

BSBI SCOTTISH NEWSLETTER

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Editor's note

Angus Hannah

Following the death in May last year of Peter Macpherson, who founded the Scottish Newsletter and edited it for 37 years, the Scottish Committee agreed that it would be right for it to continue, but not necessarily in its present form. It was decided that the existing format would be retained for this year, and would include a questionnaire to gauge the views of the readership on the preferred future format. I agreed to take on the editorship, at least provisionally, on this basis. We are very grateful to Jackie Muscott for agreeing to continue organising the distribution, an onerous task for which thanks are well deserved.

Please tell us which of the following options you would favour, bearing in mind the drawbacks as well as the advantages of each. Please remember that although your views will be considered seriously we cannot guarantee to abide by them. We will e-mail a link to a doodle poll where you can vote. Alternatively, send your reply by post to Angus Hannah, Glenmore, Rothesay, Isle of Bute, PA20 0QU. Remember that if you do not reply your opinion cannot be taken into account, but please don't vote more than once!

These are the possible future options:

1. Retain present format, distributing free by post to all Scottish members.
Advantage: many people prefer reading from a printed booklet rather than on screen.
Drawback: option possibly not sustainable, as it involves a substantial cost to BSBI (£806 last year). Quality of photo reproduction is relatively poor, and colour limited by cost to the cover pages only.
2. Publish on-line only as a free PDF download.
Advantages: saves costs of printing and postage and labour of maintaining distribution and subscription lists, etc. Allows numerous photos of high quality to be published.
Drawback: some members still unable to receive downloads and some others dislike reading on screen (but have option to print out).
3. Publish on-line but also make paper copies available at cost to subscribers who wish to receive their Newsletter in that form.
Drawbacks: extra work in maintaining subscription and distribution lists and processing payments. Cost per copy would rise if print run were shortened. Hard copies would lack the photos in the on-line version and editing work would increase significantly.

4. Discontinue publication as an entity, but find a home on the Scottish web pages for the materials currently published in the Newsletter.

Drawback: diminution of Scottish identity and loss of communication among members, since not all would regularly read these web pages.

BSBI/BSS Scottish Annual Meeting 2015

Jane MacKintosh

Mark Watson of RBGE opened the meeting with an introduction to the work of the RBG over the past year. The British team has expanded to include three people working on the Edinburgh Living Landscape Project. Digitisation of the herbarium continues and all red algae and most *Carices* are now digitised.

Sandy Edwards, vice-chair of the BSBI Scottish Committee, acknowledged the huge contribution of three members who died this year: Pat Evans, who was joint VC recorder for West Sutherland, Peter Macpherson, who edited the BSBI Scottish Newsletter, jointly and singly, since its launch in 1979, and Edna Stewart, previously recorder for Stirlingshire. Sandy thanked Liz Lavery for organising the meeting and the RBGE for providing the facilities, Jim McIntosh for his work as BSBI Scottish Officer and Faith Anstey for her outreach work.

Jim McIntosh, Scottish BSBI officer, reported on his year. Jim's full Annual Report is printed on page 7. The **AGM** of BSBI Scotland was held; minutes can be viewed on the website.

There were several opportunities to view the exhibits and during an extended lunch break two Herbarium tours were led by David Harris & Mark Watson. They looked at a selection of interesting herbarium sheets including one contributed by Darwin. A Scottish plant shade-tunnel tour was led by Heather McHaffie.

Jill Mathews described the National Plant Monitoring Scheme, funded and co-ordinated by JNCC, Plantlife, CEH and BSBI. This is a standardised monitoring scheme based on Plantlife's Wildflowers Count and Common Plant Survey. It is designed as a simple, repeatable survey, accessible to non-experts, based on stratified random 1km squares across the UK. There are three levels of survey to suit different levels of recorder expertise: wildflower level, indicator level and inventory level. You choose a square from the website, select small survey plots within it and visit twice each year (or every second year) to record presence and abundance. 137 people have signed up to

record Scottish squares since the Scheme was launched last year, but there are still very many unadopted squares throughout Scotland.

Brian Ballinger reported that the BSS has again run a full lecture programme and field meeting programme, often jointly with other societies. It publishes its excellent journal (*Plant Ecology and Diversity*) and newsletter. It continues to support student projects and has started an educational outreach project. The Urban Flora project has collected over 5000 records of 640 species so far, in all the major cities of Scotland (though mostly Edinburgh and Dundee) and many small towns. Bryophytes, lichens and fungi are included. The survey complements the BSBI's Atlas 2020; it uses iRecord and all records go onto the BSBI database.

Jim McIntosh gave an update on progress on Atlas 2020. It will be 20 years since the last atlas by the time it is published, and the aim is to analyse and report on change in that interval. It will produce distribution maps for all native species in Britain and Ireland as well as aliens, hybrids and critical taxa. At least five tetrads in every hectad will be sampled, with visits made on two dates in the year (except in the uplands where one summer visit suffices). Guidance and updates are published on the BSBI website. The Atlas will be published online, with a summary and analysis on paper.

Scotland holds 1/3 of the land area to be recorded but just 13% of the BSBI membership. New (or joint) recorders are needed for Shetland, Caithness, Lanarkshire and Berwickshire. You can help by applying for a VC recorder vacancy, booking on a recording week or helping a local recorder. Or volunteer to join Jim's 'rough crew' for recording remote areas.

Des Thompson spoke about Derek Ratcliffe, 'Nature's polyglot'. Derek Ratcliffe's main claim to fame was in showing that pesticides, DDT in particular, were implicated in the thinning of peregrine eggshells. However, his publications were mostly botanical, including *Plant Communities of the Scottish Highlands*, written with Donald McVean, and *A Nature Conservation Review*, where he developed the nature conservation criteria that still drive nature conservation policy. With Donald Piggott he master-minded the development of the National Vegetation Classification. As Chief Scientist of the Nature Conservancy Council he worked to halt the widespread afforestation of Scotland's uplands and peatlands. His work commanded respect for its scientific rigour and integrity. He was a knowledgeable field naturalist and author and a skilled photographer.

Julia Wilson spoke about polyploidy in *Campanula rotundifolia* and the importance of geographical isolation in maintaining the two British subspecies.

The day's main speaker was **Ken Thompson**, whose talk on *Aliens in the British Flora* looked at the concept of nativeness and argued that it is time for conservationists to focus more on the functions of species, and less on where they originated. The talk is summarised in his article below.

Aliens in the British Flora

Ken Thompson

Department of Animal and Plant Sciences, University of Sheffield

In botany, as in most areas of life, a lot depends on your point of view. For example, the publication of the first vascular plant red list for England makes you realise how different the world looks from an English, rather than a British, perspective. Viewed from Scotland, it's quite hard to believe that *Calluna vulgaris* is near-threatened in England.

But when it comes to aliens, we first have to decide if a plant really *is* alien, a question that has both spatial and temporal aspects. Quite a few common British plants are native in England, but alien in Scotland, if you think the geographical distinction is worthwhile. In the opposite direction, is *Pinus sylvestris* a perfectly good British native, or England's most widespread alien?

Timescale presents some even bigger problems. *Rhododendron ponticum* is universally reviled, but it was native in the British Isles in the previous interglacial, and only bad luck has prevented it being native in this one. So offended are some by the idea that rhododendron might have any claim to native status, however tenuous, that there is a widespread belief that our plant is in fact a hybrid, *Rhododendron* × *superponticum*. But this view is soundly debunked by rhododendron expert Kenneth Cox (<https://www.glendoick.com/Why-so-called-Rhododendron-x-superponticum-is-nonsense>).

Coming right up to date, *Serapias parviflora* is only one of several recent arrivals that might have got here with or without human assistance, in which case they're alien or native respectively - take your pick. Sometimes we just can't make up our minds; in successive floras, *Chenopodium bonus-henricus* has been alien, native, native (with reservations), and back to alien again. A lot has happened in my relatively short career. When I was younger, CTW assured me that *Galanthus nivalis* and *Fritillaria meleagris* were both natives, but we're now sure that the former is a neophyte, and the balance of probability is that the latter is too.

Then there's the 'media perspective', which I won't waste any time on, other than to remark that if Japanese knotweed were really guilty of everything it's accused of, I for one would be too frightened to get out of bed in the morning.

The legislative view of aliens often pays little attention to biological reality. New EU legislation promises that 'A list of invasive alien species of Union concern will be drawn up...', but don't hold your breath. England and Wales have a short list of 'Schedule 9' species that cannot be allowed to escape into the wild, while Scotland has decided to outlaw the introduction of *any* alien into the wild. A list of exceptions to this blanket prohibition includes numerous alien trees, apparently chosen on the grounds that there are already too many of them out there to make killing them all a realistic option.

Our many alien arable weeds, many of them attractive, and many of them rare, make an interesting case study. Various initiatives, from Plantlife, Kew and others, urge us to like these plants, to grow them, and to contribute to their conservation. In order to persuade us to do this, we are often informed, explicitly or otherwise, that these are native plants. The feeling here (which may well be justified) seems to be that aliens as a class have been so thoroughly demonised (see Japanese knotweed, above), that there's no way we can learn to love these plants unless we genuinely believe them to be native.

Legally this is fine, at least in England and Wales, since none of the species concerned is on Schedule 9. But in Scotland, things are more complicated. An apparently random selection of arable weeds is exempt from the blanket ban. So you can do what you like with, for example, *Euphorbia helioscopia*, but not with *Agrostemma githago*. Which would make sowing many 'cornfield weed' seed mixes problematic, at least in the 'wild' (whatever that is). The Royal Botanic Garden, Edinburgh, to its great credit, takes no notice whatsoever of all the legal nonsense. Its list of priority species under 'Target 8' of the Global Strategy for Plant Conservation is a complete mixture of natives and aliens.

Where does that leave us? Personally, I've nothing to add to the *Nature* paper to which I contributed in 2011 (<http://www.macalester.edu/~davis/pubs.html>), and in particular to its closing sentence: 'Nearly two centuries on from the introduction of the concept of nativeness, it is time for conservationists to focus much more on the functions of species, and much less on where they originated.'

For more on this subject, see *Where do Camels Belong?* By Ken Thompson (Profile Books, 2014)

Site Condition Monitoring

Vascular plant Site Condition Monitoring continues to be an important aspect of my work. It is particularly helpful in making a strong case for SNH funding for the Scottish Officer post. The fieldwork and reporting is largely done by BSBI volunteers with some help from me.

In the early part of the year, reports were completed, checked and forwarded to SNH for the six sites surveyed in 2014. These were Arthur's Seat Volcano, Craighall, Derskelpin Moss, Glen Strathfarrar, Milton Wood & Selkirk Racecourse Moss. Further attempts were made in spring 2015 to monitor previously unsatisfactorily surveyed species in three other SSSIs. Reports were updated and re-sent. Another full SCM program was agreed with SNH for 2015. Fieldwork was completed and reports drafted by volunteers for Eigg-Cleadale (by Stephen Bungard), Glas Tulaichean (Martin Robinson), Hill of Towanreef (David Welch), Kyle of Sutherland Marshes (Brian Ballinger), Loch Leven (Liz Lavery) and Morven & Mullachdubh (Eric Meek).

BSBI members Ian Strachan, Gordon Rothero, Dan Watson and I worked with climbing guides to find and monitor rare plant populations on Ben Nevis as part of the North-face project. A highlight was finding *Luzula arcuata* (Curved Woodrush) Grateful thanks are again due to all the BSBI volunteers involved with monitoring work in 2015.

Atlas 2020 Recording

Achieving full Atlas 2020 coverage is going to be a great challenge in Scotland - particularly as several vice-counties fell vacant during the year. A number of initiatives were arranged to help Recorders with Atlas 2020. For example, we held two residential recording weeks in 2015 - in Shetland and Ayrshire. The Shetland recording week, based on Unst, was organised by me with the help of Paul Harvey of the Local Recording Centre, Lynne Farrell and the local recorder, Walter Scott. In total 7,500 records were collected by 14 participants and digitised by Paul Harvey. Another equally successful recording week was organised by Angus Hannah and local recorders in the south of Ayrshire in early July. A dozen members participated and collected an equally impressive number of records.

Both Angus Hannah and I each spent a week on the Isle of Jura with the newly appointed Atlas 2020 Recorder, Simon Smart, to get him started with MapMate and Atlas Recording and up to speed with the local flora. Mean-

time visiting members provided significant help with Atlas recording on Islay and Colonsay. [See vc102 report by Malcolm Ogilvie]

Andy Amphlett collected an amazing 11,500 records in his neighbouring Vice-County of Easternness and this was augmented by a further 3,500 records by local member Stewart Taylor. Together this is a great contribution to Atlas recording in *the* biggest VC in the British Isles. Both Stephen Bungard and Angus Hannah helped with Atlas coverage in VCs that neighbour their own (West Ross & Ayrshire respectively). If other recorders who are on top of Atlas coverage in their own VCs would like to help struggling neighbours please get in touch. Thanks are due to all those involved in these initiatives.

Cairngorm National Park (CNP) Recording Project

The BSBI collected over 20,000 records in the CNP area in 2014, with the help of CNP Authority funds to cover the cost of volunteers' travel and subsistence costs. A similar project bid was prepared by Andy Amphlett on behalf of the BSBI in 2015. This was successful and resulted in another 30,000 records, being gathered, digitised, uploaded to the DDb and validated - a truly remarkable achievement. Records were made within 53 hectads, 334 tetrad and 644 monads (1x1km grid squares), and were from 3572 unique grid references. Field Meetings organised by Recorders in Angus & South Aberdeen made a significant contribution to the tally.

VCR Network Support

A residential Recorders' Workshop with the theme *Atlas 2020 - the final five years* was held in March at Kindrogan FSC. In total, 27 recorders participated. Its aim was to provide *practical* help and advice on the tools that recorders need to use for the project, such as MapMate, Memory Map and the DDb. We invited recorders to bring their laptops or desktops and held sessions on tuning-up MapMate for Atlas 2020 and getting recorders started with the DDb and validating records in the DDb. There were also talks on RPRs & the CNP project. We offered one-to-one clinics with experts to address specific problems, not covered in the classroom sessions. The presentations and handouts are still on the BSBI Scotland page. It was agreed that similar events will be held two yearly, and in the intervening years lower-key one-day events would be held.

One-to-one support meetings were held with Recorders in West Ross, Westernness and West Sutherland and I met prospective recorders for Caithness and spent time in the field with them. Two support newsletters (one in winter

and another in summer) were sent to Scottish Recorders. Atlas 2020 guidance specifically for BSBI Vice-County Recorders was also drafted and published.

