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1-5: Mountain plants in Glen Lyon
(see p.7) 1 *Cornus suecica*, 2 *Bartsia alpina*, 3 *Salix myrsinites*, 4 *Tofieldia pusilla*, 5 *Cystopteris montana*

Left: *Lotus dorycnium* (formerly *D. pentaphyllum*) new to Scotland in wild in vc83 (see p.36) photo R. Milne

BSBI SCOTTISH NEWSLETTER

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Scottish Officer Report for 2018

Atlas 2020 Recording

Scottish Recorders had another very busy year recording for Atlas 2020. So far, 220,000 records have been added to the BSBI database for 2018, with more to come.

For the first time ever, we held **three** recording weeks in the year to help plug gaps in under-recorded areas. Angus Hannah organised another very successful week in Argyll – this time based at Carrick Castle, during which some 5,000 records were collected. The Scottish Officer organised a recording week based at Lagafater Lodge, Wigtownshire with the help of Ayrshire Recorder, Carol Crawford. 16 BSBI members collected a total of 7,400 records in Wigtownshire and in the south of Ayrshire. The third Recording Week was organised with the help of Westernness Recorder, Ian Strachan, and Easternness Recorder, Adam Fraser at Kingie Lodge in Glen Garry. Remote mountains and glens were surveyed by some 14 members who collected over 10,000 records.

The Scottish Officer organised an Atlas recording long-weekend at Haddington, and helped recorders Jeff Waddell with one based in Kelso and Phil Sansum & Matt Harding with another at Drymen. Those participating at Haddington formed a local group and went on to collect (and digitise) a huge number of records over the remainder of the year. Thanks are due in particular to Marion Moir and Sue Jury. Local groups were also set up during the year in Fife by Sandy Edwards and in West Lothian by Jay Mackinnon.

We are planning two recording weeks in 2019; one in Argyll and another in Easternness. The long-weekend format has been particularly successful and three similar events are planned this year – in Haddington, Fintry and Hawick. I'd be very grateful if members would give all recording field meetings their fullest support in this, the final field season for Atlas 2020.

Particularly notable feats of recording this year include Ian Green collecting an astonishing 17,000 records in his vice-county (Moray), while Andy Amphlett collected 8,000 records in neighbouring vice-county, Easternness and Audrey & Bob Turner collected over 5,600 records in Moray and Easternness. Many recorders would warmly welcome such contributions from BSBI members and if you are able to help – even on a much smaller scale - please offer to do so.

Of course, success is not all about numbers of records. Many great (re-) finds have been made across Scotland and some of these are featured in the Scottish Botanists' Conference Exhibition abstracts (pp.14ff.) or mentioned in Vice-county Annual Reports (pp.31ff.). Thanks are due to all Recorders and members involved with Atlas recording in 2018.

Data Issues

We received 362,000 records in an exchange of data with the NE of Scotland Local Recording Centre. The data has largely been collected as part of an extensive habitat survey and has significantly helped plug many gaps in our Atlas coverage in Banff, Aberdeen and Kincardine.

The Scottish Officer recovered 125,000 records from the Renfrewshire Recorder's now defunct recording system and uploaded it to our database with the help of Recorder Keith Watson. Over 40,000 of the records are post 2000 and will contribute to Atlas 2020.

Work has begun on a major project funded by SNH to extract records of Nationally Rare or Scarce species from Site Condition Monitoring reports before the end of the 2019.

Recorder Network Support

Two one-day recording conferences were organised and held in April, at RBGE and Strathpeffer – with the same programme repeated. A total of 52 folk participated in the two events. The theme was (of course) Atlas 2020 recording, digitisation and validation. The programme included two very popular mini-workshops – one on Deergrass by Jeremy Roberts and Andy Amphlett and another on Bladderworts by Nick Stewart and Claudia Ferguson-Smyth. The presentations are available online.

This year's call for Vice-county Annual Reports has resulted in reports for 37 (out of 41) counties. I respond to each report individually and the reports are collated and published in the Scottish Newsletter and on the BSBI Scotland page. Take a look (pp.31ff.) – they are a great read.

The Scottish Officer continued to produce and publish the monthly electronic newsletter BSBI [eNews](#). It aims to provide support, encouragement and news for everyone in the BSBI recording community across Britain and Ireland.

