





Photo competition entries:

- 1 *Menyanthes trifoliata* (Bogbean)
[Roger Buxton]
- 2 *Ruppia maritima* (Tasselweed)
[Claudia Ferguson-Smyth]
- 3 *Drosera rotundifolia* (Common Sundew)
[Roy Sexton]
- 4 *Hammarbya paludosa* (Bog Orchid)
[Sarah Longrigg]



BSBI SCOTTISH NEWSLETTER

Number 39

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Editor's note

Following last year's poll, we are continuing to send printed copies of this Newsletter to all Scottish members (except for those who opted to receive only an electronic copy) and also to members living elsewhere who expressed a wish to receive it. The latter are invited to make an appropriate donation to BSBI. A freely downloadable PDF version will be available shortly on the BSBI website.

Botanical Society of Scotland / Botanical Society of Britain and Ireland

Scottish Annual Meeting 2016

Julia Wilson

John Faulkner, BSBI President welcomed participants to this joint meeting. Reporting on BSBI, he said that the Society was in good heart. More than 50 field meetings had been held this year, generating more than a million records for the BSBI data base, and publications are flowing from members with many new local floras. However, improvement is always possible and structural changes previously made have now been in place for 3 years. A comprehensive review of the Society has now been launched. Emerging issues include:

- ● contrasting views among BSBI membership as to the importance of training and encouraging beginners and improvers *vs.* fulfilling the needs of the expert botanists,
- ● the emphasis of the BSBI on recording *vs.* botanical science *vs.* education *vs.* appreciation of plants and
- ● the need to protect the independence of the Society.

Funding is very important. The government would like the BSBI to make all of its data available for free, but the updating and support of the database with all the ramifications of file storage and back-up, do cost money and financial support is essential.

Robin Payne, BSBI Scottish Chairman formally opened the AGM of the BSBI in Scotland. He apologised for the absence of formal minutes from the 2015 AGM, although an account had been published in the BSBI Scottish Newsletter (Spring 2016). As no comments or corrections had been received he asked members present if the account could be accepted as the correct record. Acceptance was proposed by xxxxxx and seconded by xxxxx.

Jim McIntosh BSBI Scottish Officer presented his report. (See page 6 for the full text of his annual report) Jim then thanked all recorders and volunteers for their hard work over the year, SNH and BSBI for their funding of his post, and RBGE for their continued support.

John Grace BSS President reported that the BSS had held 9 lectures in Edinburgh and 15 field meetings/ workshops (some joint with other societies), including some on bryophytes, lichens and fungi. Several *ad hoc* meetings were also run in support of the BSS Urban Flora project. The Society is try-

ing to develop better engagement with schools, and several initiatives were launched, but we are still trying to work out the best way to do it.

The BSS Urban Flora project has achieved about 19,000 records so far. Participants have recorded several species which tend to have more southerly distributions. As towns and cities tend to have warmer climates, these species may be indicators of the urban heat island effect.

The BSS academic journal *Plant Ecology and Diversity* is on the rise. Under the editorship of Lazlo Nagy, its Impact factor has increased from 1.7 to 2.3.

Atlas 2020 - Progress Report - Jim McIntosh, BSBI Scottish Officer

By the time Atlas 2020 is published it will be 20 years since the last Atlas - and there have been many changes in that time. Like previous Atlases, the next one will produce comprehensive maps for both native and introduced taxa (vascular plants and stoneworts) occurring in Britain and Ireland and analyse and report on the changes that have occurred in recent decades. In addition, it will also provide interactive maps online that can display frequency and distribution at a variety of scales and produce maps for infra-specific taxa, rare aliens, hybrids, etc. Unlike previous atlases we want to record at tetrad (or better) resolution for a sample of squares in every hectad, aiming for a minimum of 5 tetrads per hectad, surveying each twice.

Recorders have been extremely busy across Scotland and there are now 2.3 million Atlas 2020 records. Many older datasets have been uploaded this year and recorders are making a great effort to digitise them. There is an increasing spatial precision in recording data and 67% of all Scottish hectads are now well or moderately well recorded. A good start, but the focus isn't spread evenly across locations, and there are still records stuck in the system or on paper.

But Scotland is big in proportion to its BSBI membership, and the Atlas 2020 project will need all the help it can get from members (and non-members)! You can help by joining local botany groups and going on Atlas recording meetings. Or ask Jim or local recorders how you can help more specifically.

Atlas Recording in the Cairngorm National Park - Andy Amphlett, BSBI Recorder Banff

Andy highlighted the large size and access difficulties to many parts of this Park, with an area of 4528km², comprising 65 hectads, 1700+ taxa, including 125 species endemic to Great Britain and 146 GB Red List species. A travel grant from the Cairngorms National Park Authority (CNPA) has been used to target data collection with the prime objectives to:

• improve tetrad scale coverage of the CNP by targeted recording in tetrads with few or no records in any date class, or with few or no records post 1987

• demonstrate the ability of BSBI to collect and collate high quality botanical records from the CNP area, so as to benefit plant conservation in the CNP.

Many people have contributed records to this, with 13 lead recorders, of whom 3 have each contributed >10000 records. The recording effort is greatly increasing the number of taxa recorded per tetrad and many new records of species on the Cairngorms Rare Plants Register have been made.

Challenges include the remoteness and difficult access to much of the area, and the tendency of botanists to visit the base rich and botanically interesting locations rather than botanically less interesting acid soils, especially where-muir-burn is intensive. Notable finds include *Deschampsia setacea* (Bog Hair-grass) in an ephemeral pool on moorland, *Centunculus minimus* (Chaffweed) and *Juncus balticus* (Baltic Rush) on roadsides, and *Cystopteris dickieana* (*Dickie's Bladder-fern*) on bridges and rocky outcrops.

How I became a botanist - Michael Braithwaite, BSBI Recorder Emeritus

Childhood influences were important - a rural upbringing and education led to an interest in wildlife in general, encouraged by school wild-flower rambles and pressing of flowers. The presentation of a wild flower book as a prize (Wild Flowers at a Glance, by M C Carey and Dorothy Fitchew) provided an interested schoolboy with easy to understand descriptions and drawings. Interest lapsed for a while, but revived as an adult, when joining the Scottish Wildlife Trust and other societies, and going on outings with botanists made a great difference. We used to use botany all the time as hunter-gatherers! - introduce people to plants when young and hope that they will come back to them as adults may be the best approach to fostering an interest.

The sunny sides of summits: influence of aspect on diversity, distribution and leaf size of plant species in an alpine environment- Jay Mackinnon, Lecturer, Edinburgh Napier University (Patricia Monterde Vitoria, Dan Watson & Jay Mackinnon)

Following Global Observation Research Initiative in Alpine Environments (GLORIA) protocols, summit vegetation was surveyed in the Ben Lawers NNR to understand how different microclimates and other factors can influence plant diversity. Vegetation was categorised according to National Vegetation Classification groupings; U8 (*Carex bigelowii*-*Polytrichum alpinum* sedge-heath) was found on all summit faces, but only North and

East were predominantly U8. South was predominantly U7 (*Nardus–C.bigelowii* grass-heath), while west predominantly U10 (*C.bigelowii–Racomitrium lanuginosum* moss-heath). However, it was relative abundance of species rather than presence/absence which differentiated the communities. Data were further analysed using ordination techniques which enabled examination of the similarities and differences between species composition at different sites in relation to parameters such as radiation and grazing. Leaf length and leaf width of *Alchemilla alpina* were significantly related to direct incident radiation. Species richness was negatively correlated with direct incident radiation.

A year in the life of a Scottish Recorder, Stephen Bungard, BSBI Recorder North Ebu

This vice-county covers several islands, of which Skye is the largest. Access to many is difficult as several of the islands have no ferry service, and many of the ferry services are indirect, so (for instance) it takes 3 ferries (and 8 hours) to reach Rum from Raasay. Other challenges to recording are altitude and distance from roads - as already noted in Andy Amphlett's presentation, and access to cliffs. Small islands contain many significant species so should not be neglected. The number of VC records per month closely follows the changes in day length. Spring starts late, so there is a limited number of days which are light, dry and when plants are growing. Data is entered to the database daily.

During the year, as well as plant recording, there are botanical visitors and requests to deal with, site condition monitoring, field meetings, and a blog to keep up. Notable additions to the species list for 2015 included *Saxifraga tridactylites* (Three-fingered Saxifrage), *Platanthera x hybrida* (Hybrid Butterfly Orchid), and *Raphanus raphanistrum* subsp. *maritimus* (Sea Radish, last recorded in 1893-95).

The last tetrad in this VC which was 100% land but with no previous records was surveyed this year. There are still about 25 tetrads with no previous data which are partly land, and several for which there is no recent data (i.e. since 2000).

Winters are spent on paperwork - rare plant registers and other reports.

The biggest problems in European fern taxonomy? - Fred Rumsey, NHM & BPS President

Fred Rumsey described work in progress on the fern *Cystopteris fragilis* agg. (Brittle Bladder-fern) This is a widely distributed polyploid complex, with 2x -

8x cytotypes, but no diploids in Europe. With at least three diploid progenitors there are many potential origins for each cytotype.

Spore size increases with ploidy, so can be used as a proxy, but as sizes overlap, they are not fool-proof. As well as size, spore shape and ornamentation are also important.

Another plant causing taxonomic problems is the clubmoss *Huperzia selago* agg., which is also polyploid. In North America there are nine species, of which four (*H. appressa*, *H. arctica*, *H. continentalis* and *H. selago*) might occur in the UK. The gemmae provide important distinguishing characters and hybrids are frequent. *H. arctica* is known from the Shetlands and possibly on mountains further south but hybrids, presumed to be between this and *H. selago* are believed to be more frequent.

Main talk: Alien Plants in Scotland, Professor Mick Crawley

Mick gave an illustrated talk concentrating on Scotland's alien plants, with case studies of speciation (the creation of the neophyte *Mimulus peregrinus* in Lanarkshire) and enemy release (the reduction in plant size exhibited by *Conyza* (Fleabane) species as they recruit local root herbivores and pathogens following establishment).

His message was that alien plants have a great deal to tell us about important processes in plant evolution and plant ecology, and that Scotland is extremely fortunate to have so few species (like *Rhododendron ponticum*) that have increased to the point where they are an important threat to native biodiversity.

Scottish Officer Report for 2016-7

Jim McIntosh

Atlas 2020 Recording

With 30% of the land area but only 13% of the BSBI membership, Scotland faces a great challenge in achieving full Atlas coverage. A number of initiatives were arranged to help including two recording weeks: one in Lanarkshire organised by Angus Hannah and another in Shetland organised by Paul Harvey and me. Over 4,400 records were collected, with 274 new hectad records by ten members in Lanark and over 10,000 records in 110 monads were collected by 29 BSBI members across the Shetland Mainland and the eastern isles. We plan to continue with two Recording Weeks per year in the final three years of Atlas 2020 fieldwork.

Wild Flower Society funds supported Atlas recording in West Ross & Sutherland. The funds paid for two weeks' survey work in remote areas of West Ross, by contractor, Ian Green and self-catering accommodation so the West Sutherland Recorder, Ian Evans, could base himself and a small survey team in the north-east of his county for three weeks (avoiding a daily 4-hour return journey).

Andy Amphlett collected an amazing 11,000 records in his neighbouring Vice-County of Easternness and both Stephen Bungard and Angus Hannah also helped neighbours in West Ross and Ayrshire respectively. If other recorders who are on top of Atlas coverage in their own VCs would like to help neighbours, please do get in touch with them. Several members also made very significant Atlas contributions; the late Eric Meek collected a remarkable 8,000 records in North and South Aberdeen and Stewart Taylor collected 6,750 records in Moray and Easternness. Many recorders would warmly welcome such contributions and if you are able to help please offer to do so.

Grateful thanks are due to all those involved in these initiatives.

Cairngorm National Park (CNP) Recording Project

We prepared a further funding bid to the Cairngorm National Park Authority for a third and final year of the project to support BSBI recording in its area. The bid was successful and Andy Amphlett again managed the project to a successful conclusion. Over its three years some 87,000 records have now been collected by about 100 recorders - a great achievement. These have all been digitised, uploaded to the DDb and validated by the Recorders and have made a significant contribution to Atlas 2020 in one of the most remote and mountainous areas of Scotland.

VCR Network Support

Two one-day conferences were held in April with major sessions on Atlas 2020, MapMate and the BSBI database. The same material was repeated once in the north at Strathpeffer and again in the south at Edinburgh to minimise travelling time for attendees. Fifty-two attended in total, half of whom were county recorders, and the other half were potential recorders or interested members. The presentations and handouts were made available on the BSBI Scotland webpage for those who did not make it, as well as an aid to memory for those that did.

Recorder vacancies were filled in Lanarkshire (by Michael Philip), Caithness (Margaret and Francis Higgins) and Shetland (Paul Harvey and Alex Prendergast). Time was spent variously in the field and at the computer training

these new appointees. There was no response to the vacancy advert for Berwickshire. Sadly, Jackie Muscott (West Lothian) tendered her resignation just before the Scottish Annual Meeting. At the time of writing, both are being (re-)advertised in BSBI News.

I took over as editor and compiler of the monthly Recorder & Referee support newsletter, BSBI *eNews* in March. A support newsletter was also sent to Scottish Recorders just before Christmas.

Publications

Two excellent Rare Plant Registers were published for Ayrshire by David Lang and Dumfriesshire by Chris Miles bringing the total of Scottish RPRs to sixteen (including one for the Cairngorm National Park). They are all available on the BSBI website and local and visiting botanists are invited to use them to track down long lost populations and update old records! The splendid Flora of Lanarkshire was also published during the year by the family of the late Peter Macpherson.

Training

2016 was the fourth year of the Plant Family training initiative. Three one-day Plant Family Workshops were attended by a total of 55 beginners. They were mainly young adults working, studying or volunteering in plant-related activities. Thanks are due to volunteers, Faith Anstey the main organiser and tutor, and 12 assistant tutors and to our partners this year - Plantlife Scotland, National Trust for Scotland and Dundee Botanic Garden.

In addition, two training days were organised on Shetland for twenty local botanists after our Recording Week in August with the help of BSBI volunteers Jenny Farrar, Jay MacKinnon, Matt Dodd, Alex Prendergast and Paul Harvey.

BSBI Meetings

We held a very successful Scottish Annual Meeting at the SNH Conference Centre at Battleby in November. A new innovation was the inclusion of six breakout workshops - on Sedges, Bents, Stoneworts, *Dryopteris affinis* agg., Microscope techniques and the BSBI Review. The concept proved to be very popular and will be repeated when we return to RBGE this November.

Twenty-five BSBI members enjoyed an excellent Christmas lunch with wine kindly supplied by Iain Macdonald and convivial company in the RBGE conference room.

Site Condition Monitoring

The BSBI's contribution to SNH's vascular plant Site Condition Monitoring has helped us to make a strong case for SNH funding for the Scottish Officer post. The fieldwork and reporting is largely done by BSBI volunteers with help from me. In the early part of the year, reports were completed, checked and forwarded to SNH for the six sites surveyed in 2015. These were Loch Leven, Eigg - Cleadale, Glas Tulaichean, Kyle of Sutherland Marshes, Morven & Mullochdubh and Hill of Towanreef.

Another full SCM program was agreed with SNH in 2016. Fieldwork was completed and reports drafted by volunteers for The Cairnwell (by Eric Meek) Loch Moraig (Martin Robinson), Raasay (Stephen Bungard), Rescobie & Balgavies Loch (Theo Loizou), Torrs to Mason's Walk (David Hawker) & Whitlaw Mosses (Sarah Eno).