VCR Network Support - Andy Amphlett

Andy Amphlett retired from the RSPB in March and undertook even more support work on behalf of the BSBI in 2015 than in 2014. Much of this work related to helping Recorders with data and its validation. In particular he developed or updated spreadsheets that variously analyse Atlas 2020 coverage for each VC by hectad and tetrad and assess the frequency of taxa in a vc. He provided support - particularly on validation - to recorders in the NE of Scotland, e.g. Easternness, East Perthshire, Moray and South Aberdeen and helped recorders in Dumfries and Kirkcudbright import records into MapMate. Andy revised DDb User Guidance and contributed regularly to the DDb message board.

Rare Plant Registers

It was great to see a further two RPRs being published in Scotland: West Perth by Liz Lavery & Jane Jones and Orkney by John Crossley & Eric Meek. That brings the total of Scottish RPRs up to fourteen (including one for the Cairngorm National Park). Chris Metherell and I continue to provide advice and support to Recorders preparing Rare Plant Registers. Local and visiting botanists are invited to use them to track down long lost populations and update old and vague records! There is a full list on the BSBI website - please send any updates to the relevant VC Recorders.

Data

One of the biggest outstanding datasets from the Scottish Computerisation project was finally synched to the hub and made it onto the DDb. This was a 150,000 record set by Bernard Thompson for Argyll for the period 1980-1999. The current recorder, Carl Farmer, has been diligently checking it since it was digitised by contractors in 2010. A further 40,000 Argyll records for the period since then also came through in the same upload. Another outstanding dataset - that for 10,000 Dumbarton records was also recently completed by the contractor and uploaded directly to the DDb by Tom Humphrey.

In addition we continue to work on the 127,000 records from Keith Watson's BioBase database for Renfrewshire. BioBase is now defunct so we need to set Keith up with MapMate. Katherine White was given MapMate training

and digitised Jackie Muscott's West Lothian backlog. Katherine then went on to collect (and digitise) 2,300 records from East Lothian over the summer.

Training

The BSBI Outreach Group offered beginners training in Identifying Plant Families by organising workshops and follow-up field meetings in Inverness and St Andrews in May. A total of 41 beginners participated and particular thanks are due to Faith Anstey.

Fifteen members attended an *Introduction to Recording* day organised in May at RBGE - covering how to find, prepare and complete recording cards, use GPS, plan routes, etc. For the more advanced, Chris Metherell led two *Euphrasia* Study Group days at RBGE - each attended by about a dozen participants.

Two training days were organised on Shetland for 18 local beginner and intermediate botanists in August. And a further half day was spent training the BSBI member on Foula to provide Atlas 2020 coverage.

BSBI Meetings

The Scottish Committee organised another very successful BSBI/BSS Scottish Annual Meeting (SAM) at RBGE in November. The SAM organiser, Liz Lavery, was assisted by an automated booking and payment system. A great range of interesting exhibits were on display thanks to Recorders. But one of the most colourful was the BSBI Photographic Competition arranged by Natalie Harmsworth. An account of this meeting is given elsewhere.

Twenty BSBI members enjoyed an excellent Christmas lunch and convivial company in the RBGE staff canteen, thanks to retiring RBGE Chef, Ted Gattier. I hope to repeat the initiative next Christmas.

Thanks

Thanks are due to all the BSBI Recorders, members and volunteers who contributed so magnificently in 2015! And I look forward to seeing you in the field in 2016!

Jim McIntosh, BSBI Scottish Officer, March 2016

Are Crab Apples and Wild Plums naturalised in Scotland?

Michael Braithwaite, Clarilaw Farmhouse, Hawick TD9 8PT

In 1991 at apple-blossom time I wrote a letter to the local paper asking for flowering sprigs of Crab Apples from hedges. I was pleased to receive about a dozen parcels. I identified the specimens and then visited the localities. I concluded that hedgerow apples in the Scottish Borders are a mixture of Crab Apple *Malus sylvestris* and seedlings of the Cultivated Apple *Malus pumila*. Both species seem to have been included randomly in nurserymen's stock as 'crab apples'. The older plantings usually produce small crab-apple-size fruit even if they are not true Crab Apples and are probably hybrids. More recent plantings are more varied. Self-sown apples are rare.

I have not altered my view over the years except that I find that exotic crabs such as Sargent's Apple *Malus sargentii* and Purple Crab *M. x purpurea* are now planted occasionally.

In 2015 I re-surveyed a 25 mile stretch of the old Waverley Line railway that I had previously surveyed in 1975 in fifteen survey sections. Apples were recorded from four sections in 1975 and the same number of sections in 2015, though only two were the same. All the six trees found in 2015 were wildings from cultivated apples. None had regenerated to form colonies. Some of the trees are far from houses, so it is not clear how the seeds were dispersed, whether brought by birds from gardens or hedgerows, by discarded apple cores from some workman's lunchtime 'piece' or by discarded cores hurled from carriage windows.

Wild Plum *Prunus domestica* is quite scarce in the Scottish Borders. There are two sorts. There are small trees with relatively large leaves that correspond with *subsp. domestica*. These are most often found in hedgerows where they are not spaced out methodically like the crab apples, so they do not seem to have been commonly included in nurserymen's stock, instead they are clustered near habitation. Then there are shrubs that look very much like the native Sloes (Blackthorn) *P. spinosa* except that they have few or no spines, sucker less strongly and may have larger fruit with stones that are ridged and deeply pitted. These correspond roughly with *subsp. insititia* but are variable and may include hybrids with *P. spinosa*.

On the railway *Prunus domestica* was found in four places within three survey sections in 1975 and in four sections in 2015, of which two were the same as in 1975. One of the 2015 finds was of *subsp. domestica*: it was a small tree in a hedge where it had probably been planted. The others were all shrubs and appeared to be bird-sown. It is not at all clear where they had come

from. Have we a wild population of *subsp. insititia* (or the hybrid) in the Scottish Borders or have the bushes been bird-sown from gardens or hedges fairly close at hand?

Wild Plum and Sloes are present in quantity on the Eildons in the wood on the south side of Hill North where they appear to have been planted as part of a nineteenth-century fox covert. They are a puzzling mixture of different forms.

I conclude that no apple species are native or naturalised in the Scottish Borders, they are only planted or casual, and that of the two main forms of Wild Plum only *subsp. insititia* (or the hybrid) is naturalised, while *subsp. domestica* is usually planted or occasionally a bird-sown casual from garden plums. I would be most interested to hear of any Scottish localities of well-naturalised Crab Apples or Wild Plums or of other comments on their distributions or origins.

Patterns of Flora: Mapping Seven Raasay Habitats

Stephen Bungard

In May 2014 I was contacted by Frances Priest, an artist and designer based in Edinburgh who was heading for Raasay and Skye to begin visual research into the native plant species of the area. This was to form the starting point for a new body of ceramic work that would explore ornamental motif and pattern inspired by the plant life of Raasay and Skye.

Shortly afterwards we met up for a day's exploration of Raasay, and Skye soon disappeared off the wish list. After discussion of various possibilities such as traditional uses for local plants, we settled on seven different habitats as the subject of the work. Frances was commissioned by Atlas Arts, Portree for the work that became "Patterns of Flora | Mapping Seven Raasay Habitats". ATLAS Arts was founded in 2010 to inspire public interest in contemporary visual arts and culture.

The selected habitats and plants are:

- **Moor**
Blechnum spicant (Hard Fern), *Erica tetralix* (Cross-leaved Heath), *Myrica gale* (Bog Myrtle), *Narthecium ossifragum* (Bog Asphodel), *Succisa pratensis* (Devil's-bit Scabious)
- **Bog**
Drosera rotundifolia (Round-leaved Sundew), *Eriophorum angustifolium* (Common Cottongrass), *Pedicularis sylvatica* (Lousewort), *Potamogeton polygonifolius*, (Bog Pondweed), *Sphagnum* sp.

- **Freshwater Loch**
Carex rostrata (Bottle Sedge), *Comarum palustre* (Marsh Cinquefoil),
Equisetum palustre (Marsh Horsetail), *Juncus effusus* (Soft Rush),
Ranunculus flammula (Lesser Spearwort)
- **Coast**
Armeria maritima, (Thrift), *Blysmus rufus* (Saltmarsh Flat Sedge),
Glaux maritima (Sea-milkwort), *Plantago coronopus* (Buck's-horn Plan-
tain), *Sedum rosea* (Rose-root)
- **Mountain**
Alchemilla alpina (Alpine Lady's-mantle), *Cryptogramma crispa*
(Parsley Fern), *Diphasiastrum alpinum* (Alpine Clubmoss), *Gentianella*
campestris (Field Gentian), *Sedum anglicum* (English Stonecrop)
- **Limestone**
Asplenium ruta-muraria (Wall-rue), *Asplenium viride* (Green Spleen-
wort), *Draba incana* (Hoary Whitlow-grass), *Dryas octopetala*
(Mountain Avens), *Epipactis atrorubens* (Dark-red Helleborine)
- **Woodland**
Anemone nemorosa (Wood Anemone), *Betula pubescens* (Downy
Birch), *Brachypodium sylvaticum* (False-brome), *Galium odoratum*
(Woodruff) *Hyacinthoides non-scripta* (Bluebell / Wild Hyacinth)

The main period Frances had available for this work was during the winter when direct observation of the plants in their natural habitat was not possible, but with the help of images, drawings and the herbarium at RBGE, Frances was able to create seven beautiful designs [See photo inside back cover].

Raasay House was the selected centre with door furniture (door knobs and finger plates) and window-sill inlays becoming permanent features. Additionally, seven designs of Parian ware vase were designed, one for each habitat, plus adult colouring books featuring the seven habitats. Maps were created of walks on Raasay to each of the featured habitats and for that we were greatly helped by graphic artist Andy McGregor. The walks are of varying length and difficulty, all starting from Raasay House.

A shelf of botanical books was established in the Raasay House library where all the bookcases are newly adorned with doorknobs featuring Frances' designs.

Frances and I were invited to appear on "Radio Scotland's premier arts programme" the Janice Forsyth Show and the project came second in the 'Placemaking' category of the Arts & Business Scotland Awards.

The project was launched at Raasay House in June 2015 with a weekend of activities including botanical walks to some of the habitats.

The vases and colouring books are on sale at Raasay House and from the online store at <https://atlas-arts.myshopify.com/>, though most vases have now been sold. The map of walks costs £1 and is also available as above.

“Look what’s come to roost in our tattie patch!”

George Ballantyne

For well over 30 years our potato bed has helped to sustain us, but it also has thrown up plants that are not always welcome, a few decidedly not so!

During 2016 the first ‘outsiders’ were Caper Spurge (*Euphorbia lathyris*), not the true plant that produces edible capers but one that has look-alike fruits, and no fewer than three Hemp-nettles: *Galeopsis tetrahit* and its very close sibling, *G. bifida*, together with *G. speciosa*, living up to its specific name by looking very showy with its unusual combination of yellow and purple corollas - it has long been one of my favourite weeds, now less and less encountered. Next, a very unusual species in Scotland appeared quite unexpectedly, viz. Small-flowered Buttercup (*Ranunculus parviflora*), the provenance of which I recently documented; originally transferred to our garden from the local harbour in 2006, it had spread from the vegetable patch a good 15 yards away.

While carefully cordoning it off, I realised that a much less welcome species had also sprung up, in the shape of Thornapple (*Datura stramonium*) - and it was soon joined by a close relative Apple-of-Peru (*Nicandra physalodes*). These poisonous plants belong to the family Solanaceae, as does of course the humble potato (it is the ‘berries that ripen after flowering that are the trouble)-we were careful to get rid of them after our crop of Roosters was gathered in. Another toxic species in the family growing wild in our garden is *S. dulcamara* (Bittersweet or, more tellingly, Woody Nightshade), while the odd plant of Opium Poppy (*Papaver somniferum*) also flourishes; my wife tolerates it because of its value in flower arrangements with its goblet-shaped ‘pods’.

So all-in-all, we have quite a mix of unusual and harmful flowers in the garden, so much so that I’m tempted to request the Editor not to include an address in case the Drugs Squad gets word of what we are growing and decides to investigate!!!

***Epipactis phyllanthes* (Green-flowered Helleborine) new to Scotland**

Ian Green

On the 1st August 2015 an email arrived from Eric Jensen saying he had found a single spike of *Epipactis helleborine* (Broad-leaved Helleborine) by the path on the east side of the River Findhorn north of Forres, (NJ02696110) on the 27th July. With this Helleborine only being known from one other site in vc95 about 5km up-river, I thought I would go and take a look. The following day, with my GPS set with Eric's map reference, I soon found the Helleborine. When I saw it was greenish nearly all over, I realised it was more like *E. phyllanthes*, a species I hadn't seen for about 20 years. Keying it out in 'Stace', the glabrous inflorescence-axis certainly made it seem to fit this species better. I took a load of photos then headed back spotting two more spikes right beside the path that I had walked by earlier.

It was not till I was home and looking up records for this species that I realised it was not known from Scotland. After getting into trouble from another BSBI referee for not taking very good photos, I had taken a good number of photos of all parts of the plant hoping some would be good enough, not easy on a mobile phone! I emailed a variety of these photos off to John Richards, the BSBI referee, and waited. Mid-morning the next day came the reply. Your plants are *E. phyllanthes* with the nearest site being in Northumberland.

A few days later I led a meeting of my local botany group. After some searching the group found a total of 12 spikes in mainly open bare ground on either side of the wooded path, but also some spikes amongst the stems of *Fallopia japonica* (Japanese Knotweed). The woodland there being on sandy soils and next to the river, the ground flora is made up of a very high percentage of non-native species, so it is good to have such an exciting native species appear. It will be interesting to see how many spikes come up this year.

Atlas 2020: using hectad percentage scores to monitor progress

Angus Hannah

In his vc88 report (p.39) Jim McIntosh writes "My main aim in 2015 was to improve the hectad re-recording rate (taxa recorded post 2000/ taxa recorded all years) to $\geq 75\%$ ". This is an admirable aim, and one which all smaller vice-counties and some larger ones should achieve. But because of the way this percentage is calculated, there is an important caveat to bear in mind. This target can be reached much more rapidly by re-finding previously recorded taxa than by recording taxa new to the hectad. This possibly counter-intuitive fact may be illustrated by a couple of examples.

Suppose for simplicity that 100 species had been recorded pre-2000 in a square. Re-finding 75 of these would achieve the target. If, instead, you found 75 species new to the square, your achievement would be a paltry 43% ($100 \times 75 / 175$). To reach the target of 75% with new finds alone, you would have to find no less than 300 new species! Here is a more realistic case: suppose 400 taxa were recorded pre-2000. Re-finding 300 would achieve the target. You have re-found 280. You are only 20 short, and your score is 70%, but you are now in a previously unrecorded section of the square, and begin to find new taxa. Finding 20 of these only gets you to 71.4%. Unless you can re-find any more old ones, you must go on to find 80 new taxa before you reach the 75% target.

