufficient time to search for many of the target species. It also meant that we caught another rather unpleasant piece of weather on the way down, and this, combined with the

amount of water in the burn made the descent, shall we say, entertaining!

Bob Ellis and Kevin Walker set off in pursuit of *Crepis mollis* (Northern Hawk's-beard), both an RPR and TPP plant. Although they ranged far and wide, visiting the area around Langleeford, and the Upper Coquet Valley (which made them rather late for dinner) only one of the known sites came up trumps. This was an excellent meadow near Langleeford, although they reported that the Coquet Valley site looked promising and might be revisited. Another interesting record was for *Myosotis secunda* (Creeping Forget-me-not), a TPP species not previously known from the Langleeford area.

Michael and Paddy Braithwaite opted for a lowland day, visiting Dunstanburgh and Newham Fen. The latter produced excellent site records for *Carex lasiocarpa* (Slender Sedge), *Potamogeton coloratus*, *Salix myrsinifolia* (Dark-leaved Willow) and *Molinia caerulea* ssp. *arundinacea* (Purple Moor-grass). Indeed, Michael brought back a specimen of the latter for us to argue about over dinner. Dunstanburgh turned out not to be so interesting; however it turned up two further site records for *Torilis nodosa*, at different locations from those recorded by John Richards the day before. They also provided a record which, although in itself not remarkable, shows just how much work remains to be done in North Northumberland: *Galium palustre* ssp. *elongatum* (Common Marsh-bedstraw). Astoundingly there are no previous records of this plant from Newham Fen!

We had ordered dinner at the Crown and Anchor, but we had to phone to say we would all be late. However, we got there eventually, tired and hungry, although those who had studied the coastal areas had a sunny, easy, day. We sank back in the warm comfort of a little alcohol, good food and plenty of botanical discussions.

Saturday, 16th August

This was our first day of serious Holy Island botany, and a hot one too. We grew in numbers as locals joined us over the two days of the weekend. We began by working the slacks in the dune system at the west end of the Island, known as The Snook. This was where we seriously cursed the *Acaena* that stuck to socks, rucksacks, anything that went near the ground. One person eventually abandoned a pair of socks that were too stuck up to be worth restoring. Each slack had been allocated a number and marked on an aerial photograph and armed with these, several parties set off into the dunes. The first lesson learned was that it would have been a good idea to mark grid lines on the photograph to aid identification of the numbered slacks! Notwithstanding this a number of slacks were monitored and a large number of sites for RPR species accumulated. *Equisetum variegatum* proved much more abundant than on Ross Links, with 10 sites, and 13 sites for *Euphrasia tetraquetra*, including some magnificent specimens, showing just what a distinctive plant it can be in the right environment. However the winner for the most records went to *Gentianella amarella* ssp. *septentrionalis*, with no less than 34 sites!

After the heat of the dunes, it was a relief in the afternoon to hit the slight breeze on the north coast of the island. Two groups found the same patch of *Pulicaria dysenterica* (Common Fleabane), probably the only one on the island and one of only a handful in the Vice-County. Lots more sites of *Gentianella amarella* ssp. *septentrionalis* and several new sites for *Blysmus compressus* (Flat-sedge) were found, which, over the week, proved to be much commoner on the Island than expected. But the finds of the afternoon were undoubtedly *Polygonum oxyspermum* ssp. *raii* (Ray's Knotgrass), which had not been found on the north coast before: the fifth site for the v.c.; and a very interesting hybrid *Equisetum*, which provoked much thought.

At 7pm we were back at the Crown and Anchor, but not as tired or hungry as the day before. So we mostly chose more subtle dishes this time, rather than huge hearty ones.

Sunday, 17th August

This was our last day in v.c.68. We began by examining the south shore, to see whether we

could find *Blysmus rufus* (Saltmarsh Flat-sedge). We couldn't! Eventually the group became strung out along the west shore of the mainland of the island, some stopping to view *Zostera noltii* (Dwarf Eelgrass), for which the mudflats around the Island are well-known, whilst others shared an excellent discussion of *Atriplex* hybridity by Bob Leaney, which resulted in the discovery of *A.* ×*hulmeana* (Spear-leaved Orache × Grass-leaved Orache) which was a first v.c. record (with thanks to Dr Leaney for his subsequent correspondence in connection with this plant).

In the afternoon some people had to leave to get back to the mainland while the tide level allowed, some went sightseeing, and the remainder set off in different directions. Paddy Braithwaite and Mary Smith studied the east shore and recorded *Sorbus intermedia* (Swedish Whitebeam), for which there is only one previous v.c. record, another site for *Torilis nodosa* and another site for *Salsola kali* near the Castle. The main group toured the remaining sections of the north shore, and were rewarded, amongst the *Gentianella* and *Blysmus* records, with *Dactylorhiza viridis* (a.k.a. *Coeloglossum viride*, Frog Orchid), which was last recorded on the island in 1991.

John Swindells, ever vigilant, noted *Galinsoga* growing in a garden in the village, but did not note the species. If it turns out to be *Galinsoga quadriradiata* (Shaggy-soldier), it will be a new v.c. record, although *G. parviflora* (Gallant-soldier) has been seen on the island before.

Dinner was in the Lindisfarne Hotel for our last night. The wine flowed while we ate the salmon and the strawberry shortcake, and reminiscences of the few days were shared and final plant details discussed. The surprise entertainment followed. Chris, our leader, with three Northumbrian colleagues, gave us a short concert on the Northumbrian pipes and drum! This recital was much enjoyed and appreciated by all, and was a fitting end to an excellent few days. Thank you, Chris, from all of us.

Postscript:
Fiona Aungier had monitored the *Blysmus compressus* at Cockburnlaw later, and had included some excellent photographs, one of which is shown in the Colour Section, Plate 2. John Richards visited Ross Links with a group later and found several more plants including another site for *Carex viridula* ssp. *viridula*.

2009

Conifer Day, Cyril Hart Arboretum, West Gloucestershire (v.c.34), 15th March

CLARE KITCHEN & TONY TITCHEN, with help from MARK KITCHEN

The morning was spent at the Cyril Hart Arboretum in the Forest of Dean, Gloucestershire with the kind permission of The Forestry Commission, who have planted the arboretum with a representation of commonly planted conifer trees, as well as some specimen trees of more unusual species. Fifteen members and the leaders attended the meeting. John Poland had allowed us to trial his key to the vegetative features and we were able to familiarise ourselves with the terms used in it. The party concentrated their attention on those taxa most frequently planted in the Forest.

In the afternoon, having become thoroughly acquainted with these common trees, we proceeded to Shakemantle Quarry, where we were able to use our newly acquired skills to identify several invasive species established there. Amongst these were *Pseudotsuga menziesii* (Douglas Fir), *Thuja plicata* (Western Red-cedar), *Pinus nigra* ssp. *laricio* (Corsican Pine), *Pinus sylvestris* (Scots Pine) and *Picea abies* (Norway Spruce). In addition we found a further two-needled pine species which we were not able to name confidently as it was too young to show all the features. We also noted some young *Larix* trees clinging to

the sides of the quarry, too high up on the face to be safely inspected. Investigation of the steep beech covered slopes above the quarry revealed young plants of *Tsuga heterophylla* (Western Hemlock-spruce) growing amongst a few plants of *Calluna vulgaris* (Heather) and *Luzula sylvatica* (Great Wood-rush).

Chiltern Hills of mid-Bucks (v.c.24), 16th May

CHRIS BOON

About 30 attendees met with the leaders, Roy Maycock, Aaron Woods, Rodney Sims and Gareth Luscombe in the new barn at College Lake reserve. College Lake, and the nearby Pitstone Fen, were among the first worked-out chalk pits in the country to be conserved and developed into nature reserves. After brief introductory talks on the history of the reserves, the arable weed project and what plants we should see during the day, plus a welcome cup of coffee and biscuits, the group walked in Indian file along the busy road to the first site, Pitstone Fen reserve, which is a small calcareous fen.

Although rather early in the season for many plants to be in full flower, there was an excellent general flora present. The first plant of interest was an extensive colony of the hybrid horsetail *Equisetum ×litorale* (*E. fluviatile* × *arvense*) (Water × Field Horsetail) (identity later confirmed by Pat Acock). As well as other wetland plants, such as *Eupatorium cannabinum* (Hemp-agrimony), *Lycopus europaeus* (Gipsywort) and *Ranunculus trichophyllus* (Thread-leaved Water-crowfoot), there was a good selection of calcicoles of drier habitats, such as *Agrimonia eupatoria* (Agrimony), *Cirsium acaule* (Dwarf Thistle), *Leucanthemum vulgare* (Oxeye Daisy), *Polygala vulgaris* (Common Milkwort), *Primula veris* (Cowslip) and *Sherardia arvensis* (Field Madder). The orchids present were many *Dactylorhiza fuchsii* (Common Spotted-orchid), leaves showing only, and two plants, in bud, of *D. praetermissa* (Southern Marsh-orchid). Also, in full flower, were many *Listera ovata* (Common Twayblade). At the far end of the reserve were the magnificent leaves of *Cirsium eriophorum* (Woolly Thistle). The two commonest plants in full flower were *Carex flacca* (Glaucous Sedge), which was everywhere, and large patches of *Fragaria vesca* (Wild Strawberry).

After a picnic lunch at College Lake, the party was shown the Arable Weed Nursery, where the most showy plant was *Ranunculus arvensis* (Corn Buttercup). Also in the beds were *Agrostemma githago* (Corncockle), *Lithospermum arvense* (Field Gromwell), *Scandix pecten-veneris* (Shepherd's-needle) and *Valerianella locusta* (Common Cornsalad). Over many years seeds from these nursery plants have been scattered on a field nearby and all these plants were observed there in a more natural habitat.

On the walk back to the car park for the second part of the day's excursion we were shown *Lithospermum purpureocaeruleum* (Purple Gromwell) and, in a disturbed area near the lake, a large area of *Tetragonolobus maritimus* (Dragon's-teeth). The latter looked very well established but its origin on the site is unknown.

After a short journey by car and a delightful walk to the chalk downland near Ivinghoe Beacon to Income Hole we were rewarded by the feathery fruits of *Pulsatilla vulgaris* (Pasqueflower) and, in flower, two plants of *Tephroseris integrifolius* (Field Fleawort). Other species of interest were *Hippocrepis comosa* (Horseshoe Vetch), *Polygala vulgaris* (Common Milkwort) and several *Sorbus aria* (Common Whitebeam) in full flower. At the final stop on Steps Hill there was a good colony of *Gentianella anglica* (Early Gentian). Initially only two plants were seen but eventually at least a dozen were found, all in bud. Returning to the car park, in the rain, we passed some good specimens of *Lithospermum officinale* (Common Gromwell) to round off a very enjoyable visit to Buckinghamshire.

East Norfolk and East Suffolk (v.c.c. 25, 27), 6th June

ARTHUR COPPING

A full complement of 15 members met at Wortham Ling, an area of sandy heathland in v.c.25, for this grass identification day. *Anisantha*, *Bromus*, *Festuca* and *Vulpia* were the main focus of attention, and the leader began by explaining the structure of the grass plant by using locally gathered material of *Anisantha diandra* (Great Brome) and *A. sterilis* (Barren Brome), which he distributed among members of the group. In addition specimens of *A. madritensis* (Compact Brome) and *A. tectorum* (Drooping Brome) collected during May in Spain were passed round for comparison. Heavy rabbit grazing and lack of rain had reduced the Ling to near desert so the stay there was brief, taking in a *Bromus* population conforming to Stace's description of *B.* ×*pseudothominei* (Lesser Soft-brome), where it is known to have persisted for over 50 years , and a roadside colony of *Vulpia ciliata* ssp. *ambigua* (Bearded Fescue). The latter was augmented by plants of *V. myuros* (Rat's-tail Fescue) collected the previous day in Lowestoft and one of *V. fasciculata* (Dune Fescue) brought to the meeting from Southwold by Graham Peck. Curiously we were unable to find any *V. bromoides* (Squirrel-tail Fescue)! In passing we noted dwarfed plants of *Aira caryophyllea* (Silver Hair-grass) and *A. praecox* (Early Hair-grass), as well as *Koeleria macrantha* (Crested Hair-grass), whose panicles were in various stages of development.

The party then moved to Shelfanger Town Meadows (v.c.27), unimproved damp grassland bisected by a stream. The area was dominated by flowering *Ranunculus acris* (Meadow Buttercup), presenting a 'sea of yellow' in which were found *Bromus commutatus* (var. *commutatus* and var. *pubens* Wats.) (Meadow Brome) as well as *B. racemosus* (Smooth Brome). The latter proved quite elusive, and was very short, with the panicles bearing few spikelets, possibly a consequence of the drying out of the site. In one place *B. commutatus* and *B. hordeaceus* ssp. *hordeceus* (Soft-brome) were growing intermingled , obligingly revealing their differences. To complete the *Bromus* picture, the leader passed round a cultivated plant of *B. lepidus* (Slender Soft-brome), which seems now to be very rare in the wild. *Festuca pratensis* (Meadow Fescue), *F. arundinacea* (Tall Fescue) and ×*Festulolium loliaceum* (Hybrid Fescue) completed the targeted Shelfanger taxa. After lunch we moved to Knettishall Country Park in West Suffolk (v.c.26), an extensive heath on the border of Breckland. There waves of *Deschampsia flexuosa* (Wavy Hair-grass) greeted us, but amongst it grew *Festuca ovina* (Sheep's fescue) and *F. filiformis* (Fine - leaved Sheep's-fescue). At this point cultivated material of *F. longifolia* (Blue Fescue), sourced in Guernsey and the Suffolk Breckland, as well as *F. brevipila* (Hard Fescue), originally from Felixstowe, were circulated for comparison, together with *F. heterophylla* (Various-leaved Fescue), to contrast with the *F. rubra* (Red Fescue) we had seen at intervals during the day. We then moved west in the country park, where the soil was more basic, and saw *Helictotrichon pubescens* (Downy Oat-grass) and *H. pratense* (Meadow Oat-grass) growing together. In conclusion, before dispersing and as a relief from agrostology, we admired a patch of *Astragalus danicus* (Purple Milk-vetch) dotted among the short turf. The society wishes to thank Mr W.J.Butler of Shelfanger Hall for granting access to Shelfanger Town Meadows and permitting us to park cars at the Hall.