We advertised two Recorder vacancies in 2018 – one in Berwickshire after Michael Braithwaite retired four years ago and another for a joint recorder in Stirling to help Phil Sansum, who has moved to England. As a result, we did find a recorder for Stirling in Matt Harding but there has been no

interest shown in Berwickshire. We also appointed David Elston as joint recorder with David Welch for Kincardine and North Aberdeen. During the year Carl Farmer resigned as joint recorder in Argyll, leaving Gordon Rothero, who would like a joint recorder to help him. Also, Andy Amphlett said he'd like to stand down as Recorder for Banffshire after the Atlas. All three vacancies are currently advertised. If you are interested in being a recorder for any of these counties, please let me know.

Training

The 2018 training programme for complete beginners included two one-day Plant Family Workshops held in Dumfries and Aberdeen, led by Chris Miles and Aileen Meek respectively. A total of 29 beginners participated. Two follow-up field days were arranged by Faith Anstey for workshop students and anyone else who was interested.

For intermediates, the Scottish Officer held an 'Introduction to Recording' workshop at RBGE in May and Faith Anstey led a grass identification workshop at Milngavie in June. For the more advanced, Angus Hannah organised a workshop on Brambles at Ballachulish in August.

Thanks are due to all the volunteer organisers, leaders and tutors who helped and to our partners this year – Plantlife Scotland, SRUC, Mugdock Country Park and Aberdeen City Council.

Scottish Botanists' Conference

We changed the title of the BSBI/BSS Scottish Annual Meeting to the Scottish Botanists' Conference in 2018, as RBGE joined us as a collaborator and to broaden the event's appeal. That change seemed to have been successful with a record 175 botanists attending. During the day 140 folk each attended two of seven mini-workshops on a variety of topics – introductions to conifers, grasses, horsetails, the Vegetative Key and the BSBI Database. There were also more advanced workshops on separating difficult species-pairs in the herbarium and on oaks. Feedback was very positive – particularly about the mini-workshops and the main talk, which was entitled *When will we ever learn? A History of Tree Disease* by Professor Richard Ennos. All the talks are available online and there is a virtual exhibition.

Thanks

Thank you to all the speakers, facilitators and volunteers who made the Scottish Botanists' Conference such a success. More widely, thanks are due to all the BSBI Recorders, members and volunteers who contributed

so magnificently to the BSBI's work in 2018. As always, we are very grateful to SNH and RBGE who continue to support the BSBI in Scotland.

Jim McIntosh, BSBI Scottish Officer, March 2019

A week of recording in Glen Lyon vc88, July 2018

Glen Lyon, in highland Mid-Perthshire (v.c.88) stretches for 32 miles (51 km) and forms part of the Loch Rannoch and Glen Lyon National Scenic Area. Famously it was described by Sir Walter Scott as the "...longest, loneliest and loveliest glen in Scotland..." while Wordsworth, Tennyson, Gladstone and Baden Powell also sang its praises. Using the generous contribution from the WFS the vc88 recorders rented Vannoch cottage, a small self-catering cottage in the hamlet of Pubil from 28 July to 4 August 2018. Pubil is at the extreme west end of Glen Lyon just below the Loch Lyon hydro-electric reservoir. This area, though close to Killin as the crow flies – just 10 miles – takes almost an hour to drive (each way). The base would give us relatively easy access to several remote and poorly recorded hectads for the BSBI Atlas 2020 project.

Joint VC Recorders for Mid-Perthshire, Alistair Godfrey and Jim McIntosh were joined for most of the week by Tim Rich and for day trips by John Holland and Dan Watson who was accompanied by a young NTS volunteer on one day. The survey work was done either directly on foot from Pubil or from the car after short drives. In addition Jim & Dan cycled along the north Loch Lyon track to reach the very remote Glen Meurain. Finally, Jim stopped on the way home in lower Glen Lyon and surveyed a square in the Glen Lyon Woods SSSI.

We collected a total of 2,677 records– which is not a huge number for such a week, but reflects the rather species-poor nature of much of the terrain and the fact that we were at 1,000 feet or more for most of the week. We explored high corries and some summit ridges on the following 3,000-foot mountains: Stuchd an Lochain, Meall Ghaordaidh, Meall Buidhe Loch Lyon, Meall Buidhe Loch an Daimh & Beinn Heasgarnich, and obtained many quality records from these areas. We recorded in the Beinn Heasgarnich, Meall Ghaordie & Glen Lyon Woods SSSIs.

Over the week, we collected records from 21 tetrads in 5 hectads - many of which had been very poorly recorded previously. All the records were

at monad resolution or better and 200 records were at 6 figure grid ref accuracy or better.

Particularly notable finds included:

11 populations of *Bartsia alpina* in 8 monads in three hectads - many of which hadn't been recorded for many decades (or indeed ever).

4 populations of *Hammarbya paludosa* in three different monads in two hectads.