It is hard to see any good reason for preferring re-finds to new finds, and I suggest it is better to use the formula *taxa recorded post-2000/taxa recorded pre-2000*, which is not biased in this way. It is then just a matter of finding as many as you can in the square, whether new or not. Another useful statistic is the percentage of taxa *not* re-found in the current period, which shows how much remains to be done. However, all formulae of this kind should be used with caution, since real change may have occurred; plants may have gone, so no amount of effort can re-find them, or an influx of new taxa may give a false sense of achievement, while many others still remain to be re-found.

Exhibit Abstracts: Scottish Annual Meeting 2015

Some notable recent records for Cumbria (v.c.70)

Geoffrey Halliday

The exhibit consists of specimens and photos of *Dactylorhiza fuchsii* x *Coeloglossum viride*, *Allium roseum* (Rosy Garlic), *Lathyrus tuberosus* (Tuberous Pea), *Salix cinerea* x *purpurea* and *Vicia orobus* (Wood Bitter-vetch).

Interesting finds in Dumfriesshire in 2015 & willows from 2014 (v.c.72)

Chris Miles

The exhibit shows two new vc records for the spring annuals *Cardamine corymbosa* Hook.f., (New Zealand Bitter-cress) and *Valerianella carinata* (L.) Pollich, (Keeled-fruited Cornsalad). A second record for *Myosotis x bollandica* (*M. secunda* x *stolonifera*) P Jepson. A third vc record for *Veronica catenata* Pennell (Pink Water-speedwell) and the first record for 122 years for the naturalised, and rather elegant *Senecio sarracenicus* L. (*S. fluitans* Wallr.) (Broad-leaved Ragwort). There are also some willow hybrids from 2014.

Peeblesshire (v.c.78) Luke Gaskell

I am now recording in monads and aim to record a minimum of 15 monads per hectad in Peeblesshire by 2020. I find that concentrating on a small area quite intensively is very productive and recording a monad including travelling time and walking into the site seems to take me about half a day. This fits well within the time I have available.

I am exhibiting a selection of natives and aliens which have been found in 2015: See Table below.

Natives		Location
<i>Equisetum pratense</i> (Shady Horsetail)	2 nd VC record	River bank, Cardrona
<i>Carex diandra</i> (Lesser Tussock-sedge)	2 nd VC record	Loch Burn near Leadburn
<i>Gnaphalium sylvaticum</i> (Heath Cudweed)	4 th VC record, last recorded 1988	Forest track, Walkerburn
Arable plants		
<i>Camelina sativa</i> (Gold-of-pleasure)	1 st VC record	Wild bird cover, Holms Water
<i>Stachys arvensis</i> (Field Woundwort)	1 st VC record	Sown grass, Innerleithen
<i>Anthemis arvensis</i> (Corn Chamomile)	4 th VC record	Fodder crop, Shiplaw
<i>Glebionis segetum</i> (syn. <i>Chrysanthemum segetum</i>) (Corn Marigold)	3 rd VC record, last recorded 1959	Fodder crop, Shiplaw
<i>Trifolium incarnatum</i>	1 st VC record	Fodder crop, Eddleston
Casuals		
<i>Potentilla recta</i> (Sulphur Cinquefoil)	1 st VC record	River embankment, Peebles
<i>Saxifraga cymbalaria</i> (Celandine Saxifrage)	1 st VC record	Church yard, Broughton
<i>Primula x pruhonicensis</i> (Hybrid Primrose (<i>P. vulgaris x juliae</i>))	1 st VC record	The Glen. Seems more common and variable than assumed
<i>Viola cornuta</i> (Horned Pansy)	2 nd VC record, last recorded 1978	Riverbank, West Linton

Herbarium sheets of some rare plants in Selkirk and Roxburgh 2015 (vcc.79 & 80) Rod Corner

Impatiens noli-tangere (Touch-me-not Balsam) v.c. 79. A large colony by the Ettrick near Selkirk first seen in 2001 seemed unchanged. It is almost certainly derived from plants upstream at Bowhill. In contrast with *I. glandulifera* (Himalayan Balsam), it is a poor coloniser.

Imperatoria ostruthium (*Peucedanum ostruthium*) (Masterwort) v.c. 79: only known as a single non-flowering patch of 5 square metres by the Ettrick upstream from Selkirk. It has remained unchanged since first found in 1989. The species is now thought to be extinct in Roxburghshire.

Carex appropinquata (Fibrous Tussock-sedge) v.c. 80. This Red Data List and Near Threatened sedge is unknown elsewhere in Scotland the nearest site being in Mid-west Yorkshire (v.c. 64). It was first seen at Dunhog Moss in 1967. Its status there remains unchanged with about 50 tussocks.

Carex aquatilis (Water sedge) v.c. 80. This northern sedge was found by Luke Gaskell in 2009 on the Tweed below his farm. This is probably the only extant colony in v.c. 80.

Crepis biennis (Rough Hawk's-beard) v.c. 80. A large conspicuous colony of this introduction over 25m verge of pathway was reinstated to the flora of Roxburghshire. It is a rare Borders species.

The Railway Flora of Teviotdale revisited (v.c.80) *Michael Braithwaite*

A few copies of the above book are available today in exchange for a token donation to BSBI funds to help towards the costs of this meeting. It is also available as a 2MB PDF for free download on the BSBI website.

This is an account of a repeat survey after 40 years of a 20 mile stretch of disused railway in Roxburghshire, v.c. 80, first surveyed in 1975. There have not been many repeat surveys of small areas outwith wildlife reserves, so you may find this report interesting. There has been an amazing amount of change: by no means all along the lines of what was expected. After making adjustments to allow as far as possible for recording differences between the two surveys, the overall species diversity has increased from 477 to 506.

Some Rare Lothian Plants (v.c.83 & 84) and *Crataegus* *Douglas McKean*

One of the plants on show is *Lamium gangeticum* ssp. *laevigatum*, a recent garden escape, not yet in 'Stace', (hairy anthers), another plant is *Carduus acanthoides* L. (Broad-winged Thistle) previously confused with *C. crispus* (Wetted Thistle) in Stace's Census Catalogue and elsewhere. This thistle has larger capitulae and the stem wing-spines are also longer (5mm.) Also shown is *Cotoneaster franchetii* (Franchet's Cotoneaster) another increasing escape.

As *Crataegus* (Hawthorn) referee I exhibited *C. mollis* from Derbyshire (not in Stace but in Poland and Clement); *C. persimilis* x *monogyna* from Derbyshire det. Michael Wilcox, and agreed by me, apparently a First world record. Specimen at E.

Stingless Nettle (v.c.85) *Sandy Edwards*

I always thought, until recently, that Stinging Nettles lived up to their name. However, I was told of some specimens of the "Stingless Nettle" or "Fen Nettle", *Urtica dioica* ssp. *galeopsifolia* at Morton Lochs, Tentsmuir (vc85) by

Ron Youngman who noticed a clump near the car park. They certainly fitted the general description: Flowering late summer (September), flowers at nodes 13 - 22 and long narrow leaves. (*cf* Plant Crib).

Close inspection showed fine hairs, especially on the leaf underside and very few, if any stinging hairs. It is certainly different from *Urtica dioica* ssp. *dioica*. (See micrographs). There is very little data about how significant these differences are; Stace states the two species do not differ consistently, either morphologically or in chromosome number and there are intermediates. ($2n=48$, 52 in *doica*, $2n=26$ in *galeopsifolia*).

Since then I have seen a few similar clumps in other locations, some with more stinging hairs than others. Before being made aware of the species I assumed that the variation in nettles was just due to age or habitat conditions. So, is this plant overlooked and just recorded as ssp. *dioica*?

***Corallorhiza trifida* (Coralroot Orchid), Loch Leven NNR 2015 (v.c.85)**

Liz Lavery & Jim McIntosh

One of our target species while monitoring vascular plants at Loch Leven for SNH was *Corallorhiza trifida* (Coralroot Orchid). Lynne Farrell discovered a small population in 2005 when exploring the eastern shoreline by boat. Prior to this 'a few spikes were observed on the south side of the loch in 1908, while it was described as plentiful on the east side in 1920' in the *Wildflowers of Kinross* (Ballantyne, 1985). Liz had failed to re-find it at Lynne's site in 2010, during the second round of vascular plant Site Condition Monitoring.

This year, after battling our way through a dense tangle of willow undergrowth along the water's edge Jim spied a few tiny plants nestling on the inner edge of a tall dense *Phragmites australis* (Common Reed) bed beside an old, spreading *Salix cinerea* (Grey Willow).

Also displayed is another target species, *Ranunculus x levenensis* (*R. flammula x reptans*). An estimate of more than 14,000 plants of this very rare hybrid species were scattered along the upper shoreline at Findatie.

***Oxytropis halleri* (Purple Oxytropis): A New Site in Mid-Perths (v.c.88)**

Alistair Godfrey

During the summer of 2015, a number of tetrads were recorded in Mid-Perthshire which had no or very few records. The object was to improve coverage and provide records for the Atlas 2020 project. Two tetrads were visited to the south-west of Pitlochry, in an area called Duntanlich (pronounced *Dunchanlich*) bounded at their south-west corners by NN 86 56 and NN 88 56. These tetrads are situated where the higher ground rises from 500m to just over 600m above ordnance datum.

The first tetrad visited provided records for a small number of calcicolous species in rocks and flushes with a montane distribution. The second visit provided more records from this group, including a small population of *Oxytropis halleri* ssp. *halleri* Bunge ex W. D. J. Koch. An account of the new site is provided along with information on the species from a number of sources examining its European distribution.

New Site Location: Meall a' Choire, Duntanlich, NN 8808 5677, 6km south-west of Pitlochry.

Population: 12 plants in total, 6 in flower, within two recesses on west facing crag.

Date of find: 3rd July, 2015. Recorder: Alistair Godfrey.

Two Rare Coastal Sedges in Angus (v.c.90) Theo Loizou

Carex maritima (Curved sedge) and *Carex serotina* (Small-fruited Yellow sedge) are Angus' rarest coastal sedges. *Carex maritima* was re-confirmed at a site near the Mains of Usan. It had been reported there in 2011 during a saltmarsh survey by Thomas Haynes of the Nature Bureau. This is currently the only known site in Angus but it has previously also been recorded at Barry Buddon. However its status there is currently unknown. *Carex serotina* was also recorded in 2015 by the author and by Michael Morphy at Scurdie Ness, just 2.5 km north of Mains of Usan. According to Hogarth (2012) this is the only known site for the sedge in Angus. Like *C. maritima* it is associated with the *Juncetum gerardi* saltmarsh (SM16). Several dozen fruiting clumps were noted in two separate areas less than 40m apart.

Status of Orchid Species in Angus (v.c.90) Theo Loizou

At least 17 species of orchid are known to occur in Angus - excluding hybrids and sub-species. A preliminary assessment of population status (their number, size and distribution) and trends (i.e. whether increasing, stable or decreasing) of each orchid species is presented, based on an understanding of the local flora gathered during fieldwork over the past 20 years, including >30 days recording for Atlas 2020 in 2015. It is also informed by Barbara Hogarth's *The Flowering Plants and Ferns of Angus* (2012).

Generally the population trends of Angus' orchid species are unclear. While several may possibly be stable, at least one species *Anacamptis pyramidalis* (Pyramidal Orchid) is clearly declining and four other species are probably declining in at least some of their sites.

Further information is required, particularly on the highlighted orchid species. If you can help, please email me: loizou958@btinternet.com.

New Vice County Records for Angus (v.c.90) *Theo Loizou*

Thalictrum lucidum (Shining Meadow-rue) was encountered above Ethie Haven in tall *Arrhenatherum elatius* grassland (NVC, MG1) on 29th June 2015. Its origin is unknown, but the most probable explanation is that it has come via bird seed dispersal. There is only one other Scottish record of this species in the BSBI Database (in Berwickshire).

In June of 2015, Martin Robinson, the BSBI recorder for East Perthshire (vc89), found *Carum verticillatum* (Whorled Caraway) in a damp meadow in Angus. The site, near Kirriemuir, known as Woodside, also contains *Platanthera bifolia* (Lesser Butterfly Orchid). This is clearly a western species in Britain and its appearance in Angus could be the result of animal (cattle) seed dispersal. If this is the case, this species may not be truly native in the county.

***Ranunculus x levenensis* Druce ex Gornall: new to Angus (v.c.90)**

John Edgington

This hybrid between *Ranunculus flammula* (Lesser Spearwort) and *R. reptans* (Creeping Spearwort) is named for the type locality, Loch Leven (v.c. 85). There are post-2000 records from six Scottish sites: Loch Leven itself, Loch of Strathbeg (v.c. 93), Loch Vaa (v.c. 95), Loch Awe (v.c. 98), Coir' a'Gallaich, Ben Hope (v.c. 108), and a recent (2013) record by Andy Amphlett from the River Spey (v.c. 95).

Plants with the appearance of the hybrid were found in July 2012 in silty ground beside a shallow permanent pool in upper Glen Esk, Angus (v.c. 90) and shown to Geoffrey Halliday who thought the identification was correct. Plants have appeared in quite large quantity each year since. A further collection was made this year (2015) and shown to Fred Rumsey (NHM) and Richard Gornall, the BSBI referee, both of whom confirmed them as the hybrid. This is the first vice-county record for the taxon. Voucher specimens from 2012 and 2015 will be exhibited, and their habitat described.

***Moneses uniflora* at Glen Strathfarrar SSSI (v.c.96)**

Sarah Smyth & Ian Strachan

Glen Strathfarrar is a stunning glen in v.c.96, Easternness. It is a designated site for, amongst other features, its vascular plant assemblage, monitored by the BSBI on behalf of SNH over the last two cycles in 2009 and again in 2014/15. Management in recent years has reduced the impact of grazing, which is resulting in improvements in condition of the pine woodland. One of

most important plants is the Nationally Rare pinewood specialist *Moneses uniflora* (One-flowered Wintergreen). In 2009 four populations were found with 79, mainly sterile, rosettes, but with some evidence of sexual regeneration. In 2014 despite careful searching no plants could be found. The site was revisited in 2015 with grim determination, suspecting timing / conditions had not been great in 2014 resulting in a poor year for *Moneses*, however once again no plants were recorded.

Moneses populations do seem to fluctuate significantly from year to year and rosettes without flowers may be difficult to spot in dense vegetation. Can we say that *Moneses* has disappeared from Glen Strathfarrar? If so, is the management unsuitable/vegetation too lush? Records are sought for post-2012 records for *Moneses* within Glen Strathfarrar SSSI, or for experience of declines elsewhere. If you can help, please contact sarah.smyth@snh.gov.uk tel. 01349 860654 or Ian Strachan (imstrachan55@gmail.com).