In addition, I helped SNH area staff identify suitable fence lines so grazing can be controlled at the *Saxifraga hirculus* flushes at Craigengar SSSI site in the Pentlands. I also worked with Aline Finger of RBGE to collect DNA samples for an SNH-funded project and to gather seed for the Millennium Seed Bank from six *Saxifraga hirculus* populations in Caithness.

BSBI members Ian Strachan, Dan Watson and Matt Harding worked with climbing guides to find and monitor rare plant populations on Ben Nevis as part of the third and final year of the North-face project. Many thanks to all the BSBI volunteers involved with monitoring work in 2016.

Thanks

Grateful thanks are due to all the BSBI Recorders, members and volunteers who contributed so magnificently to the BSBI's work in 2016! I look forward to seeing you in the field in 2017!

Jim McIntosh, BSBI Scottish Officer, March 2017

This year's Scottish Annual Meeting

The 2017 BSBI / BSS Scottish Annual Meeting will be held at the Royal Botanic Gardens Edinburgh on Saturday the 4th of November.

The main talk on *Mountain Flowers* will be given by Mike Scott. We also plan to repeat the idea, first trialled in 2016, of including a wide selection of identification workshops. Put the date in your diary now!

Another Scottish specimen of *Rubus arcticus*

David Welch, East Fernbank, Banchory. AB31 5XL.

In 2015 while working in the *Rubus* boxes in Aberdeen University herbarium (ABD), I spotted a single sheet of *Rubus arcticus* (Arctic Bramble). This species has distinctive small leaves with a few large teeth, and was quite different from the other sheets in its box.

I was unable on that visit to fully read the label, and then found it had also caused problems for the team employed to digitise the 120,000 species in the herbarium. Hence it appears in the ABD searchable database as *Rubus ariticus*, and the place of collection is given as: Barry..Col...va. But the sheet bears a clear printed label: Herb. R. Wight, presented 1871, and there is a further label showing the Wight herbarium then passed to George Nicholson, who in turn gifted it to ABD in 1894.

Barry is not only a Scottish place-name but the name of a known Scottish collector, Dr Martin Barry. By searching in the ABD database, it was apparent that about half of the c. 100 instances of Barry occurring on a sheet label came from specimens collected by Barry. These sheets had been incorporated into the herbarium of R. Wight, from which there are now c. 600 sheets in ABD.

The *Rubus arcticus* sheet is only connected to Barry by some quite faint pencil handwriting, which I believe says "Barry cultivated". I examined many of the other Barry specimens shown up by the database, and found the same pencil handwriting, most often saying "Martin Barry" and then a date and place name, e.g. Glen Doll, Lochnagar, Woods Aboyne, these respectively for specimens of *Astragalus alpinus*, *Saxifraga stellaris* and *Goodyera repens*. The dates are all in the early 1830s, and the main area where Barry collected was NE Scotland.

Martin Barry was born in Hampshire in 1802 and came to Edinburgh to train as a doctor. He qualified in 1833 and then studied at Heidelberg University, doing important embryological research. His successful discoveries led to awards, notably being made a Fellow of the Royal Society. When at Heidelberg he climbed Mont Blanc; back in Britain he supposedly obtained an egg of every British bird.

These biographic facts fit with Barry botanising on Scottish mountains in 1830 and 1831 as a leisure activity during his training. They led me to believe that he obtained material of *Rubus arcticus* as an aid to finding this

elusive species in the Angus or Grampian uplands. In an article on the British occurrence of the species, Harley (1956) mentions cultivation in gardens, so this was the likely source of Barry's specimen; there is no evidence that he himself kept a garden of attractive or rare plants.

Who wrote the names and collection details on to the Barry specimens in ABD is unknown, but seems not to have been Barry. Maybe he had kept a list of dates and sources in his herbarium, and this was made use of by later owners, the most likely being R. Wight. There are also nine Barry specimens in the Royal Botanic Garden herbarium (E), and its database shows that the labels of these sheets have a similar lack of information. The sheets reached E from the herbarium of W. Brand in 1871, and for two sheets of *Astragalus alpinus* the database compilers have been misled into thinking the collection date was 1871.

Barry died in 1855, his health having declined rapidly from the super-fit condition that enabled his mountaineering feats in the 1830s.

The early C19 efforts to find colonies of *Rubus arcticus* drew negligible reward. They were doubtless triggered by text in Smith's 1806 illustrations: "Rev. Dr. Walker, Professor of Natural History at Edinburgh, informs me ... of his having gathered this beautiful plant in rocky mountainous parts of the Isle of Mull. Mr Sowerby [Smith's illustrator] has been favoured ... with dry wild specimens from the high regions of Ben y Glo". After 1806 probably just three more sites in wild situations were discovered for arctic bramble, and at no reported site were revisits successful, possibly because exact locations had not been given. Martin Barry's inclusion of a cultivated specimen of the *Rubus arcticus* in his small herbarium is just another illustration of the motivations of the pioneering botanists active 1800-1850. Their endeavours mean we can say (as does Stace in his two recent floras): probably once native, last record 1841.

I thank Jim McGregor for maintaining ABD and Rob Randall for vetting the draft.

Reference

Harley, R.M. (1956) *Rubus arcticus* L. in Britain. *Watsonia* 3: 237-238.

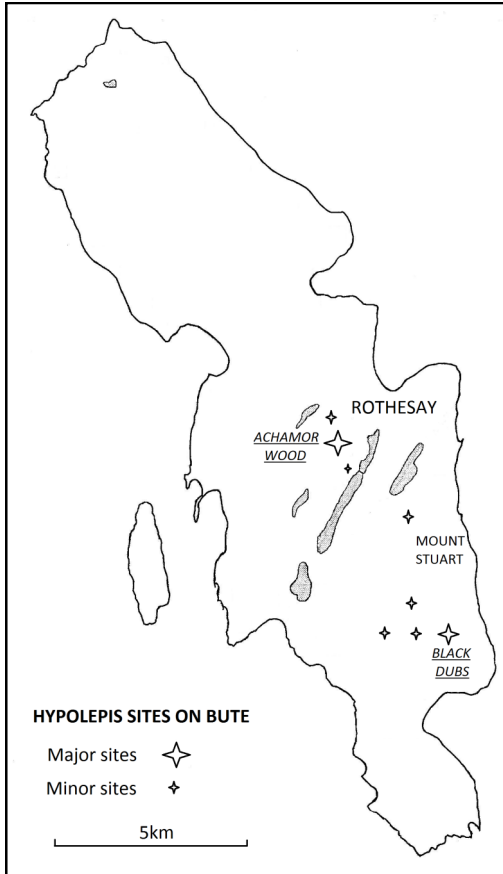
Smith, J.E. (1806) *English Botany*, Vol. 23, London.

***Hypolepis ambigua* on Bute: a New Zealand endemic fern new to the British Isles in the wild... the story so far...** *Angus Hannah*

On March 13th 2016 I came upon an unfamiliar fern in an area of conifer forestry on Bute, known as Black Dubs plantation NS1057. I had dismissed it momentarily as bracken, until I remembered that it was March, and there was only dead litter of bracken. What could it be? I took some photos and a specimen pinna home with me, and half an hour on the internet convinced me that the genus was *Hypolepis*, but I had no idea of the species. The DDb had one *Hypolepis* record, for *H. millefolium*, recorded in 2014 by John Edgington in Buckingham Palace gardens. But my plant certainly wasn't *millefolium*. (See photos inside back cover)

A few days later I collected a frond and sent it to Fred Rumsey at NHM. He told me that Tim Pyner was the British authority on *Hypolepis*, and Tim kindly spent a day in BM checking my specimen, and concluded provisionally that it was the New Zealand endemic *H. ambigua* (Brownsey & Chinnock). These authorities published a major re-assessment of Australasian *Hypolepis* in two papers in the 1980s, and revised the diagnosis of *H. ambigua* to include many plants formerly named *H. tenuifolia* (Brownsey & Chinnock 1984). The following month I had an opportunity to visit RBGE, where I was able to study the *Hypolepis* collection in the herbarium, and see specimens formerly labelled *tenuifolia* and re-determined by Brownsey as *ambigua* which closely resembled my plant. Later my photos were seen by Pat Brownsey, who pointed out that the Australian species *muelleri* was very similar, but differed from *ambigua* in usually having hairs among the sporangia (paraphyses), which mine seemed to lack. Tim likewise drew attention to a similar Himalayan species *polypodioides* with the same character. After checking other specimens, I have never found any paraphyses in the Bute fern, and so the determination as *ambigua* seems increasingly sound. Globally, however, the genus *Hypolepis* remains unresolved.

The colony in Black Dubs plantation occupied an area of blow-down in a block of larch. At its nucleus there were fronds over 2m in height, and it extended for about 25m in one direction and rather less in others, not penetrating the adjoining block of mature Sitka spruce. Several people speculated about the possible origin of the colony, with the extensive gardens of Mountstuart some 2km to the north of the site being suggested as a likely source. There was, however, no evidence that any *Hypolepis* had ever been grown there. I exhibited a frond at SAM in November, and ventured to suggest that there was a good possibility that further colonies might be found.



On December 17th I was recording near Rothersey, adjacent to Achamor wood NS0763, an area of recently felled and replanted Sitka spruce, when some clumps of green fern among the brash drew my attention. On inspection, these proved to be *Hypolepis ambigua*, and on looking up I could see that the colony extended uphill to the horizon. On climbing the hill I saw beyond it another hillside, also bright green with the fern inside the afforested area. It did not extend to any significant degree on to the open summit slopes of Barone Hill, where similar steep, rocky terrain continued, but without disturbance to the vegetation cover from felling or planting. Altogether, this colony occupies six hectares in the north west corner of the plantation, with a few small gaps where damper gullies are less to its liking. Two weeks later I found that the fern was also

abundant in some other parts of the plantation, particularly along the old marginal bank in the north-east and on the steep slopes above, covering in all some 20ha.

This discovery, 6km from the first site, led me to think it likely that there would be other sites on Bute, in similar areas of Sitka, recently felled and replanted and not yet having time to close out the canopy. Three days after my first Achamor find I went to Lochend wood NS0961, and found three small patches of the fern, each likely to be independently established by spores wind-blown from Achamor, 2km distant. This suggested to me that the Black Dubs colony may have arisen many years earlier in the same way, and that Achamor was probably the mother colony, at least as far as Bute was concerned. Searches in several other plantations yielded nothing, but a single plant was found at the edge of a wood where rhododendron had been cleared a few years ago, and in Drumreoch plantation NS0857, 2km west of

Black Dubs, a transect of an area of clear-fell revealed six young, scattered plants, suggesting the likely existence of others.

Further reflection led me to realise that the Achamor colony could scarcely have reached its present size under a single crop of Sitka, and that the previous generation of conifers would have been planted in the early 1920s. The original plantation, dating from around 1800, was mixed deciduous (sycamore, beech, oak etc.) with some spruce, pine and larch, and was felled during WW1, and for a few years the ground would have lain open, bare and disturbed, an ideal site for germinating any spores that happened along. It is also more likely that *Hypolepis* spores might have been around at that time, as the war led to gardens being less well cared for, and a weedy fern imported accidentally with other material during the Victorian fern craze might have had an opportunity to sporulate. Achamor is within a mile of Rothesay, and any town garden could have been the source. In any case, the fern found Achamor very much to its liking.

On February 3rd I had the first proof that Pig-fern could colonise outwith spruce plantations. In Craigberoch wood NS0763, I found it in an area of oak and beech blow-down on a north facing slope, within a kilometre of Achamor wood, but out of sight over the hill and facing the opposite way. Access was difficult, but I found one established patch 2m long and numerous outlying plants presumably originating from its spores over an area of some 30m sq. It would seem that colonisation proceeds in this way; an occasional longer distance offspring subsequently populating its immediate environs with its own sporelings, each of which then spreads rhizomatously. This discovery further increases the likelihood that it will be found elsewhere before too long.

Whether Pig-fern has already colonised other sites elsewhere in the Firth of Clyde area or further afield remains to be seen. The plant is easily spotted once known, especially in winter, and recorders and others are encouraged to look out for it in suitable habitat. A detailed description is given in the publication mentioned below, which can be accessed on-line.

My thanks are due to Fred Rumsey, Tim Pyner and Pat Brownsey for help in determining the species.

Reference

Brownsey P.J. & Chinnock R.J. 1984. A taxonomic revision of the New Zealand species of *Hypolepis*, *New Zealand Journal of Botany* Vol.22 pp.43-80.

An earlier account of this discovery was published in the Newsletter of the New Zealand Botanical Society, March 2017.

BSBI Scottish Newsletter Crossword No. 1

by *Cruciada*

This is a miniature cryptic crossword particularly for those people who say, 'Oh, I can't do cryptic crosswords.' The essence of cryptic clues is that one part – either at the beginning or the end – is the definition, and the rest is a cryptic version of it. The cryptic bit could be an anagram – in which case there will be an anagram indicator such as 'mix', 'order', 'play' etc. – or a charade, or maybe involve abbreviations such as 'R' for right, part-words, reversals and so on – a crib follows the solution on page 50.

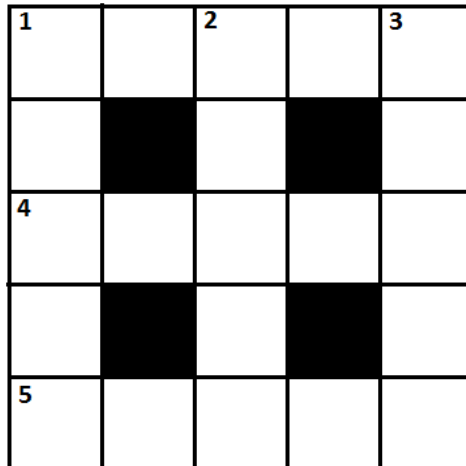
Tip: you don't have to get 1 across first; do whichever clue you find easiest and that will help you towards the next.

ACROSS

1. Potato, perhaps, found on underground railway (5)
4. Verdant meadow, fairly empty (5)
5. Flower part dished up in plate (5)

DOWN

1. Put back about half of (Stace 3) Lily genera? Only one-third, actually (5)
2. British deed that supports a flower (5)
3. Glen of parallel roads attracts a learner with this fern (5)



Solution on page 50

Exhibit Abstracts: BSBI / BSS Scottish Annual Meeting 2016

A Rare Plant Register for Dumfriesshire and recording in 2016 (v.c.72)

Chris Miles

The first Dumfriesshire Rare Plant Register was on display.

- 256 taxa are included, native and archaeophytes, being rare or scarce or of particular interest in Dumfriesshire. Altogether 1582 records of these are given in the Register.
- 1018 other taxa recorded in Dumfriesshire were excluded as occurring in more than 10 locations or being neophyte/non native.
- 69 taxa are currently thought extinct.

2016 recording updated a number of the register's taxa:

Ruppia maritima (Beaked Tasselweed), first record since 1999

Equisetum pratense (Shady Horsetail), Crawick, last recorded here in 1994 and a new hectad record at 530m

Utricularia minor (Lesser Bladderwort), 5th site for vc and first for 57 years

Euphrasia arctica x micrantha, new to vc.

Neottia nidus-avis (Bird's-nest Orchid), first in NY38 since 1978

Dryopteris expansa (Northern Buckler-fern), 2nd vc record in the Moffat Hills

Genista tinctoria (Dyer's Greenweed), first record in NX89 since 1978

Gentianella amarella (Autumn Gentian), Glenshanna, last recorded in 1996

Hymenophyllum wilsonii (Wilson's Filmy Fern), NS70, a new hectad record.

And a new alien:

Cyperus eragrostis (Pale Galingale) a first for Scotland? Kelton Merse NX97

Use of strategic mapping to direct data planning in Lanarkshire (v.c.77)

Michael Philip

Several schematic maps are shown here, using colour to convey the status of existing data. These give a clear picture of areas needing to be re-surveyed for Atlas 2020; areas which can be tackled by people with relatively modest experience; and areas where no data currently exists.