4 populations of *Juncus alpinoarticulatus* in 4 monads in two hectads.

4 populations of *Dryas octopetala* in 3 monads in one hectad

A new hectad record of *Vicia sylvatica* in NN34.

Gnaphalium sylvaticum, *Juncus alpinoarticulatus*, *Leontodon saxatilis*, *Potentilla anglica*, *Ranunculus bulbosus* and *Sagina nodosa* all near or at Lochan an Damh dam.

Two common woodland species recorded for the first time ever in the hectad at Eas Eoghannan on the banks of Loch Lyon – *Rubus idaeus* and *Stachys sylvatica*.

Clinopodium vulgare and *Sedum acre* right beside the cottage – only site in entire hectad for these species.

Big populations of *Meum athamanticum* in the Pubil area – including some beside cottage

Thanks to Tim Rich, we recorded 6 records of *Hieracium anglicum* agg., one of *H. flocculosum* agg., three of *H. holosericeum* and ten of *H. vulgatum*.

Again, thanks to Tim, we recorded two records of *Taraxacum ceratolobum*, ten of *Taraxacum faeroense* and one record of *Taraxacum gelertii*.

240 taxa in the monad in the Glen Lyon Woods SSSI including *Hy-menophyllum wilsonii*, *Poa compressa* and *Viola canina*.

Many thanks to Tim Rich, John Holland, Dan Watson & Alistair Godfrey.

Jim McIntosh

***Betula pendula* (Silver Birch) in the west & north of Scotland**

Andy Amphlett

Betula pendula (Silver Birch) is most frequent in eastern Scotland (Fig 1). Worrell & Malcolm (1998) found that the western and northern limits of *B. pendula* in Scotland ± follows the main watershed (Fig. 1). West and north of this line *B. pendula* is apparently absent over large areas and the birch woods generally consist entirely of *B. pubescens* (Downy Birch). There are though a few outlying populations which may be native, eg. by

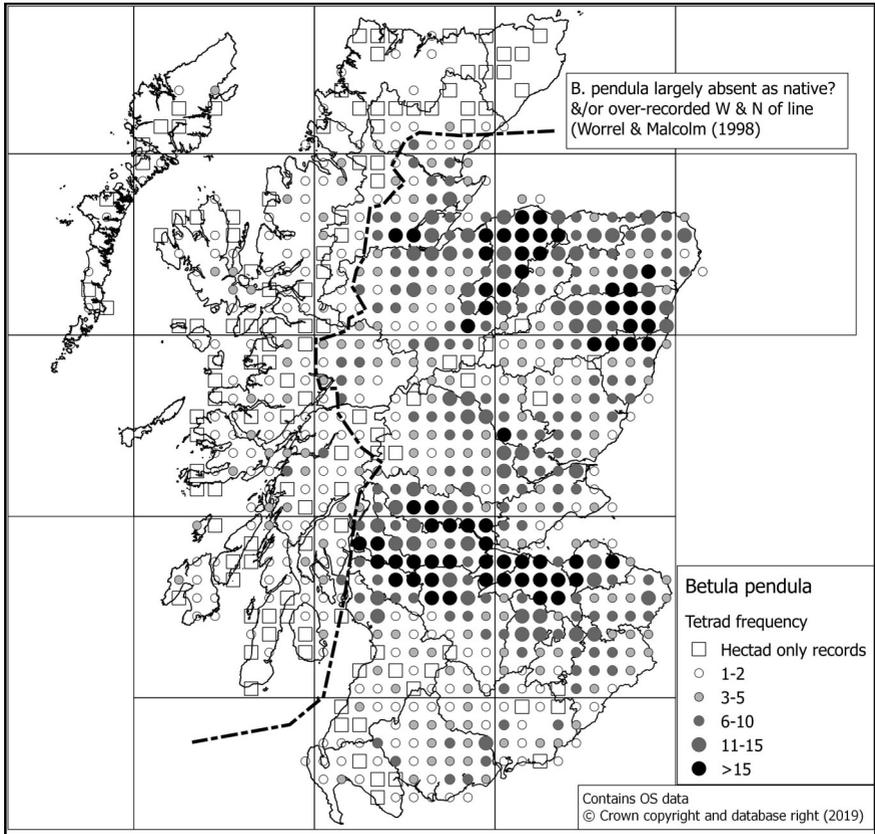


Fig.1. *Betula pendula* tetrad frequency (all records). From BSBI DDb 15/03/2019.