Westernness, some highlights from 2015 (v.c.97) Ian Strachan

Another busy year of recording, with some surprises. Monitoring plots for *Diapensia lapponica* (Diapensia) above Glenfinnan were relocated, though the 'new' site further west again proved elusive. In August the second year of the North Face project turned up interesting finds on Ben Nevis including more than 100 spikes of *Carex lachenalii* (Hare's-foot Sedge) on Tower Ridge, and several new UK altitudinal records. Other finds of note included the first montane record in the vice-county for *C. aquatilis* (Water Sedge) on Sgurr Choinnich Mor, and *Dryas octopetala* (Mountain Avens) in Ardgour. The biggest surprise was *Epipactis helleborine* (Broad-leaved Helleborine), a rare species in the Highlands, which appeared in several places around the car-park at Nevis Range! Where has it come from?

Some brambles from Bute (v.c.100) Angus Hannah

I began looking at brambles in 2014, encouraged by Tony Church, who has a good knowledge of Arran brambles. With his help, and that of Scottish referee, George Ballantyne, I have become familiar with the common species of Bute. There are about eight of these, along with a similar number that are less common. Specimens and photos are displayed to illustrate some of the variety in the *R. fruticosus* aggregate, and to demonstrate that distinguishing between species is not always difficult (though I am also hoping for help with some particular problems).

The purpose of the exhibit is to encourage other recorders to look at the brambles in their home patch. This is rewarding, as it adds interest to record-

ing particularly in urban and agricultural areas. It is also useful. Recording the aggregate is of limited value, as it is present in nearly every lowland square, but recording any microspecies at monad or tetrad scale significantly increases our knowledge of their distribution. I am happy to send copies of my photos to anyone who might find them helpful, though with the warning that photos are never enough on their own!

Three nationally uncommon Orchid hybrids found on Skye: (*Dactylorhiza x jenesis*, *Dactylorhiza x dufftii*, and *Dactylodenia x evansii*) (v.c.104)

Terry Swainbank

It can be notoriously difficult to determine with any certainty the parents of hybrids between *Dactylorhiza* species and with species of closely related genera. Several examples of some nationally uncommon hybrids found on Skye are described. Even though the examples showed variability, certain characteristics of the putative parents were common factors allowing potential identification.

Summer is too short - is Winter recording worthwhile? (v.c.106)

Brian Ballinger

Two short 30-60 minute visits were made to 10 varied lowland sites in East Ross (VC106) following a standard route of approximately 500 metres. The first was made in January or February and the second in June or July 2014.

During the summer visits, 529 taxa were recorded of which 315 had not been noted in January or February. During the winter visits a total of 339 taxa were recorded. 95 of which were not found again in summer. Species may have been overlooked in summer because of dense vegetation. A longer summer visit would be likely to have reduced this discrepancy.

Many of the VC106 *Pyrola media* (Intermediate Wintergreen) and all three *Linnaea borealis* (Twinflower) sites were found outwith the flowering season. Winter recording may be useful, particularly for certain wintergreen species if time is limited in summer, but it can usually only supplement summer fieldwork.

West Sutherland, 2015 (v.c.108) *Ian Evans*

A late season delayed the start of fieldwork, but 15 areas were surveyed, mainly remote tetrads. Five were on the Cape Wrath peninsula, accessed by ferry and minibus. Some interesting finds were, as ever, accidental.

Silene vulgaris (Bladder Campion) was noted, new to Assynt, at Culkein,
Stoer

Centaurium erythraea (Common Centaury), is thriving in an old quarry at Little Assynt, and also turned up at Keoldale and Inshore.

Rumex longifolius (Northern Dock) occurred beside a remote loch near Rhiconich.

Diphasiastrum alpinum (Alpine Clubmoss) was found at 80m a.s.l. on the southern slopes of Quinag.

An odd form of *Bellis perennis* (Daisy), with sterile heads, appeared on a garden wall at Nedd.

Many thanks for their help to: Gwen Richards; Bill Badger (Cam Loch islands); James Mather (Cape Wrath); Dr Jean Balfour (Calbha Beag).

Some Revisions in Taxonomy of *Salix* (Willows)

Leslie Tucker & Irina Belyaeva

Paraphrasing excerpts from Meikle's Handbook (1984): "*Salix cinerea* Linnaeus, 1753, (Grey Sallow) populates fenlands of south-eastern Britain as on the Continent, extending from Scandinavia eastwards to Siberia." Later, a western European type (Rusty Sallow) was distinguished: unfortunately, *S. oleifolia* Smith, 1804, was found to be an illegitimate, antedated, homonym, so "never wholeheartedly approved by British colleagues;" however, *S. atrocinerea* Brotero, 1804 also, gained acceptance on the continent, and occasional usage here, *e.g.* Buchanan White, 1891, and John Fraser, 1933.

Discussing appropriate Latin descriptives, Meikle agreed that: "some difference between pubescent-leaved 'ashy' *cinerea* and lustrous 'oily-leaved' *oleifolia* (rusty-haired 'dark' *atrocinerea*) cannot be denied;" however, following consideration of "the fact that the two have distinct geographical distributions and ecological preferences", his "conclusion that they are most satisfactorily ranked as subspecies" is unconvincing.

We advocate that they are confirmed at species rank and NOT demoted to subspecies.

Consequently, in naming their hybrids, not only such components but also some compound \times nothospecies epithets must be revised; *e.g.* *S. caprea* \times *cinerea* = *S. \times reichardtii* A. Kerner, 1860, should mostly be refined to *S. atrocinerea* \times *caprea* = *S. \times quercifolia* Sennen ex Goerz, 1927, as in neighbouring countries. The exhibit included additional examples, supporting specimens and texts.

Two Clubmosses to look out for (*British Pteridological Society*)

John Edgington

Huperzia selago (Fir Clubmoss) and *Lycopodium clavatum* (Stag's-horn Clubmoss) are familiar and fairly common plants of heathy hill country in Scotland. Atypical forms on arctic tundra in Scandinavia have been segregated as sub-species (*H. selago* ssp. *arctica*, *L. clavatum* ssp. *monostachyon*) or as a distinct species (*L. lagopus*). Plants with a morphology approaching these taxa have been found in the central highlands and elsewhere in Scotland, though their precise status is unresolved. Specimens will illustrate features that help to distinguish these from the types.

Scottish Snowbed Vegetation Monitoring Network

David Genney (Scottish Natural Heritage, Inverness, UK)

Gordon Rothero—presenting

John Birks (University of Bergen, Bergen, Norway)

Chris Ellis (Royal Botanic Garden Edinburgh, Edinburgh, UK)

Climate change scenarios for Scotland have estimated a decline in the mean snowfall rate of 65-80 % over montane areas generally by the 2080s (UKCP09). This poses a significant risk to Scotland's specialist snowbed vegetation. A multi-institutional partnership, funded by SNH, is delivering a Scottish Snowbed Vegetation Monitoring Network. The Network represents a commitment to the repeat monitoring of snowbed sites across Scotland's mountains, which includes training for a new generation of specialist field biologists. Resurvey data for a period spanning the late-1980s through to 2007/8 has demonstrated (i) a shift in the vegetation structure of Scotland's snowbeds, as well as (ii) a decline of key snowbed indicators, such as a statistically significant 13% fall in the frequency of the specialist liverwort *Moerckia blytii*. The snowbed data have been adopted as a biodiversity risk indicator for Scotland's Climate Change Adaptation Programme, and inform our response to the vexed question, how does national conservation policy respond to a biodiversity threat and impact over which we have little direct control, such as global climate change?

Correlating hydro-mechanical properties of vegetated soil with leaf functional traits of UK native shrubs

*D. Boldrin*¹, *A. K. Leung*¹ and *A. G. Bengough*¹

¹School of Science and Engineering, University of Dundee, Dundee, UK

Vegetation has an important influence on slope hydrology and hence slope stability via plant transpiration. There is, however, little understanding of the hydro-mechanical properties of vegetated soil and their correlation with plant functional traits. This study aims to quantify the soil-plant-water relations of nine species and to identify relevant above-ground traits that correlate with hydro-mechanical properties of vegetated soil.

Nine UK native shrubs were chosen as experimental species. For each species, five replicates were planted in separated pots of sandy loam soil. Each planted pot was irrigated until the soil was saturated and then was left to transpire for 13 days. Induced suction, leaf conductance to water vapour and soil penetration resistance were recorded. After testing, some key leaf traits were determined.

Our study found substantial differences between native species water demand and hence a distinctive effect on soil hydrological reinforcement. Both suction and soil penetration resistance are revealed to be strongly correlated with the product of different leaf parameters.

Seed quality in large-scale production: The *Rhinanthus minor* L. case study

Maria Marin^{1,2}, *Cándido Gálvez Ramírez*³ and *Giles Laverack*¹

¹ Scotia Seeds, Mavisbank, Farnell, Brechin, DD96TR, United Kingdom.

² University of Pavia, Corso Strada Nuova 65, 27100, Pavia, Italy.

³ Semillas Silvestres S.L., C/Aulaga n° 24, 14012 Cordoba, Spain.

Agricultural propagation of seed collected from wild populations is becoming a critical need to ensure our ability to re-vegetate with native seed in the future. Despite the increase in commercial production, in the EU, the trade of native seed remains largely unregulated. Most seed is not certified and is generally traded without germination or purity test results being available.

Germination tests of 22 commercially available seed lots of *Rhinanthus minor* (Yellow Rattle) revealed quality problems in a high proportion of the seed lots being sold in the EU market, with some lots being clearly unsuitable for sowing because of very low (or no) germination. Tetrazolium staining was positively correlated with seedling emergence and germination, providing a more convenient way of identifying low quality lots of *R. minor* in just 2 days. The final emergence of the lots was significantly correlated with the rates of germination in the laboratory tests and therefore differences in the mean ger-

mination time between seed lots of *R. minor* is the crucial factor determining emergence performance.

Plant Families Workshops 2015 *Faith Anstey*

Although four workshops were planned for 2015, we could only hold two in the end, owing to illness plus BSBI admin problems. Nevertheless, we had 41 participants at the workshops in Inverness and St Andrews, and had to turn away a number of applicants for Inverness. More students than in previous years were already BSBI members and one was a Norwegian associate professor of botany on sabbatical!

As before, the day's programme covered theoretical and practical classroom work and a short fieldwork session. A new feature was a half-day field meeting nearby immediately following the workshop, which turned out to be a very popular addition. Apart from problems with the acoustics at the Inverness venue, the evaluations were again very enthusiastic about both the course itself and the expert help of the tutors.

The Pocket Guide to Wildflower Families - our field-friendly ringbound and weatherproof A6 booklet - was further improved, using only photos kindly offered by BSBI members and other well-wishers. Again our extra supply was soon exhausted by people outside the workshops, so next year we plan to publish the Guide officially and put it on the open market, providing copies for all who want them.

A Folk Flora: Appeal for Scottish Information *Roy Vickery*

Work progresses on a *Folk Flora* which will cover the folklore and traditional uses of native, naturalised and cultivated plants in the British Isles, and will be the culmination of some 40 years of collecting. Information is sought on plants used in children's games, local plant-names, superstitions concerning plants, herbal remedies, wild plants collected for food, and any other topics which contributors think relevant. As it is planned to try and map the distribution of beliefs and practices in both time and space, all records are useful, regardless of how common these beliefs and practices are considered to be. See Plant-Lore for details. At present material dating from the early 1960s to the present is under represented, so memories relating to the past 50 years are particularly welcome. Please record your memories now, or send them to roy@plant-lore.com.

Royal Botanic Garden (RBGE) Herbarium *Elspeth Haston*

The Herbarium at RBGE holds an estimated 500,000 specimens from Britain and Ireland. These specimens include Algae, Fungi, Lichens, Bryophytes, Ferns, Gymnosperms and Angiosperms. Currently, about 80,000 of these have now been databased to some level and are available on our website <http://data.rbge.org.uk/herb/>. In addition, all our type specimens and over 18,000 specimens have also been imaged and these are available to download.

Recent projects involving the British and Irish collections have included:

- the recuration of the British Basidiomycetes
- the databasing and incorporating of a large number of Alan Fryday's important British montane lichen collections
- the databasing of a globally significant collection of all specimens of the lichen genus *Micarea*
- the digitisation of all British and Irish red algae
- the digitisation of a significant proportion of *Carex*
- the ongoing incorporation of Andrew Currie's herbarium
- the ongoing digitisation of the monocots
- the databasing, georeferencing and phenological scoring of specimens for a number of Scottish species

We are actively working with Herbaria@Home (<http://herbariaunited.org/atHome/>), submitting specimens that have been imaged but not yet fully databased. With the help of volunteers, the data on these specimens are being transcribed and made available.

Plant Identification Table *Douglas McKean*

Specimens identified included *Sorbaria sorbifolia*, determined by Douglas McKean & M. Braithwaite, *Ulex gallii*, and *Carex muricata*. However another two specimens defeated the experts: a Cotoneaster brought by Alison Rutherford and a possible Japanese grass from Ian Strachan. Also, experts could not agree on the identity of a (fruitless) *Fumaria*. All three specimens will be sent to BSBI Referees.

Other Displays were provided by

Botanical Society of Britain and Ireland (BSBI) *Jim McIntosh*

Botanical Society of Scotland (BSS) *Trudi Dorr*

British Pteridological Society (BPS) *Bridget Laue*

Plantlife Scotland *Jill Williams*

Scottish Natural Heritage *Iain Macdonald*

Reports from Vice-county Recorders

Dumfriesshire (vc72) *Chris Miles*

Surveys continued to fill gaps in coverage for Atlas 2020. A total of 18 tetrads and 7 monads were covered during the season. This generated 3246 new records.

According to the analysis in DDb 27 tetrads remain to be covered to achieve a well recorded Hectads coverage (high threshold) by 2020. This is well within the normal coverage of two field seasons. A field meeting is being held in 2016 in the Moffat Hills to focus on mapping *Carex vaginata* (sheathed sedge) and undertake further monad recording.

I completed the first draft of the Rare Plant Register. After further editing it should be completed in early 2016.

In the Moffat Hills confirmed the population of *Arctostaphylos uva ursi* (Bearberry) remains healthy and that *Vaccinium uliginosum* still survives where DAR Ratcliffe recorded it on the Mid Craig in 1956.

Led a Plantlife wildflower walk at Drumlanrig in July where we saw *Ranunculus lingua* (Greater Spearwort), *Apium nodiflorum*, (Fools water-cress) and a colourful display on riverside rocks including *Galium boreale* (Northern Bedstraw), *Trollius europaeus* (Globeflower) and *Salix phylicifolia* (Tea-leaved Willow)

Took part in the Bioblitz at Caerlaverock East Park WWT centre in June, generating 170 higher plant records for the monad, including *Veronica catenata* (Pink water-speedwell).

Collected specimens for the Euphrasia study from 2 populations.

One of the challenges that is emphasised by compiling a RPR is the vulnerability of populations of native species to change, mostly loss. I wonder whether the information we hold can be used more readily to flag the locations that support those vulnerable species that are locally rare or scarce. Perhaps BSBI need to do a little more on championing the places these populations depend on. This would be a category below important plant areas - there are none in my vc. I just feel that as the rare disappear, the scarce become rare and the common become scarce, our knowledge of good places for plants is not working in their favour.