Parsonage Moor and Dry Sandford Pit, Berkshire (v.c.22), 27th June

JOHN EDGINGTON & JOHN KILLICK

The surface geology of the Cothill region, west of Abingdon, consists of Jurassic "coral rag" overlying deposits of oolitic sandstone. At Parsonage Moor, digging of post-glacial peat deposits has allowed a base-rich fen to develop within more acid surroundings, while at Dry Sandford, quarrying activity reached the water table in some places, resulting in a mire fed by calcareous springs surrounded by species-rich grassland. Both sites are SSSIs and BBOWT reserves. On an oppressively warm day 17 members explored their remarkable flora with John Killick, the Recorder for Oxfordshire, who lives nearby. We donned wellingtons to wade through Parsonage Moor in the morning, while after lunch we visited Dry Sandford Pit in the company of Steve Grigson, the volunteer warden.

Parsonage Moor immediately yielded one of its iconic species, *Schoenus nigricans* (Black Bog-rush), together with *Juncus subnodulosus* (Blunt-flowered Rush) and *Oenanthe lachenalii* (Parsley Water-dropwort), the latter rarely found so far inland. Where the ground was not submerged, *Pedicularis palustris* (Marsh Lousewort) and *Anagalis tenella* (Bog Pimpernel) were in flower, and *Pinguicula vulgaris* (Common Butterwort) in fruit. These species are quite rare in central England. Among the sedges were *Carex distans* (Distant Sedge), *C. pulicaris* (Flea Sedge) and *C. rostrata* (Bottle Sedge), while searches of drier ground yielded *Cirsium dissectum* (Meadow Thistle) and *Serratula tinctoria* (Saw-wort). A good find was *Eriophorum latifolium* (Broad-leaved Cottongrass), easily distinguished from *E. angustifolium* by its rough peduncle. We failed, however, to find totally convincing specimens of *Dactylorhiza traunsteineri* (Narrow-leaved Marsh orchid) which has been recorded here.

Previous reconnaissance had located two of Dry Sandford Pit's specialities, *Triglochin palustre* (Marsh Arrow-grass) and *Equisetum variegatum* (Variegated Horsetail), so the afternoon began by going straight to these, trying not to damage the fragile calcareous mire where they grow. This was dominated to a remarkable extent by the massed flowers of *Epipactis palustris* (Marsh Helleborine) – over 10,000 plants at the last census – and dense colonies of the stonewort *Chara hispida*. This and other stoneworts also grow at Parsonage Moor, as does *Potamogeton coloratus* (Fen Pondweed), found in a nearby pool. Like the *Equisetum*, its nearest stations are over a hundred miles away. Specimens were taken of a Polypody that looked suspiciously like the hybrid *Polypodium* ×*shivasiae*, before the day ended with tea under the shade of the largest bush of *Berberis vulgaris* (Barberry) any of us had seen.

Nidderdale (v.c.64) and Wensleydale (v.c.65) 4th - 5th July

PHYL ABBOTT, LINDA ROBINSON & KEVIN WALKER

Even at an altitude of 400m at Greenhow in Nidderdale, we soon realised we were in dockland. Right by the parking area were several examples of *Rumex longifolius* (Northern Dock). While driving to the site from the south, several of us had noticed *R. pseudoalpinus* (Monk's Rhubarb), with its broad cordate leaves. Both species have large, sturdy heads of flowers and fruits. As we entered Duck Street Quarry, a disused limestone quarry, now a privately owned nature reserve, the first plant we examined was the glabrous Lady's-mantle easily identified as *Alchemilla glabra*. Later we found large leaved *A. xanthochlora*, with hairy petiole and leaf undersurface and with pointed leaf lobes, and the smaller *A. filicaulis* ssp. *vestita*, with rounded leaf lobes. The numerous *Listera ovata* (Twayblade) made it difficult to spot the far less frequent *Coeloglossum viride* (Frog Orchids) lurking amongst them. Bill helped with the hawkweeds, most of which were forms

of *Hieracium vulgatum*. We moved across the road to a small field to feast our eyes on a glorious crimson mass of *Cirsium heterophyllum* (Melancholy Thistle) which made a splendid foreground to the willows *Salix cinerea* ssp. *cinerea*, *S. cinerea* ssp. *oleifolia* (Grey Willow), and what is probably the only specimen of *S. lanata* (Woolly Willow) growing in a wild situation in England. It is believed to have been introduced many years ago and is now well naturalised. Back to the quarry for lunch, then a few roadside plants en route to Cock Hill lead mine, an industrial heritage site. The first *Rosa mollis* (Downy Rose) we saw may have had a few canine genes but there were more convincing specimens nearby. *Myrrhis odorata* (Sweet Cicely) leaves were crushed and the aniseed scent provoked an exchange of recipes, using parts of the plant instead of sugar in fruit pies. While we were admiring *Cephalaria gigantea* (Giant Scabious) and *Geranium x oxonianum* (Druce's Crane's-bill), which had escaped from the garden across the road, Graeme keyed out *Sedum hispanicum* (Spanish Stonecrop), which was adorning a nearby wall. *Cochlearia pyrenaica* ssp. *pyrenaica* (Pyrenean Scurvygrass) was on the edge of a roadside ditch. A short walk over more acidic terrain, due to glacial drift, brought us down to the mine site where there was a more calcicole flora again. A splendid display of *Cystopteris fragilis* (Brittle Bladder-fern) enhanced the entrance of an adit. Both *Minuartia verna* (Spring Sandwort) and the similar *Sagina nodosa* (Knotted Pearlwort) were scattered across the area. We managed to find two disappointingly poor specimens of *Dryopteris submontana* (Rigid Buckler Fern). On the uphill walk back to the cars a good excuse to pause for breath was provided by the entirely yellow form of *Viola lutea* (Mountain Pansy) and *Mentha* ×*villosonervata* = *M. spicata* × *M. longifolia* (Sharp-toothed Mint), which has distinctive whitish leaves but was not yet in flower. We moved across to Upper Wharfedale where Kevin showed us the meadow where he had monitored *Crepis mollis* (Northern Hawk's-beard) last year. There was *Crepis paludosa* (Marsh Hawk's-beard) for comparison, as well as several other "yellow daisies". The weather had stayed fine all day and we only had a heavy shower while we were waiting for our table to be ready at the Fountaine Inn at Linton where we had a good meal in good company.

On Sunday we re-convened at the Ballowfield Local Nature Reserve in Wensleydale, and, having made our way round a group of hippies who had been camping there, we admired the orchids: *Dactylorhiza fuchsii* (Common Spotted-orchid), *D. purpurella* (Northern Marsh-orchid) and, of course, hybrids. The reserve includes large areas of calaminarian grassland supporting colonies of *Armeria maritima* (Sea Thrift), *Thlaspi caerulescens* (Alpine Pennycress), *Minuartia verna* (Spring Sandwort) and *Botrychium lunaria* (Moonwort). By the stream, Bill Thompson spotted the hybrid *Equisetum* ×*litorale* (Shore Horsetail), possibly the first record for the vice-county. Under the guidance of Deborah Millward, we then made our way up to the ridge above Haw Bank, which was resplendent with *Helianthemum nummularium* (Rockrose). However, we were searching for *Orobanche alba* (Thyme Broomrape). There was no sign of the four spikes which Deborah had seen a week earlier, but eventually Graeme earned his gold star when he spotted two very small specimens hiding amongst the Thyme. On the way down John Newbould spotted another "odd" Horsetail on some mineral workings. Although yet to be confirmed, this looked like *Equisetum* ×*rothmaleri*. If so, it would be the second new county record for the day! We then moved on to Marsett, where the first target was *Carum carvi* (Caraway) on the village green. This was duly sniffed and tasted, which reminded some of us of wartime Britain when seedcake was an occasional tea-time treat. Then on to Marsett Rigg SSSI, a steep species-rich hillside reserve covered in flushes. *Juncus acutiflorus* (Sharp-flowered Rush) was dominant in the damper areas, but the Orchids seen earlier were there too, as well as a good population of *Dactylorhiza viridis* (Frog Orchid) and *Gymnadenia conopsea* ssp. *borealis* (Heath Fragrant Orchid). A "silvery" Lady's-mantle noticed last year by Linda Robinson turned out to be *Alchemilla glaucescens*. This was strikingly pale, due to the fact that it is hairy on the upper

surface of the leaves as well as below, and even the pedicels in the tight cluster of flowers are hairy. This is an excellent record for a species that is very uncommon outside v.c. 64. The flushes were rich in sedges, and good specimens of *Carex hostiana* (Tawny Sedge), *C. viridula* ssp *brachyrhyncha* (Long-stalked Yellow-sedge) and the hybrid *C.* ×*fulva* were all duly noted, growing with *C. pallescens* (Pale Sedge), *C. nigra* (Common Sedge), *C. panicea* (Carnation Sedge), *C. flacca* (Glaucous Sedge) and *C. dioica* ((Dioecious Sedge). Other goodies included *Primula farinosa* (Bird's-eye Primrose) and *Trollius europaeus* (Globeflower). We were gradually edgeing towards a Hawthorn where *Pseudorchis albida* (Small White Orchid) was known to be. Sure enough, we found half a dozen, past their best, but still with a few flowers remaining. A good finale, and to see us cheerily on our way home there was some Schrecklich comment about *Tussilago* going *farfara*way!

Bog and fen in Co. Clare (v.c.H09), 11th - 12th July

STEPHEN WARD & SHARON PARR, joint v.c. recorders for Co. Clare

Grey skies and Common Gulls with newly fledged chicks heralded our arrival. We stood at the edge of a fen, with whale-backs of limestone protruding amidst beds of *Cladium* (Saw-sedge) and *Phragmites* (Common Reed) which stretch some four miles away to the south-west. To the north is the scenic backdrop of Mullagh Mor.

Whilst there is much more to fieldwork than clocking-up species, it is a measure of the diversity of Rinecaha (R3692) that, in a walk of less than half-a-mile, we recorded 138 species in vegetation ranging from limestone pavement and rich fen to acid bog. Highlights included *Eriophorum latifolium* (Broad-leaved Cotton-grass; *Juncus subnodulosus* (Blunt-flowered Rush); all three species of *Drosera* (sundews); *Utricularia minor* (Lesser Bladderwort) and *U. intermedia* (Intermediate Bladderwort); orchids, including *Dactylorhiza fuchsii* (Common Spotted-orchid), *D. incarnata* ssp. *pulchella* (Early Marsh-orchid), *D. maculata* (Heath Spotted-orchid), *Epipactis helleborine* (Marsh Helleborine), *Gymnadenia conopsea* (Fragrant Orchid); *Gentiana verna* (Spring Gentian) in seed on the limestone grasslands; *Calluna* (Heather) with *Narthecium ossifragum* (Bog Asphodel), *Rhynchospora alba* (White Beak-sedge) and *Osmunda regalis* (Royal Fern), *Schoenus nigricans* (Black Bog-rush), and *Selaginella selaginoides* (Lesser Clubmoss); as well as a variety of sedges, including *Carex dioica* (Dioecious Sedge), *C. echinata* (Star Sedge), *C. hostiana* (Tawny Sedge), *C. leporina* (=*ovalis*) (Oval Sedge), *C. pulicaris* (Flea Sedge) and *C. viridula* ssp. *brachyrrhyncha* (Long-stalked Yellow-sedge).

Lunchtime found us sheltering from the rain borne on an increasingly blustery westerly gale, which somewhat curtailed our afternoon recording. Beside Loch Muckanagh, where the land is cattle-grazed, we recorded 145 species, by which time we were soaked. Here, highlights included *Utricularia vulgaris* (Common Bladderwort), *Anacamptis pyramidalis* (Pyramidal Orchid), *Carex rostrata* (Bottle Sedge), *Potentilla fruticosa* (Shrubby Cinquefoil) and *Hydrocharis morsus-ranae* (Frogbit).

The next day, we visited Dromore Woods NNR and ventured down to the banks of River Fergus, flanked with *Schoenoplectus lacustris* (Common Club-rush), with the occasional *Baldellia ranunculoides* (Lesser Water-plantain) and *Butomus umbellatus* (Flowering Rush). In Dromore Loch, both *Nuphar lutea* (Yellow Water-lily) and *Nymphaea alba* (White Water-lily) were in flower, and *Lythrum salicaria* (Purple Loosestrife) gave vivid splashes of purple. Heavy showers alternated with bright sun, but the exceptionally high water levels limited exploration of the wetlands.

The group comprised Sharon Parr, Fiona Devery, Michael Archer, Jenny Seawright, Megan Morris, Margaret Marshall, Mary Vaughan and Stephen Ward.

Footnote:

On a visit to Rinecaha just four days later, Sharon recorded *Utricularia australis* (Bladderwort) in flower, making a total of four *Utricularia* species in all.

REPORT OF OVERSEAS FIELD MEETING – 2009

Páramos of Northern Castile (Spain), 13th May - 20th May

Thirteen members joined leaders Teresa Farino and Jon Cox for a week to explore this relatively unknown area of northern Spain, which straddles the confluence of the provinces of Palencia (P), Burgos (Bu) and Cantabria (S). The high limestone plateaux of this region are known as *páramos*, where the 'bones' of the land protrude through the thin soils, creating a charismatic landscape of crags and buttresses, interspersed with low-intensity cereal cultivations, species-rich grasslands and fragments of evergreen oak forest. We also visited more montane habitats in the Cordillera Cantábrica to the north – both on limestone and siliceous bedrock – as well as the impressive river canyon carved out by the infant Ebro.

Mid-May normally sees the cereal fields of the *páramos* teeming with arable weeds, but we found the season to be abnormally late, following one of the hardest winters in recent years. All agreed, however, that despite the lack of colourful displays of poppies and cornflowers, there was more than enough of botanical interest to keep us on our toes.

The taxonomy used in the following report follows *Flora Iberica* as far as possible. Teresa and Jon would like to extend their heartfelt thanks to Lynne Farrell for collating each day's findings in the evenings, resulting in a total species list for the week of almost 600 taxa.

13th May - Hoyos del Tozo (Bu)

Having collected everyone from Madrid airport, we drove up the A1 to Burgos, then spent an hour or so botanising on a dry limestone plateau and small canyon near Hoyos del Tozo, on the southern margin of the Páramo de La Lora. In what was to become the pattern for the week, no sooner had the minibuses ground to a halt than botanists fanned out in all directions, in search of botanical gems. Those of us who stayed fairly close to the vehicles in the first instance found a wealth of orchids – many of which were of inordinately small stature following the hard winter – including *Anacamptis morio*; (=*Orchis morio*; Green-winged Orchid), *Orchis anthropophora* (=*Aceras anthropophorum*; Man Orchid), *Dactylorhiza insularis* (Barton's Orchid), *Ophrys tenthredinifera* (Sawfly Ophrys), *Ophrys lutea* (Yellow Ophrys) and *Ophrys sphegodes* (Early Spider-orchid).