Our aim in v.c.77 is to deploy a growing network of field-workers, according to their experience and skill, right across the vice-county in a big push for fresh data throughout 2017/2018. Whether in small, informal outings; or training days; or weekends with expert input - there will be lots going on. Why not give us a hand?!

Recording and Forestry, Peeblesshire 2016 (v.c.78)

Luke Gaskell

I have been recording in monads across Peeblesshire with the aim of increasing coverage for the new Atlas. Some of the least visited parts of the county are the extensive blocks of commercial forestry, and while the ground under the conifers is usually almost barren, other areas left unplanted such as stream sides, hill tops and fire breaks can be quite rewarding.

Trientalis europaea (Chickweed Wintergreen) 4th VC record, first since 1986. It is in a new hectad in the south of the county above Tweedsmuir.

Potamogeton pectinatus (Fennel Pondweed) first VC record in a former fire pond within a large commercial forest.

Carduus nutans (Nodding Thistle) first VC record. Not in a forest yet, but in a reseeded field that has a planting application pending.

Acaena ovalifolium (Two-spined Acaena) first VC record, growing in forestry around Leithen Lodge.

I have surveyed the farm and made a contribution to the current Forestry consultation. The current planting proposals will leave the large area of blanket bog and marsh unplanted though the *Meum athamanticum* (Spignel) which grows on the dry acid grassland still needs to be protected.

Interesting new records from Roxburgh and Selkirkshire 2016. (v.c.80 & 79)

Rod Corner and Jeff Waddell

Luke Gaskell has made some interesting discoveries at the new Borders Railway sites at Galashiels of which *Senecio inaequidens* (Narrow-leaved Ragwort) and *Hirschfeldia incana* (Hoary Mustard) are the most noteworthy and are exhibited here together with descriptions from the *The Adventive Flora of Tweedside* by Hayward and Druce (1919). Although they were recorded by Mary MacCallum Webster and Olga Stewart in the 1960's and early seventies from the flora derived from the woollen industry at Galafoot, they have not been seen in the area since. It is thought that the railway excavations have allowed long buried seed in both v.c. 79 & 80 to come to the surface and germinate.

Michael Braithwaite made an intensive survey of flora of the trunk road A7 in Roxburghshire and Selkirkshire in 2016 and published an account in *Floras of Hawick's Road and Rail Routes compared*. Among several interesting species seen was the elusive *Leontodon saxatilis* (Lesser Hawkbit) as the first definite record for v.c. 80. It is not a native species in the area but derived from a wild flower seed mix. The diagnostic taxonomic features were described.

On the 25th of September three and a half miles east of Kelso in Roxburghshire, Jeff Waddell collected a species which appears not to have been rec-

orded in Scotland this century, *Galeopsis angustifolia* (Red Hemp-nettle). The last Roxburghshire record is from 1860, i.e. 156 years ago! The plant was growing in an arable margin in a wheat field.

During the BSBI Hawick field meeting on the 26th of July Jeff Waddell, Luke Gaskell & Phil Munro recorded a well established population of over 70 plants of *Oenanthe fistulosa* (Tubular Water-dropwort) scattered around the margins of Broadlee Loch. It occupied two habitats, sedge swamp and shallow rocky loch edges. These are the first Roxburghshire records and also the first for the Scottish Borders region. It is suspected the species may have colonised the site recently, rather than have been overlooked. During the same recording trip, the neophyte *Lagarosiphon major* (Curly Waterweed) was also collected from Broadlee Loch. This is the third county record, but the first time it has been recorded from a natural water body, away from habitation.

Floras of Hawick's Road and Rail Routes compared (v.c.80)

Michael Braithwaite

A 2015 survey of a 20 mile stretch of disused railway near Hawick in Roxburghshire had demonstrated the survival of a botanically species-rich habitat corridor. This raised the possibility that a comparable corridor might have developed down the A7 trunk road especially as so much of it had been subject to road realignment projects that had left a legacy of broad verges, cuttings and embankments. The 2016 survey of the A7 from Mosspaul to Selkirk has indeed found habitats that are comparable with those on the old railway.

Species-diversity is at its highest in the grassland of the frequent cuttings and embankments. Orchids are very plentiful. There is also a rich mosaic of habitats in narrow unmanaged strips sandwiched between the road and the River Teviot. Most of the roadside habitats are represented by small fragments, underlying the tenuous existence of the populations of species confined to such fragments that make up so many of the 'dots' in distribution Atlases.

The very detailed survey report, illustrated in colour, is available on the BSBI website under Roxburghshire and as a printed booklet.

Some highlights of 2015/2016 in Midlothian (v.c.83)

Barbara Sumner

Photographs are displayed to show two new vice-county records, and seven scarce or rare species recorded at new sites. *Echinops exaltatus* (Globe-thistle) and *Rumex hydrolapathum* (Water Dock) are new to v.c.83, the former being a garden escape and the latter a native species which has spread along the Union Canal. Scarce or rare species found at new sites are *Dactylorhiza incarnata* subsp. *incarnata* (Early Marsh Orchid), *Equisetum pratense*

(Shady Horsetail), *Lactuca serriola* (Prickly Lettuce), *Meum athamanticum* (Spignel), *Scleranthus annuus* (Annual Knawel), *Scutellaria galericulata* (Skullcap) and *Valeriana dioica* (Marsh Valerian). All these scarce or rare species are native except *Lactuca serriola*, which is an archaeophyte making a reappearance after 105 years absence.

New and interesting Lothian Reords

Douglas McKean

A dozen specimens are exhibited mainly from a brownfield site at Newbridge, but also from Currie. *Scilla bithynica* (Turkish Squill) NCR, *Geranium x cantabrigiense*, NCR from Catcune (Fountainhall) and Newbridge. The latter site also delivered *Lysimachia ciliata* (Fringed Loosestrife) NCR chocolate leaves, *Geranium versicolor* (Pencilled Crane's-bill) NCR, *G. x oxonianum* (Druce's Crane's-bill), *Aquilegia vulgaris* cv. (Nora Barlow Columbine), *Astilbe x arendsii* NCR red var. *Clematis* sp. (sterile), *Geranium versicolor*, NCR, *Lysimachia nummularia* 'Aurea' (Creeping Jenny), *Hypericum calycinum* (Rose-of-Sharon), *Typha latifolia*, (Bulrush), *Melissa officinalis* (Balm) NCR, lots of *Calamagrostis epigejos* (Wood Small-reed) and hundreds of *Senecio inaequidens* (Narrow-leaved Ragwort) and finally a colony of *Chara vulgaris* (which is rare), confirmed by Nick Stewart.

This is the site that delivered *Anthoxanthum aristatum* ssp. *puellii* - no longer found. I am also exhibiting a leaf from a seedling of *Quercus cerris* (Turkey Oak) from a seeding in a hedge, Inverleith Park, Edinburgh, where *Q. cerris* is frequent. Regeneration is also known from Glasgow and Lanarkshire and is frequent down south. I note that the Army are felling their Turkey Oaks in favour of native ones which may be under threat from it.

Also exhibited is Stuart Maxwell's *Blackstonia perfoliata* (Yellow-wort) - a species new to the Lothians and only the third site for Scotland.

A New Site for *Linnaea borealis* in NE Fife (v.c.85)

R. Pennington & A.S. Edwards

In Scotland, the distribution of *Linnaea borealis* (Twinflower) closely matches that of the old pinewood remnants of the Caledonian Forest, as the species is most closely associated with these ancient woodlands. It is most common in the northeast of the country, in the drier native pinewoods.

In Tentsmuir Forest in NE Fife (vc85), *Linnaea* is growing under mature Scots Pine that date from the forest's early development in the 1920s. The ground flora is *Pinus sylvestris*-*Hylocomium* woodland, *Erica cinerea*-*Goodyera repens* sub-community of the Grampian Highlands, albeit with several coastal dune species.

"*L. borealis* has been recorded from some locations in the Borders region, and also in the northeast of England, where it was most likely introduced in

the 18th century, together with conifers planted from Norwegian sources, but it has subsequently disappeared from there.” (*Trees for Life* website)

Tentsmuir Forest is younger than the North East and Borders plantations. Perhaps *Linnaea* was accidentally brought there with juvenile pines from the Highlands or Norway, or perhaps they were brought from the North East lowlands or Borders plantations. It would be informative to know the origin of the original saplings planted in Tentsmuir.

A new site for *Lycopodiella inundata* (Marsh Clubmoss) in West Perth (v.c.87)

Jane Jones

After a day's recording on the hills on the north side of Loch Katrine, Arthur and I were heading by the most direct route we could find, back to the car. We were following a rough track which undulated through the terrain and which had presumably been last used when some broad-leaved tree planting had taken place at least 5 years previously. As we came down a small slope where the track was less vegetated I noticed a club-moss which looked unfamiliar. I took a few photos and a small specimen to look at later and we continued on.

When I examined the plant I realised it looked very much like *Lycopodiella inundata* (Marsh Clubmoss). But as this is considered endangered within Britain, I felt I needed a second opinion, so contacted both Liz Lavery and Heather McHaffie. Heather was excited enough to come out to the site and confirmed that my identification was correct. We also investigated the spread of the *Lycopodiella inundata* in the area and I also looked at old maps to see if I could work out the age of the track. This exhibit gives more details of the find.

***Pseudorchis albida* (Small-white Orchid) discovered in West Perth (v.c.87)**

Liz Lavery

John Snodin and Roy Sexton found 6 flowering spikes of *Pseudorchis albida* (Small-white Orchid) growing beside the footpath to Callander Craggs, Braeleny above Callander village on 11th June 2016. This is the first confirmed record for this species in West Perth since the 1970s. The tiny plants, 5-8 cm high, were growing in herb rich grassland with other orchids *Gymnadenia borealis* (Heath Fragrant-orchid) and *Platanthera chlorantha* (Greater Butterfly-orchid), and *Succisa pratensis* (Devil's-bit Scabious), *Carex flacca* (Glaucous Sedge), *Potentilla erecta* (Tormentil), *Anthoxanthum odoratum* (Sweet Vernal-grass), *Festuca ovina* (Sheep's-fescue) and heath species *Calluna vulgaris* (Heather) and *Vaccinium myrtillus* (Blaeberry) nearby.

Base-enriched areas on the west side of the road in the area known as 'the Commonly' on Braeleny Farm are rich in orchid species (NVC plant communities MG5, MG3, M10). *Trollius europaeus* (Globeflower), *Orchis mascula* (Early-purple Orchid), *Neottia ovata* (Common Twayblade) and *Ranunculus auricomus* (Goldilocks Buttercup) are present in unusually high numbers. *Cirsium heterophyllum* (Melancholy Thistle) is also present but under threat from grazing. It is an outstanding site, probably the best for orchid species in West Perth, but has never been adopted as an SSSI. The discovery of Small-white orchid makes it exceptional.

Stirling and Clackmannanshire SWT Group's Botanical Projects in v.c.86 & 87 *Roy Sexton and Melissa Shaw*

This rolling video display will illustrate the botanical monitoring/conservation projects of this local SWT group including those concerned with *Silene viscaria* (Sticky Catchfly), *Coeloglossum viride* (Frog Orchid), *Platanthera bifolia* (Lesser Butterfly-orchid), *Pseudorchis albida* (Small-white Orchid), *Juniperus communis* (Juniper), *Neottia nidus-avis* (Bird's-nest Orchid), *Bryum schleicheri* (Schleicher's Thread Moss), *Genista anglica* (Petty Whin), *Heracleum mantegazzianum* (Giant Hogweed), *Helianthemum nummularium* (Rock Rose), *Platanthera chlorantha* (Greater Butterfly Orchid), Hedgerows, etc..

The Perthshire Society of Natural Science 150th Anniversary

Alistair Godfrey

This display summarises the PSNS's contribution to botany since 1867, led from the start by Dr. Francis Buchanan White with prodigious energy and enthusiasm. His greatest contribution to British botany was *A Revision of the British Willows*; seven of his hybrid binomials are still recognised.

The number and variety of excursions were also prodigious. Specimens were collected for the Society's own museum. Records were collected for the *Flora of Perthshire* and published in 1898, posthumously in Buchanan White's name, completed by Professor J. W. H. Trail of Aberdeen University.

Other notable PSNS members include William Barclay, who had an interest in roses and their hybrids; one was named by Georges Rouy as *Rosa* ^x*perthensis*. Barclay's pupil, J. R. Matthews, developed an interest in roses, and also ecology and plant distribution in his native Perthshire. He was also Professor of Botany at Aberdeen University.

Botany flourished again from the 1950s, led by A. W. Robson, BSBI recorder for all the Perthshire vice-counties for several years, and chair of PSNS's Botanical Section. A *Checklist of the Plants of Perthshire* followed in 1992. The BSBI partnership continues and with the BSS on the Urban Flora of Scotland project.

***Saxifraga hirculus*: a new population in Perthshire (v.c.89)**

Martin Robinson

On 2 August 2016 a strong new population of *Saxifraga hirculus* L. (Marsh Saxifrage) was discovered by Martin Robinson on Fealar Estate in the extreme north of v.c.89 (East Perthshire). Three weeks later another colony, 100 metres from the first one, was found by Leslie Tucker, who had accompanied Martin Robinson to see the population. Both colonies were in linear flushes at an altitude of 720-735 metres. These resulted from slightly calcareous springs issuing from the lower edge of a peat cap covering the shoulders of a long ridge. They were densely carpeted with moss species and a rich variety of herbs, appearing from a distance as stands of *Carex rostrata* (Bottle Sedge) in one case and *C. nigra* (Common Sedge) in the other.

The community is best described as M8 *Carex rostrata* - *Sphagnum warnstorffii* mire, although the moss blanket was mostly of pleurocarpous species. The most frequent Sphagnum species was *S. warnstorffii*, and *S. teres* and *S. angustifolium* were also found. The main herbaceous species are listed. They range in base-tolerance from *Parnassia palustris* (Grass of Parnassus) to *Comarum palustre* (Marsh Cinquefoil). *Pyrola rotundifolia* (Round-leaved Wintergreen) and *Salix myrsinites* (Whortle-leaved Willow) are present in one of the flushes.

This discovery constitutes the fifth extant population in Scotland.

Wilson's Filmy-fern Extant in Angus (v.c.90)

Theo Loizou

Hymenophyllum wilsonii has not been detected in Angus for at least 50 years and was thought to be extinct. However, in 2016 T. Loizou detected the fern in West Corrie of the Clova mountains, while recording for Atlas 2020.

Several old records exist for this fern in the county. For example, it has been recorded at Reekie Linn in the Den of Airlie and also by a stream near the Bassies in Glen Clova. Other sites include Falls of Fee and Glen Effock in Glen Esk. The most recent old record is from Bachnagairn and this appears to date back to the early 1960's. There are no past records in Angus of this fern in West Corrie and therefore it could be a new site. However, it is not clear whether the Bachnagairn site (which is just about 1 km from the site) that is referred to in the *Flora of Angus* (1981) is this site.

The colony itself occurs in damp (but not wet) north facing mossy crevices in what appears to be mostly acidic rock. This small colony contained at least 100 fronds.

Elusive and Rare Orchids in Angus (v.c.90)

Theo Loizou

Two orchids that are particularly scarce in Angus are the *Pseudorchis albida* (Small-white Orchid) and *Anacamptis pyramidalis* (Pyramidal Orchid).

P. albida is known mainly from Glen Clova and Glen Esk where it is associated with species-rich heathland. However, it also occurs in a few lowland areas such as Woodside not far from Kirriemuir. While undertaking recording for Atlas 2020, the author found a new site in the county along the north-facing slope of Glen Ogil Reservoir in grassland. Although this proved to be a good find only one flowering spike was detected in the whole area and no non-flowering shoots were found. The area was grazed by cattle.