One thing I do feel could be better and I dont have time to sort properly is a better presence on the website for my VC. As you can see there is plenty of interesting things to report on. I would like to do a blog or regular update like some others do but not sure how to go about that.

Kirkcudbrightshire (vc 73) *David Hawker*

Despite the poor weather, this has been a reasonable season for recording. A BSBI weekend field meeting in early June to a series of wetlands (Carrick Ponds SSSI and Colvend Lochs LWS) made over 500 records including *Stellaria neglecta* (Greater Stitchwort), *Cladium mariscus* (Great Fen Sedge) and *Platanthera chlorantha* (Greater Butterfly-orchid). Report in 2016 Yearbook.

The **Kirkcudbright Botany Group** (KBG), in its second season, held 10 meetings between March and October with only one curtailed due to very inclement conditions. Altogether 1500 records were produced by this group, with meetings held from sea-level to the highest hilltop in the Southern Uplands. Reports are available from the VCR. Highlights were re-discovering *Althaea officinalis* (Marsh Mallow) at its only VC site, after 172 years, re-finding *Persicaria vivipara* (Alpine Bistort) after 56 years at its only VC73 spot and new locations for *Saxifraga hypnoides* (Mossy Saxifrage), *Sedum rosea* (Rose-root) and *Saussurea alpina* (Alpine Saw-wort), all very restricted species in VC73.

Progress with Atlas 2020 has been reasonable, with a total of 7500 records for 2015 entered to MapMate, with 7 new county records: *Polypogon monspeliensis* (Annual Beard-grass), *Stellaria neglecta* (Greater Chickweed), *Peucedanum ostruthium* (Masterwort), *Sasa palmatum* (a Bamboo), obviously long established, *Fallopia baldschuanica* (Russian vine), although known for several years previously, *Lemna minuta* (Least Duckweed) and *Saxifraga cymbalaria* (Celandine Saxifrage), although it was noted & sketched from local material in my predecessor's notebooks, without location or date (but pre-1998).

Seed from three widespread species were collected in the VC, cleaned and sent to the Millennium Seed Bank at Kew - *Iris pseudacorus*, *Campanula latifolia*, *Allium ursinum*.

I continued to serve on the MOD Kirkcudbright Range Conservation Group and have recently up-dated the Rare & Scarce Plants of the Range Register for their files. Cooperation with and submission of the KBG records to the Dumfries & Galloway Environmental Records Centre (DGERC) continues, as does the mutual exchange of records with FCS on their estate.

Wigtownshire (vc74) *Alan Silverside*

2015 has seen my health improving and while I still tire quickly I have been able to do useful recording. I have not managed as much as I hoped or planned, but a number of monads have been visited in under-recorded (post-2000) hectads, raising hectad totals and filling many "silly" gaps. Even some

better-recorded hectads have had their totals significantly improved; late-season urban recording has been particularly successful. A drier year is awaited for visiting or updating several loch and wetland sites.

No major native finds have been made, but additions of adventives (non-native in Wigtownshire) have been made. Early in the year, *Stellaria pallida* (Lesser Chickweed) was found along lawn edges outside a community centre. *Helminthotheca echioides* (Bristly Oxtongue), a rather surprising previous absentee, was found well established where there had been some road-works. A hill square, expected to be unexciting, had a weedy area along a reservoir walkway, *Apera spica-venti* (Loose Silky-bent) being a particular surprise. Perhaps the oddest record was the single plant of *Lactuca serriola* (Prickly Lettuce) on a heap at an isolated farm on the west coast.

Ayrshire (vc75) Dave Lang

The year of the Great Leap Forward, more or less! Throughout my entire tenure as Joint VCR, we have never had more than three or four people actively recording in Ayrshire, most or all of them with full-time jobs or family commitments limiting them to a handful of weekend recording days each year. I was therefore grateful for the support of the Scottish Officer and others in organising an “Ayrshire Recording Week” in July 2015, and equally to those participating. The effect on our coverage has been significant, but achieving the target level for Atlas 2020 is still going to be a challenge. At least this event has made it seem possible.

I have been working for years on an RPR and am on the brink of completing a draft. It has proved very likely that at least some Ayrshire dots in the last Atlas were based on what the previous recorders knew from experience, but I inherited only hectad tick-lists along with piles of notebooks from which they were derived. Since so many skilled botanists were coming to visit poorly recorded areas during the recording week I moved the cut-off point forward to end of 2015, hoping to update notable species records from decades ago. The draft RPR should soon be published on the webpage and can be revisited - perhaps even updated to a Flora - once Atlas 2020 is done.

My Joint-VCR (Gill Smart) is the local SWT Reserves Officer and I work for SNH (though not in the VC), so there is some flow of records to BSBI. Colleagues have also been involved in local Bioblitzes etc.. We have run beginners days and a ‘Flower Finders’ group to enthuse more people and give them skill and confidence to contribute, but without success in terms of new botanists becoming regularly active in the VC.

Notable vice county firsts from 2015 included:

Stellaria neglecta (Greater Chickweed) in riverside woodland in the north of the VC. Possibly under-recorded, this is one we will be looking out for.

Anacamptis pyramidalis (Pyramidal Orchid) on the beach in southern Ayrshire. The latest of several orchid VC firsts. We suspect the prevailing winds bring seed across from Ireland. Perhaps climate change is making it easier for them to gain a foothold.

Nitella flexilis s.l. (Smooth Stonewort?) in a quarry pond to the east of the VC. First post 2000 record of any charophyte in Ayrshire.

Glyceria notata (Plicate Sweet-grass) during the Atlas 2020 week in unassuming East Ayrshire farmland, and a few days later a few kilometres away in similar habitat.

Peebles-shire (vc78) *Luke Gaskell*

2015 has been a productive season with 7250 new records all now digitised from some 67 sites. A selection of the more interesting plants was exhibited at the November meeting.

I am still familiarising myself with the vc and am trying to record monads across as many habitats as possible rather than concentrating on the more interesting areas. Peeblesshire is not particularly large or inaccessible by Scottish standards, but it will take a long time to visit all 900 or so monads.

Graham Pyat, Manor Valley, has undertaken to record every monad in the catchment and I have accompanied him on a number of occasions. He has drawn up a target list of plants and revisits the monads at different times of year until he is satisfied with the coverage. I intend to use his data as a benchmark for recording monads in the surrounding countryside. It is obvious that the more time one can spend recording a particular spot the more complete the final list, but that will mean that other areas may not be recorded at all. Hence at present I usually limit myself to one visit per monad and will then target apparently recorded areas.

I led a field meeting in a neighbouring vice county and have taken a number of volunteers out with me to encourage new recorders. I am still doing botany training for Edinburgh Napier University, which students' reports suggest is a much valued part of their education.

Selkirk and Roxburgh (vcc 79/80) *Rod Corner and Jeff Waddell*

Another productive year for botanical recording with around 9,000 records of over 600 taxa collected and digitised in the year for the two counties.

The majority of **Roxburgh** records (5,184 records of 470 taxa) were collected by Michael Braithwaite during field work for the resurvey of the Railway Flora

of Teviotdale. This updated many records for lowland grassland axiophytes, now rare elsewhere in the county, including *Bromus erectus* (Upright Brome), *Gymnadenia conopsea* (Chalk Fragrant Orchid), *Gymnadenia densiflora* (Marsh Fragrant Orchid), *Neottia ovata* (Common Twayblade), *Sanguisorba officinalis* (Great Burnet), *Scabiosa columbaria* (Small Scabious), *Silaum silaus* (Pepper saxifrage) and *Trollius europaeus* (Globe Flower).

An early April visit to the Newcastleton Hills found a small colony of *Andromeda polifolia* (Bog-rosemary) on Roan Fell; only previously known in three tetrads in the county. Some other interesting finds were exhibited at SAM (see page 17).

Eleven poorly recorded tetrads with promising habitats were targeted for recording, some of which was undertaken by an informal group of beginner and improver botanists, led by Jeff Waddell. This produced several new sites for plants uncommon in the county:

Trachystemon orientalis (Abraham-Isaac-Jacob) was found well naturalised on a landslip on the banks of the Jed Water at Camptown, along with new colonies of Toothwort. *Silaum silaus* (Pepper Saxifrage) and *Sanguisorba officinalis* (Great Burnet) were found at new sites on the Hassendean Burn.

Dactylorhiza incarnata s.s. (Early Marsh Orchid) was found in a base-rich hill flush with *Eriophorum latifolium* (Broad-leaved Cottongrass) at the Well Strand, Plenderleith. The orchid only has one other known site in hills in the east of the county, being more common in basin mires in the west. A colony of *Sedum villosum* (Hairy Stonecrop) was found on Penchrise Pen, south of Hawick, the first time it has been recorded in the NT40 hectad for 151 years!

Crassula helmsii (New-Zealand Pygmyweed) was found (unfortunately!) at its third tetrad and hectad in the county at Wooden House. And the nationally rare *Chara rudis* (Rugged Stonewort) was collected from a new pond, in which it was dominant, at Todshaw Hill. This is the first time it has been seen in a pond in the county, as opposed to its usual habitat of larger waterbodies, such as lochs and reservoirs.

Probably the best find of the year was made in early September when only the second colony of *Paris quadrifolia* (Herb Paris) in the Scottish Borders was found in a small native woodland on the Borthwick Water at Todshaw.

In **Selkirkshire**, (vc79) two poorly recorded tetrads with promising habitats were targeted for recording. The Rankle Burn/Kingside Loch tetrad, produced *Eriophorum latifolium* (Broad-leaved Cottongrass) in a flush on Muckle Bleak Law and *Neottia ovata* (Common Twayblade) in rich fen at Kingside Loch. The last remaining colony of *Imperatorium ostruthium* (Masterwort) in the vice-county by the Ettrick was refound. It has never been known to flower

here and the habitat dominated by *Aeopodium podagaria* (Ground-elder) tends to mask it. The fine colony of *Gentianella amarella* (Autumn Gentian) near Whitmuir Loch was doing well, and *Eleogiton fluitans* (Floating Club-rush) in one of only two v.c. 79 sites and almost unknown elsewhere in south east Scotland, was abundant nearby. *Utricularia minor* (Lesser Bladderwort) still survives in a mire above Selkirk in one of three known sites in the vc.

118 fruiting stems (more than expected) of *Carex magellanica* (Tall Bog-sedge) were counted in the colony at Kingside Loch, its only known site in the Borders. *Carex vaginata* (Sheathed Sedge) was also revisited on Bught Hill and the population found to be stable, but not fruiting.

Sadly the *Calamagrostis stricta* (Narrow Small-reed) colony on the Rankle burn wasn't refound. Nor was *Corallorhiza trifida* (Coral-root Orchid) at Loch of the Lowes, its only vc79 site. It hasn't been seen here since 1977.

East Lothian (vc82) Helen Jackson

Another year of maintaining a presence but with frustratingly little to show for it due to health problems. However my mobility is recovering at last, and I hope to be able to do more recording and gap-filling next year. I did come upon a few unexpected plants in Musselburgh but these are for vc83.

Records have been gratefully received from other people, including a list of roses from Roger Maskew, a CD from The Wildlife Information Centre (TWIC)'s database, a huge batch of spring records from Katherine White (who has also digitised them) and a surprise contribution from Susan Bowden who recorded here while on holiday. Overall about 9,000 digitised records are on their way into the East Lothian MapMate database (contact: records@lastdragon.org).

I look forward to including the 3000+ that SNH paid to have digitised in 2010-11. When I had worked so hard on these it was a major setback to have them confiscated for "verification" – really, there was no incentive to do any more. I understand that they are on their way back from this exile now, and am feeling more positive about digitisation, which we have restarted after a lull.

Midlothian (vc83) Barbara Sumner

Over 10,200 records were collected in 2015, entered into MapMate and sync'd to Bob Ellis. Many thanks to all contributors.

New VC records of the following in 2015 were sent to Mike Porter for the NJB: *Muscari latifolium* (a Grape-hyacinth), *Pilosella flagellaris* subsp. *flagellaris* (Spreading Mouse-ear-hawkweed), *Pseudosasa japonica* (Arrow Bam-

boo), *Rhus typhina* (Stag's-horn Sumach), *Rumex hydrolapathum* (Water Dock).

Rare Plant Register: Contributions this year to the next Midlothian edition include records for the following species: *Gagea lutea* (Yellow Star-of-Bethlehem), *Meum athamanticum* (Spignel), *Valeriana dioica* (Marsh Valerian), *Equisetum pratense* (Shady Horsetail), *Cichorium intybus* (Chicory) and *Lathyrus nissolia* (Grass Vetchling).

Atlas 2020: Thirteen volunteers have kindly offered to record squares. Four tetrads and 17 monads have been agreed and some records have already been added to the MapMate database. The method and a records submission form can be viewed and downloaded from the Midlothian web page (<http://www.bsbi.org.uk/midlothian.html>). The gaps in recording are in the more remote parts of the vice-county. Please contact me if you are interested in recording in these areas.

Digitisation: There are historical records still needing digitised. Some have outdated plant names that would need interpretation. Please would anyone with the time to do this get in touch with me. Thank you.

West Lothian (vc84) Jackie Muscott

Mopping up' for the Atlas I have continued to target monads with relatively few post-2000 records, or which have not been visited recently, or where changes are underway. There have also been 'random' visits to the VC with various societies to which I belong, and Jill Williams of Plantlife who has recently moved to the area has started recording squares near her home.

As a member of the Edinburgh Natural History Society I take part in most of their weekly excursions and have led two excursions in the last year. I am also involved with the local recording centre (TWIC), sending them records and attending the Biodiversity Steering Groups of Edinburgh and West Lothian Councils.

The most interesting find this year was *Scirpus sylvaticus* (Wood Clubrush) in a pond near the River Almond and much further east than previous records in VC84.

Fife (vc85) Sandy Edwards

According to the DDb analysis, there are 76 well recorded tetrads with about 20 to do. However, some of these are just farmland and areas of low interest. There are two hectads which need 6 tetrads in all to be done to ensure there are at least 5 well recorded tetrads in each hectad.

I have started validation, helped by Andy Amphlett's email .

Two people send in very good records as well as George of course. Another three send occasional records and I meet with them now and again. They all have a list of localities of rare plants, which helps in their plant hunting.

The list of BSBI members in vc85 is very useful. I will contact them and see who would like an occasional bulletin on recording progress etc.

I led a BSBI field meeting at Cleish Lochs, information is in the 2016 Year-book, and helped with the Wildflower Workshop in St.Andrews.

We had another field meeting with the NTS workers at Shell Bay which was very successful.

A Facebook page (Fifeandkinross Plants) was set up, and a list and photos of rare plants is kept up to date on the Flickr link from the vc85 web page.