Loch Creran and on eastern Mull. *Betula pendula* was also found to be remarkably rare in those parts of central & southern Scotland (Lanarkshire, Ayrshire, the Lothians and Borders) which they surveyed. The vast majority of the birch in these areas, as in western Scotland, proved to be *B. pubescens*.

Worrell & Malcolm (1998) argue that *B. pubescens* is often incorrectly identified as *B. pendula*. Commonly used Floras and identification guides typically do not list the full range of ID characters that discriminate between *B. pendula* and *B. pubescens*. Some accounts contain errors: the illustration of fruiting bracts of *B. pubescens* in Stace (2019) is completely wrong, while the lateral lobes of fruiting bracts of *B. pendula* are typically backward pointing, (sometimes fancifully described as fleur-de-lis shaped); leaf shapes of the two species are shown (incorrectly) to be al-

most the same in Rose (2006). However, the account in Plant Crib (Rich & Jermy, 1998) is good.

Betula pubescens is very variable (more so than *B. pendula*). For example, there are white and brown-barked forms, twigs and leaves may be hairy or glabrescent, and may or may not have frequent resinous glands (warts). Recorders visiting the Highlands from lowland parts of Britain, may not be familiar with the small-leaved form of *B. pubescens* in the Highlands (subsp. *tortuosa*, *sensu* Stace), which is very different in appearance to subsp. *pubescens*. While this small-leaved tree is very different to *B. pendula*, it also has lower branches with \pm pendent or drooping, glabrescent twigs, often with numerous resinous glands; its leaves are also glabrescent. If in any doubt, the fruiting catkin bracts have forward pointing lateral lobes, cf. spreading to re-curved in *B. pendula*.

Hybrids with *B. pendula* occur as well as introgression from *B. pendula* into *B. pubescens*. To further complicate matters, Stace (2019) has added *B. pubescens* subsp. *celtiberica* in the latest edition of his Flora, and Sell and Murrell (2018) mention a record from Arran. Welsh examples of this taxon are illustrated and described by Chater (2010). According to Ashburner & McAllister (2013), *B. celtiberica* is most likely a stabilised population derived from *B. pubescens* heavily introgressed with *B. pendula*, and is morphologically closer to *pendula* than to *pubescens*. However, the populations in the Cantabrian mountains (the only ones recognised by Ashburner & McAllister) are geographically (and hence reproductively) isolated from other populations of *B. pubescens*. Having the same chromosome count ($2n=56$), it is unclear how true *celtiberica* would maintain its distinctiveness when growing alongside *B. pubescens*. Nevertheless it should be borne in mind.

While it may not be practical for VCRs to review the accuracy of identification and status of all old records of *B. pendula* from the western and northern Highlands, it would be worthwhile critically examining at least the post 1999 records in advance of Atlas 2020. Were the records accurately determined? Were the trees planted? It is likely that some of the existing records from this area, tagged as native in the DDb, are actually planted, or derived from planted trees.

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Recording oaks in Scotland

Angus Hannah

At the Scottish Botanical Conference last November I led a workshop on identifying oaks by leaf morphology. The separation of *Q. robur* and *Q. petraea* has long presented problems to recorders. Although good examples of the two species are easily enough defined and identified, in most areas a large proportion of oaks lie somewhere between them, with individuals often showing some clear characters of both species. Recording these as *Q. x rosacea* remains problematic, since there is no settled definition of what this taxon includes. Authorities have concluded that F1 hybrids are rare, and nearly all 'intermediate' trees show evidence of introgression by repeated back-crossing, most often to *robur* but also to *petraea* and sometimes possibly to each in successive generations.

All this presents the recorder with serious practical difficulty, and I have sympathy with the decision of some to record nothing beyond *Quercus* sp.. However, this admission of defeat may be premature, and the purpose of my workshop was to offer a means of determining the character of an oak along a quantifiable continuum between the two species. This leaves the problem of setting boundaries between the species and the intermediates, but ensures at least consistency for any single recorder and the possibility of a broader consensus if species limits can be agreed.

At a practical level, recorders must ask what is their immediate purpose. If it is to establish the presence of a taxon within an area (tetrad, etc.) then a single, confidently identified specimen suffices. However, the value of such recording may be questioned. In my experience in west-central Scotland, any locality containing more than a handful of oak trees will yield at least one satisfactory specimen of each taxon, so that *petraea*, *robur* and *x rosacea* could very probably be recorded from almost any

tetrad where there is a modest quantity of oaks. However, this information alone could scarcely justify the work of collecting and measuring involved in finding and confirming the specimens. Tetrad-presence maps of the three taxa, however comprehensively recorded, would tell almost nothing of value beyond the distribution of oaks in general.