A. pyramidalis is currently only known from one site in Angus. It occurs near Easthaven in calcareous dune grassland. However, according to the *Flowering Plants and Ferns of Angus* by Hogarth (2012), numbers of plants at Easthaven have steadily declined since it was first discovered there in 1998 by L. Tucker. In 2016 L. Tucker and T. Loizou re-visited the site but were unable to detect any plants. This rich dune-grassland is moderately to heavily grazed by cattle and they appear to be having a deleterious effect on this orchid.

Two tricky montane ferns (v.c.90)

John Edgington

It is sometimes difficult to distinguish *Dryopteris oreades* (Mountain Male Fern) and *D. expansa* (Northern Buckler Fern) from *D. filix-mas* (Male Fern) and *D. dilatata* (Broad Buckler Fern) respectively. Not only are these two far commoner than their montane relatives, but they often grow in close association with them. This exhibit aims to show, by photographs and mounted specimens, some of the distinctive characters separating these, and related, species. After studying these, you should in most cases be able to identify these ferns in the field (which is likely to be block scree on a disconcertingly steep slope). Plants shown were collected in Angus, v.c.90.

Dwarf Atlantic Ivies (v.c.99 & v.c.75)

Alison Rutherford

This exhibit shows living samples of typical Atlantic Ivy dwarf forms and a tiny-leaved prostrate but vigorous form from a wood near Westerton, west of Glasgow (v.c.99). A painted china bowl with a small, tri-lobed, round-tipped ivy is also displayed - made by an artist living on Bute. As this portrays a plant very similar to the known 'Irvine Dwarf' ivy from v.c.75 Ayrshire, it perhaps indicates that this form may also be found on that island. This may mean that we have *Hedera hibernica* (Atlantic Ivy) but not *Hedera 'hibernica'* (Irish Ivy) as a native in three Scottish Vice Counties.

***Hypolepis ambigua*, a New Zealand endemic fern, newly discovered in a wild state in the British Isles (Clyde Isles v.c.100)** *Angus Hannah*

In March 2016, in a remote conifer plantation on Bute, I found an extensive colony of a large bracken-like fern unfamiliar to me. A specimen which I sent to Fred Rumsey at NHM was determined by Tim Pyner as the New Zealand endemic *Hypolepis ambigua* (Brownsey & Chinnock) not previously recorded in the wild in the British Isles. Not considered particularly decorative, it is seldom grown in gardens, but occasionally juveniles travel as epiphytes on the trunks of tree-ferns.

The species was not well understood in the past, and was partly included in the ill-defined taxon *H. tenuifolia* until the thorough revision of New Zealand *Hypolepis* by Brownsey & Chinnock (1984). There are specimens from New Zealand in E, originally labelled *H. tenuifolia*, the majority of which have been re-determined by Brownsey as *H. ambigua*. The most useful characters are the pseudo-indusia (flaps partially covering sori) and the hairs beneath the lamina, the latter being best observed on fresh material.

A frond is exhibited, along with some photographs and details of the site, and information about the taxon.

***Trachyspermum ammi* (v.c.103)**

Lynne Farrell

Trachyspermum ammi (Ajoram) was found on the island of Coll in August 2016. The BSBI database shows that there are very few records for this casual species and only six from this century. With many people now providing bird-seed in their gardens, it is likely to be on the increase, so worth keeping an eye on what grows under the bird-seed holder.

***Linnaea* returns to East Ross (v.c.106)**

Brian Ballinger

Linnaea borealis (Twinflower) was thought to be extinct in East Ross not having been recorded since 1957. However it has now been found in four sites:

Wester Culbo Wood NH638 597. Found by us in March 2007 when looking for an *Orthilia* site in Forestry Commission pine plantation.

Strath Vaich NH342 753. Found in birchwood by Ian Green in March 2012. There had been unconfirmed reports about a population in this area before, but they were never confirmed.

Cnoc Navie NH658 787. Found by me in September 2015, growing in a Forestry Commission pine wood plantation.

Cnoc Corr Guinie NH666 747. Found by Derek Gunn and FC staff in August 2016. Another FC pine plantation. There are (at least) two populations here.

It is notable that three of these sites are in Forestry Commission *Pinus sylvestris* (Scots Pine) plantations and most were found when not in flower

(although they have all been seen to flower since). How did they get there? How many more sites are waiting to be found? *Linnaea* is relatively easy to identify when not in flower once you have your eye in for it and the three FC patches extend over 5 to 40 metres.

Short or long visits - which are better? A pilot study (v.c.106) *Brian Ballinger*

Four linear sites of approximately 400 metres were selected and visited on 3 occasions, starting at the centre; 2 were coastal, one urban and one forest. One visit was one hour long and two visits were of half an hour each. The order was varied and all vascular plant species seen were noted.

All visits took place during a two week period in September, although all sites were recorded on 3 different days. A total of 231 records were made on the 4 long visits and 277 on the 8 short visits to the same sites. The long visits only recorded 84% of the short visit species total. Some 46 long visit species were not noted on the short visits and 92 short visit species were not seen on the long visits. This suggests there may be advantages to repeated short visits rather than one long visit. However, this must be treated with great caution as it is a small sample and reflects the experience of only one recorder and takes no account of travel time.

West Sutherland, 2016 (v.c.108)

Ian Evans and Gwen Richards

A productive year's work, yielding some 4100 records from 36 monads, mainly in under-recorded areas on the north coast and in Strath Naver, including the following:

Eleocharis parvula (Dwarf Spike-rush): saltmarsh, Kyle of Tongue, June (Clive Chatters; second Scottish record).

Ruppia cirrhosa (Spiral Tasselweed): saltmarsh pool near the above, September (first recent record for mainland Scotland).

Ranunculus flammula scoticus (Lesser Spearwort): exposed shore, Loch Loyal, July (new site).

Mertensia maritima (Oysterplant): Armadale Bay, July (new site).

Solanum dulcamara (Bittersweet): normal and albino forms, mouth of the River Strathy, August (first recent record from West Sutherland).

Many thanks for help from: Bill Badger (Loch Urigill); Gordon Rothero and Ro Scott (Tongue).

Plant Families Workshops 2016

Faith Anstey

Now in its fourth year, the three Plant Families Workshops we held this spring - in Glencoe, Stirling and Dundee - were as successful and enjoyable as ever. Fifty-five students attended, and twelve tutors generously gave their

time and expertise to introduce beginners and improvers to the concept of identifying species by finding the family first.

The Pocket Guide to Wildflower Families being published and on sale to all, the print run of 500 is now almost sold out. Copies have gone all over the country to individuals, local botanical groups and even for use at Napier University. The National Trust for Scotland is also keen on this approach through families, and Plantlife's recommendation of the booklet to volunteers on the National Plant Monitoring Scheme resulted in many more orders.

[For more details and 2017 plans see Faith's note on page 51]

Influence of aspect on diversity, distribution and leaf size of plant species in an alpine environment

Patricia Monterde Vitoria¹, Jay Mackinnon¹ and Dan Watson²

¹Edinburgh Napier University, ²National Trust for Scotland

This study examined the relation of aspect, slope and radiation to species distribution, species richness, vegetation cover, community composition and leaf size in the Breadalbane Mountains. Slope and aspect are important drivers of vegetation composition in montane habitats due to the creation of different microclimates by variation in the period and intensity of solar radiation. In addition, since disturbances induce strong changes in the abundance of plant species, grazing pressure was also estimated.

Five summits within the Ben Lawers National Nature Reserve were sampled using a modified GLORIA approach (Pauli *et al.* 2015), recording percent cover of each substrate and species of plant and lichen. Leaf size was measured on *Alchemilla alpina* (Alpine Lady's Mantle) and line transects used to estimate grazing pressure in terms of number of intact dung pellets.

We present the plant communities identified (using the National Vegetation Classification), examine the factors underlying variation in species composition and abundance using ordination plots and describe the patterns of presence/absence, abundance and richness of species in relation to aspect, solar radiation, estimated grazing pressure and location.

An opportunity for translating Low Countries' botanical expertise to a Scottish context: Discovering *Taraxacum pietii-oosterveldii* (Piets Paardebloem, Pisenlit de Pierre, Pete's P.-abed, Caisearbhán'a Peadair)

Leslie Tucker

Having myself overcome, with considerable trouble, the common or gardeners' prejudice which leads to the recording of *Taraxacum agg.* (Dandelion allsorts), I recommend targeting a few rarer species which have more recognisable jizz; also worthy indicators and essential components of threatened wild habitats.

As my title indicates, I have been greatly aided by recent Dutch publications, which I recommend and make further reference to in my exhibit. I hope my translations and interpolations are appropriate and memorable. First, if one overlooks, however temporarily, the gross and ubiquitous herbs of section *Ruderalia* (Weeds), some of our nicest species are found in section *Celtica* (Westerners). Here, the title taxon commemorates a recently died Dutch explorer and environmentalist. Karst Meijer's Herbarium Friscum and Dandelion Society have proposed keys to a new section *Frugalia* (Schraallandsindicatoren, Skrawland Indicators); Wiktionary proposed 'skimpy country indicators', but old fellows recall thin turfs turned to cultivate lazy beds, *sgrath* (skraw), as more couthily appropriate.

Eponymous *T. frugale* (Schraallandspaardebloem), widespread in Netherlands, I know only in Devon. BSBI Handbook 9 lists *T. nordstedtii* s.l. (Nordstedt's Dandelion group), 42 a - e, including *T. lancastriense* (Lancastrian Dandelion) discovered in Perthshire and Angus Sidlaws. Others probably await identification and reclassification.

BSBI Photographic Competition

Natalie Harmsworth

All 112 entries to the 2016 BSBI Photographic Competition are displayed. Vote for your favourites in each of the two categories: Rare species and Common species. The winners will be announced after the main talk and, if present, will be awarded BSBI Summerfield Books tokens. The winning photographs will be displayed at the prize giving and will adorn future front covers of BSBI publications. [See our cover, *editor*]

Botanical Society of Scotland (BSS) - The Urban Flora of Scotland

John Grace

The Botanical Society of Scotland has completed the second field season of a long-term project to survey the flora of Scotland's towns and cities. The hypothesis to be tested is that towns and cities, by virtue of a slightly warmer microclimate, hold more warmth-loving species which are otherwise found further south. We present some early indications, highlighting several species which appear to be scarce or absent in Scotland generally, but which thrive in Scottish towns and cities. We appeal for those with relevant data to join our project, by registering as a recorder on our web site.

The British Pteridological Society for fern enthusiasts

Heather McHaffie

The British Pteridological Society has an active Scottish group with summer field trips. Non-members are always welcome. Add your name and email to the sign-up sheet if you would like to be on the mailing list for these visits. Each year a site is monitored and there are trips both to wild fern populations and gardens. (See programme on page 54)

Plantlife Scotland - second field season of the National Plant Monitoring Scheme

Jill Williams

The National Plant Monitoring Scheme (NPMS), a partnership between Plantlife, BSBI and CEH, and funded by JNCC, has completed a successful second field season. In Scotland the number of allocated monads is now 208, an encouraging increase of 35% from 2015. There is still much to do to increase the adoption of monads particularly in more remote and rural areas of Scotland, and to ensure sufficient survey plots in upland habitats.

We continued our training programme, with four “Introduction to the NPMS” workshops around Scotland delivered by Jill Williams, and two “Introduction to Grasses and Sedges” run by Ben Averis. We have also set up a mentor scheme, with eight mentors around Scotland, many of whom are also Vice-county Recorders. We hope that mentoring will enable more volunteers to progress to the core “Indicator” level of NPMS. There should also be benefits beyond the NPMS in terms of increased volunteer plant surveyor capacity and skills. We are grateful to all the mentors for their support.

Feedback from volunteers has been very encouraging, and drop-out rates are extremely low. Half of the volunteers are members of Plantlife or BSBI. Although about half have been involved in surveys before, a further third are new to surveying.

Plant Identification Table

Douglas McKean

A great opportunity to get expert help with identification

Other displays included

Botanical Society of Britain and Ireland (BSBI)

Jim McIntosh

The BSBI Panel of Referees and Specialists

Jeremy Ison

Scottish Natural Heritage

Sarah Smyth

Bryophyte finds on BSS Urban flora excursions in 2016

David Chamberlain

Botanically themed glass

Hazel Metherell

National Trust for Scotland: NTS botanical work

Lindsay Mackinlay

Reports from Vice-County Recorders

Dumfriesshire (vc72) *Chris Miles*

Good progress was made with Atlas 2020 with 4732 records gathered from 25 monads and 18 tetrads. In the latest recording period, of the hectads with over

200 species recorded (range from 268-703), 20 have more than 70% of the species re-recorded. Of the 18 with less than 70% only 3 of these are less than 60%. These 18 will be the priority for recording in the three remaining seasons with the aim of getting as many hectads as possible above 70%.

A field meeting in the Moffat Hills on 23/24 July was attended by 8 people. Some of the specialities found in new sites are highlighted in the field meeting report. Some good sites were found or revisited included a valley mire with calcareous flushes, unusual for Dumfriesshire, supporting *Carex diandra* (Lesser Tussock-sedge), *Dactylorhiza incarnata* subsp. *incarnata* (Early Marsh-orchid), *Eriophorum latifolium* (Broad-leaved Cottongrass), and *Utricularia minor* (Lesser Bladderwort). The re-find of the small population of *Persicaria vivipara* (Alpine Bistort) in the ravine at Dalveen was the first record here since 1984.

I finished the Rare Plant Register for Dumfriesshire which was published on the BSBI web pages in July. I made two recording visits to a square for the National Plant Monitoring Scheme and volunteered to be mentor for this scheme. I attended the Edinburgh and Shrewsbury recorders' meetings and I volunteered to help develop recommendations for the BSBI review, attending a residential weekend in January 2017.

Kirkcudbrightshire (vc73) David Hawker

5000 records for 2016 from 62 monads were entered to the MM database with 10 NCRs, mostly casuals/aliens, except possibly for *Imperatorium obstruthium* (Masterwort); plus the 2nd records of *Carex strigosa* (Thin-stalked Wood-sedge) last seen in 1976 and *Foeniculum officinale* (Fennel). And a late submission of 3850 records from 2015 also added.

The Kirkcudbright Botany Group numbering 49, held 11 field meetings in its 3rd season, with one cancelled due to sensitive breeding birds on site. Of the 1550 records, the highlights were re-discovering *Ruppia maritima* (Tasselweed) at one of its few VC sites, and new locations for *Saussurea alpina* (alpine saw-wort), *Saxifraga hypnoides* (Mossy Saxifrage), *Sedum rosea* (Roseroot), all CRPR species. Meetings reports are available from me. A sedge id day in June was attended by 15 members, with demand for more similar days! **See page 53 for the 2017 programme.**

The third SCM cycle on a coastal SSSI, resulted in four of the five species monitored in Favourable condition, the 5th species *Mertensia maritima* (Oyster-plant) being a temporary, sporadic plant here.

I continue to serve on the MOD Kirkcudbright Conservation Group and up-dated their site RPR files of 32 species to 2016 - the above-mentioned SSSI sits almost wholly within their area. I have belatedly begun work on the CRPR. I responded to consultation documents on expansion of the Solway SPA/SSSI and the draft Forestry Guidance.

Wigtonshire (vc74) Alan Silverside

A quietly satisfactory year though with no real surprises. As previously, recording concentrated on unrecorded monads in the poorest recorded hectads. There remain 5 hectads, all fragmentary and marginal, still with under 200 species, which will be the principle targets for 2017 recording.

An old walled garden with weedy paths provided the first recent record of *Veronica polita* (Grey Field-speedwell), last recorded in the county in 1990, the second recent record of *Mimulus moschatus* (Musk), recorded from the same site in 1977, and *Fumaria officinalis* ssp. *wirtgenii* (Common Fumitory), in a glasshouse, seemingly new to Wigtonshire.