Interesting finds:

Senecio inaequidens (Narrow leaved Ragwort) An increasing colony at Inverkeithing, possibly due to ground disturbance from the bridge roadworks

**Valerianella carinata* (Keeled Corn Salad)

Centaurea cyanus (Cornflower) A regular occurrence in the usual area but a big increase in numbers this year

Lathyrus japonicus (Sea Pea) This is spreading rapidly at its only location in vc85.

Neottia cordata (Lesser Tayblade) A good colony at Tentsmuir this year

Poa chaixii (Broad-leaved meadow Grass)

**Oxalis articulata* (Pink Sorrel)

Sisymbrium altissimum (Tall Rocket)

**Trifolium striatum* & *T. scabrum* (Knotted & Rough Clover)

**Onopordon acanthium* (Cotton Thistle)

**Gentiana campestris* (Field Gentian) A new, large colony at Tentsmuir

(*Plants found by other people and checked)

Stirlingshire (vc 86) *Philip Sansum* and *Ruth McGuire*

Approximately 2300 records of just over 400 taxa were digitised and added to the database in 2015 (mostly collected in 2015). and are now on DDb. They represent visits to 66 monads in 14 hectads, but reasonably full lists were only provided for surveys in 7 of these hectads.

Although the VCRs were hampered personally by non BSBI work, a welcome increase to 40% of the new records were submitted by other members. This was facilitated by the circulation of PS's data-entry script (running on the free 'Autohotkey' programme) to local recorders which helps them compile fuller, 'MapMate-ready' lists of plants, as opposed to only submitting more notable

finds. Sarah Longrigg supplied several hundred records from NS49 and NS57, substantially boosting Atlas progress in these two important squares.

Based on the DDb automated analysis, 25-30 tetrads still need to be surveyed. I have been trying to redress the post-2000 bias toward sites in the west of the county (mainly Loch Lomond & Trossachs National Park) but more surveys from central and east Stirlingshire are especially needed.

Some progress has been made on a digital transcription of Stirling & Kidston's late Victorian Flora of Stirlingshire. When complete this will provide a baseline for further study of the county's flora.

Examples of 2015's few botanical highlights are:

Jane Jones found *Lathraea squamaria* (Toothwort) at Callendar, the first record for NS97 of a scarcely reported plant in vc86.

Lysimachia thyrsoiflora (Tufted Loosestrife) was re-found in the Forth & Clyde Canal, the first vc86 canal record since before 2000; it was frequently recorded in this habitat for the last Atlas period but is apparently in severe decline or going unreported.

A possible 2015 find of *Nitella mucronata* (a charophyte) by Sarah Longrigg, is awaiting confirmation from the referee.

We lack the resources in the county to adequately resample certain taxa/habitats and any visiting expertise would be most welcome. For example I would like advice on/assistance with refinding (or not) the various alpine we have no recent data about. Coastal plants and aquatics are also not being adequately recorded. We have SSSI saltmarshes in the county but scant information on their flora (e.g. nine records of *Salicornia* in total, only 1 post 2000).

RM is still not up and running with MapMate and so does not have access to the records (although access to DDb online may alleviate this problem).

West Perth (vc87) *Jane Jones* (JJ) and *Liz Lavery* (LL)

JJ: Visited 45 tetrads and 2 monads either on my own or with others, collecting just over 4500 records. Basically targeting tetrads with no or few records where possible. Also trying to get into areas which are difficult due to land-ownership, using local contacts to get access where I can. I helped with two field meetings organised by PSNS. Had hoped that the rough squad would manage to get into some of the Glen Falloch area but unfortunately this didn't happen in 2015. Plant Families day in Stirling was cancelled. A Plant Families Workshop will be held at Logiekirk Hall, Stirling on 21 May 2016 with a half day field excursion the following day.

RPR completed and on the BSBI website, but continuing to extract records for inclusion from the plant records collected each year.

Very glad and happy to have another VCR partner in the vice-county; makes it more fun, and good to have someone to confer with over id.

LL: Visited about 20 tetrads and collected well over 2000 records, not all entered into Mapmate yet. I targeted some tetrads with very few records near to home, Carnbo, usually on the VC boundary. I have been involved in resurveying potential Local Nature Conservation Sites (LNCS) in Clackmannanshire; these were surveyed by SWT in the late 1990s. Once adopted these LNCS sites are to be recognised by Clackmannanshire Council planners when considering applications. SWT surveyed potential LNCS sites all over Scotland in the late 1990s and these files are a valuable source of records with 6 figure grid references. You have to go to Edinburgh to get them and ask SWT to retrieve them from storage first.

My most unusual find was a few tiny plants of *Ranunculus sardous* (Hairy Buttercup) in a dark mixed conifer/grey alder plantation beside Glenochil Prison. It has not been recorded in the VC since 1970.

I have enjoyed recording with other botanists, especially some very good days out with my co-recorder Jane. I have been welcomed by local landowners into areas where access is difficult without driving on private roads. This is much appreciated as parking is often a major problem beside busy roads.

I strayed into VC85 with Jim to carry out Vascular Plant Site Condition Monitoring around Loch Leven NNR for SNH. We were able to re-find *Corallorhiza trifida* (Coralroot Orchid) first found by Lynne Farrell in 2005. Populations of *Hierochloa odorata* (Holy-grass), *Juncus filiformis* (Thread Rush) and *Ranunculus x levenensis* (R. flammula x reptans) are all doing well.

A problem is to access the most western parts of the VC; the time taken to get there and then the walk into remote spots, and also reaching the middle of the Ochils where there are no roads.

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

Jim McIntosh: My main aim in 2015 was to improve the hectad re-recording rate (taxa recorded post 2000/ taxa recorded all years) to $\geq 75\%$. I collected a total of 4,800 records - virtually all of which were monad or better resolution. More than 100 taxa were recorded in 20 monads. I targeted remote squares mainly in the west of the VC, including Ben Challuim, Beinn Mhannach, in the west end of Glen Lyon, Rannoch Moor, around Loch Earn, and in Glen Artney. One monad was surveyed as part of the Cairngorm National Park funded project near Blair Atholl. A survey method was also trialled on

Meall nan Tarmachan to record species within 10 m (vertically) of summits with the help of Dan Watson, NTS.

We now have 26 hectads where the re-recording rate exceeds 75% and 27 where it exceeds 60% (and one remote sliver where there are no post 2000 records!) which in a VC that has been well recorded previously, is a significant achievement.

Notable finds in 2015 include a field of *Lithospermum arvense* (Field Gromwell) near Kinkell Bridge, Strathallan (first record in 30 years), *Carex muricata subsp. pairae* (Small-fruited Prickly-sedge) near Blair Atholl, *Tragopogon pratensis* (Goat's Beard), near Perth, and a new site for *Potamogeton praelongus* (Long-stalked Pondweed) at Loch na Mna, above Loch Earn.

East Perthshire (vc89) Martin Robinson

3125 records were made in 2015, including some level of coverage in 18 tetrads and also casual and targeted records. Les Tucker and I reached 7 tetrads in remote and largely under-recorded acidic areas of Atholl Forest, finding unexpected calcareous patches containing such things as *Carex capillaris* (Hair Sedge), *C. vaginata* (Loose-sheathed Sedge) and *Sibbaldia procumbens* (Sibbaldia), as well as the expected *Cornus suecica* (Dwarf Cornel) and *Lycopodium annotinum* (Interrupted Clubmoss) and sad little remnants of *Salix lapponum* (Downy Willow). These records all contributed to Andy Amphlett's Cairngorms National Park recording project.

Three recording visits were made by the PSNS and two by Brian Ballinger and the Dundee Naturalists' Society, one of them jointly with the PSNS for the Urban Recording Project.

There was a concentration of effort on dandelions, mainly in April and May, and four new ones (*T. acutifrons*, *T. angulare*, *T. coartatum* and *T. xanthostigma*) were added. The first two were both second records for Scotland and the third one was the third.

In March I met four members of the British Pteridological Society to check out our two *Asplenium septentrionale* (Forked Spleenwort) sites near Dunkeld. One site had 35 plants and the other 133. Also the latter had a good candidate for *A. x murbeckii* (= *A. ruta-muraria* x *A. septentrionale*) but access was difficult and another visit with ladders is required.

Site Condition Monitoring was finished off at Craighall Gorge SSSI, as Jim McIntosh and I were too late in 2014 for *Silene viscaria* (Sticky Catchfly). The species looked in very good nick, with >286 clumps at 9 sites. In July

SCM was carried out for Glas Tulaichean SSSI, where the late snow patches had only just cleared and we were a bit early for two of the target species.

In March the Rare Plant Register was updated, with 22 updates and 80 new records, including three new species: *Callitriche palustris* (Narrow-fruited Water-starwort), *Dactylorhiza traunsteinerioides* (Pugsley's Marsh Orchid) and *Trifolium micranthum* (Slender Trefoil).

Lack of other recorders is certainly a problem. You can rope other people in to do a tetrad, but unless the person has quite a high level of expertise the records are always untrustworthy. There is a large gap between the training courses which we are getting quite good at organising, through the Outreach Group, and the ability to go out and record. Mentoring is one obvious answer but finding someone to mentor is not easy. We need to be finding people young enough to take over from us when we retire, but there's no magic way of doing this: it's up to us, and either I haven't tried hard enough or I haven't been very successful.

Help is needed with recording some of the most remote areas in the extreme north of the VC, some of which could be quite dull botanically.

Kincardineshire (vc 91) and North Aberdeenshire (vc 93) David Welch

Taxonomic problems and difficult species took up more time than usual this year.

First I relocated a colony of a strange dewberry I had found in 1985 in dunes at Fraserburgh. Then a summer visit showed no fruit was formed, hence an article in *BSBI News* suggesting the bushes were *Rubus caesius x saxatilis*, a hybrid never recorded in Britain.

In spring Andy Amphlett triggered checks on crack willows, which led to sightings of the native *Salix euxina* in both my vcc, besides some planted *Salix fragilis*.

Next I was asked to confirm the identity of several fine elms in a mansion policy, this for a painter commissioned to produce portraits for the Royal Horticultural Society Art Show. Amongst these elms I found one with small leaves, and though Max Coleman (elm referee) said just a variety of *Ulmus glabra* I went back to sites elsewhere at which years ago I had recorded small-leaved elms as *Ulmus procera*. Despite deaths and disease, some surviving trees turned out to be *Ulmus minor*, extending north its known British range.

Other identity checks arose from Richard Marriott finding giant inflorescences of *Dactylorhiza fuchsii* (Common Spotted-orchid) near Stonehaven, and my worry about having the only dot of *Pyrus pyraster* (Wild Pear) in Scotland. An

autumn visit to the hedgerow in countryside near Memsie showed the tree had the round pears with reddish bloom that characterise this species. But no further pear trees were found in neighbouring farmland which could explain its origin.

Conservation work included doing an SCM for SNH on the Hill of Towanreef SAC. Diplomacy was needed about access and balancing good news on some species with reporting unfavourable status for others, plus damage from water voles. I was also called to assess the value of some small fields with orchid colonies in two coastal areas otherwise botanically barren. These visits led to spotting *Persicaria alpina* (Alpine Knotweed), a rare alien, near Johnshaven.

I led my usual one-day SWT field meeting, this year to Fourman Hill and then a cattle-grazed semi-natural grassland at Cairnie. Our combined force recorded there many more spikes of *Pseudorchis albida* (Small White Orchid) than I had seen when surveying for the Threatened Plants scheme.

Balancing these excursions to rich sites, I did much general recording in my botanically poor lowlands, and Eric Meek assisted on his RSPB rounds.

It would be good to see more progress in putting images of herbarium sheets on the web. I am also concerned that insufficient effort is being directed at taxonomy and understanding the species we are all busily recording but may be often erroneously. I welcome what is happening with *Euphrasia* but fear our collective expertise is waning on brambles, hawkweeds, etc. Angus Hannah has suggested we organise an exchange for bramble pictures, but that needs photographic skills besides expert referees.

South Aberdeenshire (vc92) Ian Francis

Good progress was made with the atlas this year. Just over 12,000 records from 2015 were added to the DDb, plus several thousand earlier records, bringing the vc total in the database for the atlas period to over 50,000. Their spread shows some clearly under-recorded areas in terms of any level of coverage, and the concentrations of intensive recording are also clear. Field work for the remaining seasons will target the less recorded areas.

A weekend field meeting was held in the Ballater area which attracted 22 participants. In total, almost 2,000 records of 380 taxa were accumulated during the weekend from 19 monads, all areas with no or very few post-2000 records. This represents a major addition to coverage in mid-Deeside and also contributes towards the ongoing accumulation of records for the Cairngorms National Park co-ordinated by Andy Amphlett. Highlights included several scarce or rare plants in the vice-county, such as *Drosera anglica* (Great Sun-

dew), *Hammarbya paludosa* (Bog Orchid) (found at two sites), *Linnaea borealis* (Twinflower), *Lobelia dortmanna* (Water Lobelia), *Lycopodium annotinum* (Interrupted Clubmoss), *Orthilia secunda* (Serrated Wintergreen) and *Pimpinella saxifraga* (Burnet-saxifrage).

Around 12 local botanists contributed to recording this year, with considerable assistance from Andy Amphlett and Eric & Aileen Meek. One vice-county newsletter was produced, to try to stimulate further recording.

A direct data input system to the DDb not involving MapMate would be very helpful!

Need more committed recorders and can't think of how to get them. If Eric wasn't here the picture would be rather different for this vice-county!

Banffshire (vc94) *Andy Amphlett*

Fairly good coverage of vc94 had been achieved by 2011; at least as good, and by some measures much better, than for the last Atlas. Therefore my attention turned to recording in other areas, mainly the Cairngorms National Park, in vc95 and (especially) vc96. A very high level of recording was achieved in 2015, following my early retirement, 78% from vc96.

Nevertheless more recording could usefully be done in vc94, and some visits are planned for 2016. The big upland blocks in NJ00 and NJ01 have had rather few recent recording visits, and there remain several areas of contiguous tetrads across the vc that have few records.

A Checklist and RPR taxon list for vc94 are on the BSBI website. I have not updated these. I may update the RPR taxon list, so as to update the list available on the DDb, but do not currently plan to write a full RPR.

The main initiative in 2015 was a second year of a collaborative project to records plants within the Cairngorms National Park. CNPA granted £2200 to cover T&S costs. Report submitted to CNPA, and all records on the DDb.

Five taxa new to vc94 were recorded in 2015. The most notable were two uncommon aliens: a 3rd Scottish record for *Allium subhirsutum* (Hairy Garlic) and the first mainland Scotland records of *Iris latifolia* (English Iris).

I have more or less completed validation of vc94 records, and keep up to date with validating records as they arrive on the DDb. I send MM sync files every one to two weeks.

Considerable time was spent on non-vc94 work in support of BSBI, through my role as 'Voluntary Support Officer'.

Direct syncing of MapMate records to the DDb would be a useful improvement. It would help in the correcting and validating of MapMate records to see edits and submissions of records appearing more quickly on the DDb.