To do better, a more intelligent approach to recording is required. For instance, it is necessary to distinguish first generation plantings, such as in parkland, along roadsides and in small plantations, from larger, mixed-age woods where at least some of the trees may have ancestry of several generations in the vicinity and may carry genes from local native stock. Woods of this nature deserve more thorough sampling, and would best be recorded as a population, indicating the proportions of each taxon present, or better still, as a histogram showing the relative frequency of various degrees of introgression or affinity. Thirdly, fragmentary scrub or single trees on crags etc., should be investigated thoroughly as they may be remnants of ancient stock (although in my own limited experience I have found them to be just as diverse as oaks in woodland generally).

In short, recording of oaks cannot be divorced from local history, and as every wood has a unique past one must be cautious in extrapolating from one area to another. Nevertheless, some general observations can be made. Much planting of oak was done throughout Scotland from c.1760-1860 from many different, often continental sources, and much but by no means all of this was either *robur* or of *robur* affinity (maybe historically or prehistorically introgressed before its arrival). In the west at any rate, these trees were usually planted into pre-existent woodland which would have included oak (often perhaps *petraea*) in a mixture of other broad-leaves depending on the character of the soil. Cousens and others have doubted the native status of *robur* in Scotland, while on Bute there is no doubt that many of the best examples of *petraea* are planted trees. The more one seeks out likely 'native' sites the more one finds trees of intermediate character with affinities towards either species, but seldom close enough to be recordable as such. It is tempting to suggest that our native oak populations were already mixed when they arrived, and may have consisted of some relatively pure *petraea* and some intermediates of *robur* affinity.

Much remains to be learned about oaks in Scotland. The method I demonstrated at the workshop offers a relatively quick and accurate way of assessing one's local populations at most times of the year. For a copy of the procedure and bibliography email: butesedge@yahoo.co.uk

A salutary lesson

Andy Amphlett

Over the weekend 11th - 13th May 2018 my wife and I were staying in Strathan, near Lochinver in vc108 (West Sutherland). Almost as soon as I got out of the car I noticed a few plants of *Carex caryophyllea* (Spring-sedge) in short grazed turf adjacent to the cottage. Taking a mug of tea up on to a knoll close by to view the scene, I found more *C. caryophyllea* just coming into flower. The plants were c.5-7cm tall. Checking the Flora of Assynt which I had taken with me, showed that this was a rare species in the area, with no recent records. Reading further I noted that the authors of the Flora (Pat and Ian Evans) said that they had generally not started recording until June. It seemed to me quite feasible that this early flowering sedge had been overlooked. Indeed *C. caryophyllea* is scarce or absent from much of the north-west Highlands, so I was feeling quite pleased with myself.

The next day, I found more *C. caryophyllea* in an identical habitat close to the sea shore nearby. Walking across the rocky knolls where the gneiss bedrock was exposed, I started to realise that these *C. caryophyllea* plants had a suspiciously similar appearance to dwarfed specimens of *Carex binervis* (Green-ribbed Sedge) that grew quite commonly there.

I only had Poland's 'Vegetative Key' and Streeter's 'Collins Flower Guide' available. After carefully comparing the (now putative) *C. caryophyllea* with certain *C. binervis*, my doubts grew. On returning home (to Strathspay), I looked at the descriptions and illustrations of the two species in the BSBI Sedges handbook and popped out to a nearby roadside bank where I knew that *C. caryophyllea* grew. All the vc108 plants I had looked at had indeed been *C. binervis*!

So what went wrong with my ID? Quite a few things! The *C. binervis*, along with several other species, was growing as much smaller plants than I was used to in vcc94-96 where I usually botanise. Heavy grazing by sheep had removed virtually any trace of the typical reddish brown litter and old basal sheaths of *C. binervis*, which is typically so eye-catching. Over-reliance on vegetative features of *C. caryophyllea*, eg. shiny green leaves with trigonous tips also applies to many specimens of *C. binervis*. Not having a more detailed ID book available. Jumping to conclusions based on familiarity with the jizz of *C. caryophyllea* in another area, and uncritically applying that to plants in another vice-county. Not having seen *C. caryophyllea* for about a year, mistakenly thinking I could remember what it really looked like, as opposed to what I thought it looked like.

Lesson learned. I hope ...