Much still needs to be done and help with recording will be gratefully received.

Ayrshire (vc75) Dave Lang

Progress continues as quickly as it reasonably can with Atlas 2020 coverage. For a variety of reasons, we had a few more bodies available to us in 2016 than we normally do (or are likely to have in future years) and as a consequence we were able to schedule two Atlas recording trips per month in 2016 and know that at least one or two people would be available for each. We continue to record at tetrad level - but have certainly noticed that having two groups of two or more individuals covering different parts of the tetrad leads to a significantly larger species total at the end of the day. Meeting the full recommended level of vice county coverage for the 2020 Atlas remains highly unlikely - but I am well aware that we are far from unique in that respect.

The VC75 Ayrshire Rare Plant Register was finally published on-line in 2016. Consideration will be given to updating this to a flora at the end of the Atlas 2020 project. Another priority for the near future is likely to be the setting up of a website for Ayrshire.

Despite the increase in recording intensity - and indeed a number of interesting refinds or hectad firsts - the most interesting records that came to light this year in fact came from the discovery of an old (2010) FCS Montane Scrub Survey of the south-eastern boundary of the VC. This included first Ayrshire records for *Salix lapponum* (Downy Willow) and *Saussurea alpina* (Alpine Saw-wort).

Lanarkshire (vc77) Michael Philip

2016 has been a most exciting year! My predecessor's (the late Dr. Peter Macpherson) eagerly-awaited 'The Flora of Lanarkshire' was published and launched in September. Together with his herbarium, which is currently being catalogued at Glasgow's Kelvingrove Museum, this provides the vice-county with better resources than ever.

The major piece of field-work in 2016 was a week-long Field Meeting in the south of Lanarkshire, organized in June by Angus Hannah (VCR Clyde Islands). Just

over 4,200 records were made in some 30 hitherto under- or un-recorded tetrads. This was a major contribution to the 7,800 records that were added to the DDb for 2016 for Lanarkshire.

I was appointed as VC Recorder late in the year (November) and my immediate priority has been to gain a detailed understanding of the current status of Atlas coverage, and begin to build a team of field botanists to help with recording in the vice-county.

The Lanarkshire page on the BSBI website is now live, and contains a detailed report on the June Field Meeting.

As the new season approaches, an extensive programme of outings is being planned with training resources and events provided for beginners and improvers - including some schools who would like to get involved.

Peeblesshire (vc78) Luke Gaskell

4730 records were made and digitised this season bringing the total contributed for Peeblesshire via MapMate to 36600 (and via all sources to 53,300) since 2000.

This year I have concentrated on the poorly recorded South West of the county spurred on by Andy Amphlett's record density maps. It is unsurprising that this part of the Vice-county needs more attention as it takes a long time to get there and can be relatively unrewarding as it is mostly acid hill and forestry. However much of the area is rather beautiful and I have enjoyed tracing the remains of the big sheep farms which thrived here during the enlightenment. The current poor returns from sheep and consequent expansion of tree planting, along with wind turbines and grouse moor management, is rapidly changing this landscape and its flora. Some of the more interesting records were exhibited at the SAM.

A small number of excellent records have been sent in: *Cornus suecica* (Dwarf Cornel) at a new site and *Hymenophyllum wilsonii* (Common Filmy-fern), a 2nd VC record, both reported by Dr David Long. *Persicaria vivipara* (Alpine Bistort) in a new 10k Square by Graham Pyatt and *Platanthera chlorantha* (Greater Butterfly-orchid) a 2nd VC record, recorded by Alison McArthur.

I have also been surveying the urban flora of the towns along the upper Tweed, both in Peeblesshire and in neighbouring VCs. It is noticeable that urban areas now have a more diverse flora, excluding casuals, than the surrounding farmland. This type of data could be used to show that urgent action is needed to protect and enhance remaining habitats.

Selkirkshire (vc79) Rod Corner & Jeff Waddell

2016 was a better than average year with 1,484 records collected in total. Michael Braithwaite collected just under half of these, mostly on his A7 roadside survey. His highlights included *Carduus crispus* (Wetted Thistle), *Colchium au-*

tumnale (Meadow Saffron), *Sagina filicaulis* (Upright Pearlwort), *Cymbalaria palida* (Italian Toadflax) and *Philadelphus coronarius* (Mock Orange).

Sarah Eno was the second most prolific recorder noting over 350 records including several quality ones: *Antennaria dioica* (Mountain Everlasting), *Vicia sylvatica* (Wood Vetch) and *Melica nutans* (Mountain Melick) near Meerlees on the Tima Water and *Agrimonia procera* (Fragrant Agrimony) near Tinnis in the Yarrow valley. Rod Corner teamed up with Sarah to visit Clearburn Loch for a very productive recording session. *Carex appropinquata* (Fibrous Tussock-sedge) was rediscovered in quantity at its second vice county site and the nationally rare *Hierochloa odorata* (Holy Grass) was found to be present in three distinct monads.

Other recorders included Martin Moncrieff recording over 100 species around Stantling Craig Reservoir, the most notable of which was *Polygonatum x hybridum* (Garden Solomon's-seal). Luke Gaskell also investigated ruderals associated with the new railway in both Selkirkshire and Roxburghshire and found *Hirschfeldia incana* (Hoary Mustard) and *Senecio inaequidens* (Narrow-leaved Ragwort) in Vc79. Douglas Methven worked the riverbanks around Selkirk and found *Persicaria amplexicaulis* (Red Bistort) a new county record and two sites for *Centaurea cyanus* (Cornflower) associated with the flood defence works.

Roxburghshire (vc80) Rod Corner & Jeff Waddell

In total 7,804 records were collected from Roxburghshire, just under half by Michael Braithwaite, mostly in connection with the publication "Flora of Hawick's Road and Rail Routes Compared". The records included many garden escapes, hybrids and difficult-to-identify taxa. Highlights included: *Poterium sanguisorba* subsp. *sanguisorba* (Salad Burnet) and *Trichophorum x foersteri* (Hybrid Deergrass). Michael's survey greatly improved tetrad coverage of roadside halophytes including *Atriplex prostrata* (Spear-leaved Orache).

Jeff Waddell targeted thirteen poorly recorded tetrads, most of which were recorded by an informal group of beginner and improver botanists lead by him, producing c. 2,500 records.

Four tetrads were targeted in the Rule Water Valley, the most notable find here was *Oenanthe crocata* (Hemlock Water-dropwort) in two tetrads. New colonies of *Scirpus sylvaticus* (Wood Club-rush) and *Astrantia major* (Astrantia) were also of interest here. *Agrimonia procera* (Fragrant Agrimony) and *Centaureum erythraea* (Common Centaury) were found in the Newcastleton area. Jeff snuck in evening recording sessions after work in three tetrads on the long days of midsummer and found an arable field with tens of thousands of plants of *Galeopsis speciosa* (Large-flowered Hemp-nettle).

Late in the season tetrads around Hownam were visited, producing choice calcicoles including *Scabiosa columbaria* (Small Scabious), *Origanum vulgare* (Wild Marjoram) and a new colony of *Dianthus deltoides* (Maiden Pink). Jeff Waddell

followed up old records of *Goodyera repens* (Creeping Lady's-tresses) in the Scots Pine plantations east of Jedburgh.

Rod Corner continued work on his flora and a rare plant register and found time to do some new fieldwork in Roxburghshire. Highlights included *Persicaria hydropiper* (Water-pepper) on the Kershope Burn and *Vaccinium uliginosum* (Bog Bilberry) at Holm Hill. Rod also attended the local records centre (TWIC) assessment meetings for notifying wildlife sites.

Many recorders were active in the county under their own initiative producing valuable records. Roger Manning recorded *Allium scorodoprasum* (Sand Leek) on a road verge near Crookhouse and *Malva neglecta* (Dwarf Mallow) in a churchyard. Martin Moncrieff refound *Bidens cernua* (Nodding Bur-marigold) at Folly Loch and *Solanum nigrum* (Black Nightshade) in his garden. Luke Gaskell turned up good species by the new railway: *Galinsoga quadriradiata* (Shaggy Soldier), *Hirschfeldia incana* (Hoary Mustard) and *Senecio inaequedens* (Narrow-leaved Ragwort).

Roxburghshire (vc80) *Michael Braithwaite, BSBI Recorder Emeritus*

Recording: 4,485 records, all at 100m scale or finer, were made by me and input into MapMate. Almost all related to the A7 trunk road project. Referee assistance received from Rod Corner.

Publications: *Floras of Hawick's Road and Rail routes compared*, a comparison of my 2016 survey of a 20-mile section of the A7 trunk road with my 2015 survey of the old railway, was published by the Hawick Archaeological Society. A PDF was uploaded to the BSBI website.

An article on Road and Rail project was published in BSBI News with emphasis on a maritime ecotype of *Elytrigia repens* (Common Couch) discovered to be widespread along the A7 with an associated gall.

An article was published in BSBI News on *How many species do we overlook when recording?*

Berwickshire (vc81) *Michael Braithwaite, BSBI Recorder Emeritus*

Recording: 170 records were made by six recorders and were entered in MapMate. These included two localities for *Neottia nidus-avis* (Bird's-nest Orchid), last seen 1985 and thought to be extinct, which was found by Nigel Picton and Ron McBeath. Robin Cowe found anthocyanin-free specimens of *Corallorhiza trifida* (Coralroot Orchid) confirmed by Richard Bateman.

Data validation on DDb: Minor follow-up work after a major exercise in 2015.

Archiving: I have begun indexing in Excel the metadata with Berwickshire paper records (the data at the top of field cards). I have also begun scanning associat-

ed route maps, site reports and similar material and also selected literature of a more general nature.

Publications: I published an autobiographical article on 'The making of a botanist' in the *History of the Berwickshire Naturalists' Club* and an article on 'Anthocyanin-free specimens of *Corallorhiza trifida*' in *BSBI News*.

Training: I have supplied limited support to Robin Cowe and Martin Moncrieff.

Talk: I gave a short talk to the Scottish Annual Meeting on 'How I became a botanist'.

East Lothian (vc82) Helen Jackson

2016 began well editing printouts of other people's digitised records - some 4,600 - so they could be entered into MapMate. My thanks to Andy Amphlett for preparing records for MapMate.

I retired after 30 years as the Wild Flower Society's Scottish Branch Secretary, which should leave me freer in the spring in future.

In June I enjoyed a week helping with recording in Wigtonshire but then, due to circumstances beyond my control, was unable to do more until October. My most notable East Lothian find in 2016 was *Datura stramonium* (Thorn-apple).

I am very grateful for all the records received. These included *Veronica scutellata* (Marsh Speedwell) at Aberlady Bay (last recorded there 1972) and *Gentianella campestris* (Field Gentian) at Longniddry Bents (previously pre-1934) from Abbie Marland, and from Stuart Maxwell a detailed record of *Blackstonia perfoliata* (Yellow-wort) confirming Jackie Muscott's unexpected 2014 record of this new-to-the-Lothians species.

I was unable to attend the Scottish Annual Meeting for the first time in more than 40 years, but enjoyed the BSBI Christmas Lunch - where two people offered help recording in 2017!

Midlothian (vc83) Barbara Sumner

2016 has so far yielded 7411 records from roughly 96 monads in 15 hectads. A further 1000-1500 records are expected. Grateful thanks to all surveyors.

New VC records were mostly garden escapes or planted species, including *Agapanthus praecox* (African Lily), *Astilbe x arendsii*, *Echinops exaltatus* (Globe-thistle), *Galanthus elwesii* (Greater Snowdrop), *Geranium x cantabrigiense* (Cambridge Crane's-bill), *G. himalayense* (Himalayan Crane's-bill), *G. versicolor* (Pencilled Crane's-bill), *Helianthus x laetiflorus*, *Houttuynia cordata* (Fish-plant), *Lysimachia ciliata* (Fringed Loosestrife), *Ostrya carpinifolia* (Hop Hornbeam), *Pinus radiata* (Monterey Pine), *Scilla bithynica* (Turkish Squill), *Thuja occidentalis* 'spiralis' (Northern White-cedar 'spiralis') and *Taxus baccata* f. *fasciculata* (Irish Yew).

Some rarities were re-found, e.g. *Lysimachia vulgaris* (Yellow Loosestrife) and *Scutellaria galericulata* (Skullcap) on the Penicuik Estate. It was a good year for *Saxifraga hirculus*, (Marsh Saxifrage) with 16 plants seen in bud or flower in August. *Oxyria digyna* (Mountain Sorrel), thought to be extinct in VC 83, caused excitement when found at Silverburn, near the Pentland Hills, but it was only a garden escape!

Edinburgh continues to receive more attention than the rest of the vice-county. Records would be welcome from more remote areas, e.g. W and E of Cobbinshaw Reservoir, W of Little Vantage, and areas in the Moorfoot Hills. Please contact the VC recorder if you would like to survey a monad for the Atlas 2020 project.

The VC recorder continues to represent the BSBI on steering groups for Local Biodiversity Sites in the Lothians, and for the Edinburgh LBAP.

West Lothian (vc84) Jackie Muscott

Only a very little recording was undertaken in West Lothian in 2016 due to ill-health. However, volunteer Katherine White digitized the 2015 record cards using MapMate and synched some 4,400 records to the DDb. She is currently working on the 2016 data.

Jackie retired as recorder at the end of the year, and the vacancy is currently being advertised in BSBI News.

Fife & Kinross (vc85) Sandy Edwards

I was unable to record in May and June due to a knee injury so fewer tetrads were recorded in 2016 than previously. However, a lot of progress was made with DDb validation. Records were received on card from four contributors and via MapMate from a fifth. A handful of individual notable records were also received from others. All these records have been thoroughly checked and George Ballantyne, joint Recorder, kept informed.

During 2016 I tutored for a Wildflower Families Workshop, for four students on the FSC on-line plant identification course (with probably two more this year) and for a St Andrews University field meeting at Kindrogan. I led the PSNS Field Meeting at Cleish and enjoyed the Shetland recording week. An NPMS survey was undertaken at Tentsmuir. I also participated in BSBI and PSNS committee meetings.

Significant finds in Fife in 2016:

- *Linnaea borealis* (Twinflower) NCR (See SAM poster)
- *Crepes biennis* (Rough Hawksbeard) (2nd record)
- *Dianthus deltoides* (Maiden Pink) (2nd record)
- *Setaria viridis* (Green Bristle-grass) (2nd record)

- *Rosa multiflora* (Many-flowered Rose) NCR
- *Sedum villosum* (Hairy Stonecrop) (Refound, very rare in vc85)
- *Ranunculus sardous* (Hairy Buttercup) (3rd record)
- *Crambe maritima* (Sea Kale) (2nd record)
- *Fumaria capreolata* (White Ramping-Fumitory) (3rd Record)

Stirling (vc86) Philip Sansum

Recording in 2016 ranged across 18 of Stirlingshire's 24 10km squares but much of this was casual and measurable progress with Atlas 2020 was limited to work in three or four hectads. A worthwhile plant recording day at RSPB Fannyside Lochs (NS87) was held with RSPB staff and Glasgow Botany Group in late summer and some useful plant recording has been undertaken in conjunction with volunteer surveying of other wildlife on the RSPB reserve at Inversnaid (NN30). Overall there was a modest accrual of 3094 records of 487 species (all digitised and captured at monad level or better). In 2017 there should be greater emphasis on the least worked hectads, potentially with help from Glasgow Botany Group.

Submission of records to the VCRs remains quite a rarity so it was pleasing to receive a very good dataset of some 400 observations from the Fintry Hills made by a new member. Members' contributions are needed to support the Atlas project, especially since the county is now down to one VCR.