Among the other monocots growing here were stately *Asphodelus albus* and *A. aestivus* (White and Common Asphodels), *Aphyllanthes monspeliensis* (Blue Aphyllanthes) and *Muscari comosum* (Tassel Hyacinth). The low-growing, white-flowered *Spiraea hypericifolia* ssp. *obovata* was the predominant shrub on the plateau, in the shelter of which grew a number of scarce British species, notably *Viola kitaibeliana* (Dwarf Pansy), *Trinia glauca* (Honewort) and *Carex humilis* (Dwarf Sedge). Incredibly, some attempt had been made to cultivate cereals on the exceedingly thin soils here, with these more disturbed areas turning up the shepherd's-needle *Scandix australis*, *Asterolinon linum-stellatum* (Asterolinon) and *Neatostema apulum* (Yellow Gromwell).

The walls of a small limestone gorge nearby were decorated with bushes of *Amelanchier ovalis* (Snowy Mespilus) in full flower, among which flourished the eye-catching creamy flowers – up to 4cm in diameter – of *Thalictrum tuberosum*, plus *Hornungia petraea* (Hutchinsia), the fleshy-leaved *Saxifraga cuneata* (see Back Cover) and *Globularia vulgaris* (Common Globularia). Such was the enthusiasm engendered by this first taste of the *páramos* that it took quite some time to round everyone up to drive the final few kilometres to our hotel in the converted convent of Santa María de Mave, but eventually we were tucking in to our first delicious evening meal of the week.

14th May 2009 - Las Tuerces (P)

Our first full day in the field dawned fair, but with a brisk north-easterly wind. We drove just a short distance to the foot of the limestone 'sculpture city' of Las Tuerces, where Leslie gave us a succinct introduction to the willows growing along the margins of the Río Pisuerga, for the most part *Salix atrocinerea*, *Salix fragilis* (Crack Willow) and *S. purpurea* (Purple Willow). The river itself sported lush ribbons of *Ranunculus penicillatus* (Stream Water-Crowfoot).

We spent the morning strolling through the village of Villaescusa de las Torres, where the dry-stone walls were festooned with *Sedum dasyphyllum* (Thick-leaved Stonecrop), *Telephium imperati*, *Saxifraga tridactylites* (Rue-leaved Saxifrage) and *Campanula erinus* (Annual Bellflower). The more natural rock-gardens, by contrast, were a gloriously colourful melange of yellow-flowered *Stachys recta* (Perennial Yellow Woundwort), the Iberian endemic toadflax *Linaria badalii* and the composite *Pallenis spinosa*, startling blue *Linum narbonense* (Beautiful Flax), *Marrubium vulgare* (White Horehound) and the star-of-Bethlehem *Ornithogalum narbonense*.

The dominant shrubs here were the horribly spiny *Genista scorpius*, *Amelanchier ovalis* and *Jasminum fruticans* (Wild Jasmine), while the margins of the track hosted annuals such as *Papaver argemone* (Prickly Poppy), *Silene conica* (Sand Catchfly), *Petrorhagia prolifera* (Proliferous Pink), *Euphorbia serrata*, *Scandix pecten-veneris* (Shepherd's-needle), *Anchusa arvensis* (Bugloss) and *Centranthus calcitrapae* (Annual Valerian). Those of the group who were investigating a parallel route along the crest of the adjacent limestone ridge were rewarded with a brief glimpse of a small Lataste's Viper, as well as that rare British umbellifer *Bupleurum baldense* (Small Hare's-ear).

After lunch we explored the labyrinth of limestone pillars and buttresses on the summit of Las Tuerces. One of our target species was the curious little fern *Asplenium seelosii* ssp. *glabrum* – a rather scarce species in Spain – for which Teresa had found an old record from the area, despite it not being listed as present in Palencia in *Flora Iberica*. Martin's sharp eyes soon located the first specimen, and we went on to discover a dozen or so clumps growing in shady nooks on the north-facing exposures of several outcrops.

The wind-swept upper plateau of Las Tuerces boasted *Ranunculus gramineus* and *R. paludosus* (Grass-leaved and Jersey Buttercups), silvery-leaved *Plantago monosperma* ssp. *discolor*, *Valeriana tuberosa*, with small, pink heads, the montane cornflower *Centaurea triumfetti*, the conspicuous yellow flowers of the viper's-grass *Scorzonera hispanica*, the Afro-Iberian endemic *Poa ligulata* and *Ophrys fusca* (Dull Ophrys), as well as drifts of diminutive *Muscari neglectum* (Common Grape-hyacinth) and *Tulipa sylvestris* ssp. *australis* (Wild Tulip), the latter unfortunately past their best. Areas of seepage harboured *Schoenus nigricans* (Black Bog-rush) and *Adiantum capillus-veneris* (Maidenhair Fern).

15th May - Fontibre and Alto Campóo (S)

For a complete change of scenery, we drove north to Alto Campóo, at the head of the valley that runs west from Reinosa towards the peak of Tres Mares, stopping briefly en route at Fontibre: the source of the Río Ebro, from which the Iberian Peninsula gets its name. Despite being essentially a poplar plantation, Fontibre boasts a rather rich ground flora, among which we located *Ophioglossum vulgatum* (Adder's-tongue), *Helleborus foetidus* (Green Hellebore), *Saxifraga granulata* (Meadow Saxifrage), *Cruciata laevipes* (Crosswort) and many other shade-tolerant species familiar from the UK. Brighter splashes of colour announced the presence of purplish *Pulmonaria longifolia* (Narrow-leaved Lungwort) and yellow *Symphytum tuberosum* (Tuberous Comfrey).

More interesting, however, for most of us, were the splendid specimens of *Orchis pallens* (Pale-flowered Orchid) and *O. provincialis* (Provence Orchid), the former with broad, unspotted leaves and robust spikes of lemon-yellow flowers, and the latter with short, relatively few-flowered spikes of delicate, long-spurred flowers, the lip of each being

speckled with orange. Some well-grown plants of *Polygonatum multiflorum* (Solomon's-seal), clumps of pale-blue *Scilla verna* (Spring Squill) and a sheet of *Fritillaria pyrenaica* (Pyrenean Snakeshead), the flowers sadly well past their best, completed the list of monocots found here.

Teresa confessed to some anxiety as to what we would find at the head of the valley, above the Alto Campóo ski station, because snowfalls had been heavy and lingering. However, the sun shone and snowmelt-fed streams cascaded over the igneous rocks and peaty soils, revealing the first flushes of a flora quite different to that of the limestone we visited most other days. The short turf at around 2,000m was studded with the nodding pink-purple heads of *Erythronium dens-canis* (Dog's-tooth-violet) and drifts of the smallest of all trumpet daffodils, *Narcissus jacetanus* ssp. *vasconicus*, with straight cylindrical trumpets and thin, transparent or browning, spathes, as well as a few of the tiny hoop-petticoat daffodil: *N. bulbocodium* ssp. *nivalis*. Leslie pointed out that, like many montane species, these narcissi have the simplest genetic make-up, both being diploids.

Here too we came across splendidly floriferous clumps of Spring Gentian (*Gentiana verna*), as well as *Thlaspi caerulescens* (Alpine Penny-cress), *Pinguicula grandiflora* (Large-flowered Butterwort), *Ajuga pyramidalis* (Pyramidal Bugle) and *Cruciata glabra*. Several pteridophytes were seen only here during the week, notably *Selaginella selaginoides* (Lesser Clubmoss) *Cryptogramma crispa* (Parsley Fern), *Dryopteris oreades* (Mountain Male-fern) and, curiously, given the granite bedrock, *Polystichum lonchitis* (Holly-fern).

A little further down the valley we paused to examine the head-high scrub of pink-flowered *Erica australis* (Spanish Heath; in full bloom), white-flowered *E. arborea* (Tree Heath; still in bud) and the greenweed *Genista obtusiramea*, endemic to north-western Iberia, among which were growing less lofty *Erica vagans* (Cornish Heath), *Calluna vulgaris* (Ling), *Pterospartium tridentatum*, with undulate, toothed wings on the stems, and *Genista anglica* (Petty Whin). A second stop at the Mirador de la Joyanca turned up some delightful *Narcissus triandrus* (Angel's-tears), as well as the striking *Daboecia cantabrica* (St Dabeoc's Heath), plus *Moenchia erecta* (Upright Chickweed), *Arenaria montana* (Large-flowered Sandwort) and white-flowered *Potentilla montana*, whose leaves are toothed only at the tip.

On our return trip to Mave we visited an area of wet, acid pastures to the north of Salcedillo, dominated by *Nardus stricta* (Mat-grass). Colour was provided by pink and purple *Lathyrus linifolius* (Bitter-vetch), *Vicia orobus* (Upright Vetch), *Pedicularis sylvatica* (Lousewort), *Dactylorhiza maculata* (Heath Spotted-orchid) and some lovely pale-rose-tinted *Orchis morio*, plus yellow *Pedicularis schizocalyx* (an Iberian endemic), *Scorzonera humilis* (Viper's-grass), *Dactylorhiza sambucina* var. *lutea* (Elder-flowered Orchid) and *Narcissus bulbocodium* ssp. *bulbocodium*.

There was just enough time left for a quick visit to the Romanesque collegiate church at Cervatos, which is renowned for the 'erotic' gargoyles that decorate the eaves; frankly we were astonished that such graphic sculptures should adorn a place of worship!

16th May - Páramo de La Lora (Bu & S)

Although the day started with heavy cloud, it steadily improved to become sunny and warm, but was very windy throughout. Our first stop was on a grassy hillside amongst limestone outcrops on the southern margin of the Páramo, where we found striking clumps of *Adonis vernalis* (Yellow Pheasant's-eye) and the lovely scarlet peony *Paeonia officinalis* ssp. *microcarpa*. Orchids were abundant, in particular *Orchis purpurea* (Lady Orchid), *O. mascula* (Early Purple Orchid), *Anacamptis morio* and *Orchis anthropophora*, plus *Ophrys lutea*, *O. fusca* and *O. sphegodes*. Along the edges of the cereal fields we encountered *Ranunculus arvensis* (Corn Buttercup), with its 'spiny' carpels, the Iberian endemic mignonette *Reseda barrelieri*, *Androsace maxima* (Annual Androsace) and *Asperula arvensis* (Blue Woodruff).

From Sargentes de la Lora, we turned north along dusty tracks and parked on the Páramo de La Lora proper: slabs of baked limestone, punctuated only by scattered rocky outcrops, a few small copses of stunted *Quercus ilex* ssp. *ballota* (Western Holm Oak) and some diffident attempts at cultivation of the thin soils.

There was little vegetation above knee height, but the predominant woody species were *Juniperus communis* (Common Juniper), *Spiraea hypericifolia* ssp. *obovata*, *Genista hispanicus* ssp. *occidentalis* (Spanish Gorse) and *G. scorpius*. *Ranunculus gramineus* and *Linum narbonense* were accompanied by *Iberis saxatilis*, the Spanish endemic stork's bill *Erodium daucoides* (see Back Cover) and *Parentucellia latifolia* (Southern Red Bartsia). Wherever there was enough soil to sustain them, there were dense drifts of orchids, principally the *Orchis* and *Ophrys* species seen earlier, but with the addition of *Neotinea maculata* (Dense-flowered Orchid), and the yellow *Dactylorhiza insularis*.

Lunch was taken atop a small limestone cliff, at the base of which flourished a huge colony of *Cystopteris fragilis* (Brittle Bladder-fern). In the afternoon, some members of the group explored a nearby stream, encountering a flora a little more familiar to us from northern Europe: *Carex paniculata* (Greater Tussock-sedge), *Carex viridula* ssp. *brachyrrhyncha* (= *C. lepidocarpa*; Long-stalked Yellow-Sedge), lemon-yellow *Tetragonolobus maritimus* (Dragon's-teeth) and a solitary spike of *Neottia ovata* (= *Listera ovata*; Twayblade).

Turning 'homewards', we visited one of the many Neolithic dolmens of La Lora, its central chamber lined with huge vertical slabs of stone; these laborious constructions are thought to have been of great religious or ritual significance to the people of that time. Nearby was a spring of clear water, around which we found the attractive crucifer *Sisymbrella aspera* ssp. *aspera*, *Mentha pulegium* (Pennyroyal), *Senecio aquaticus* (Marsh Ragwort) and a lemon-yellow hoop petticoat daffodil, which Leslie declared to be the tetraploid *Narcissus bulbocodium* ssp. *citrinus*.

17th May - Puerto de Piedrasluengas (P)

Sunday saw us heading back towards the mountains, this time to the limestone-dominated pass of Piedrasluengas (1,355m). Emerging from *Quercus pyrenaica* (Pyrenean Oak) woodlands around Cervera de Pisuerga, we headed up into the stream-side meadows just below the pass, where large numbers of the spectacular *Narcissus pseudonarcissus* were growing amongst vivid clumps of *Euphorbia hyberna* (Irish Spurge), and we indulged in a little *Narcissus*-based taxonomic controversy: were they in fact ssp. *leonensis* or *nobilis*? *Cardamine raphanifolia* (Greater Cuckooflower), *Trollius europaeus* (Globeflower) and *Dactylorhiza incarnata* (Early Marsh-orchid) were just coming into bloom along the margins of the stream.

From the *mirador* at the head of the pass, surrounded by beechwoods and jagged limestone crags, we admired the view of the Picos de Europa to the north. Soon we were hopping from crag to crag in search of alpine delights, but again the lateness of the season was evident, even on the southerly exposures. The northern Spanish endemic *Saxifraga canaliculata* was everywhere, but barely in bud, while the lime-encrusting *Saxifraga paniculata* (Livelong Saxifrage) had to rely on its undoubted vegetative appeal. However, *Anemone pavoniana* was flowering very prettily on the cliffs and there were bright splashes of yellow from the crucifer *Erysimum duriaei*. Both species are unique to the Cordillera Cantábrica. Other crucifers in flower were the dainty *Pritzelago* (= *Hutchinsia*) *alpina* ssp. *auerswaldii*, growing alongside 'pincushions' of the local endemic *Draba dedeana*, and we were also delighted with the Iberian endemic grass *Oreochloa confusa*, distinguished by its neat, two-ranked spikes.