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Scottish Botanists Conference 2018 – Abstracts of Exhibits

A new inland population of *Hierochloe odorata* (Holy-grass) and other interesting species found along a stretch of the Black Esk in Dumfriesshire in 2018 (v.c.72) **Chris Miles**

While recording a square including the Castle O'er hill-fort (NY2492) on 25th August a new population of Holy-grass was found along the edge of the Black Esk in Dumfriesshire. This has so far been found in two places 3 km apart. Holy-grass has one previously known population in Dumfriesshire, at the back of the merse at Caerlaverock NNR where I found it in 1993. This is in a similar coastal habitat to some of the sites in Kirkcudbrightshire and is 35 kilometres from the new population. It is known from only 18 hectads in Britain and 1 in Ireland. These new inland populations are in a similar situation to those in Selkirkshire where Rod Corner found it on the Ale Water in 1965 and the site on the North Tyne where it was found by Michael Braithwaite in 2004 (Watsonia 25.4 p.423).

This stretch of the Black Esk also supports other interesting species. These include *Equisetum variegatum* (Variegated Horsetail), small populations of *Eleocharis mamillata* ssp. *austriaca*, (Northern Spike Rush) and two populations of the hybrid willow *Salix x laurina* (*Salix cinerea* x *S. phyllicifolia*) which are also exhibited.

Plants that missed the boat – Two garden escapes which, mysteriously, seemed to become 'lost' from the floras of Ayrshire (v.c.75) and Dunbartonshire (v.c.99) **Alison Rutherford with help from Dave Lang**

Alison Rutherford (AR), while exploring Largs (v.c.75) in the early 1980s, saw a silvery-white plant clothing a woodland floor. It was *Helichrysum petiolare* (Silver-bush Everlasting Flower).

Prior to 2017 – when a record was accepted from Inveralligin (v.c.105) – *H. petiolare* had never been recognised by the BSBI as occurring 'wild' in Scotland. Although aware of the Largs find, somehow Allan Stirling, the then-VCR, did not enter it into his great ledger – which, pre-MapMate, was the repository of all notable Ayrshire records. Yet despite all this, a reference somehow appeared in Stace (2010) to *H. petiolare* occurring as far north as Ayrshire. The current VC75 recorder – Dave Lang – has now also been made aware of it!

Around the same time, while botanising land bordering a development above Helensburgh (v.c.99) AR spied an *Aspidistra* among the bricks, a builder's barrow and garden rubbish tipped over a bank. Pot-bound but rooted-down it was removed – as in the 1980s it was not known that they

could grow outside. Re-potted, it soon became clear that it was *Aspidistra elatior* (Cast-iron-plant). However, the BSBI Database has only two records of *A. elatior* for the whole of the UK – both in England. A pot showing each plant is displayed.

Roxburgh and Selkirk plants found in 2018 (v.c.79 & 80)

Rod Corner & Jeff Waddell

Isatis tinctoria (Woad) v.c.79 - a single plant of this striking species possibly derived from long buried seed, was found by Luke Gaskell from a disturbed road side affected by the Selkirk Flood Prevention Scheme near Philiphaugh. It was cultivated in the past for its dye.

Thalictrum aquilegifolium (French Meadow-rue) v.c.79 - Jeff Waddell recorded a single large plant of this introduced species on the banks of the Tweed in woodland at Sunderland Hall. Not seen in v.c. 79 for 150 years.

Carex riparia (Greater Pond-sedge) v.c.80 - a BSBI group of Rod Corner, Luke Gaskell and Zoe Gardner found this large sedge introduced in an old pond at the Roxburgh Golf-course, Sunlaws.

Deschampsia cespitosa subsp. parviflora (Small-flowered Hair-grass) v.c.80 – found in woodland by a drive at Harestanes, Monteviot by Rod Corner. It appears to have few Scottish records which are all mainly in the south. It may well be overlooked or else it is genuinely local and rare.

Equisetum hyemale (Rough Horsetail) v.c.80 - Jeff Waddell with his botany group discovered a large colony (100m long) along the west bank of the Jed Water in a forested area, South-east of Southdean, only the second extant site.

Primula japonica (Japanese Cowslip) v.c. 80 – Rod Corner discovered this introduced species of wet ground was at the edge of Abbotsmoss, Melrose. Coincidentally it was seen again a few weeks later in a wet hollow on the Roxburgh Golf-course by a BSBI party.

Astroemeria aurea (Peruvian Lily) v.c.80 – was refound by Jeff Waddell and party after a gap of over 40 years in unmanaged grassland at Cavers, Hawick. It was presumably derived from planted stock.

Peeblesshire Plants in 2018 (v.c.78)

Luke Gaskell

With the 2020 Atlas deadline looming I have been filling the gaps in the less visited parts of Peeblesshire. The plants exhibited are not native to the area and have all probably arrived as a result of human activity.