Moray (vc 95) Ian Green

A good amount of recording in 2015, so far 15,067 records have been uploaded to the DDb, the highest total since 2000 by some way. There are still several thousand records to be computerised. Only 4 hectads NJ00, NJ23, NJ34 and NJ45 had no recording done in 2015; these only have very small areas in vc95. Otherwise recording is going very well, but still surprising how much work is needed in each hectad. The plan for 2016 is to try and visit as many tetrads as possible with no post-2000 records, as well as trying to re-locate species in hectads where they have not been recorded since 2000. I have recently been recording the vc on a monad basis towards producing an atlas flora of the county. A few other people have also been helping.

Led two botany walks in vc95 for local botanists plus two in vc94 and one in vc96. The meetings aim either to check-up on a species, re-locate a rare species or do general plant recording in an unrecorded area. The first meeting in vc95 was to check on the population of *Equisetum hyemale* (Rough Horsetail) in woodland between the Black Burn and the B9010 at NJ09965428. The *E. hyemale* was looking very good at this site. The second meeting in vc95 was to have a look at *Epipactis phyllanthes* (Green-flowered Helleborine) by the river Findhorn NJ02686105 that had just been found new for Scotland. [See article on page 15 and photos inside back cover]. All meetings were well attended with an average of around 10 people.

2015 was a very good year for new species, with several natives being found in the vc. The best was *Epipactis phyllanthes* (Green-flowered Helleborine) also new for Scotland, another was *Ranunculus auricomus* (Goldilocks Buttercup). The best non-native was *Cotoneaster qungbixiensis*, the first record of this plant naturalised in the UK. A first for Scotland was the very invasive *Hydrocotyle ranunculoides* (Floating Pennywort). *Euphorbia stricta* (Upright Spurge) was only the second record for Scotland. Another non-native (but native in other parts of the UK) was *Draba muralis* (Wall Whitlowgrass).

Westernness (vc 97) Ian Strachan & Ian Bonner

An Atlas recording week at Kingairloch and Strontian by IB (20-29 June), focused on poorly recorded hectads in Morvern (NM85 & 95), also Ardnamurchan, Sunart and Moidart. With help from Richard Marriott, Liz MacDonald and IS. c.2500 records were made and entered into MapMate by IB. Star find was the Nationally Scarce *Ophioglossum azoricum* (Small Adder's-tongue) near Corran, a new VC record.

Atlas recording by IS in various remote and/or under-recorded areas, including Murlaggan, Garbh Shlios, Loch Aline, Beasdale, Morar, Grey Corries, Glen Loy, Spean Bridge, Leanachan, Mucomir. Ca 2,700 records collected in 15 hectads (mostly still to be entered).

Various records collected by other botanists, including c 1000 records for Locheil Estate (Adam Fraser).

Rare plant monitoring (non-SCM) - *Diapensia lapponica* (Diapensia), Glenfinnan, *Corynephorus canescens* (Grey Hair-grass), Morar.

Ben Nevis North Face project (year 2), 7-14 August. Highlights include large new populations of *Luzula arcuata* (Curved Woodrush) and *Carex lachenalii* (Hare's-foot Sedge) as well as new sites for 7 NS species and several GB altitude records. Help from Jim McIntosh and Dan Watson.

NPMS square 'adopted' near Moy (Glen Spean).

Work started by IS on combined RPR (>50 spp drafted), axiophyte list and checklist, also DDb checking/validation.

Botanical walk with LNHS at Cuil Bay for Lochaber Wildlife Festival (May). Talk given on Ben Nevis flora to Scottish Rock Gardening Club (Oct). Short talk on recent NVC surveys given at BSBI Kindrogan workshop. VC97 exhibit at SAM (Nov).

Main Argyll (vc98) Carl Farmer

2952 records added during year; there may be more not yet mapped. Did not do much recording owing to other commitments. Will do more in 2016.

Monthly field trips with Lorne Natural History Group include botanical recording, and some have this as their main activity. We had a trip to look at "Lismore's Limestone Flora" and another to look for Bog Orchid (*Hammarbya paludosa*) at Ardmaddy, of which one spike was eventually found after an extensive search.

No really interesting new finds but some good re-finds including Carlina Thistle (*Carlina vulgaris*) in its only VC98 site on limestone cliffs on Kerrera, together with a prostrate form of Yew (*Taxus baccata*) which may well be native there. Christine Loudon re-found Marsh St John's Wort (*Hypericum elodes*) at Portavadie, and Spring Quillwort (*Isoetes echinospora*) was re-found at Lochan Urr. Escapes and casuals included Flax (*Linum usitatissimum*) found by Peter Wiggins at 2 sites in Oban, and Ivy-leaved Bellflower (*Wahlenbergia hederacea*) new to VC98, presumably introduced, at the Sea Life Centre, Barcaldine, during their Bioblitz.

Dunbartonshire (vc99) Pam Murdoch

Despite the constant need to re-schedule or change plans because of the weather in 2015, another 42 monads in vc99 were covered with additional recording in other sites as well. The most interesting find was a chance discovery of *Carex elongata* (Elongated Sedge) which I later found to have been recorded in the past!

Progress for Atlas 2020 remains slow but steady. I would hope to cover the southern half of the vice-county in the next few years with at least one monad per tetrad recorded, omitting about 15 tetrads.

Headway in the northern mountainous section will be difficult and unlikely. I look forward to recording the lower and loch-side sites on the same basis, but this will only cover one-third of the total area.

Thanks go to Malcolm Ogilvie for digitising and adding a large set of older records.

A mid-season training day at an intermediate level and socialising opportunity (but with no recording) would be a wonderful boost to enthusiasm!

Clyde Isles (vc100) Angus Hannah

3984 records were made in the vc, all at monad resolution. A further 103 records of uncommon species with 8-10 fig grid-refs were added to Mapmate.

Hectads: On average, in Bute and Cumbrae post-2000 records comprise 92% of all-time hectad/species records, and on Arran 83%. However, 4 hectads on Arran still have more than 100 taxa not refound post-2000, and these will be targeted in remaining years of the decade.

Tetrads: the average per tetrad is 324 in Bute and 326 in Cumbrae (almost none pre-2000). Arran averages 164 post-2000 (190 all dates). A significant proportion of north Arran tetrads have fewer than 50 species growing in them.

Monads: It is impractical to record Arran comprehensively in monads. Around 40% have a significant number of records, and these average 114 post-2000, 142 all dates. Bute and Cumbrae monads average 225 taxa post-2000.

Flora of Bute: over 500 maps of distribution and abundance were prepared. Some progress has been made with brambles and roses, but much work remains to be done on some other critical groups.

The most interesting find on Bute was a colony of *Pyrola minor* (Common Wintergreen) in Mountstuart policy woodland, the first record from the island and vice-county since 1930.

On Arran, Tony Church continues to work on *Dryopteris affinis* agg. (Scaly Male ferns) and is jointly engaged in producing a new guide to these difficult taxa.

I taught two courses at FSC Millport and led on vascular plants at the Cumbrae Bioblitz, recording 309 species including a first Cumbrae record for *Beta maritima* (Sea Beet).

Outside vc100, I organised and participated in a recording week in vc75 Ayrshire and spent a week recording on Jura (vc102) with Simon Smart.

Kintyre (vc101) Dave and Pat Batty

A combination of awful weather and family commitments meant that we carried out much less recording than we had anticipated in 2015. However the Kintyre Botany Group (KBG) managed several trips in south Kintyre and helped fill in some gaps. There are only two remote coastal 10 km squares where we have no records as yet but we intend to visit these sites in 2016. Otherwise we have tetrad records for the rest and now will be looking at gaps in habitats, e.g. upland and freshwater, and in species previously recorded. There were few notable finds in 2015. The KBG found *Geranium nodosum* (Knotted Crane's-bill), a first record for the VC, at Ugadale. A large area, >50m in length along the strandline, of *Lepidium didymum* (Lesser Swine-cress) was found on the east coast of Kintyre.

We would prefer to spend less time on databases and in front of a computer, and would appreciate as much centralised checking/validation of records as possible.

South Ebudes (vc 102) Malcolm Ogilvie

Recording for Atlas 2020 took two large steps forward.

I was absolutely delighted when, in response to a published appeal, Simon Smart volunteered to help me by taking on the considerable challenge of recording Jura for Atlas 2020. He paid two week-long visits, accompanied in late May by Jim McIntosh and in early September by Angus Hannah, contributing in total 2926 records for 417 species from 46 monads.

Oli Pescott came on the first of an intended series of annual visits, contributing over 1700 records from 10 monads, mainly in the Rinns. Taxa apparently new for Islay included the hybrids *Epilobium x rivulare* (conf. G. Kitchener), *Euphrasia arctica x confusa* and *Euphrasia confusa x micrantha* (both det. C. Metherell), and *Salix x multinervis* (conf. I. Belyaeva). New aliens for the island included *Triticum aestivum* (Bread Wheat), *Zea mays* (Maize), *Crocosmia paniculata x pottsii*, *Solanum lycopersicum* (Tomato), *Campanula*

poscharskyana (Trailing Bellflower), *Fallopia baldschuanica* (Russian-vine), and *Matthiola incana* (Hoary Stock).

A dataset of c.1500 records from 23 monads (including several remote ones) from 2012 has just been received from a butterfly surveyor and I am in the process of converting it to a suitable format for adding to MapMate.

Four BSBI stalwarts, Pete Stroh, Kevin Walker, David Pearman and Owen Mountford, paid the second of their planned annual visits to Colonsay and are currently undertaking the digitising of their 10,000+ records from 2014 and 2015.

Nick Stewart is bringing his 20+-year-old list of Jura wildflowers up to date, and I have been helping him chase up Atlas cards and past surveys.

A new species for the VC was *Dactylorhiza traunsteinerioides* (Narrow-leaved Marsh Orchid) found by visitors in a dune area already rich in orchids. Apart from their original find of about 15 flowering spikes, a search revealed a further 30-40 scattered plants in another area a few hundred metres away.

Annual orchid monitoring took place.

Mid Ebudes (vc103) Lynne Farrell

Rare Plant Register updated Sep. 2015; waiting for my technical assistant to update on her database and then re-issue on BSBI website.

Tiree tetrads survey almost completed for post 2000- a few small bits of land to record 2016 onwards. Still need a boatman to get me out to smaller islets- none found on Tiree yet. Met Kew botanist and his wife, who worked on *Spiranthes romanzoffiana* (Irish Lady's Tresses) whilst on Tiree. Found new site for *S. romanzoffiana* on the island.

One tetrad surveyed on Mull in its own 10km square to update records to post 2000. Several species sites checked. Also visited croft owner and re-engaged him in botany on Ross of Mull. We recorded a tetrad together and he has since visited again and sent specimens.

Euphrasias collected from Tiree and Mull and sent to Chris Metherell who has identified them. Hieracia specimens taken to David McCosh and he has identified. Other critical groups sent off to referees- some still to hear back from. Tidy up of specimens in my press and most sent off to referees. All other records from 2015 field season entered in Mapmate and synched to hub.

Action plan made for 2016 field season, but this might be delayed as I am still waiting for my right hip operation. Week booked for 13-20 August for Coll tetrad recording. Alistair Godfrey and Ro Scott helping, which is very welcome.

Participated in New Year Plant Hunt in Northants with friends, and members of BSBI, on 4 Jan and sent in report - 31 species flowering.

Set up Ash Splash plots in remote area and also an extra site on East coast of Mull with 2 locals I am encouraging.

Agreed to help set up and record NPMS squares on Coll and arranged for John Bowler RSPB to do one on Tiree.

Helped with identification of old plant collection in Tobermory Museum.

Help in rough terrain would be appreciated, especially after my hip operation! Gordon Rothero has visited and checked a few species' sites for me this year in the hills.

North Ebudes (vc 104) *Stephen Bungard*

Over 13,000 records were made in VC104 in 2015. Recording for Atlas 2020 continues apace with all hectads already adequately covered but much more to be done before the VCR will be content.

Saxifraga tridactylites (Rue-leaved Saxifrage) was recorded on Rum, a first for VC104.

Raphanus raphanistrum subsp. *maritimus* (Sea Radish) on Eigg was the first record in the vice-county since 1893 or 1895 - and in the same location! It was also found at Waternish, the first record for Skye.

A list of plants native to Skye was produced. With many caveats it includes just short of 600 species.

The Skye Botany Group met five times in 2015.

Andrew Currie's Herbarium was catalogued by two volunteers and the sheets were then transferred to RBGE to become part of the general herbarium. There are c. 1800 sheets of which c 75% were from the UK (63% from Scotland). Only six are from VC104.

A collaboration with artist Frances Priest, "Patterns of Flora - Mapping Seven Raasay Habitats" resulted in maps of botanical walks, ceramic furnishings for Raasay House, Parian ware vases and adult colouring books, all featuring plants from the seven selected habitats. The project has been shortlisted in the Placemaking category of the prestigious Arts & Business Scotland Awards 2015. [See article on page 12 and photo on inside back cover.]

Fuller reports for January-June and July-December are available at http://bsbi.org.uk/north_ebudes.html

West Ross (vc 105) *Duncan Donald*

The highlight was the weekend Field Meeting based on Glen Carron, reported elsewhere, but I am again indebted to many visitors who have helped contribute other invaluable records. In June, Ro FitzGerald, Liz McDonnell and Janet Macpherson helped me re-record Upper Loch Broom [NH18] (with *Ruppia maritima* (Beaked Tasselweed) a first since 1952) and Corrieshalloch Gorge [NH27] (including *Festuca altissima* (Wood Fescue) last recorded in 1982). In July, Coigach Community Heritage Group invited me to lead a foray around Polglass [NC00]. In August, Inverness Botany Group joined me recording along Little Gruinard River [NG98]; Debbie Wallace visited Plockton airfield [NG73] (*Polygonum boreale* (Northern Knotgrass) would be a new vc record; her specimen is with the referee); Stephen Bungard found *Poa nemoralis* (Wood Meadow-grass) near Lochcarron [NG84] ... then in September re-found *Eupatorium cannabinum* (Hemp-agrimony), very local hereabouts, north of Applecross [NG74].

Also in September, Jim McIntosh found lots of good things at North Keanchulish [NC10]; Ian Francis re-recorded near Upper Loch Torridon [NG75 & NG85]; and Peter Wortham re-found *Sibbaldia procumbens* (Sibbaldia) on the eastern flank of vc 105 in NH04. At Christmas-time, my daughter Flora helped me re-survey the lower reaches of the Abhainn Alligin, finding *Dryopteris aemula* (Hay-scented Buckler-fern) last noted in NG85 in 1965. Nor should I overlook finds made by interested locals: a new *Zostera marina* (Eelgrass) site in NG99 found by Peter Cunningham; and *Potentilla crantzii* (Alpine Cinquefoil) reported from NG97 by Jeremy Fenton.