Perhaps the most important record of the year was of a new site for *Hypopitys monotropa* (Yellow Bird's-nest) discovered by Niall Traynor at Skinflats. Other NCRs were *Catapodium rigidum* (Fern-grass), *Veronica peregrina* (American Speedwell), *Carex x fulva*, *Nepeta x faassenii* (Garden Cat-mint), *Cochlearia danica* (Danish Scurvygrass), *Hieracium diaphanoides* and *Chelone obliqua* (Rose Turtlehead - an alien native to the south-eastern USA and probably the first Scottish record). A second site, and 1st since 1982, for *Carex spicata* (Spiked Sedge) was also notable.

West Perthshire (vc87) Liz Lavery & Jane Jones

Between us we have entered over 7500 records. Jane visited about 35 tetrads 10+ monads, some of those with Liz. The highlight of the year for Jane was finding a new site for *Lycopodiella inundata* (Marsh Clubmoss). For Liz it was when she was shown *Pseudorchis albida* (Small-white Orchid) discovered by John Snodin and Roy Sexton, the first confirmed record for our vice-county. Accounts of both are in the SAM abstracts. It was also pleasing when Jane found *Pimpinella major* (Greater Burnet-saxifrage) near Callander when all we had were two old records from 1898 and 1961 just giving the 10km square.

We had two successful meets at Doune and Balquhiddy, the latter much helped by the presence of Steve Longster and Henry Lima. We also led a PSNS excursion

sion to Silver Glen, Alva in May. We managed to get into areas which hadn't been explored for a long time - if ever and hopefully we will continue this in 2017. We have begun the big task of verifying records, this is also an opportunity to tidy up and check our paper records, especially the older ones. Liz has continued to work with TWIC surveying potential LNCS (Local Nature Conservation Sites) for Clackmannanshire Council. We would welcome help from hill walking members/Rough Crew with recording in the remote far north-west of the county and in the interior of the Ochil Hills.

Mid-Perthshire (vc88) *Alistair Godfrey & Jim McIntosh*

We have added 7,000 records to the DDb for 2016 so far, but there are still more to digitise. Of the 251,317 all-time records for Vc88 in the DDb, 41% are now post 1999. Tetrad coverage is improving; six were surveyed that had no previous records (ever).

A highlight of the summer was the *Euphrasia* recording meeting based at Killin. Thanks to expert guidance from Chris Metherell, our knowledge of the genus and status of the taxa in Perthshire has been raised considerably. We were assisted by Dan Watson and his team who also provided records for the Ben Lawers NNR.

Tim Rich had paid a visit and has updated records for *Hieracia*. He determined a new hectad record for *Hieracium holosericeum* (Shaggy Hawkweed) made by one of the Recorders.

Interesting finds made by JM included *Chaenorhinum minus* (Small Toadflax), *Poa compressa* (Flattened Meadow-grass), *Valerianella locusta* (Common Cornsalad) and *Veronica peregrina* (American speedwell) all in Crieff. A cluster of more southerly species was found on a road verge near Madderty - including *Chaerophyllum temulum* (Rough Chervil) and *Trisetum flavescens* (Yellow Oat-grass). And a new population of *Carex acutiformis* (Lesser Pond-sedge) was found while (successfully) updating an old record of *Carex diandra* (Lesser Tussock-sedge) at Ochtermuthill.

Recording was carried out in two SSSIs; one to monitor orchids, the other a training session run by the Perthshire Society of Natural Science. Eight training sessions were run, one jointly with or attended by members of the BSBI. Two excursions were run to support the Urban Flora of Scotland project and to encourage identification; one led by David Chamberlain on bryophytes and the other led by Richard Brinklow on lichens.

East Perthshire (vc89) *Martin Robinson*

3,850 records were made in 2016, mostly at minimum monad level. 37 monads were covered in 20 tetrads. About 1,700 of these were within the Cairngorms National Park, including eight sites for *Salix lapponum* (Downy Willow), six for

Carex vaginata (Loose-sheathed Sedge), five for *Carex capillaris* (Hair Sedge), three for *Equisetum hyemale* (Dutch Rush) and single sites for *Sagina x normani-ana* (Scottish Pearlwort), *Orthilia secunda* (Serrated Wintergreen), among other notable species. A large stand of *Carex aquatilis* (Water Sedge) was found at Dalnaspidal, Drumochter, but by far the best was the discovery of a strong new site for *Saxifraga hirculus* (Marsh Saxifrage) in the extreme north of the vice-county. Growing beside it was a large colony of *Pyrola rotundifolia* (Round-leaved Wintergreen).

39 new records from 2016 will be added to the RPR at the next revision, alongside 11 updates. One species, *Asplenium scolopendrium* (Hart's-tongue Fern) will drop out.

Most of the records were made by myself and Les Tucker, with a couple of squares also being covered by Faith Anstey. There were three visits by the Perth Society of Natural Science, one of which was held jointly with the BSS for their Urban Plants Project.

Site Condition Monitoring carried out for the Cairnwell SSSI by Eric Meek et al showed that it was still in good condition, though two of the main species, *Astragalus alpinus* (Alpine Milk-vetch) and *Minuartia rubella* (Mountain Sandwort), had declined considerably. I carried out SCM at Loch Moraig SSSI, and found all the target species to be in favourable condition.

Angus (vc90) *Robin Payne, Theo Loizou & Mark Tulley*

We held a four-day field meeting, based in Glen Esk during August organised by Robin Payne. Seven people attended. This helped towards the year's total of 56 tetrads surveyed. There are still many more to do by 2020. A Bioblitz organised by enthusiasts at Easthaven was supported by two of us in July. Perth and Dundee naturalists' organisations continue with separate programmes of field trips and winter talks. Mark Tulley led a local wild-flower group on 6 flower walks in Tayside.

One of the most significant new finds in 2016 was the rediscovery of *Hymenophyllum wilsonii* (Wilson's Filmy fern) which was thought to be extinct in Angus. Its re-discovery will no doubt prompt recorders and other botanists to search for it in other areas where it has been recorded before. The orchid *Epipactis helleborine* (Broad-leaved Helleborine) which was also thought to be extinct in Angus has recently been reported (personal communication, Brian Allen, Nov. 2016) in Angus.

About 5500 records were inputted to Mapmate and the DDb during 2016 and there were visits to areas such as Glen Ogil, Glen Moy and Glen Lethnot where botanical records are few.

Theo Loizou with the help of other botanists completed Site Condition Monitoring of vascular plants at Rescobie and Balgavies Lochs SSSI. All of the Nationally Scarce and Nationally Rare plants associated with this site appear to be thriving except *Corallorhiza trifida* (Coralroot Orchid). This elusive orchid was detected in 2016 but only three spikes in total were found.

Kincardine & North Aberdeenshire (vc91 & 93) David Welch

Greater emphasis was given to tetrad recording this year than previously. Lists have now been accumulated for some 70 tetrads in my two counties, with help from Eric Meek and others.

Finds of NCRs were fewer than usual and mainly aliens e.g. *Acaena novae-zelandiae* (Pirri-pirri-bur), *Fargesia spatheca* (a bamboo), and *Rubus parviflorus* (Thimbleberry). A notable exception was Aileen Meek spotting *Fumaria bastardii* (Tall Ramping-fumitory) in a school "wild" garden where she was supply teaching.

I led my usual one-day outing for the SWT NE Scotland group, this year to the Morpie district in south Kincardineshire. Good colonies of *Scirpus sylvaticus* (Wood Club-rush) were seen along the North Esk, and we found rarities for our region *Amsinckia micrantha* (Common Fiddleneck), *Geranium pusillum* (Small-flowered Crane`s-bill) and *Veronica agrestis* (Freen Field-speedwell) in weedy places. David Elston and Judith Cox scrambled up a sandstone outcrop to check the continued existence of *Hieracium oxybeles* (Pointed-leaved Hawkweed), this site being much disjunct from other Scottish occurrences.

My every-other-year monitoring of a *Saxifraga hirculus* (Marsh Saxifrage) colony in the Hill of Towanreef SAC found good flowering.

Several revisits to sites of balsam poplars were made, stimulated by Andy Amphlett's new key; only *Populus balsamifera* (Western Balsam-poplar) was present.

I also went back to the strange dewberry in the dunes at Fraserburgh that I wrote about in BSBI News 131, arguing that it was a hybrid of *Rubus caesius* (Dewberry) and *Rubus saxatilis* (Stone Bramble). This year a handful of flowers with white petals had been produced, and a single drupe with one drupelet had formed, adding to the evidence of sterility. My article drew no further records of this hybrid occurring in the UK.

South Aberdeenshire (vc92) Ian Francis

Good progress was made with Atlas 2020 this year, and just under 12,000 plant records were submitted for 2016 and added to the BSBI DDb. Coverage of South Aberdeenshire for the atlas period is now becoming more even, but there are still some clearly under-recorded (and blank) areas in terms of any level of coverage, though the concentrations of intensive recording are also clear. Field work for the remaining seasons will target the less recorded areas and also attempt to boost

records of aquatic plants. Botanical effort in VC92 also contributed towards the BSBI Cairngorms plant recording project, co-ordinated by Andy Amphlett. Around 15 local botanists contributed to recording this year and one early season vice-county newsletter was produced, to try to stimulate further recording. This was uploaded to the BSBI web page and the vice-county information updated.

Eric Meek made an enormous contribution and found the new vice-county records *Betonica officinalis* (Betony), *Fumaria bastardii* (Tall Ramping-fumitory), *Geranium phaeum* (Dusky crane's-bill), *Juncus conglomeratus x effusus* = *J. x kern-reichgeltii*, *Ranunculus penicillatus* (Stream Water-crowfoot), *Rubus laciniatus* and *Senecio smithii* (Magellan Ragwort).

Banffshire (vc94) Andy Amphlett

In terms of recording and other activities in support of BSBI, it was a busy year, just not in vc94! Over the year, I collected just under 13,000 records; 84% from vc96 but only 3% from vc94. In all, just over 1000 records were added for vc94. Records on the DDb for vc94 have almost all been checked and validated, and all record entry is up to date.

Over the last 3 years my recording focus has been on vc96 and the Cairngorms National Park. The 3-year CNP project is now completed and a final report written. While I will continue to record in vc96 in 2017, I intend to make time available to fill some gaps in vc94 coverage. However, at the hectad scale post 2000 recording in vc94 (number of hectad 'smarties') is greater than any of the preceding date classes, so vc96 will have to be the greater priority.

Moray (vc95) Ian Green

Atlas 2020 recording went very well in 2016. Approximately 22,000 records were added to the DDb. This included several significant contributions from local botanists. All hectads in the vc were visited (apart from a few with little ground) and within them, a good number of tetrads and monads were recorded.

I am currently working on an Atlas flora for the vc and aim to record all tetrads, and most monads by the end of 2019.

I led one local botany meeting to look at *Gagea lutea* (Yellow Star-of-Bethlehem) near Forres. Here we found the *Gagea* to be common in the area. The Inverness Botany Group also had a couple of meetings in the vc.

Twenty new species, subspecies, varieties or hybrids were added to the vc in 2016, the most interesting being 14 plants of *Asplenium ceterach* (Rustyback) growing on the railway bridge at Boat o' Brig.

Easternness (vc96) Adam Fraser

Progress continues with Atlas coverage, amassing nearly 16,000 records in 2016 from just over 20 recorders. A huge thanks to all contributors! A significant pro-

portion of records in 2016 were within the Cairngorm National Park, contributing to the recording project led by Andy Amphlett.

Plans for the coming year include more atlas recording, there remains a significant amount to do to achieve sufficient coverage for the atlas. Several more remote areas including Glen Affric and the central Monadhliath will be targeted using small groups of volunteers to record intensively for long weekends, making use of bothies and estate accommodation to assist with the practicalities of reaching some of the further flung corners of the VC.

2016 saw 8 NCRs including discovery of *Gagea lutea* (Yellow Star-of-Bethlehem), *Betonica officinalis* (Betony) and *Persicaria minor* (Small Waterpepper). Data validation has also been a priority task over the past year, and with assistance from Andy Amphlett VC96 now has a near complete set of validated records!

Westernness (vc97) Ian Strachan & Ian Bonner

Another busy year of recording, mainly for Atlas 2020, with around 9,000 records made - covering a remarkable 33 hectads and 112 tetrads (49 with at least 50 taxa). Joint Recorder Ian Bonner had a productive period of recording in early summer based at Kingairloch and Salen, with help from Richard Marriott, Liz MacDonald and IS. More than 2500 records were gathered from under-recorded hectads especially in Ardgour, Morvern and Moidart. A highlight was a new site for *Rhynchospora fusca* (Brown Beaked-sedge) near Inversanda. Other areas surveyed by IS included Glen Roy/Monadhliath, Loch Loyne, and Cromra as part of the Cairngorms National Park project. Several local botanists have contributed many other valuable records, with c. 2000 from Locheil Estate of especial note (Matt Harding).

With Dan Watson (NTS) and Matt, IS took part in the final season of the North Face project on Ben Nevis, funded by Nevis Landscape Partnership (NLP). Finds included new locations for *Saxifraga cespitosa* (Tufted Saxifrage), a huge new population of *Poa flexuosa* (Wavy Meadow-grass) and records for two lady's-mantles, *Alchemilla wichurae* and *A glomerulans*, not seen on Ben Nevis for over 60 years.

Training activities: IS helped Faith Anstey with the 'plant families' training day at NTS Glencoe and used this experience to lead a botanical 'Citizen Science' day in Glen Nevis and a similar session for trainee rangers there, both organised and funded by NLP. He has also taken on a mentoring role for NPMS.

Plans for 2017 include Atlas fieldwork in Morvern, Ardgour and Knoydart and further work on an RPR.

Dunbartonshire (vc99) Pam Murdoch

This year I gave priority to tetrad coverage and managed at least 1 monad per

tetrad for 22 tetrads with no post-2000 records. I brought 7 under-recorded monads up to scratch and also filled in various gaps with additional monads. Just over 5500 records with a few more from other people still to add in. I hope to complete coverage for the southern half of the vice-county this year. The northern half, more inaccessible and decidedly hilly is another matter! I have made a start and am most grateful to have received offers of help as, without them, I fear future coverage will be limited.

Interesting finds were few as good species were not the focus for the year. Alison Rutherford recorded *Polygonum oxyspermum* (Ray's Knotgrass), a new vc record. I confirmed and noted location details for 4 sites for *Asplenium ceterach* (Rustyback), good sites for *Scrophularia auriculata* (Water Figwort) and *Armoracia rusticana* (Horse-radish) both with very few records and a further site for *Parentucellia viscosa* (Yellow Bartsia) which seems to be turning up each year. *Senecio inaequidens* (Narrow-leaved Ragwort) is now widespread in Clydebanks.

I have enjoyed several outings with the newly formed Glasgow Botany Group.

Clyde Isles (vc100) Angus Hannah

9333 records for vc100 were added to the DDb during the year, but fewer than half of these were made in 2016. The remainder were older records which had failed for various reasons to reach the DDb. Most records for the county have been validated.

Coverage across VC100 for Atlas 2020 is largely satisfactory, except for a few tetrads on Arran which deserve more attention. Work has continued on my forthcoming Flora of Bute, with a few critical groups still needing investigation. The *Taraxacum* workshop planned for May 2017 should go some way to filling one major gap.

Much of my recording effort in 2016 was devoted to VCs 75 and 77, where need was greater. This included running a week's residential field meeting in upper Clydesdale. I also taught three courses at the FSC centre in Millport.

The most exciting event of the year was the discovery on Bute of a fern previously unknown in the wild in the British Isles, and scarcely ever seen in cultivation. Provisionally determined as *Hypolepis ambigua*, the New Zealand endemic Pig-fern, it is now known to be well established and widespread on the island, and the full story to date is told elsewhere in the Newsletter [*See page 12*]. The lesson I learned from this discovery is that it is always worth going back to a previously well-recorded square, however dull it may have seemed on earlier visits. There is always something one has missed!