Medicago sativa subsp. *sativa* (Lucerne) and *Cannabis sativa* (Cannabis) will have been deliberately planted though for somewhat different purposes (*sativa* = cultivated).

Conyza canadensis (Canadian Fleabane) is still rare in the VC but I expect that it will soon increase in urban areas.

Lepidium didymum (Lesser Swine-cress), *Chenopodium rubrum* (Red Goosefoot), *Stachys arvensis* (Field Woundwort) and *Persicaria lapathifolia* (Pale Persicaria) are all new or very rare in the Southern Uplands. These plants appeared growing by the roadside at Meggethead Bridge probably brought in with imported topsoil from the lowlands. It would be nice to find out where this soil came from as the area must have a rich weed flora.

Chenopodium polyspermum (Many-seeded Goosefoot) is rare in Scotland and may have arrived on forestry construction equipment. It was found in Cardrona Hill forest near Peebles where a new path had been constructed to improve public access.

Pilosella flagellaris subsp. *flagellaris* (Spreading Mouse-eared-hawkweed) was also near a heavily-used public road in the adjacent Glentress forest. A species which may be increasing.

Campanula trachelium (Nettle-leaved Bellflower) was also near the main forest drive in Glentress. It is likely to have spread from one of the wild flower mixes sown there. The forest is primarily managed for recreation. There are a lot of non-native species, not all of them deliberate introductions.

***Conyza* and Car Parks, two other rarities and a new record for Fife & Kinross (v.c.85) Sandy Edwards**

In the pavement outside Dundee bus station I spotted some unfamiliar plants. These turned out to be *Conyza canadensis* (Canadian Fleabane). A week later in the park and ride car park at Inverkeithing there was a good clump of it! This is a new recent record for v.c.85, last recorded in 1936, also a rare species in the northern part of the UK as can be seen on the map.

This is reminiscent of *Senecio inaequidens* (Narrow-leaved Ragwort) which George Ballantyne found there as a new record in 2007. Since then it has rapidly spread and is common in the Inverkeithing area and totally dominant in some places. Will the Fleabane do the same? Car-parks are great

distribution areas for some species whose seeds stick to tyres; the achenes of *Conyza* are well suited for this.

On a visit to Morton Lochs at Tentsmuir a small specimen of *Bidens cernua* (Nodding Bur-marigold) was found. There are no recent records for this but George has a mention in his book for a site at Loch Leven and there is a record in 1986 at Lindores. Again, a rare plant in the north of the UK.

I was sent a specimen of *Galinsoga quadriradiata* (Shaggy Soldier) from Liz Ingram found in an allotment in Inverkeithing. The second record for v.c.85, the only other record is from George in Kirkcaldy in 1970. It is very rare in Scotland.

Two large specimens of *Rosa multiflora* (Many-flowered Rose) have been recorded from the roadside at Leuchars. They may have been planted but have been there for several years, ever since the bypass was built. This is a new record for v.c.85.

A Mystery Sedge, West Perth (v.c.87)

Liz Lavery

In late June Catherine Bell took me to see some plants of *Ranunculus lingua* (Greater Spearwort) growing at the edge of a small pond near the sewage works in Kincardine Village. This species has only been recorded once before in VC87 at Doune Ponds in 1995. She made this exceptional discovery when searching for plants to complete units for 'identiplant', the online botany plant identification course sponsored by BSBI and FSC. While there I noticed the leaves of a very large sedge growing in profusion around the edge of the pond. With some difficulty I collected a few flowering stems.

On showing the sedge to Jane Jones, joint recorder with me for West Perth, we both thought it might be *Carex acuta* (Slender Tufted-sedge) never recorded before from VC 87, with only about 8 sites north of Edinburgh. We sent it to Mike Porter, BSBI *Carex* referee for confirmation. At first, he agreed but then was not quite sure and asked me to collect some more plants. He thought there were utricles present with both 3 and 2 stigmas suggesting the sedge might be a hybrid between *C. acuta* and *Carex acutiformis* (Lesser Pond-sedge) = *Carex x subgracilis* (*C. acuta x acutiformis*). The second specimens I sent were past their best and most stigmas had dropped off. I will have to go back next June and look for early flowers. There is only one known site in Scotland for *Carex x subgracilis* near Ardrossan. The sedge I collected in 2018 is on display.