Meanwhile, I have done a lot of work prioritizing under-worked tetrads and the plants that need to be re-recorded in the next few years for the Atlas ... and, all being well, my planned Flora.

East Ross (vc106) *Brian Ballinger*

Atlas work has continued this year with visits to many places in VC106. There are recent records for the majority of tetrads but a lot of work remains to be done. Once more I am very grateful to Peter Wortham for his major contribution, especially in the more remote areas. Others have also contributed, both individuals and various societies including the Inverness Botany Group.

This year Mary Dean, Peter Wortham and I undertook the Site Condition Monitoring of the Kyle of Sutherland marshes SSSI. *Carex recta* (Estuarine Sedge) is doing well in many places, but *Pilularia globulifera* (Pillwort) proved a major challenge, because of very high water levels and quantities of mud.

Some sites were not refound until October when the water level had finally fallen.

In the autumn another new population of *Linnaea borealis* (Twinflower) was found at Cnoc Navie whilst on a routine recording outing. This is the third site for this species, previously thought to be extinct in East Ross, to be found in the last 10 years. A few plants of *Galium sternerii* (Limestone Bedstraw), for which there were no recent or localised records, were found in Benmore forest. On the negative side no plants of *Mertensia maritima* (Oysterplant) were to be seen at its only site in the Vice-county at Hilton, perhaps a victim of winter storms.

In 2016 recording work continues and a joint outing with the Botanical Society of Scotland is planned at Dingwall.

East Sutherland (vc 107) *Mick Crawley*

The lowlands are finished and the uplands reasonably well sampled, but there is still a huge amount to do in the remote featureless parts, especially on the border with West Sutherland. Volunteers for wild camping trip welcome.

The 2016 version of the Flora of 107 is ready to go up on the BSBI web site, containing all the 2015 records. Training on site is now available

Mick's plea will be echoed by many: Could we have more days in June and July (!)

West Sutherland (vc108): *Ian Evans*

Atlas 2020: the 'summer' of 2015 was nearly a month late arriving in the North-West Highlands, so fieldwork did not start until the end of June. Some 16 sites were surveyed between then and the beginning of November; 11 were previously un-visited tetrads, five of them on the Cape Wrath peninsula (NC27, 36).

About half of West Sutherland has never been surveyed at tetrad level (450+ tetrads). This area includes most of the land between Loch Eriboll in the west and Strath Halladale in the east, and some montane areas elsewhere.

A start will be made in the summer of 2016 in the area around Tongue and up Strath Naver (NC53-56, 63-66, 73-75). To this end, self-catering accommodation at Tongue has been booked for three weeks in June, July and August, and help recruited from local and other Highland botanists. We shall also be revisiting the Cape Wrath peninsula.

An interesting record, confirmed late in the year, was *Brassica nigra* (Black Mustard), found by Gwen Richards on a croft near Lochinver (NC0824); it had not been deliberately introduced and is a NVCR. A large population of *Arabidopsis petraea* (Northern Rock-cress) was located at a 'new' low-altitude site on the River Dionard (NC3458) on 3rd November.

What could we do to make your role as Recorder more fulfilling and enjoyable? New knees!

Outer Hebrides (vc110) *Paul Smith*

6000 records added in 2015, mainly in 35 tetrads.

There were two main recording visits involving the VCR in 2015. A group of visitors spent two weeks on North Uist, unusually (for group visits) in May, making useful records of spring ephemerals (including find of the year *Mibora minima* (Early sand grass)) and *Taraxacum* (dandelions) - including several NCRs. A summer visit to Harris covered montane areas, particularly increasing recording in NB11 and NB21 which were under-recorded for Atlas2020. Atlas coverage is pretty good for most inhabited islands (with plans for mopping up on Lewis in 2016); some outliers still need visits, probably not all will be done by 2020.

The Uist botany group had multiple meetings, and sent in a useful batch of records, covering some under-recorded parts of the Uists. Two UBG meetings were held when the VCR was present, including a visit to Wiay, an island off Benbecula unrecorded for around 70 years. UBG will move under the auspices of OHBR, Outer Hebrides Biological Recording, from 2016.

After persistent hinting (some may say nagging!) visitors are getting in touch before they go to vc110, and sending back records. Some have taken on tetrads and gaps, and there has been a significant contribution from several sources in 2015. Machair site condition monitoring records from SNH (Uists) were received too. A big thanks to all contributors.

2014 and 2015 records were sent to the DDb in Jan 2016. Sporadic efforts were put into updating the vc110 scarce plant register (now 10 years and a lot of recording out of date), but this requires some significant effort for completion.

Are there any specific things we can possibly help you with? Fund some boat trips! Or a helicopter...

Orkney (vc111) *John Crossley*

This year I recorded good lists from nearly 35 monads and tetrads and further, shorter ones from miscellaneous site visits. I spent several days recording tetrads on the outer islands, wanting to ensure that nearing the end of Atlas 2020 I am not left with only the most remote places to visit. Other local botanists and Field Club members were involved in most of these island visits. I received some help with costs from the Wildflower Society. A short account will appear in the Society's magazine. There will be more to do in 2016: visiting BSBI members are most welcome to join in these or other outings, though the island trips are done at short notice to make the best of forecast weather.

Following some analysis of the post-2000 record set I changed course slightly in my recording strategy this year. There is good geographical distribution of tetrad records for the VC, but many of the tetrad lists are much shorter than they should be, so after some analysis I made targeted visits to some poorly recorded tetrads. Also I have been chasing up pre-2000 VC rarity records with considerable success, some dating from the early 20th century.

Eric Meek and I produced an RPR for vc111 in March. It was a lengthier task than we had expected.

There were some new VC records, mostly sub-species not previously attended to. Find of the year was undoubtedly *Hieracium sowadeense* (awaiting final confirmation), a VC endemic found at the spot where it was last recorded in 1925. Fewer than 10 plants remain. Seeds were collected and seedlings are being reared.

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FORTHCOMING EVENTS

Plantlife Scotland

BSBI members are very welcome at any Plantlife walks. The events listed below are free of charge (donations welcome) except where noted, and are open to participants with any level of experience. All events must be booked in advance - for more details or to book a place, contact scotland@plantlife.org.uk or 01786 478509 (except where indicated).

Mosses and Liverworts in the Celtic Rainforest

Sun 15 May, 2 - 4 pm Taynish National Nature Reserve, Tayvallich, Argyll
Discover the world-renowned bryophyte flora of this classic Atlantic woodland. Walk led by Stan Phillips, SNH.

Introduction to the National Plant Monitoring Scheme

Free training days: Find out how to take part in the National Plant Monitoring Scheme at these one-day workshops. Details at www.npms.org.uk.

Sun 22 May, 10 - 3.30 Roslin Glen Country Park, Roslin, Midlothian

Sat 28 May, 10 - 3.30 Abbotsford, Melrose, Roxburghshire

Sat 4 June, 10 - 3.30 Glen Tanar, Aboyne, Aberdeenshire

Sun 5 June, 10 - 3.30 Outdoor Centre, Nethybridge, Inverness-shire

Sun 12 June, 10 - 3.30 Kindrogan, Perthshire. Supported by FSC.

Wild flowers around Loch Leven

Sat 11 June, 10am - 4pm. Loch Leven National Nature Reserve, Kinross

The shores and shallow waters of Loch Leven host a wealth of plant life including many that are locally, nationally or internationally rare, including Early Marsh-orchid, Lesser Butterfly-orchid, Holy-grass, and *Salix viminalis* (the willow used for cricket bats!). Leader Liz Lavery.

Wild flower walk at Edinburgh Zoo

Tues 14 June, 2 - 4.30pm

Cost £7.50 (includes entry to the zoo before and after the wildflower walk). Book with Plantlife but pay entry fee on the day. Led by Davie Black .

Native pinewood wildflowers in Sutherland

Sat 25 June 10am- 4pm Balblair Wood, near Golspie, Sutherland.

Balblair Wood by Loch Fleet is a mixture of surviving and regenerated native pine woodland. Join Reserve project officer Glen Campbell and local botanist Brian Ballinger to see the native pinewood plants including Twinflower, One-flowered Wintergreen and Creeping Lady's-tresses.

Farming for Wild Flowers

Sat 2 July, 2 - 4pm, Williamwood Farm, nr Lockerbie, Dumfriesshire.

Flower-rich grasslands, woodlands and a small loch are managed for biodiversity as part of a 300 acre working farm run by Michael and Shirley Clarke. Scottish winners of the RSPB Nature of Farming award 2013.

Wild plants on Ben Vrackie

Sat 9 July, 10am - 4pm Ben Vrackie, near Pitlochry, Perthshire.

Join Martin Robinson to explore the diversity of mountain plants on the lower slopes of Ben Vrackie, including the native currant *Ribes alpinum*; Brown Bog-rush *Schoenus ferrugineus* (moved here from Loch Tummel when the dam was created and now thriving and spreading); and moorland species including Lesser Twayblade, the Clubmoss *Lycopodium annotinum*, the horsetail

Equisetum pratense, and the sedge *Carex diandra* (growing at its highest British altitude). Note: the walk will require a good level of general fitness.

Plants and habitats of Schiehallion

Sat 6 Aug, 10am - 6pm Schiehallion, Perthshire

An introduction to some of the commoner upland plants and the communities they grow in. Led by Davie Black (Plantlife) and Dr Liz Auty (John Muir Trust). Note: a good level of hill-fitness is required; the walk will cover 10 km and involve 730 metres of ascent.

British Pteridological [Fern] Society Scottish Group

BSBI members are very welcome. If you would like to attend any of the BPS outings, please contact Bridget Laue: bridgetlaue@blueyonder.co.uk Home: 0131-258-9592; Mobile: 0793-243-9989 a few weeks before the date of the meeting, when further details should be available.

For up to date information check the website: www.ebps.org.uk/events/category/meetings/regional/scottish

Tuesday May 10 th 10am. Ascog Fernery workday

Leader - Bridget Laue. Meet at Wemyss Bay terminal for 10.15 ferry. Return 4 pm ferry. Bring packed lunch and small tools. Tea/coffee provided. .

Saturday June 18th 10.30am Millport, Great Cumbrae Island

Leader: Chris Nicholson. An exploration of native ferns on Cumbrae and possibly also the fern garden of Fred Jackson. Details to be confirmed.

Saturday July 16th 10.30am, Benmore Botanic Garden Bioblitz

Meet at Benmore Visitor Centre. Explore the Fernery and surrounding woodland. Record native ferns at Benmore, and help present ferns to the public.

Sunday July 17th 10.30am, Puck's Glen

Leader: Bridget Laue. One of the richest sites in the UK for native ferns.

Meet one mile south of Benmore Botanic Garden in Forestry Commission car park NS 146839 (Sat Nav PA23 8QT), six miles north of Dunoon.

If time allows, we will go north to Loch Eck and look for washed up *Isoetes* at Jubilee point NS 141930 (SatNav PA23 8SG); also lots of common ferns.

Saturday 13th August 10am-6pm. Mountain ferns, Ben Vrackie, Pitlochry

Leader: Andy McGregor. Meet 10am in tourist information centre car park on N side of main Atholl Road (A924), grid ref. NN 9415 5805. Interesting ferns, including mountain bladder fern and holly fern. We may also hope to see

shade horsetail and variegated horsetail.

Sunday 2 October from 10.00am. Annual Indoor Meeting,
Leader: Frank Katzer. Highfield House, Muirburn near Biggar, ML12 6HL (NT
095 411)

BSBI / BSS Scottish Annual Meeting 2016

The 2016 BSBI / BSS Scottish Annual Meeting will be held on Saturday 5th November at SNH Battleby Conference Centre, Perth. This is a lovely venue in beautiful Perthshire countryside, just off the A9 and with easy parking. It is also only a 5 mile taxi ride from Perth's bus and railway stations.

Around the comfortable main auditorium there is lots of circulation space that is ideally suited to displaying botanical exhibits and a number of small break-out rooms where we plan to hold a series of mini-workshops. There will be the usual varied program of interesting short talks. And following on from Ken Thompson's excellent main talk on Aliens in the British Flora in 2015, we will hear another great speaker, Professor Mick Crawley give a very different talk on the same subject.

We look forward to seeing you there. Put the date in your diary now!

BSBI Photography Competition

Our front cover displays one of the winning entries in last year's competition, Great Horsetail *Equisetum telmateia* by Sarah Eno. A selection of other entries is shown elsewhere on the cover pages. A full report of the 2015 competition appeared in BSBI News 131 (published in January) with Ian Strachan's stunning image of a Spear Thistle (*Cirsium vulgare*) seed-head on the front cover, and Ian Francis's Teasel (*Dipsacus fullonum*) on the back. I understand other winning photographs will appear in future editions of BSBI News. Well I say *full* report but one interesting observation I did not dwell on, for fear of being accused of bias, was that all four winners were from Scotland! Let's see if we can do it again!

The 2016 BSBI Photographic Competition has just two simple and very broad categories: 1) Rare species and 2) Common species. Photographs should be taken in Britain or Ireland and be of flowering plants, conifers, ferns, horsetails, club-mosses or stoneworts. But they don't have to be taken during 2016 and you don't have to enter both categories. We had over 220 entries last year and struggled to display them all. This year we are limiting the number of entries to two in each category. We may also appoint judges to select

a short list to put to a popular vote at the Scottish Annual Meeting at Battleby, Perth on 5th November 2016. This will also make voting and vote counting simpler and give us more time to prepare the prizewinning announcement.

1. Send your entries to Natalie Harmsworth (natann29@freeuk.com) **by 21st Oct 2016.**
2. Photograph file names should comprise entrant's name, competition category and photograph title e.g. John Smith Rare Species Maiden Pink, Girrick. Please submit the largest possible file size
3. Copyright of images will remain with the photographer
4. 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.
5. BSBI 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

BSBI Scottish Field Meetings programme, 2016 (summary)

Full details in Yearbook *Please check web pages for any late changes*

June 11-18	vc77	Upper Clyde valley	Angus Hannah
June 24-27	vc105	Ullapool	Duncan Donald
June 25	vc88	Cam Chreag, Tyndrum	John Holland: joint BSS alpine
July 2	vc106	Dingwall	Brian Ballanger/Mary Dean
July 9	vc87	Doune ponds	Liz Lavery/Jane Jones
July 16	vc99	Ben Vorlich	John Holland/Pam Murdoch
July 23-24	vc72	Grey Mare's Tail	Chris Miles
July 25-26	vc80	Hawick area	Jeff Waddell
Jy 31-Aug 7	vc112	Scalloway, Shetland	Jim McIntosh
Aug 6-12	vc110	Lewis, based on boat	Paul Smith
Aug 13	vc87	Balquhidder	Jane Jones/Liz Lavery

Euphrasia workshops will be led by Chris Metherell in Killin (Loch Tay) on July 2nd and 3rd. Please contact Jim McIntosh or check Yearbook for details.