Kintyre (vc101) Pat & Dave Batty

We visited the last two unrecorded hectads, both of which were small remote coastal sites. One of them includes the cliffs at Largybaan, probably the best

botanical site in the VC, where the *Oxytropis campestris* (Yellow Oxytropis) was extensively flowering on the cliffs. Other notable species were *Dryas octopetala*, (Mountain Avens) and *Crithmum maritimum* (Rock Samphire). We also tried to target early species such as *Valerianella locusta* (Common Cornsalad) and *Vicia lathyroides* (Spring Vetch).

One target species for the year was *Dactylorhiza traunsteineroides* (Narrow-leaved Marsh-orchid) and all sites were visited. There are two sites within forestry clearings and the rest are on open hill ground. It was recorded at all the sites but one in forestry had only one plant. At this site the open flushes were becoming overgrown, and even on the hill sites there is now less grazing.

A highlight of the year was visiting a remote forestry loch to find a bay full of flowering *Nuphar x spenneriana* (Hybrid Water-lily), covering an area of >25m x 50m.

A visitor on holiday found *Cichorium intybus* (Chicory) on an isolated roadside which is the first record since 1950.

As in other years we noted that habitats were generally under-grazed, especially upland ones, compared to fieldwork for Atlas 2000.

South Ebudes (vc102) Malcolm Ogilvie

Atlas 2020 recording made good progress this year. Simon Smart visited Jura twice, in mid-June and mid-September, adding ca.1300 records to the DDb. Both were wild camping trips covering areas of Jura's remote west. Simon has been recording the recommended minimum number of 16 monads per 100 in a full hectad and, in 2016, recording a focal monad and then just extra species in the surrounding three squares in the tetrad. In two years, 62 of a minimum 75 monads have been recorded this way. Interesting records this year included *Carex pauciflora* (Few-flowered Sedge), *Elatine hexandra* (Six-stamened Waterword), *Festuca filiformis* (Fine-leaved Sheep's-fescue), *Sedum rosea* (Roseroot) and *Sparganium natans* (Least Bur-reed).

For the past three years, Kevin Walker, Pete Stroh, David Pearman, Owen Mountford and Simon Leach have been visiting Colonsay and Oronsay to gather records for the Atlas and to lay the groundwork for a flora of the islands. To date, just under 10,000 records have been entered into the DDb, from 57 of the 81 monads which cover the islands. The 2016 data, still being entered, will boost the total records to ca.14,000, and the visited monads to ca.70.

Atlas recording on Islay by Oli Pescott continued with visits in April and June, extending his coverage of the under-recorded squares on the island.

My annual orchid monitoring showed a very mixed picture with some species flowering well, but only a single, non-flowering, plant of *Cephalanthera longifolia* (Narrow-leaved Helleborine), the worst showing since the discovery of the colony in 1998.

Mid-Ebudes (vc103) Lynne Farrell

1. Main Atlas 2020 recording was on Coll in August when over 15 tetrads were visited. *Euphrasia* specimens were collected and are with Chris Metherell for ID. Significant finds were a new site for *Hammarbya paludosa* (Bog Orchid) in a totally new area at the NE end of the island and the second Scottish record for *Trachyspermum ammi* (Ajoram) near the farmhouse by RSPB Totronald where they put out bird seed. Staffa was also visited in September to update records from 1999.

Plans for 2017 include recording Iona and Treshnish Isles plus other islets for which most previous records are from 1998. Most tetrads on Mull, Coll and Tiree have now been recorded post 2000 but there are a few more to visit on Coll and the remoter islands in order to obtain complete coverage.

2. Several National Plant Monitoring Scheme (NPMS) plots were set up on Coll and Mull, and John Bowler RSPB resident set up one plot on Tiree, so all three islands are now covered. Locals helped in recording on Mull and I hope will re-record in future.

3. Second, updated version of Rare Plant Register produced in May, whilst I was recovering from hip replacement.

4. *Hieracia* specimens taken to David McCosh for ID and records updated for this group. Michael Usher has a particular interest in this group and has been helping record during his annual Mull holiday.

5. Increase in records and observations received from visitors to the islands, some of which are for exotic garden escapes and Mediterranean species! Global warming in VC 103?

North Ebudes (vc104) Stephen Bungard

About 12,000 records were made in VC104 in 2016. Records were made in the last tetrad in VC104 with 100% land and no records ever. There are still four tetrads with 20 - 80% land and no records, mostly quite difficult to get to, plus more with <7% land, and then there are tetrads with earlier records but none since 1999 or earlier (nine with 100% land and five more with >20% land).

Visits were made to Harlosh Island, Tarner Island and Staffin Island. There were no previous records for Tarner or Staffin Islands and nearly all those for Harlosh Island were listed as NG23 and so do not show up on tetrad-based distribution maps.

Over 1,300 Skye records were extracted from the data collected for SNH's Scottish Saltmarsh Survey. The biggest effects were on *Carex oederi* (Small-fruited Yellow-sedge) and *Eleocharis uniglumis* (Slender Spike-rush), each with quite a few new sites.

Skye Botany Group met four times during the year and the Inverness Botany Group made an extended visit to Skye and Raasay. Monthly articles on the plants of Raasay were written for Am Bratach, the Raasay Community Newsletter.

Site Condition Monitoring of the Raasay SSSI was undertaken.

A number of non-native species were added to the VC104 list of which perhaps the most unexpected was the blue form of *Phyteuma spicatum* (Spiked Rampion) in the middle of the path up to the highest point of the Cuillins, Sgùrr Alasdair, though only at an altitude of 220m.

West Ross (vc105) Duncan Donald

A highlight was the 'weekend' Field Meeting based at Ullapool in June, reported elsewhere, but I'm also indebted to many other visitors for their invaluable records, often from distinctly under-worked areas. Jeff Banks visited Gruinard Bay and hinterland (NG98) twice, and made many useful updates in NG97. Brian Burrow submitted an extremely helpful list for *Hieracium* (Hawkweeds). Tain Field Club submitted many useful updated records from NG87 in July; then the Inverness Botany Group joined me in August to survey nearby in NG86/NG96. Peter Wortham has continued to explore marginal corners of the vice county, providing many updates - not least several *Sibbaldia procumbens* (Sibbaldia) sites.

Notably, Ian Green visited several times, adding a staggering 3752 records drawn from 21 hectads: highlights include *Schedonorus arundinaceus* (Tall Fescue) in Glen Docherty (NH05) - its first vc record since 1893; a new, second site for *Juncus alpinoarticulatus* (Alpine Rush), from NH06; re-finding *Atriplex praecox* (Early Orache) in NH08, helped by Alan Leslie; many new [NCR] aliens in Ullapool, and a new site for Nationally Rare lady's-mantle *Alchemilla glaucescens* at Leckmelm (NH19). The gaps in coverage are shrinking - a process which will undoubtedly be assisted by holding Field Meetings in 2017 at Inverpolly, Poolewe and Torridon. In addition, I should always be happy to provide search-lists for any visitors seeking a challenge!

East Ross (vc106) Brian Ballinger

2016 has followed the usual pattern, with recording effort concentrated in the summer months, but also spread over the whole year. A small study suggested that there was some advantage in supplementary winter recording and another field survey indicated that there may be a gain from repeated visits to a site in the same season, even when the total amount of time spent is the same.

Peter Wortham has once more made a major contribution to the recording work. I am also grateful to Mary Dean and several other individuals and local societies including the Inverness Botany Group.

We now have more than 10 records from all but 33 of our approximately 1000 tetrads. However, a great deal remains to be done in recording and refinding species and we are well short of our targets in many places.

Mary Dean and I led a successful field meeting at Dingwall in collaboration with the Botanical Society of Scotland as part of the urban flora project. Four species of orchid were found in the town including *Neottia nidus-avis* (Bird's-nest Orchid).

Another new site for *Linnaea borealis* (Twinline) was found by Forestry Commission staff north of Alness and there are now four known sites for this species, which was previously thought to be extinct in VC106.

In the coming year, we will concentrate on Atlas 2020 recording. In addition, another urban flora day is planned for Fortrose on the Black Isle.

East Sutherland (vc107) Mick Crawley

The great news this year was the discovery of a species new to Scotland. In June, I found *Myosurus minimus* (Mousetail) growing amongst the sheep pens at Lairg Auction Mart (NC 58353 03748). Specimens are deposited in the Natural History Museum and the Royal Botanic Garden Edinburgh.

Progress on Atlas 2020 recording is steady, but there are still substantial areas (like the remote and hilly boundary between East Sutherland and West Sutherland) where energetic volunteers could make a huge contribution.

A volume of illustrations to accompany the Flora of East Sutherland will appear on the BSBI web site as soon as storage space is available.

West Sutherland (vc108) Ian Evans

A most successful year, with recording targeted on areas accessible from self-catering accommodation at Tongue on the north coast (more than 4 hours' round trip from home). In three weeks, in June, July and August, we logged 3830 records from 33 monads in 10 hectads, from Talmine (NC5862) in the west to Melvich (NC8864) in the east and Strath Vagastie in the south (NC5430). Many of these monads were in areas never before surveyed, such as the Rabbit Islands in the mouth of the Kyle of Tongue (NC6063), but they also included ones on Ben Loyal and Beinn Stumanadh. Monads thoroughly surveyed yielded 49 to 198 species, from Ben Loyal and Armadale Bay respectively.

Significant finds included: the second Scottish record for *Eleocharis parvula* (Dwarf Spike-rush) by Clive Chatters and the first recent record for the Scottish mainland of *Ruppia cirrhosa* (Spiral Tasselweed), both in the Kyle of Tongue; a new site for *Mertensia maritima* (Oysterplant) at Armadale and *Solanum dulcamara* (Bittersweet) at Strathy.

A further 1270 records were made on fieldwork elsewhere in the vice-county, with contributions by Susan Erskine, Dawn Nelson and Ian Strachan, bringing the

total to 5100. Special thanks to Gwen Richards for her help throughout the year, and to Gordon Rothero and Ro Scott for their contributions during the July week at Tongue. In 2017 we plan to survey Strath Halladale and adjacent areas on the eastern edge of the vice-county.

Caithness (vc109) Francis & Margaret Higgins

Although we have only recently been appointed as Joint Recorders for Caithness (succeeding Ken Butler) we have collected 2,000 odd records in each of the past two years - in more than 16 monads each year.

We have had a couple visits from Jim McIntosh, to help us get started recording and with data entry. Also, we attended the Recording Workshop at Strathpeffer last Spring and joined the BSBI Recording Week on Shetland in early August, where we learnt a lot and had a great time.

We have found several species that are rare in Caithness in 2016 - including *Carex remota* (Remote Sedge), in Strath Cuil, Berriedale and *Ajuga pyramidalis* (Pyramidal Bugle) on the cliffs at Badbea, south of Berriedale. We also found vegetative *Pyrola* on the Badbea cliffs - but were unsure whether it is *P. minor* (Common Wintergreen) or *P. media* (Intermediate Wintergreen). We plan to check for flowers this summer and failing that send a leaf off to RBGE for DNA testing. Another exciting discovery was a big colony of *Equisetum telmateia* (Great Horsetail) further north at Latheron, where it has been recorded previously.

One of the few *Goodyera repens* (Creeping Lady's-tresses) populations in Caithness may have recently been destroyed due to forestry felling at Langwell wood. We are anxiously awaiting any signs of recovery.

Outer Hebrides (vc110) Paul Smith

Good progress was made filling gaps for the Atlas, with the summer recording expeditions based on under-recorded hectads NB24, 34, 35 and also covering some unvisited parts of the Lewis peatlands. There were interesting species, particularly *Juncus filiformis* (Thread Rush) and *Nitella confervacea* (a charophyte) from the chain of coastal lochs on the NW coast of Lewis. A boat-based field meeting covered an impressive 23 tetrads (many previously unvisited) round Scarp and Loch Resort in six days; there were surprisingly few unusual species, but *Centunculus minimus* (Chaffweed) and *Ruppia maritima* (Beaked Tasselweed) are uncommon on the extreme west of Lewis.

Vc110 is now well-covered since 2000 except for some outlying islands, though there are still gaps to fill. A spring *Taraxacum* visit and a blitz of *Hieracium* by Tim Rich added good records. A number of botanical visitors have also sent records, which are much appreciated. We continue with links to SNH and Outer Hebrides Biological Recording project, and the VCR led an OHBR meeting in the

spring. Several interesting orchid records have been submitted through OHBR contacts.

4800 records were added in 2016, with a few records and some critical specimens awaiting processing. These records have been sent to BSBI central for uploading to the DDb. Vc110 is now very close to 200k records (ever), and this landmark will be surpassed easily in 2017.

Orkney (vc111) John Crossley

With help from others I had a productive recording year in 2016. 28 monads and hectads were visited and over 4000 records made. Attention again focussed on Orkney's outer isles, with a total of 16 visits to these (not 16 isles - some got more than one visit). Species counts are not usually very high in these places - in the region of 100 to 160 per tetrad - but the locations and surprise finds more than make up for that. These included an abundance of *Euphrasia marshalli* (Marshall's Eyebright) on one cliff-top and new sites for *Sparganium emersum* (Unbranched Bur-reed) and *S. natans* (Least Bur-reed), both scarce in the far north. Less welcome were NCRs for *Lagarosiphon major* (Curly Waterweed) and *Ceratophyllum demersum* (Rigid Hornwort). An aquatic *Ranunculus* (Water Crow-foot) has so far defied all attempts at identification.

Hectad recording coverage for Atlas 2020 is progressing well; remaining gaps should not be difficult to fill in the time left. Outer isles still need some attention and visiting botanists are very welcome to join recording visits there (and elsewhere in the VC).

A local Flora group was formed this year and met several times, mostly on summer evenings for the benefit of working people unable to commit to week-end outings. The most acclaimed venue was a saltmarsh with abundant flowering *Aster tripolium* (Sea Aster), which also yielded a distinctive-looking *Euphrasia* (Eyebright) that was later identified as the very rare hybrid *E. marshallii* x *E. scottica*, an NCR.

Shetland (vc112) Paul Harvey

The botanical highlight of 2016 was the BSBI Recording week held at Port Arthur House, Scalloway during July, organised by Jim McIntosh. Never in the history of the BSBI has so much recording been done in a single week - 30 botanists collected just over 10,000 records of 484 taxa. 107 monads were surveyed in 35 hectads - mostly on the mainland but also including Bressay, Noss, Out Skerries and Whalsey. (Last year we visited the three Northern Isles on a recording week based on Unst.) All the records have been digitised and Walter Scott has kindly helped with the verification.

Notable finds included two more Mainland sites for *Hammarbya paludosa* (Bog Orchid) - after its discovery of the first ever Mainland site in 2015 by Rory Tallack;

Oxyria digyna (Mountain Sorrel) on the foreshore in Scalloway (thought to be planted or brought in from a local garden); 430 plants of *Mertensia maritima* (Oysterplant) at Bardister; a new site for *Lycopodium clavatum* (Stag's-horn Club-moss) at Sound of Scord and *Atriplex laciniata* (Frosted Orache) at Cunningsburgh - only the third site in Shetland.

Immediately following the recording week, BSBI volunteers helped Shetland Amenity Trust run a very enjoyable two-day plant id workshop for 20 local botanists.

In October, Paul Harvey & Alex Prendergast were officially appointed as joint recorders. We would warmly welcome records from visiting botanists - please get in touch with us before your visit!

Eric Meek - a brief botanical appreciation

The entire botanical (and birding) community was shocked and saddened by the sudden death of Eric Meek in February. Eric spent much of his working life in Orkney, and John Crossley (vc111 recorder) sent the following paragraph in appreciation of his contribution to botanical recording there.