More widespread montane plants here included sheets of *Potentilla crantzii* (Alpine Cinquefoil), *Ribes alpinum* (Mountain Currant), the delicate pink-and-white *Potentilla micrantha* and *Astragalus depressus* (Sprawling Milk-vetch). *Acinos alpinus* (Alpine Calamint) and *Chaenorhinum origanifolium* (Malling Toadflax) looked good

together on the rocks, and several early spikes of *Himantoglossum hircinum* (Lizard Orchid) decorated one sunny slope. As we descended to the road, the banks were full of deep-purple *Viola bubanii* (Violet Mountain Pansy), yet another northern Spanish endemic.

Despite the exciting novelties of the morning, the highlight of the day for many of us was the afternoon's walk through a small valley to the south of the pass: a little Arcadia of stream, meadow and beechwood. In damper spots we found white-flowered *Ranunculus aconitifolius* (Aconite-leaved Buttercup) and nodding *Geum rivale* (Water Avens), with *Geranium sylvaticum* (Wood Crane's-bill) and *Crepis paludosa* (Marsh Hawk's-beard) yet to bloom. On one crag, *Arabis scabra* (Bristol Rock-cress) could be admired, while the beechwoods were carpeted with flowering *Scilla lilio-hyacinthus* (Pyrenean Squill), in fair imitation of an English bluebell wood (see Back Cover), but dotted through with *Hepatica nobilis* (Hepatica), *Aquilegia vulgaris* (Columbine), *Corydalis cava* (Hollow-root), *Cardamine impatiens* (Narrow-leaved Bitter-cress) and *Primula elatior* (Oxlip).

In the woodland glades, the leaves of *Adenostyles alliariae* (Adenostyles), *Lilium martagon* (Martagon Lily) and *Paris quadrifolia* (Herb-Paris) gave promise of things to come, as did the sheets of glaucous-leaved *Allium scorzonerifolium* (= *A. stramineum*) in the adjacent meadow. It was with horror, therefore, that we learned that the road here was due to be straightened and widened, almost certainly resulting in the destruction of this beautiful spot, and all in the interest of speeding up – and no doubt increasing – traffic between the central plains and the coast.

Having reconvened at a site for *Aconitum lamarckii*, the Iberian endemic *Ranunculus gouanii* (Gouan's Buttercup) and Fly Honeysuckle (*Lonicera xylosteum*), we set off for the Romanesque church of San Salvador de Cantamuda. Although we expected this to be a strictly cultural activity, the north wall of the building turned up one of the real botanical surprises of the week: *Dryopteris submontana* (Rigid Buckler-fern).

Our final stop of the day was at another little Romanesque chapel near Barrio de Santa María: a village that boasts an enormous number of nesting White Storks. As some of the group admired the intricately carved capitals of the chapel, others examined the crop of ruderal and arable weeds in the surrounding cereals, to be rewarded by *Thlaspi perfoliatum* (Perfoliate Penny-cress), *Centaurea cyanus* (Cornflower) and a scarlet-flowered pheasant's-eye – in the absence of ripe fruits, either *Adonis flammea* or *A. aestivalis* ssp. *squarrosus* – as well as a new grass for the week, suspected by Arthur to be *Hordeum hystrix*.

18th May - Hoces del Ebro (Bu)

This was certainly the most strenuous day of the week, involving an 11km walk through the spectacular limestone canyon of the Hoces del Ebro. Stuart Hedley (Teresa's co-leader from our Benasque tour in 2008) and Graeme Deas also spent the day with us, providing extra botanical expertise.

While Teresa and Jon refuelled the vehicles, the group explored a small area of acid heathland near Respenda de Aguilar (P), which was dominated by the beautiful *Erica umbellata*, *Lavandula stoechas* (French Lavender) and the white-flowered 'sun-rose' *Halimium umbellatum*. Arthur informed us that among the more interesting grasses here were *Mibora minima* (Early Sand-grass), *Micropyrum tenellum* (Gravel Fescue), *Vulpia unilateralis* and *Aira elegantissima*. As well as the rare British species *Veronica triphyllos* (Fingered Speedwell), we also found the skull of a large canine by the roadside and speculated as to whether it could have been that of a Wolf, as this part of Spain is known to harbour a healthy population of these carnivores.

We stopped for elevenses in the dry Mediterranean scrub, high above the Ebro gorge, where we saw at least three species of juniper: *Juniperus communis*, *J. phoenicea* (Phoenician Juniper) and *J. oxycedrus* (Prickly Juniper), although rather more eye-catching were the low clumps of yellow-flowered,

silvery-leaved *Argyrolobium zanonii*, *Leuzea conifera* (Cone Knapweed) and *Allium roseum* (Rosy Garlic).

At the start of our trek, in Pesquera de Ebro, we set off through open fields full of magnificent stands of delicate *Silene nutans* (Nottingham Catchfly), *Coronilla scorpioides* (Annual Scorpion-vetch), the umbellifer *Laserpitium eliasii*, the shrubby plantain *Plantago sempervirens*, the distinctive grass *Aegilops geniculatus* and *Ophrys scolopax* (Woodcock Ophrys). On reaching the banks of the Ebro, we marvelled at the substantial patches of *Lathraea clandestina* (Purple Toothwort) that were parasitizing the roots of some of the *Populus nigra* (Black Poplar) trees.

Although the other dominant canopy species of this riverine forest was *Fraxinus angustifolia* (Narrow-leaved Ash), the shrub layer and ground flora was rather similar to that of an English woodland, albeit belied by an abundance of scarce British species such as *Lithospermum purpureocaeruleum* (= *Buglossoides purpureocaerulea*; Purple Gromwell), *Melittis melissophyllum* (Bastard Balm) and *Scirpoides holoschoenus* (Round-headed Club-rush), and firmly disproven by clumps of *Petrocoptis pyrenaica* ssp. *glaucifolia* (Blue-leaved Petrocoptis) and *Sarcocapnos enneaphylla* on a shady crag.

Eventually the shady deciduous forest gave way to more open, evergreen vegetation, where we picnicked amid pink cushions of *Saponaria ocymoides* (Rock Soapwort) and yellow *Helichrysum stoechas*, with a pair of Egyptian Vultures circling overhead. Afterwards we made a brief side excursion to see *Fumana ericoides*, *Ajuga chamaepitys* (Ground-pine), *Orobanche gracilis* (Slender Broomrape) and *Limodorum abortivum* (Violet Limodore).

After lunch, most members of the group continued on through the gorge, with Teresa examining each and every *Limodorum* en route in the hopes of locating the *L. trabutianum* (Trabut's Limodore) she had found here in the past, but sadly none had the very short spur typical of the species. We did, however, encounter many other botanical gems along the way, including *Equisetum variegatum* (Variegated Horsetail), the birthwort *Aristolochia paucinervis*, the silver-hairy mercury *Mercurialis tomentosa*, *Arabis turrita* (Tower-cress), *Sorbus domestica* (True Service-tree), the linear-leaved, salmon-pink-flowered *Lathyrus cicera* and much larger, pink-flowered *Lathyrus latifolius* (Broad-leaved Everlasting-pea), as well as *Cephalanthera rubra* (Red Helleborine) in bud.

19th May - Olleros de Pisuerga (P) and Peña Amaya (Bu)

Our last day in the *páramos* of Northern Castile arrived. First, by popular vote, we visited the local market in Aguilar de Campóo, joining the influx of local inhabitants already making their way into the arcaded square. Lynne, however, spent this time delving into the depths of the Río Pisuerga, turning up *Groenlandia densa* (Opposite-leaved Pondweed), while Arthur and Gerard rummaged along the banks, producing *Carex acuta* (Slender Tufted-sedge), *C. acutiformis* (Lesser Pond-sedge) and *C. riparia* (Greater Pond-sedge).

After the market, we stopped to explore some hay-meadow-like grasslands in Olleros de Pisuerga. The most productive field supported a good population of *Rhinanthus minor* (Yellow-rattle), which had successfully reduced the vigour of the grasses, thus enabling less competitive plants to gain a foothold. As a result, we located *Lathyrus aphaca* (Yellow Vetchling), *Malva moschata* (Musk Mallow), a healthy population of *Carex divisa* (Divided Sedge), which is exceedingly rare in the UK, and the star-of-Bethlehem *Ornithogalum orthophyllum*. John also found *Equisetum ramosissimum* (Branched Horsetail): another exceptionally scarce British species, although its status as a native plant in the UK is doubtful. Our attempt to visit the renowned 6th century 'cave church' here was foiled by the fact that the sacristan had broken her leg, but we did find *Paronychia polygonifolia* and *Convolvulus lineatus* growing around the entrance, and Arthur collected a species of *Agrostis* that he'd never seen before.

We ate Teresa's last splendid picnic lunch in the attractive gardens of El Convento, after which some of us flitted between flowerbeds, just like the butterflies we were trying to photograph. Not surprisingly, garden varieties of *Dianthus barbatus* (Sweet-William) and *Hesperis matronalis* (Dame's-violet) attracted the most insects, including Hummingbird Hawk-moths (*Macroglossum stellatarum*), Queen of Spain Fritillaries and a rather languid Cardinal (*Argynnis pandora*), whose image was captured beautifully by Liz.

After lunch we headed for the hills for the last time, our destination the magnificent two-tiered limestone buttresses of Peña Amaya. On the way, we stopped briefly in the extensive arable fields to the south, finding *Pisum sativum* (Garden Pea) and *Vaccaria hispanica* (Cow Basil), plus many of our old favourites: *Ranunculus arvensis*, *Papaver argemone*, *Scandix pecten-veneris* and *S. australis*.

From the village of Amaya we drove almost to the top of the buttress, where the more agile members of the group made a beeline for the high crags. Most of us, however, lingered on the limestone pavement, where the greatest diversity of flowers was to be found. Here we encountered *Ranunculus ollissiponensis*, the clump-forming *Dianthus pungens* ssp. *brachyanthus*, *Paronychia kapela* ssp. *kapela*, with its white, papery bracts, an abundance of *Arabis scabra* and *Draba dedeana*, the delightful little *Legousia hybrida* (Venus's-looking-glass) and a scattering of the diminutive *Senecio minutus*. More spectacularly, Annette and Shirley located some splendid specimens of the Iberian endemic stork's-bill *Erodium glandulosum*. Our journey home was interrupted by a visit to the fabulous portico of the church in Rebolledo de La Torre: one of the most magnificent examples of Romanesque architecture in the province.

The chef had prepared a splendid *paella* for our last meal at El Convento. It was tinged with regret, however, as we contemplated having to leave this extraordinary region, with its dramatic scenery and myriad places where botanical treasures were still flourishing.

20th May - Milagros (Bu) and Embalse de Pedrezuela (M)

An early start gave us a little time in hand as we headed back to Madrid, so we stopped for coffee in Milagros, where a quick examination of the car park turned up the ruderal crucifers *Descurainia sophia* (Flixweed) and *Calepina irregularis* (White Ball Mustard), as well as *Matthiola fruticulosa* (Sad Stock), *Reseda phyteuma* (Corn Mignonette) and *Lithodora fruticosa* (Shrubby Gromwell).

Once through the tunnel that traverses the Guadarrama at Somosierra, we turned off west for one last foray into the dry Mediterranean vegetation near the Embalse de Pedrezuela. The sandy soils here supported shrubby *Lavandula stoechas*, *Thymus mastichina* (Round-headed Thyme) and *Osyris alba* (Osyris), between which flourished more colourful *Lupinus angustifolius* (Narrow-leaved Lupin), the annual, yellow-flowered toadflax *Linaria spartea*, *Campanula rapunculus* (Rampion Bellflower), *C. lusitanica* and the lemon-yellow composite *Andryala integrifolia*.

Here Gerard collected a *Stipa* species taller than he was, which Arthur said was probably *S. gigantea*, and promptly added it to his bulging suitcase, full of specimens. Arthur has attended four of the five previous BSBI trips to Spain led by Teresa, from which he has furnished her with herbarium specimens of no less than 167 taxa of rushes, grasses and sedges, with Eric Clement providing confirmation of the identification of critical or doubtful material. No doubt many more taxa were added during this most recent foray, and Teresa looks forward to receiving the latest batch in due course.

This report was written by Paul Bartlett, Liz Clark, Arthur Copping, Gerard Dirkse, John Edgington, Teresa Farino, Lynne Farrell, Annette Ford, Sue Helm, Sophie Hochstenbach, Martin and Clare Rand, Leslie Tucker and Shirley Watson, and was edited by Teresa Farino.

Pteridophytes seen during the Páramos of Northern Castille BSBI field meeting, 13th -20th May 2009: John Edgington

Selaginella selaginoides	Peaty flushes, Alto Campóo (S)
Equisetum variegatum	calcareous seeps by hydro-electric plant, Hoces del Ebro (Bu**); det. P.J. Acock
Equisetum ramosissimum	Hoces del Ebro (Bu); field near Olleros de Pisuerga (P)
Equisetum arvense	flush above Villaescusa de las Torres (P*); fen below Piedrasluengas (P*); Hoces del Ebro (Bu)
Equisetum × litorale (*E. arvense × E. fluviatile*)	marshy field-edges north of Mave Station (P)
Equisetum fluviatile	fen below Piedrasluengas (P)
Equisetum palustre	flush above Villaescusa de las Torres (P*); fen below Piedrasluengas (P*); Hoces del Ebro (Bu)
Ophioglossum vulgatum	deciduous woodland, Fontibre (S)
Polypodium interjectum	epiphytic in beechwood south of Puerto de Piedrasluengas (P**)
Polypodium vulgare	rocks, Alto Campóo (S)
Cryptogramma crispa	boulder scree, Alto Campóo (S)
Adiantum capillus-veneris	flushed rocks above Villaescusa de las Torres (P); *ditto* by hydro-electric plant in Hoces del Ebro (Bu)
Pteridium aquilinum	road to Alto Campóo (S); Páramo de la Lora (Bu); woodland at Pesquera de Ebro (Bu)
Asplenium trichomanes ssp. *quadrivalens*	rock crevices: Hoyos del Tozo (Bu); Las Tuerces (P); Páramo de la Lora (Bu); Puerto de Piedrasluengas (P); Hoces del Ebro (Bu); Peña de Amaya (Bu)
Asplenium trichomanes ssp. *pachyrachis*	rock crevices, Las Tuerces (P**)
Asplenium adiantum-nigrum	rock crevices, Alto Campóo (S); wall of cave church, Olleros de Pisuerga (Bu)
Asplenium seelosii ssp. *glabrum*	rock crevices, Las Tuerces (P**)
Asplenium ruta-muraria	rock crevices: Hoyos del Tozo (Bu); Las Tuerces (P); Páramo de la Lora (Bu); Puerto de Piedrasluengas (P); Hoces del Ebro (Bu)
Asplenium scolopendrium	shady rock cleft, Las Tuerces (P**); near Valdelateja, Hoces del Ebro (Bu)
Asplenium ceterach	rock faces, often in full sun: Villaescusa de las Torres & Las Tuerces (P); Páramo de la Lora (Bu); Puerto de Piedrasluengas(P); Pesquera de Ebro (Bu); Peña de Amaya (Bu)
Cystopteris fragilis ssp. *fragilis*	damp shady places: Las Tuerces (P); Alto Campóo (S); Páramo de la Lora (Bu); Puerto de Piedrasluengas (P); Peña de Amaya (Bu)
Athyrium filix-femina	beechwood south of Puerto de Piedrasluengas (P)
Dryopteris filix-mas	beechwood south of Puerto de Piedrasluengas (P)
Dryopteris oreades	montane scree, Alto Campóo (S)
Dryopteris submontana	mortared wall, Church of San Salvador de Cantamuda (P)
Dryopteris dilatata	woods, rocky places: Alto Campóo (S); beechwood south of Puerto de Piedrasluengas (P)
Polystichum lonchitis	flushed rocks, Alto Campóo (S)
Polystichum setiferum	shady rock cleft, Las Tuerces (P); deciduous woodland, Fontibre (S); beechwood below Piedrasluengas (P); Hoces del Ebro (Bu)
Polystichum aculeatum	deciduous woodland, Fontibre (S); beechwood south of Puerto de Piedrasluengas (P)
Blechnum spicant	leaf litter in beechwood south of Puerto de Piedrasluengas (P*)

* / ** = doubtfully / never recorded in the province according to *Flora Iberica*:
Bu = Burgos; P = Palencia; S = Cantabria (Santander).
voucher taken of bold (underlined) taxa.

CONFERENCE REPORT

BSBI Spring Conference on alien trees and shrubs, Berwick-upon-Tweed, 9th - 11th May

GWYNN ELLIS & MICHAEL BRAITHWAITE

Rarely has a BSBI meeting been held in such a grand setting. With chandeliers glittering overhead in the Guild Hall the President, Michael Braithwaite, welcomed 86 members and guests from several local societies and remarked on the excellent turnout. After a brief commentary on George Johnston, a former Mayor of Berwick and founder of the Berwick Naturalists' Club in 1831, he handed over to Jane Croft, BSBI Vice-president and chair of the morning session.

She introduced the first speaker, Jeremy Ison, who confessed that, although a member for over 30 years, this was the first time he had assisted the BSBI on a specific project – a BSBI report on *The status of some alien trees and shrubs in Britain*. The uneven treatment of alien taxa in the *New atlas* had prompted the sending of a questionnaire over the winter period to all vice-county recorders asking for such information as: which alien trees and shrubs were becoming naturalised (not just planted), what habitats were being colonised by naturalising species, and for any changes in patterns of planting.

Results were received from 48 vice-counties and of the 148 taxa included in the survey, 112 were reported to be naturalised somewhere, and all had regenerated somewhere to some extent whether vegetatively or by seed.

Amongst the problems, it was noted that *Picea sitchensis* (Sitka Spruce) was widely recorded as having a 'weedy' tendency, frequently colonising moorland habitats. *Pinus contorta* (Lodgepole Pine) regenerated well in wetter vice-counties. *Quercus cerris* (Turkey Oak) and *Q. ilex* (Holm Oak) were both reported to be spreading into lowland heaths in south-west England. *Pseudotsuga menziesii* (Douglas Fir) was regenerating well and becoming naturalised in many southern vice-counties.

Biomass plantings were not well recorded, due to the difficulties in visiting sites and in determining which taxa are involved in the *Salix* hybrid plantations.

The species most widely reported as regenerating were similar to those most widely reported as naturalised, with the addition of three of the species that spread vegetatively to form large patches: *Fallopia japonica* (Japanese Knotweed), *F. sachalinensis* (Sachalin Knotweed) and *Spiraea* agg.

One of the main aims of the survey was to stimulate the study of regeneration of alien trees and shrubs and it is hoped that this is indeed the case.

The next speaker was Maggie Magee, formerly of FWAG, but newly self-employed as a consultant, who gave a fascinating talk on species selection and sourcing for farm woodlands. Farmers have long relied on native woodlands as a source of timber for fencing and buildings, but only where grazing pressure has been greatest have they needed to look at re-planting woodland – Elm, Ash and Holly are all readily eaten by sheep.

In the nineteenth century new species of tree were introduced from foreign parts and many of these were planted by owners of great estates and became the mainstay of planted trees in woodland. We now have semi-natural woodlands and plantations. Some of the trees planted were at the whim of the forester in charge at the time. Blocks of conifers were planted as shelter-belts, often monocultures of Sitka Spruce or larches, with (occasionally) some broad-leaved trees at the margins.

Today, species choice is important, but so is proper management – woodland needs to be thinned if an economic timber crop is to be the end product. A woodland of native species needs to be planted at random, with Birch, Hazel and Blackthorn, for example, with no

regular rows, and this is not always easy. Re-planting of a clear-felled plantation poses particular problems, and care needs to be taken that the mix and density of species is done sensitively and enhances the landscape.

Biomass plantations are a flourishing industry. Three to four different hybrids involving *Salix alba* (White Willow) are most frequently used, which put on over six feet in a season and are normally cleared after three years. Different cultures are used to try and avoid a build up of pests and diseases.

Woods are also often used for farming livestock, especially pigs, and new native broadleaved plantations attract higher grants than conifers. The Forestry Commission have a 'Field Survey' pack to help farmers decide which taxa are best to plant in a particular habitat, and it is vitally important to take into account elevation, wind factor, drainage and surrounding trees. The minimum planting rate is 1,100 stems per hectare, and it is important to try to avoid planting in species rich habitats.

Britain is divided into four main seed zones, which are themselves divided into 24 smaller zones, for providing seeds for planting in specific areas, and it is important that the provenance of all seeds and saplings is recorded for all plantations. It is preferable to use seed from local souces where practicable.

Magee then went on to discuss what taxa we should be planting now, to take into account climate change, where we might, in the future, have vineyards rather than barley fields. Some research is presently being carried out, and it is suggested that seed from different provenances, especially from zones further south, might be used in addition to local strains, in order to widen the genetic base. It was also suggested that regeneration of local stock be used as this was obviously well suited to the present environment. She concluded by mentioning that a large estate in the Scottish borders was conducting trials on growing stands of *Eucalyptus*.

The next speaker was Clare O'Reilly who gave a stimulating account on '*Identifying some look-alike native and alien trees & shrubs*', which she said was inspired by Peter Sell's 2006 article in *Nature in Cambridgeshire*, 48, as reprinted in *BSBI News* **105** (April, 2007).

She first concentrated on three very similar species of cherry with racemose inflorescences of white flowers – *Prunus padus* (Bird-cherry) (native), *P. serotina* (Rum Cherry) and *P. virginiana* (Choke Cherry). The fruits of the latter were different from the other two, but as it is not mentioned in the 2nd edn of Stace's *New flora of the British Isles*, it is likely to key out to *P. padus*. A sheet of colour photocopies of four Rosaceae leaves was handed out, and conference members were invited to pick the odd one out, which provoked much discussion and disagreement before Clare revealed that three of the leaves belonged to the species mentioned above and the fourth to *Amelanchier lamarckii*. There were in fact two odd ones out – taxonomically *Amelanchier* (not a *Prunus*), and biogeographically *Prunus padus* (native). Clare went on to mention the brilliant new *Vegetative key to the British flora* by John Poland and Eric Clement, from which the vegetative characters she used to separate the taxa were taken, and remarked that it had taken her up to 'warp speed' in identifying plants to subspecies level in some areas, based purely on vegetative characters, although the book was very much a 'work in progress', and it was vital that the authors receive feedback so that any errors can be corrected in the next edition!

The next group to be dealt with was *Corylus avellana* variants, with two alien variants often planted alongside the native one. Clare asked: 'Does it matter?', and went on to explain that infraspecific taxa are expressly included as part of biodiversity under the Rio Convention on Biological Diversity 1992, so arguably we should 'count' them as part of the diversity in a hedge, even if they are non-native. But this affects judgements about the age (and therefore often conservation value) of hedges – clearly the method used to determine an 'ancient' hedgerow of counting the number of species per 30m section is flawed where there are multiple non-native taxa. The method is also unclear on whether hybrids and infraspecific taxa 'count' or not. Oliver Rackham has raised this point in his recent

New Naturalists book on ancient woodland. Most surveyors don't have the taxonomic skills to identify hybrids or infraspecific taxa, but this is not a reason to ignore them!! We should arguably just use better surveyors in order to comply with our international obligations on conserving biodiversity – there are plenty of them freelance these days.

The next group mentioned by Clare was *Crataegus monogyna* (Hawthorn), with its four subspecies and three varieties, which all grow in Cambridgeshire hedges, but only one of which is native. Again she asked: 'Does it matter?', and pointed out that non-native taxa often flower much earlier than the native, and wondered if there was an issue relating to the Woodland Trust's Phenology Network recording scheme where the first flowering of hawthorn will have many erroneous records of the non-native subspecies. A Phenology Network statistician argued that, due to the size of the data set for hawthorn (over 100,000 records) any 'bias' caused by recording the wrong taxon would not influence the outcome. It was also mentioned that the need for planting trees and shrubs of local provenance has become well-known and that most plantings are of native origin. While the statistical argument may hold, the latter claim does not. Nurseries are claiming, usually in good faith, to supply native plants, but they often are not – they simply do not have the identification skills to know otherwise. Clare emphasised this point by remarking that when she had tried to get *Prunus serotina* and *P. virginiana* specimens from nurseries, she found them all labelled *P. padus*, because, she was told, 'that is what people want'!

After the Society's AGM, posing for a group photograph (see inside Front Cover), and an excellent buffet lunch, delegates re-assembled for the afternoon session, chaired by another vice-president, John Bailey. He introduced the first speaker, James Cullen, the Director of the Stanley Smith (UK) Horticultural Trust, who gave an intriguing talk on the taxonomy of *Rhododendron ponticum* (Rhododendron) as naturalised in Britain.

Rhododendron ponticum is a curiously unknown plant, considering its widespread distribution in the British Isles, and recent genetic analyses have indicated that our taxon is a mixture of three, maybe four species. There are over 1000 species of *Rhododendron* recognised today, with two main centres of population in New Guinea and China. *Rhododendron* taxa can be split into two main groups based on the presence or absence of tiny scales on the underside of the leaves, and while 'scaly' taxa can hybridise freely with other 'scaly' taxa, and 'non-scaly' with 'non-scaly', producing hybrids with great hybrid vigour, it is very difficult to get hybrids between the two groups.

Rhododendron ponticum is a rather uniform 'non-scaly' species, with leaves completely hairless beneath. British material is very vigorous and, unlike true *Rhododendron ponticum*, all British material comes from the Iberian peninsula, with slightly hairy (not hairless) ovaries.

The British taxon is a hybrid produced in the second half of the 19th Century by crossing *R. ponticum* with *R. catawbiense*, *R. maximum* and possibly *R. macrophyllum*, then backcrossing the resultant progeny with the parents and growing all of them side by side in plots, allowing cross-pollination to occur. This produced a whole range of hybrids with various characteristics, and it is now impossible to segregate any taxa within this '*ponticum* soup'. This was the result of nurserymen wanting a hardy version of *R. ponticum*. This *ponticum* hybrid was also used as rootstock for better and more desirable taxa as they were introduced from abroad, and the rootstock often outlived the graft taxon and can still be seen today. *Rhododendron* was also found to be very good for pheasant cover and was widely planted for that purpose.

The British hybrid, soon to be given a new name, is very difficult to eradicate and involves cutting back the parts above ground, three years of ploughing and the application of very nasty chemicals. The moral of this tale is not to indulge in genetic manipulation – you might create a monster!

The next speaker, former BSBI Coordinator Cameron Crook, gave a masterful introduction to the identification of conifers in Britain. He

started by stressing that there are only five native conifer taxa in Britain but over eighty alien taxa may be encountered and, although a prominent part of the landscape, are often overlooked. Conifers are important due to their influence upon semi-natural vegetation and other organisms.

The aim of the talk was to provide a general introduction to conifers in Britain, together with an outline of the techniques used for their correct identification. He went on to explain that the Gymnospermae comprise three distinct Orders: Coniferales (= Pinales), Ginkgoales and Taxales, and that the name 'conifers' comes from the shape of the cone or possibly from the conical form of growth. Most, but not all, conifers are tall with evergreen needles. They occur in widely different habitats (e.g. tundra, boreal forest, mountains, arid land and temperate-rain forest), and the feature common to most is their tolerance of drought, low nutrient levels, low light levels, and heavy metals.

He then stressed that to aid identification it was useful to reduce the number of possible species, to know which taxa were most likely to be encountered in your area and to learn to separate the genera, as each has only a few frequently encountered taxa and some are represented by only one or two taxa. These and their special characteristics were then detailed.

Pinus: with (relatively) long, needle-like leaves, born in bundles of two, three or five, on very short shoots; *Picea*: with rigid, sharp, needle-like leaves born on peg-like structures which remain when leaves drop; *Pseudotsuga*: with needle-like leaves, un-stalked with no 'pegs' that leave round scars when removed, and winter buds sharply pointed with papery scales; *Abies*: with leathery needle-like leaves, un-stalked with no 'pegs' that leave round scars when removed, and winter buds rounded at tip; *Larix*: with soft, deciduous leaves with dorso-ventral flattening that are born in whorls of >10 on short peg-like shoots; *Cedrus*: with stiff, evergreen leaves, with 3-5 angles in cross-section that are born in whorls of 10 or more on short peg like shoots; *Chamaecyparis*: with scale-like opposite leaves, with resinous smell in flat (2D) fronds, and cones small and woody (<12mm); *Cupressus*: with scale-like, opposite leaves in 3D fronds, and cones woody (15-20mm); ×*Cupressocyparis*: with features somewhere between *Chamaecyparis* and *Cupressus*; *Thuja* with scale-like opposite leaves in flat fronds with a sweet fruity smell when fresh, and cones upright and elongated (resembling small urns); *Juniperus*: with three dimensional twigs, leaves in whorls of three around the stem in juvenile foliage with mature foliage adpressed to stem, and a berry-like cone; *Sequoiadendron*: with sharp leaves, broader than thick, born singly along shoot; bark soft, and very spongy; *Cryptomeria*: with sharp, thicker than broad leaves born singly along shoot; bark stringy; *Araucaria*: with triangular, hard, sharp- pointed leaves over 1cm wide at base and unlike any other tree occurring in Britain; *Taxus*: with needle-like leaves born singly on the stem, narrowed at base and tip; winter buds green surrounded by numerous small leaves, and with red berries and non-resinous wood; *Tsuga*: with single leaves, irregular in length, with short petiole, adpressed to shoot, and with pale stripes on the underside.