Many people will remember happy outings with Eric in the hills and byways of Orkney, on BSBI meetings and recording for BSBI 'Local Change', Atlas 2000 and Atlas 2020. He was a determined list-maker; on his own, over 30 years in which he had little time to spare from work commitments, other interests and family, he contributed more than 20,000 records to the Orkney database, including several new for the Vice-county. Critical plant groups were a challenge to be enjoyed; he could confidently tackle Eyebrights, Scaly male-ferns or a hybrid Rush or Deer-grass. He knew the islands exceptionally well and had the claim, almost certainly unique, of having set foot on every one in the archipelago, however small. His definition of an island, as opposed to a mere rock in the sea, displayed a mischievous ornithological bias: it was one that a bird could nest on! Hunting down rarities was another pleasure and he supplied the driving force for an Orkney Rare Plant Register, which we completed jointly in 2015.

In recent years, Eric extended his botanical reach to Aberdeenshire, and Ian Francis (recorder for vc92) describes his achievements in that area.

When you're a vice-county recorder in rural Scotland, accumulating high-quality plant records can be really hard work. So, in South Aberdeenshire, with very few active recorders, when someone like Eric Meek comes along

it's like the long-watched-for cavalry coming over the horizon in a classic western. I knew Eric as a colleague for many years - but he was in Orkney and I was down here on the mainland. I took on the VCR role in 2010 and not long after that, Eric moved here permanently with Aileen, a native of Aberdeenshire and also a keen botanist. I was aware that Eric was 'into' botany, but until he arrived I had no idea what a botanical powerhouse he was. We're all faced with the mammoth task of gaining coverage for Atlas 2020. From 2000-2009, just 14,919 records had been made for VC92 and I knew we had a major task on our hands. Eric had already done some work here in 2009 and 1,000 of these records were his. Fast-forward to the latest date class (2010+) and over 24,000 more records were contributed personally by Eric, out of c.90,000 in the last 7 years. In total, Eric's records account for nearly a quarter of all records for VC92, and are spread liberally and densely over much of the central part of South Aberdeenshire - almost a one-man atlas project in his own right! He also undertook Site Condition Monitoring work at several local SSSIs and participated in the Threatened Plants Project in the area. Always he was thorough and keen-eyed - he found a number of new vice-county records, and was always ready to share his finds - and his uncertainties, and always eager to learn about new areas and see new plants.

We will very much miss his enthusiasm, skill and friendship. His contribution to plant recording and conservation in Scotland has been enormous. It is greatly appreciated, and will be recognised for years to come.

CROSSWORD SOLUTION

ACROSS: 1. TUBER 4. LEAFY 5. PETAL
DOWN: 1. TULIP 2. BRACT 3. ROYAL

CRIB

ACROSS

1. TUBE e.g. London underground + R abbrev for 'railway'
4. LEA = meadow, F ...Y is the word 'fairly' without the middle letters i.e. empty
5. anagram of PLATE ('dished up' indicates the anagram)

DOWN

1. reverse ('back') PUT and insert half of the word LILY - TUP. In Stage 3 there are only three genera in the LILY family, of which Tulips are one.
2. BR = British, ACT = deed
3. Glen ROY of the parallel roads, + A + L for learner

PLANT FAMILIES WORKSHOPS 2016/17

Faith Anstey

2016 was the fourth year of the Plant Families Workshops, organised by the BSBI Outreach Group in association with Plantlife. These are one-day courses in identification by 'finding the family first', aimed at beginners and improvers. They are strongly based on hands-on sessions both in the classroom and out in the field, and rely on the goodwill and expertise of tutors who range from VC Recorders to former workshop participants.

The workshops this year were held at Glencoe NTS Visitor Centre, a Stirling venue, and Dundee Botanic Gardens. They were as popular and successful as ever, attracting predominantly younger people whose work, study or volunteer activity demands skills in plant ID that they have difficulty accessing elsewhere. The approach via families, the practical sessions guided by expert tutors, and removing the 'fear factor' from using keys were some of the ingredients most appreciated.

The concept of these workshops originated with the general BSBI initiative to raise its profile, attract new members, and offer more basic training. Here in Scotland we are now at the forefront of this movement and it is possible that our format will be tried out in other parts of the British Isles. The booklet which workshops participants are given, *the Pocket Guide to Wildflower Families*, has also sold well to many groups and individuals south of the border.

In 2017 we are holding two workshops in May, at Eglinton Country Park in Ayrshire, and at Glasgow Museums Resource Centre. By popular demand, a second-level workshop on identification of common grasses, will also take place in July at Holyrood Education Centre. Enquiries about participating in one of these events, either as a student or a tutor, will be warmly welcomed. Please contact Faith Anstey <faithanstey@gmail.com>

Request for information (from George Ballantyne)

If you know of any colonies/plants of **white** Herb Robert (*Geranium robertianum*), including in a garden, I'd be pleased to have details.

Please supply to gballantyne@live.co.uk or 'Branksome', 193 Nicol Street, Kirkcaldy, Fife, KY1 1PF.

FORTHCOMING EVENTS

BSBI Photography Competition

The image on the front of this Newsletter is one of the runner-up entries to the 2016 Competition, *Centaureum littorale* by Sandy Edwards, while others adorn the inside and back cover. A full report of last year's competition appeared in BSBI News 134 (January 2017). All the photos from both 2016 and 2015 can be viewed in a fantastic display on the BSBI's new Flickr site. To find it, search for "BSBI Flickr" in your browser. If you select Albums you will find there is one album for each of the categories.

The BSBI Photography Competition's categories in 2017 will be 1) **Plants in the Landscape** and 2) **Archaeophytes** - naturalised plant species that were introduced before 1500. A list of archaeophytes found in the UK is on the BSBI website. Plants in the landscape may be flowering plants, conifers, ferns, horsetails, club-mosses or stoneworts. The competition is open to all amateur photographers. Photographs must be taken in Britain or Ireland but do not have to be taken in 2017. You may enter up to two images per category but you don't have to enter both categories. The winners will be selected by a popular vote of those attending the Scottish Annual Meeting.

Send your entries to Natalie Harmsworth (natann29@freeuk.com) by **20th Oct 2017**.

Please submit the largest possible files sizes - though files over 10MB should be sent via Dropbox and not by email.

Please give your photographs file names carefully using the following format: Common name (scientific name) location, photographers name and competition category (PL or A), e.g. "Cornflower (*Centaurea cyanus*), Strathmore, Angus by John Smith_A.jpg"

Copyright of images will remain with the photographer.

However, the BSBI claims the right to exhibit the entries, and to use them to further its aims generally and to promote the BSBI and its photography competition. This includes publishing them on the BSBI website or social media (photographs will be credited).

BSBI also claims the right to edit or use images in combination with others.

Full details of the competition also appear on the BSBI website. Remember play makes it possible!

Jim McIntosh, BSBI Scottish Officer, jim.mcintosh@bsbi.org

Kirkcudbright Botany Group: Programme 2017

Anyone is welcome: please contact davidhawker3@gmail.com

All dates will be confirmed nearer the time with meeting points, etc.

<u>Date</u>	<u>Day</u>	<u>Venue</u>	<u>Central point</u>
<u>March</u> 31	Fri	Dalbeattie forest and Rounall wood	NX8460 NX8362
<u>April</u> 8	Sat	Wood of Cree (RSPB)	NX3870
24	Mon	Glenlee/Hannaston Wood	NX5982
<u>May</u> 6	Sat	Kirkconnell Flow	NX9769
18	Thu	Corsock/Lowes Lochs	NX7078
28 or 29	Sun/Mon	Brighthouse Bay walks	NX6544
<u>June</u> 3	Sat	Mersehead (RSPB)	NX9255
11	Sun	Auchencairn/Balcary^	NX8152
<u>July</u> 5	Wed	Kirroughtree	NX4078
21	Fri	Cairnsmore of Fleet (NNR)	NX5164
<u>August</u> 11-14	Fri-Mon	The Uplands (Merrick/Kells)^*	
25 or 27	Fri/Sun	Loch Mannoich	NX6660
<u>Sept</u> 22 or 24	Fri/Sun	Loch Moan	NX3585
<u>Oct</u> 7	Sat	Greenmerse*	NX9870

^ Part day indoors getting to grips with fern/sedge identification followed by field id'ing & recording nearby.

* Several kilometres and slow climb of up to 600 metres each day. In very north of the VC, starting variously at Forrest Estate, Loch Dee and Glentroll Loch.

* This venue is tide dependent and may be re-arranged, also depending on the landowner and the presence of stock on the merse.

The **fern id day at Kirroughtree** is primarily for volunteers with the Cree Valley Community Woodland Trust, but if there are fewer than 15 from that group, then the day will be open to the KBG, up to a max. of 15 participants.

The **August Uplands long weekend** will involve climbing some of the highest hills in the north of the VC, the Merrick-Kells ranges, and a good degree of fitness will be required. This is to cover a large area last adequately surveyed back in the 1980s.

BPS (fern society) Scottish Meetings 2017 ALL WELCOME!

April 1st (Saturday) 11am *Asplenium septentrionale* monitoring

Leader: Frank Katzer (frank.katzer@moredun.ac.uk)

Fatlips Castle Roxburghshire, at the top of Minto Crags. (NB: despite the date, this is not a joke!)

Meet in car park beneath Fatlips Castle, accessed via a dirt track road from the Ancrum to Denholm road (NT 585207). Bring packed lunch and drinks.

May 2nd (Tuesday) 10am Ascog Fernery workday

Leader: Bridget Laue (bridgetlaue@blueyonder.co.uk)

Meet at Wemyss Bay ferry terminal for 10.15 ferry. I expect to return by the 4pm ferry. We plan is to assist in keeping the ferns in good condition, and to enjoy the collection and the gardens. Any donation of ferns is welcome!

Bring packed lunch. Tea/coffee will be provided by the Burkes (owners).

June 17th (Saturday) 10.30am NTS Arduaine Garden, by Oban, Argyll.

Leader: Maurice Wilkins (01631 567188, or maurice@arduaine.plus.com)

Arduaine Garden (NM 798105) has a large collection of exotic ferns growing outside, and quite a few natives too. There is also a conservatory with several tender ferns and tree ferns.

There is a charge for non-members of NTS: (£6.00, seniors £5.00).

Bring packed lunch or eat at the Chartroom 2 Bistro at Loch Melfort Hotel.

July 17th (Monday) 10am Glenshee area, Cairngorms

Leader: Heather McHaffie (heathermchaffie@hotmail.com)

Meet at lay-by south of Devil's Elbow on east side of road (N0 133753).

Steep, rough walk up to screes for *Polystichum lonchitis* and other limestone ferns. On to the ski buildings at the Cairnwell to see large population of *Botrychium* and four species of clubmoss. If there is time, return by Drummore Loch with good populations of *Dryopteris affinis* agg.

Bring food and drink and be prepared for Scottish mountain conditions.

August 5th (Saturday) 10am Mountain ferns, Ben Vrackie, Pitlochry

Leader: Andy McGregor (andymacgregor@ymail.com)

A return trip to this rich site for alpine flora, including some interesting ferns and even more interesting fern allies. Last year we got waylaid by clubmosses, moonwort and various other delights, and never made it as far as the summit.

Meet in car park at tourist information centre on N side of A924 (NN 9415 5805). The path will be steep in places and the terrain generally difficult. Be

prepared for Scottish mountain conditions. Bring a packed lunch and flask.

October 7th (Saturday) from 10.30. Annual Indoor Meeting, 50 Liberton Brae, Edinburgh EH16 6AF

Leader: Bridget Laue (bridgetlaue@blueyonder.co.uk)

Tour of the garden, coffee/tea and lunch provided!

Includes plant sales, book sales, fern presentations and planning for 2018.

BSBI members are very welcome on BPS outings; please contact Bridget Laue a few weeks before the meeting for further details .

All meetings will go ahead despite inclement weather, so please dress appropriately. Some of the walking can be strenuous. Please bring any drinks and snacks you require with you.

Contact details: Bridget Laue (bridgetlaue@blueyonder.co.uk)

Home: 0131-258- 9592 Mobile: 0793-243-9989

For up to date information check the website:

www.ebps.org.uk/events/category/meetings/regional/scotland

PLANTLIFE SCOTLAND events 2017

BSBI members or their families are welcome at Plantlife events. The events are free of charge, but we welcome donations to Plantlife to help cover costs and support our work. All events must be booked in advance - for more details or to book a place, contact scotland@plantlife.org.uk or (01786) 478509.

Spring woodland walk by Loch Lomond: Saturday 27 May, 10.30am-1pm
Balmaha, Loch Lomond,

The Carrifran Wildwood Project: Sunday 18 June, 11am-3pm
Carrifran, nr Moffat, Dumfriesshire

Jewels of the Caledonian pinewoods: Saturday 24 June, 10.45am-1pm
Grantown on Spey, Moray

A guided walk to look at the wild flowers of the Caledonian pinewoods, including twinflower and one-flowered wintergreen, and find out about how rhododendron control is helping these special plants. Led by Dr Andy Scobie.

Evening walk along the River Kelvin: Wednesday 12 July, 6-8pm
Kelvin walkway, Glasgow

Flanders Moss - Stirlingshire: Wednesday 2 August, 2-4pm
Flanders Moss, Thornhill, Stirlingshire

Bryophytes in the Trossachs: Saturday 11 November, 10am-3.30pm
Ben A'an, near Brig o'Turk, Stirling. Leader Gordon Rothero.

BSBI Scotland Field-meetings programme 2017

(check website for any changes)

May 5-8	Dandelion workshop	vc100 Rothesay Bute	John Richards
May 20	urban tetrad	vc77 Glasgow	Michael Philip
June 3	upland tetrad	vc77 Abington NS92	Michael Philip
June 3-4	recording	vc75 Kilmarnock area	D Lang/C Crawford
June 11	beginners	vc75 Irvine	Jim McIntosh
June 17-24	recording week	vc98 Kames West Cowal	Angus Hannah
June 23-26	recording.	vc105 Poolewe	Duncan Donald
June 24	joint BSS urban	vc106 Fortrose	B Ballinger/M Dean
July 1	joint BSS alpine	Ben Laoigh	John Holland
July 1	beginners	Ballinluig/Logierait	Faith Anstey
July 9-16	recording week	vc105 Torridon	Jim McIntosh
July 28-29	recording	vc79 Selkirk	Jeff Waddell
August 6	IBG joint	vc105 Inverpolly/Cul beag	Duncan Donald
Sept 2-3	beginners: roses/brambles	vc100 Bute	Angus Hannah

Many other groups organise field meetings throughout the season and BSBI members and friends are always welcome to attend. These include

Glasgow botany group
Ayrshire recording group
Lanarkshire botany
Perthshire Society of Natural Science (PSNS)
Dundee Naturalists
Inverness Botany Group
and many others.

It is always worth checking the web pages or contacting your local recorder to find out what is happening in your area. With only three recording seasons remaining in the current date-class, any offer of help will be appreciated even more than normally. Everyone can make a contribution!



Above: Hands-on learning at Glencoe Plant Families workshop(See page 51)

Below: *Hypolepis ambigua* growing on Bute (see p. 12). **Left:** in Achamor plantation. **Right:** underside of pinna with sporangia dehiscing. First British records.



Photo: R Forrester



Photo A Hannah

More photo competition favourites:

- 1 *Rosa mollis*
(Ian Strachan)
- 2 *Pyrola rotundifolia*
(Sarah Eno)
- 3 *Moneses uniflora*
(Sandy Edwards)
- 4 *Glaux maritima*
(Henry Padfield)
- 5 *Saxifraga hypnoides*
(Sarah Longrigg)