Cameron then further stressed that in conifer identification several features must be checked which are seldom used in field botany (e.g. growth form, smell, bark). Flowers (strobili) and fruits (cones) are often inconspicuous and of less use in identification.

Key identification features were then listed:

Leaf form and arrangement: scale-like (*Thuja*, *Cupressus*, *Chameacyparis*, ×*Cupressocyparis*); needle-like in whorls on short shoots: (*Cedrus*, *Larix*); needle-like, single (*Pseudotsuga*, *Abies*, *Picea*, *Taxus*); needle-like, bundles (fascicles) of 2, 3 or 5 (*Pinus*); needle-like, in threes (*Juniperus*, also in the juvenile foliage of *Cupressus* & *Chamaecyparis*).

Leaf features: stomatal lines on leaf underside (often white or pale blue bands e.g. *Abies*, *Picea, Tsuga*); resin canals in cross-section of leaf (e.g. *Picea*, *Abies*); leaf smell, very important in Cupressaceae.

Cone size, shape, texture, colour: distinctive in most genera and species; prickles on cone scale (e.g. *Cupressus*, *Pinus contorta*).

Twig characteristics: pubescence, present or absent, colour, density, whether in grooves or all over the twig etc.; peg-like short shoots, present (e.g. *Cedrus, Larix*); colour of twig, especially new growth.

Bud: shape, i.e. pointed or blunt; colour and layout of bud scales; texture - smooth, resinous, papery.

Bark: deeply fissured (some *Pinus*); flaky (some *Pinus, Picea, Abies*); soft and spongy (*Sequoiadendron*); stringy (*Cryptomeria*); presence of resin blisters (*Abies*).

Finally Cameron stated that there was no substitute for examining trees *in situ* and handling samples back at base to get a real feel for this group of taxa. Members should run through one of the field keys which cover British conifers (e.g. Stace, 1997; Mitchell, 1972 & 1974; Poland & Clement, 2009), and once the identity has been determined, the specimen should be re-examined (either whole tree or voucher) in a more personalised way and notes made of key features which, to them, make it distinct from other species.

John Bailey then introduced the last speaker of the afternoon session, Kevin Rideout, NTS ranger at St Abbs Head National Nature Reserve, which was one of the venues for a meeting on Monday. He gave an entertaining account of the nature reserve, starting with a colourful run-through of plants and habitats. He explained that the headland is a big chunk of volcanic larva surrounded by sedimentary rock and the hard volcanic rocks provide impressive sea cliffs. Thrift, Sea Campion and Roseroot grow on the cliffs, together with Scots Lovage, here near its southern limit. Inland cliffs and rocky outcrops provide habitats for Spring Sandwort and Purple Milk-vetch. The grassland has been much modified by human activity but is still species-rich, with masses of Thrift and Hairbells, and also many ant-hills with quite a diversity of plants on their summits, including Wild Thyme and Lady's-bedstraw. Rock-rose is also prevalent and is the food plant of the Northern Brown Argus butterfly.

He explained that sheep were the main management tools, except in late spring and early summer. To be successful, overgrazing, which can open the grassland to erosion, and undergrazing, which can allow coarse grasses to proliferate, must be avoided. Sheep must also be encouraged to graze where you want them to, not where they want to. With reduced grazing, Meadow Saxifrage and Common Whitlowgrass have declined. In the past there was a tendency to manage too much and the correct approach now appears to be to 'do nothing' as the 'default setting' and see how that works before doing anything else. The only exception is gorse clearance, which is an ongoing task.

A large freshwater area used to be bog land but was drained around 1900, resulting in the disappearance of Lesser Water-plantain. However, the aquatic environment has improved the biodiversity of the site. Kitiwakes enjoy bathing in the fresh water and their droppings add nutrients. The ungrazed side of the mireloch has been given over to tree planting, during the early 20th century, mainly Sycamore, Hawthorn and Grey Poplar. Then in the 1970s, Sea Buckthorn and Japanese Rose were planted, mainly to attract birds, and now the emphasis is on planting native Oaks and Birch.

The meeting ended with an open forum for discussion. The many issues raised included: the need to monitor the spread of *Robinia pseudoacacia*; the fertility of Leyland Cypress; the zigzag branching pattern of *Thuja*; the importance of smell in identifying conifers; a mnemonic for splitting *Picea* and *Abies* – *Picea* has pegs and *Abies* ain't (referring to the presence or absence of 'pegs' from which leaves arise); the fact that Roe Deer and a beetle eat *Rhododendron* leaves, but not in sufficient quantity to do any harm; the mounting bureaucracy in getting grants and planning applications for planting trees, although it was recognised that some control was needed; the impending attack on *Aesculus hippocastanum* by an aggressive fungus disease that could decimate populations in southern Britain, aided by a small moth from the Balkans whose larvae were leaf miners; the use of cows instead of

sheep in habitat management and finally the possible use of Japanese Knotweed in biomass plantations.

Parties were then made up to walk the town walls. During the walks *Fraxinus ornus* was noted self-seeding in a corporation planting. Dinner followed in the Conundrum restaurant, close to the spot where John Ray found *Tofieldia pusilla* in 1671. Table decorations of fresh Bluebells had providentially been provided by the owner's mother, little knowing that they matched the Society's logo, and the evening ended with a programme on the Northumbrian pipes by newly-elected BSBI Council member Chris Metherell and fellow members of Piper's Wynd.

On Sunday a party of just over 50 members and visitors first visited High Cocklaw farm, where John and Sandy Izat showed us how they had developed woodland and hedgerows on their farm over twenty years from almost nothing. The plantings were mainly of a traditional mix of species with a little '*Leylandii*' used as a windbreak. They maintained the plantings themselves to a high standard, utilising the thinnings for fuel. There were a few more exotic species such as *Chamaecyparis nootkatensis* (Nootka Cypress). Delegates were asked to consider how they would approach the field-recording of such woodlands. Curiosity was aroused by a strip of *Cichorium intybus* (Chicory) surviving from a 2008 wild-bird-mix sowing.

Next we were welcomed at Harry Frew's Cheviot Trees nursery. Over 100 species are mass-sown in trays of plastic cells in high-tech polytunnels. The customers are foresters and farmers in Britain and overseas. Less usual species noted included *Juniperus communis* (Juniper) for conservation plantings, *Ulex europaeus* (Gorse) for golf courses, the silver-firs *Abies nordmanniana* and *A. fraseri* for Christmas trees and *Cotoneaster lacteus* (Late Cotoneaster) for hedging. *Eucalyptus gunnii*, *Miscanthus sinensis*, *Salix* hybrids and two unfamiliar *Populus* clones were being trialled for biomass. The *Corylus* (hazel) grown is mainly Kent cobnuts, as Scottish native Hazels germinate poorly and nut output is low.

The afternoon was spent at Kyloe woods, almost 1,000 acres of conifers managed by Scottish Woodlands for the Fleming family, with harvesting by small coupes rather than large-scale clear-felling. Peter Hale and Ian Robinson walked us through an area near the fine crags of the whin sill where many of the more exotic of the 100 conifer species in the woods introduced by the Leyland family well over a century ago have been allowed to mature. Many species usually encountered as single specimens, if at all, are here planted in numbers. Notable species included *Araucaria araucana* (Monkey-puzzle), which had naturalised on the crags and self-seeded much more widely; *Pinus muricata* (Bishop Pine), with old cones surviving for many decades and thus being noted on the main trunk as well as branches (as reported by A F Mitchell); a major stand of *Sequoiadendron giganteum* (Wellingtonia); and *Picea orientalis* (Oriental Spruce), with short non-prickly needles. The ground flora under the mature conifers was notably varied, giving the whole very much the feeling of a true living woodland. In the more commercial forestry, regeneration is used as far as possible to re-stock after felling, with a mixture of species being grown together. *Pseudotsuga menziesii* is a favoured crop species but *Tsuga heterophylla* (Western Hemlock) self-seeds more abundantly and is something of a problem.

On Monday a party of ten visited St Abbs Head NNR, where we were welcomed by the ranger Kevin Rideout. The highlights were the bird-cliffs, with massed Guillemots and Razorbills, colonies of *Sedum rosea* (Roseroot) on cliffs near the lighthouse, *Astragalus danicus* (Purple Milk-vetch) just coming into flower, *Minuartia verna* (Spring Sandwort) on inland cliffs and a hybrid horsetail *Equisetum* ×*litorale* by Mire Loch, where a Wall Brown butterfly was seen. These butterflies have only recently colonised north into Berwickshire.

A further party of forty visited Lindisfarne [no report available].

PROFILE OF NEW HONORARY MEMBER

Ann Conolly

JOHN BAILEY, *Biology Department, University of Leicester, LE1 7RH*

Born in 1917, Ann Conolly took an MA at Newham College Cambridge in the 1930s, at a time when degrees were not awarded to women. Late in her retirement, when Cambridge made amends for this omission, she greatly enjoyed her delayed degree ceremony. Ann undertook postgraduate research in quaternary botany at Cambridge with Professor Godwin, earning particular acknowledgement in Godwin's groundbreaking book, the *History of the British Flora* in 1956. Apparently destined for a successful career in Quaternary botany, Ann was appointed to a lectureship at the then University College of Leicester in January 1947. Shortly afterwards in 1948 she joined the BSBI, and is currently the 10th longest standing member of the society. Whilst she maintained her studies of plant remains up to her retirement, her last significant paper in the area was in 1970. Always one to spot a connection, however remote, Ann's interests multiplied as time went on, expanding into two other aspects of the British flora. *The Flora of the Lleyn Peninsula* was her life's work, commenced in the early 1950s and continued as long as she was able to drive long distances. In Wales Ann owns a remote farmhouse in the middle of a field at the base of Garn Fadryn, and many is the botanist who has blessed Ann for the comfortable free accommodation so generously offered in that idyllic spot. After retirement from the university, Ann was faced with the prospect of emptying the office and laboratory that she had occupied for many years. Ann never threw anything away, and as she cheerfully lugged away 40 year old boxes of soil samples to the cottage, remarked that if she didn't get around to looking at them they would be a welcome addition to the thin soil of her Welsh garden. Unfortunately, the temptation for just one more recording season, her absolute perfectionism and her many other interests, meant the Flora never got written. The area of her Flora also included the Island of Bardsey and Ann was co-opted onto the council as a botanist, and was also active in the Welsh meetings of the society. Through the work on the Flora Ann developed other 'spin offs', the distribution of *Lamium album* in Wales, the association of medicinal plants with ancient habitation, and perhaps most significantly the history and distribution of those large alien Polygonaceous herbs – most notably Japanese Knotweed – leading to her much cited 1977 paper. In the late 1970s the arrival of a new technician in the Botany department led to a long-lived and extremely successfully collaboration on Japanese Knotweed and all its works; happily crowned by the surprise publication of the name *Fallopia* ×*conollyana* to fortuitously coincide with her 84th birthday. Ann's research interests and collaborations are closely mirrored by the titles of her AEM exhibits. A formidable performer at Exhibition meetings (as those unwise enough to interrupt her whilst she was preparing her exhibit will testify!), she produced no less than 44 exhibits in 51 years. In spite of her professional status and connections, Ann would genially start up a conversation with absolutely anyone she met, often discovering unexpected connections, and receiving new leads in her investigations. Dressing for comfort rather than style, for many years the slightly stooped figure in her 'hallmark' stout boots, ankle socks, tattered anorak, and adder stick was instantly recognisable at BSBI field meetings (see inside Back Cover).

Ann was reported to be very pleased about the news of her Honorary Membership - exclaiming that she wouldn't have to pay the subscription any more! She is currently in poor physical health and has been moved from her house to a nursing home. Her new address

is Harley Grange, 25 Elms Road, Leicester, LE2 3JD (0116 270 9946).

Anyone wishing to visit should first contact the solicitor: Mr Louis Brandt, Wilson & Butler, 8 Huntingdon Street, St Neots, PE19 1BH (01480 219229) in order to get permission to visit, since access to her is strictly restricted, and most of her old friends are forbidden to visit.

NEWS OF MEMBERS

Yolande Heslop-Harrison

JOHN BAILEY, *Biology Department, University of Leicester, LE1 7RH*

Yolande Heslop-Harrison is pictured at her 90th Birthday party in Leicester on 18 July 2009 (see inside Back Cover). 30 friends and family were assembled to see her presented with a birthday cake in the shape of a *Lilium* pollen grain! Yolande is still very active and living unaided in her own home. In addition to the fundamental research into pollination biology that she did with her husband, Yolande also has her own specialist research areas of insectivorous plants, the genus *Rubus* and British water lilies. Her most recent paper, the Biological Flora account of *Pinguicula* was published in 2004, and she is still involved in writing papers. Yolande is also a trustee of 'Caring for God's Acres', a charity which promotes the conservation of the biodiversity of Britain's unique churchyards. In addition to producing well over a hundred scientific papers, she also found time to produce the next generation of Heslop-Harrison professors – Pat – who lives nearby with his wife Trude and boys William and George.

[Editor's note – Is it something about the air in Leicester? – this is the 3rd 90th botanical birthday of a Leicester botanist in as many years!]

Paul Green

IAN GREEN, *19 Bogmoor Road, Bogmoor, Spey Bay, Fochabers, Moray, IV32 7PA*

Paul Green was recently presented with the second Distinguished Recorder Award of Ireland 2009 by Prof. Liam Downey of the National Biodiversity Data Centre. This is an annual award that is to acknowledge the important contribution that recorders make to the conservation of biological diversity in Ireland. It was awarded especially for Paul's botanical work in Co. Waterford which culminated in his magnificent *Flora of County Waterford*. Looking on in the photo (see inside Back Cover) are Dr Liam Lysaght and Dr Una Fitzpatrick.

BOOK NOTES

British field crops: a pocket guide to the identification, history and uses of arable crops in Great Britain

DR SALLY FRANCIS: (www.britishfieldcrops.co.uk)

Dr Sally Francis has completely updated and expanded her popular title *British field crops*, first published in 2005. The second edition contains information on 80 crop species and covers established broad-acre crops like wheat and barley, alternative crops like miscanthus and borage and also 'forgotten' crops like rivet wheat and bristle-pointed oats. It details the crop's identification features, correct scientific name, origins and history, uses, plus

information on sowing and harvest periods, estimates of acreages planted and the regions in which each crop may be found. The book has been carefully updated using new information from farmers, commercial companies, agricultural industry organisations, academics and the latest research findings. Illustrated throughout with crisp, clear botanical drawings taken from life, *British field crops* is the only one-stop-shop for essential information on the wide range of food, feed, industrial, energy, game cover, green manure and other crops now being grown on British farms.

British field crops: a pocket guide to the identification, history and uses of arable crops in Great Britain. ISBN 978-0-9550466-2-9. 104 pages including identification keys and glossary. RRP £12. Available from Summerfield Books or directly from the author.

BSBI/WFS PRESIDENTS' PRIZE

MICHAEL BRAITHWAITE, President BSBI

Below is the text of the President's Prize Award address, AGM, 2009:

"It is BSBI's President's turn to award the Presidents' Prize this year, so it falls to me. This is a truly invidious task as it has been a good year for new books, especially those that have really tried to communicate, from the beautiful but technical *British alpine hawkweeds* by David Tennant and Tim Rich to the colourful *Picture guide to the wild flowers of north-east Yorkshire* by Nan Sykes. As I write this I await John Poland's new book on vegetative identification, but I for one will wish to show my respect for his work by using his keys for a season or so before deciding what value to place on it.

One that really captured my imagination was Paul Green's *Flora of County Waterford.* What sets it apart is not just the book, with its welcoming section on Paul's favourite places to botanise, but the project behind it, with so much achieved in just ten years. He has shared his data freely and efficiently, not just through his Flora and with the BSBI databases, but through the website of the fine new Irish National Biodiversity Data Centre.

But I am not awarding him the prize as he had one in 1997 with his previous Flora. I am awarding the prize to a book that I purchased at a railway station, but not the one in Berwick! It is *Wild food*, by Ray Mears and Gordon Hillman, and is the book of the BBC TV series. This was about the only TV programme I can remember that treats our native British plants with genuine love and attention to detail. The book goes further. Gordon Hillman has worked for 23 years at the Department of Nutrition and Dietetics at King's College, London, on the nutrient status of wild plant foods, especially those used by stone-age man, and his species-by-species accounts are enthralling, combining a simple appeal with real science. While Richard Mabey covered some of this ground in 1972 with his *Food for free*, these authors put a whole new slant on the subject. I can now vouch for the value of Golden-saxifrage *Chrysosplenium* as a salad plant and have had fun nibbling the tasty stem-pith of Rosebay *Chamerion.* Ray Mears, with his amazing bush-craft, has lifted the whole to popular fame. The two together have done a real service to botany.

In awarding them the prize I will invite them to mount an exhibit at our London exhibition meeting in the autumn; meanwhile I am putting my copy of the book on a table for you to have a look at today".

RECORDERS AND RECORDING

Panel of Referees and Specialists

MARY CLARE SHEAHAN, *61 Westmoreland Road, Barnes, London SW13 9RZ*; mc_sheahan@hotmail.com

We have two new referees:

Mike Bell will do bamboos. His entry reads as follows:

Bambusoideae: Mr M. Bell. Information is needed on the habitat, the height of the clump, whether it has an open structure or close compact canes; the size of branches, the number at each node and their angle to the stem; the size, texture and colour of leaves, both above and below. His address is Mr M. Bell, Beecroft, 3 Clarence Terrace, Park Road,Wadebridge, Cornwall PL27 7NG

Rodney Burton has offered to look at records from S.W. Turkey. His address is in the Yearbook.

Also:

Allen Coombes has resigned as referee for *Quercus*, as he has moved to Mexico. However, he is prepared to help by looking at images of specimens - his new email address is: allen.coombes@hotmail.com

Mike Hardman, referee for *Viola*, has moved to Cyprus. His new address is: Tremithos B17-201, 8270 Tremithousa, Paphos, Cyprus. His new email address is: mike@mikehardman.com.

Dr E Charles Nelson the referee for Ericaceae and Maritime Drift Seeds has a new email address – tippitiwitchet@phonecoop.coop

Panel of Vice-county Recorders

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

Changes

v.c.38 (Warks). Vacant. We very much regret to announce the death of Dr James Partridge, recorder since 2004.

v.c.96. (Easterness). Mr Waddell retires (Ms S. Smyth continues as before)

OBITUARY NOTES

MARY BRIGGS, *9 Arun Prospect, Pulborough, West Sussex, RH20 1AL*

With regret we report the death of **Dr James Partridge** of Leamington Spa, Warwickshire who joined the Society in 1986 and had been our Recorder for v.c. 38 since 2004.

It is also with much regret that we report the deaths of the following members notified to us since the last issue: **Mr C.J. Bruxner** of King's Lynn, Norfolk, a member since 1973; **Mrs P.D. Law** of Guisborough, Cleveland, a member since 1995; **Mr F.T. Palmer** of Cowbridge, Vale of Glamorgan, a member since 1972; **Dr L.E. Perrins** of St Albans, Hertfordshire, a member since 1962; **Mr W.F. Robertson** of Glenalmond, Perth, a member since 1991; **Mr M. Robinson** of Macclesfield, Cheshire, a member since 1983; **Mr P.J. Wisniewski** of Burscough, Lancashire, a member since 2003 and **Mrs A.C. Macpherson**, a family member since 1991 and the wife of our former President Peter Macpherson. We send our sympathy to him and to the families of all those members mentioned above.

Also with regret we report the death of **Prof. C.J. Humphries**; although not a member of BSBI, Chris was known to many as a botanist at the Natural History Museum where he was part of the B.M. Evolutionary Biology group. BSBI rare plant recording was helpful to Chris in planning his project on mapping pictorially Rare Species of the World.

IMPORTANT NOTICE

Results of the questionnaire about the Annual Exhibition Meeting

JOHN BAILEY, *Secretary: Meetings Committee, Biology Department, University of Leicester, LE1 7RH* (jpb@le.ac.uk)

Firstly we would like to thank the 45 members who took the time to answer and return the questionnaire; their responses are summarised in the Table. The reason for the different categories of expertise and length of membership was not to embarrass anyone, but to try and see if newer, less experienced members were looking for something different from more experienced members at our Exhibition meetings. Whilst we don't want to place too much weight on such a small sample of the membership, it is all we have to go on at the moment. There are certainly some clear patterns – all categories were in favour of slides and workshops. Support for lectures was more equivocal, though clearly favoured more by our newer members. In hindsight it was perhaps a mistake to say 'lectures after the meeting' in the questionnaire, since there is no reason why they couldn't be integrated into the meeting. Similarly the question 'are you satisfied with the current AEM?' may have had the unintended effect of putting off responses from people who had not previously attended one, and would perhaps have been better phrased as 'what would you like to find at an AEM?'. There was also support for a meal from some categories of membership, but whilst practical considerations make this too difficult in London it could certainly be explored in the out of London meetings.

The BSBI is, of course, a very 'broad church' and there is no necessity that every member should want exactly the same things from a meeting. It is then more a question of: what should be available for members to chose from? Another point is that new technology is blurring the boundaries between such previously separate categories as exhibit, lecture and slide show. The Meetings Committee is committed to keeping the best components of previous exhibition meeting formats and to incorporating new features in order to make future AEMs more inclusive and relevant for our membership.

We are particularly keen to hear from members who have not yet attended an Exhibition Meeting, about what would encourage them to come, and what they would find useful.

	Expertise 1 & 2		Expertise 3 & 4		Joined before 1994		Joined 1994 onwards		Total	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Satisfied with AEM	65%	35%	88%	12%	77%	23%	70%	30%	70%	30%
Lectures	36%	64%	78%	22%	39%	61%	50%	50%	48%	52%
Meal	41%	49%	44%	56%	54%	46%	27%	63%	43%	57%
Workshops	65%	35%	77%	23%	58%	42%	92%	8%	63%	37%
Slides	75%	25%	90%	10%	73%	27%	83%	17%	80%	20%

NOTES FROM THE OFFICERS

BSBI Plant Unit

KEVIN WALKER, *BSBI Plant Unit, c/o 97 Dragon Parade, Harrogate, North Yorkshire HG1 5DG.* 01423 544902 (mon-weds) 01904 328805 (thurs & fri), kevinwalker@bsbi.org.uk

Threatened Plants Project

Many thanks to those of you who have been out surveying TPP species this summer. I am now starting to receive lots of completed forms, and going by the number we should be on course to match last year's total of over 750. I have also received quite a number of completed forms for last year's species. These will be included in the analyses so please carry on surveying species from previous years if you run out of time. The more data we receive for a species the more meaningful the results will be.

Please send completed forms to me at the address given above. Ideally we would like forms for 2009 species by the end of September so we have plenty of time to input the data. We are just about to start analyses of the 2008 species. Although this is later than we hoped we should therefore be able to report preliminary results in the next *News*.

Next year's species

Many recorders have asked if we can provide the list of species for next year much earlier so that fieldwork can be scheduled into the meeting programmes. So here they are:

Chrysanthemum segetum (Corn Marigold)
Hordeum marinum (Sea Barley)
Juniperus communis (Common Juniper) (lowland England only)
Melittis melissophyllum (Bastard Balm)
Meum athamanticum (Spignel)
Herminium monorchis (Musk Orchid)
Polystichum lonchitis (Holly-fern)
Sibbaldia procumbens (Sibbaldia)
Sium latifolium (Greater Water-parsnip)
Viola lactea (Pale Dog-violet)

You will notice a northern and western bias in the selection for 2010. This was intentional as we felt that there had been so many south-easterners in the previous two years. We have also tried to cover more habitats, in particular uplands as we haven't really covered these before. *Meum* is a good example of a northern species which seems to be genuinely threatened away from its core areas, but for reasons that remain unclear. The two montane species chosen, *Sibbaldia* and *Polystichum* were both classified as 'threatened' in the recent Red List again for reasons that were not entirely obvious. Declines might reflect an element of under-recording but also real threats posed by over-grazing or even climate change. We considered a few other options but both species seemed like indicators of the health of our montane flora: *Sibbaldia* because it might be vulnerable to changes in snow-patch cover and *Polystichum* because it seems so palatable to deer and livestock across a wider geographic range. *Viola lactea* is probably under-recorded but may be genuinely threatened by hybridisation combined with a loss of maritime heath to scrub. *Melittis* on the other hand seems to be declining due to lack of management of it's wood edge habitat although, as with *Campanula patula* (Spreading Bellflower), this needs to be investigated through more detailed survey.

We have always wanted to include an arable species and after long deliberation *Chrysanthemum* was selected. Other strong candidates included *Stachys arvensis* (Field Woundwort) and *Anthemis arvensis* (Corn Chamomile) but Corn Marigold was favoured because it is still so widespread, occurring from Cornwall to Shetland, its distribution is less likely to be affected by planting (as opposed to Cornflower (*Centaurea cyanus*) or Corncockle (*Agrostemma githago*)) and there are still sufficient populations for it to provide an indication of the state of low intensity farming systems throughout the UK.

Over the next two years we will be working with Plantlife on a project to assess the status

of lowland populations of Juniper in England. Consequently, we have included these populations for next year to run alongside a more intensive survey of 'key sites' being carried out by Plantlife. This uses a rather more detailed survey method, focusing on the size, age, regeneration of individuals but the results from the TPP will be vital in providing a more comprehensive picture of what is happening to the species across its lowland range.

Although *Sium latifolium* has received a lot of attention in the past we are not aware of any comprehensive analyses of its status and trends. We therefore felt that its inclusion would add greatly to our understanding the threats facing many fenland species. Likewise *Hordeum marinum* occurs in a suite of threatened coastal species for which we currently have very little information on recent trends (e.g. *Bupleurum tenuissimum* (Slender Hare's-ear), *Carex divisa* (Divided Sedge), *Spartina maritima* (Small Cord-grass)). Detailed monitoring of *Herminium* by Terry Well's showed that this species has a cyclical life-history, apparently disappearing in some years only to return in the next. However, it does seem to be declining in some areas and it would be good to have more information on why this is the case.

Over the next few months we will be selecting the sample sites for survey in 2010. These will be circulated to VCRs in October so that field meetings can be included in the Yearbook.

Recording Strategy

Given the Coordinator's comments on the death of DC4, recorders should note that we are currently working on a plan of recording priorities for the next two decades (2010-2030). This 'strategy', for want of a better word, will provide a plan of how best to combine major recording activities such as a repeat Local Change and Atlas 3, alongside local projects as well as tricky issues such as date-classes and recording scales. The aim is not to be too prescriptive but to provide a flexibility of approach that acknowledges the great variation that exists in the intensity and practicality of recording within different parts of the country. Although there are likely to be key principles that should underpin good recording practice we expect that a workable plan will need to provide a range of options tailored to a range of local situations. Date-classes are just one example of where a 'one size fits all' approach is unlikely to work: we might expect a 10 year repeat hectad survey in a lowland county with lots of botanists but can we expect the same from a county twice the size in the uplands? And what would that tell us given the pace of ecological change in montane ecosystems? In the latter case a sampling approach, backed by targeted surveys over 20 years might be a much more realistic alternative. Watch this space.

Coordinator's Corner

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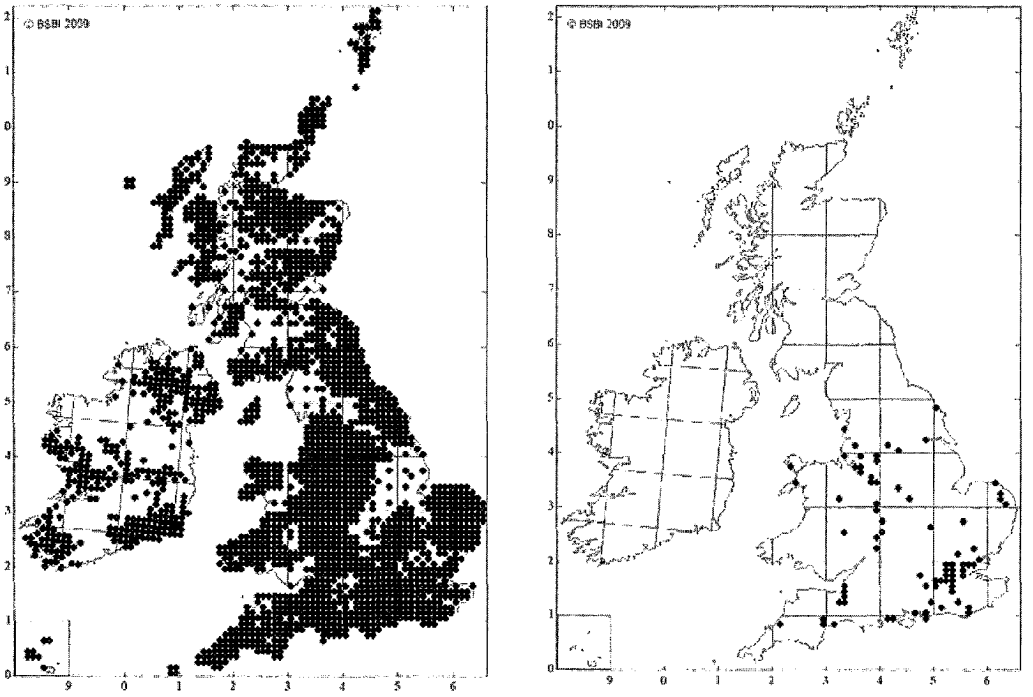
The end of date class 4 is nigh

We shall soon know whether date classes are workable or not. At the end of this year everyone should close any ongoing record cards they have open and start a new list afresh. For anyone who regularly puts their data into MapMate or another database this is not an issue because they will probably keep the full date for each record, but even they need to start thinking about a programme of re-recording over the next decade. Records Committee is going to review progress and see what the options are for using date classes to monitor change in the flora.

We would like you to use the next couple of years to finish off DC4 and encourage county recorders to submit any records that they hold. When I started working as co-ordinator, about ten years ago, I calculated that it took on average eight years for a record to make its way through to the BSBI. Now the average is less then one year, but the tail end of the graph is still fairly long. Do please send us your data as soon as you can – it is easy enough to correct errors and insert additions later on.



Maps Scheme maps of *Plantago lanceolata* (left) and *Hydrocotyle ranunculoides* (right) in Date Class 4 (2000-2009)

Looking at our maps of Ribwort Plantain, *Plantago lanceolata*, I am impressed by the level of recording in the last decade. Almost all of England has comprehensive coverage of common species. I believe Lincolnshire does have data but has not submitted it yet, as does Hertfordshire and Cambridgeshire. Cumbria is a problem because there was such an enormous effort for Halliday's Flora that it seems unlikely that it will be repeated, but I know Geoffrey has been working on getting at least the hectads resurveyed. Apart from a couple of counties, Wales is also very active. Scotland is patchy, but that has always been the case and, if we are honest about it, there is not really the need to resurvey the Highlands every decade. The rate of change is not that fast. Note the counties where there are active recorders, though. Some of our current recorders are amongst the very best that have ever worked in Scotland (as elsewhere). They have the advantage of modern technology and transport, of course, and they use it well.

Ireland is also patchy, but again the recording that is going on is clearly better than has ever occurred in the past. A lot of the records we receive are at 1km scale, which has never been attempted before, and there is a lot of work going into Ireland's most special plants, such as the whitebeams and the orchids.

The other map, which is of Floating Pennywort, *Hydrocotyle ranunculoides*, shows the other great use of the Maps Scheme. This plant has spread considerably since 2000, and only the BSBI data shows this. There are many new taxa, both alien and native, for which we have new or better data that needs to be displayed somehow.

My biggest worry is what to do about the counties that are probably not doing much fieldwork. It is OK to have a hiatus for a single date class, as we will probably have to combine DC4 and DC5 for some counties, but it will damage the whole project if there are places that are not surveyed for decades at a time. We are working towards having a continuous flow of data, which we need for all sorts of reasons, not just a County Flora every few decades – though it is the Flora projects that provide so much of the impetus to recording. Records

Committee is going to have to look hard at some of the counties and, in some cases, start looking for new people to assist with them.

Species Accounts

To complement the new maps on the Maps Scheme, I would like to now expand the Species Accounts section of our web site. There are lots of difficult, new and interesting species in the British and Irish flora that people would like to know more about. I think we have now got a unique and valuable formula that people appreciate. This is reflected in the usage stats on the web site. We get about 20,000 people a month now visiting the BSBI's suite of web sites, and the two most popular features are the Maps Scheme and the Species Accounts. In the last month, for instance, some 200 people will have read our account of Wild Gladiolus, *Gladiolus illyricus*. Add that up over a year, and include the folk around the world who do not have access to our paper publications, and you realise that this is a bigger audience than a paper in *Watsonia* or a BSBI Handbook will achieve.

The web-based Species Accounts are also a surprisingly permanent feature. The web site is archived every week or so by the British Library and the Internet Archive, amongst others, which means that each account is permanent, date stamped, and available forever. If you write a novel idea into one of these accounts, you will be permanently identified as the author and inventor. So what I am hoping is that more BSBI members will adopt a species and write us an interesting account. Have a look at the one on Climbing Corydalis, *Ceratocapnos claviculata*, for instance. Some 30 people have read it this August alone, and Nicole Voss tells me she has received data from five people and specimens for DNA analysis from three. The account is not a passive declaration of information about a plant, it creates an active flow of ideas and cooperation.

If anyone would like to adopt a species, please get in touch with me. The BSBI has about 3,000 members and there are about this many species occurring in the wild, so if a reasonable proportion of members wanted to adopt one to study, that would just about get the job done.

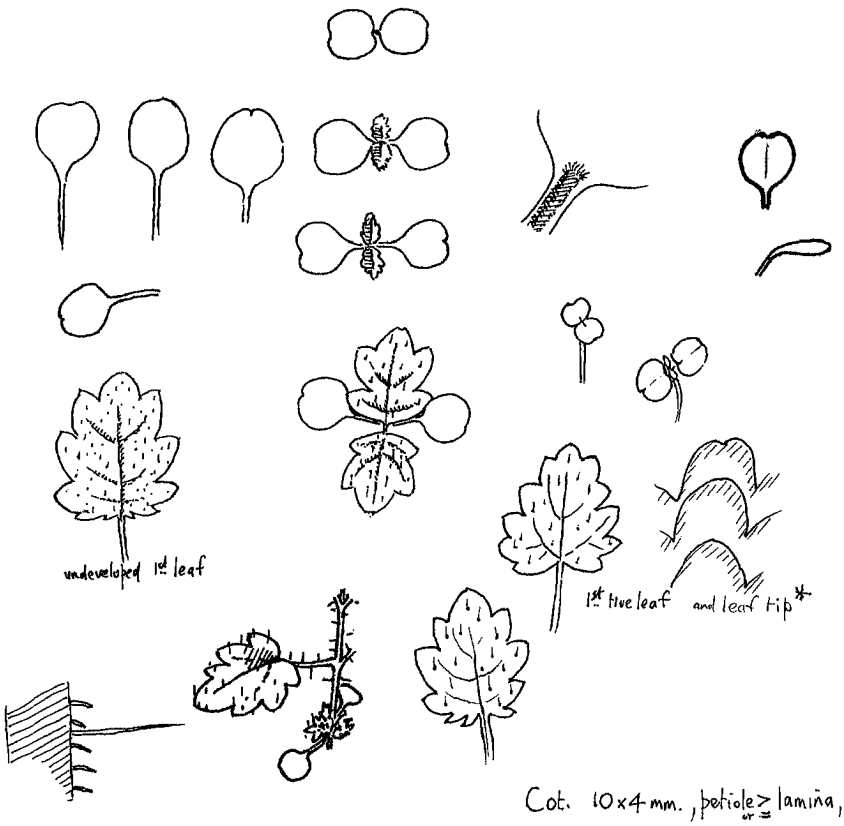
FISC Success

We had some 35 people take a FISC exam again this summer. Eight different ecological consultancies have sent staff this year and some return every few years to see if they have improved. The highly structured approach used in the FISC enables people to decide what they need to learn. An important part of our process is to get plants from around the country, so that botanists who are familiar with the area where the test is taking place do not have an advantage. We are therefore enormously grateful to our collectors, John, Clare, David, Arthur and Kevin for continuing to support it. There will be more FISCs in 2010 and BSBI members are welcome to come along. The price remains just £50, which we think is highly affordable compared to any other qualification you could get. Taking a FISC is more than just finding out how good you are: the very process of having an independent assessment of your knowledge and skill makes you look at your work in a different way.

iSpot

One of my principles is that anyone who thinks of something new deserves our support, at least to an extent. If you come up with a new web site or database or even just a clever way of identifying plants then it behoves the BSBI to give you a chance. Well, a multi-million pound Lottery funded project isn't the sort of thing that would normally get (or need) my vote, but I have to admit that their iSpot web site seems to be a first. On this site people can post their photographs of animals or plants and ask for help in identification. The site is well constructed to apply the principles of biological recording and, from the material they have collected so far, it is clear that a huge number of species can be reliably identified this way. A record backed up by a photograph is often as good a record as you could want, and definitely better than a tick on a record card. So I wish them all the best. They are asking for BSBI members to register as referees and offer their expertise in identification. If you fancy doing this, I think it could really be a valuable educational tool. Visit ispot.org.uk.

URTICA DIOICA



Cot. 10×4 mm., petiole ≥ or ≤ lamina, deeply furrowed. Emarginate. Faintly persistent.
Cot. dark green, shiny, flat; usually scattered short pointed hairs.
Hypocotyl (a few) hairs near cotyledons
1st true leaves net veined, many long and short hairs.
Internodes very hairy – some long and pointed, others shorter, slightly downward pointing; purplish.
Branches soon appearing in axils of cotyledons.

* according to Chancellor *Urtica urens* has more pointed leaf tip

Urtica dioica (Common Nettle) seedlings del. S. Evans © 2003
See *BSBI News* **83**: 68 (Jan 2002) or **108**: 73 (April 2008) for more details of these drawings

Solution & Crib to Botanical Crossword 13

Solution

Across
7. RESEDA; 8. WEEDED; 9. SCAN;
10. SCARIOUS; 11. FERTILE; 13. LATEX;
15. SPORE; 17. OIL PALM; 20. CAPITATE;
21. BENT; 22. CLEAVE; 23. ERECTA

Down
1. FESCUE; 2. VEIN; 3. CAPSULE;
4. TWEAK; 5. PERICARP; 6. RETUSE;
12. TERMINAL; 14. CINEREA; 16. PEARLY;
18. LUNATE; 19. NAKED; 21. BEET

Crib

Across
7. anag ADEERS; 8. sounds like 'we did'
9. Three meanings of 'scan'- look over/ leaf through/ scope; 10. SCAR/IOUS; 11. anag FILTER + E(cstasy); 13. anag EXALT
15. SP/ORE; 17. Like 'grease palm'
20. CA(circa)P<IT>ATE; 21. dishonest
22. Cleavers; 23. anag CREATE

Down
1. FE'S CUE; 2. 'style' as in 'manner'
3. CAPS/sounds like 'you'll'; 4. T<W>EAK (whisky = call sign for W); 5. PERI/CARP
6. RE<T>USE; 12. double definition;
14. mediCINE REA1 dose; 16. pearly everlasting/pearly gates; 18. L<UN>ATE;
19. double def; 21. BE/ET (extra-terrestrial)

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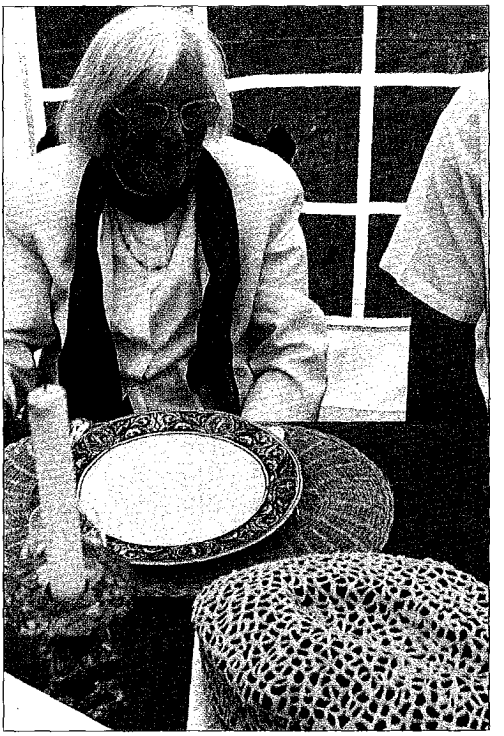
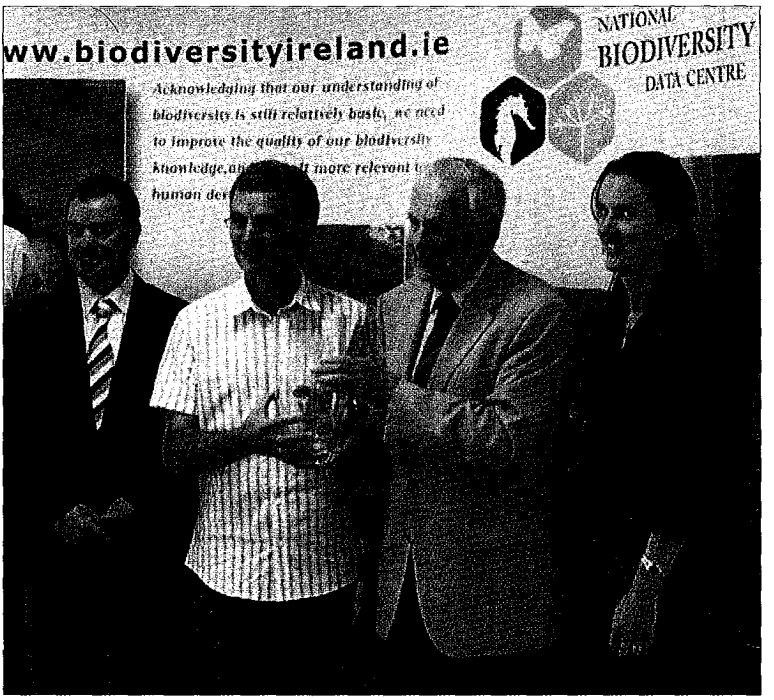
Ann Conolly at the Boathouse, Bardsey Island (v.c.49). Photo P. Hope Jones ' 1996 (see p. 65)



Yolande Heslop-Harrison admiring her 90th Birthday □pollen cake□. Photo P. Heslop-Harrison ' 2009 (see p. 66)



Paul Green being presented with the Distinguished Recorder Award of Ireland 2009 by Prof. Liam Downey with Dr Liam Lysaght (l) & Dr Una Fitzpatrick (r). Photo I.P. Green ' 2009 (see p. 66)

Scilla lilio-hyacinthus & *Corydalis cava* in beechwood, Piedrasluengas (see p. 54)

Erodium daucoides, P□ramo de La Lora (see p. 54)

Saxifraga cuneata, Las Tuerces (see p. 51)
All photos taken in Spain by Teresa Farino ' 2009