2018 highlights, puzzles and problems in Westernness (v.c.97)

Ian Strachan and Ian Bonner

In 2018 more records were made (about 20,000) than in any previous year, thanks to the efforts of many different people. A small selection of notable finds, such as new sites for *Cephalanthera longifolia* (Sword-leaved Helleborine) and *Pyrola* species (Wintergreens), and an impressive stand of *Lycopodium annotinum* (Interrupted Clubmoss), will be illustrated. The mystery of *Lysimachia thyrsifolia* (Tufted Loosestrife) in Westernness is apparently solved, then deepens! Spread of the invasive *Lysichiton americanus* (Skunk Cabbage), and what is being done about it, is also described.

***Scheuchzeria palustris* L. in Scotland, a new locality (v.c.97)**

Paul A. Smith & Ian Strachan

A new locality for *Scheuchzeria palustris* (Rannoch-rush) in Westernness is described, set in the context of the extant Scottish distribution.

Railway station flora in Easter Ross – 17 years on (v.c.106)

Brian Ballinger

The 13 railway stations in Easter Ross (VC106) were visited twice in 2001 and twice in 2018 between May and August. All vascular plants in publically accessible areas were noted.

During this time rail services have increased and there has been an increased use of herbicide as well as the development and fencing off of some areas. Wild flowers have flourished in disused goods yards and car parks in the past, but these habitats have become less favourable in recent years.

In 2001 654 records were made of 203 species. In 2018 458 records were made of 137 species, a substantial reduction. 96 species recorded in 2001 were not refound in 2018 and in 2018 30 species were found not seen in the previous survey. A comparison with an incomplete survey in 2011 suggests that this reduction may now have levelled out.

Since 2000 new or first recent records have been made on stations for some species including *Orobanche minor* (Common Broomrape), *Sherardia arvensis* (Field Madder) and *Crassula tillaea* (Mossy Stonecrop).

Although management of stations sites is necessary, it is desirable that some wildflower sites are left undisturbed.

Recording in 2018 in West Sutherland (v.c.108)

Ian Evans and Gwen Richards

Recording during 2018 focused on eastern parts of the vice-county, from a self-catering base at Tongue. We are grateful to the Finnis Scott Foundation and the Caithness and North Sutherland Fund for help with expenses.

Three weeks' fieldwork generated some 3,500 records from 31 monads and noteworthy finds included:

Gymnadenia densiflora (Marsh Fragrant-orchid) found by Andy and Liz Amphlett near Ardvreck Castle (NC2423).

Goodyera repens (Creeping Lady's-tresses) spotted by Mike Donaghy beside the main path up Quinag (NC2327), an odd find, since nowhere near any trees.

Ophioglossum azoricum (Small Adder's-tongue) found by Clive Chatters in an old cultivation area at Cnoc Beag, Clachtoll (NC0426), far from its usual cliff-top habitats.

Two species of cultivated or waste ground plants new to West Sutherland occurred in gardens in Assynt: *Anagallis arvensis* (Scarlet Pimpernel) at Clachtoll (NC0427) and *Malva sylvestris* (Common Mallow) at Nedd (NC1331).

The limestone island, Eilean Choraigh in Loch Eriboll (NC4258) was visited on 20th July; there are no previous records? Amongst 112 species noted were *Coeloglossum viride* (Frog Orchid), *Draba incana* (Hoary Whitlowgrass) and a large stand of *Ophioglossum vulgatum* (Adder's-tongue) in a WW2 bomb crater. We also had a close encounter with a pair of otters. The wide variety of habitats recorded along the north coast and inland was illustrated by a selection of photographs.

Thanks to Gordon Rothero, Ro Scott and Francis and Margaret Higgins (Caithness) for their help with fieldwork, to other BSBI members for their records, and to Wildland Ltd. for transport to remote areas.

Progress towards a tetrad flora of the Outer Hebrides (v.c.110)

Paul A. Smith

Concentrated recording in v.c.110 over approx 15 years towards a tetrad flora has considerably expanded our knowledge of its flora. In 2017 a milestone was reached with the 200,000th record for the vice-county. A progress report is presented, together with some of the interesting discoveries made so far.

Hirta, St Kilda: an Island of Flowers (v.c.110)

Falgunee Sarker

St Kilda consists of an archipelago situated in the North Atlantic. These islands formed from a volcanic event. Flora and fauna arrived here over time and developed unique characteristics to adopt and adapt to this archipelago. I visited Hirta with National Trust for Scotland's voluntary work programme from 20th June to 3rd July 2013. I have recorded flora within the village area, Cleit, Black houses, Houses, Graveyard and Head Dyke, in Abhainn Mhor, in the Quarry, in the Gap and in and around the Helipad, Beach and Jetty. Plants recorded in the Helipad, Beach and Jetty area showed human influence.

In Hirta evolution has been playing its role in designing and shaping the flora. Here the survival of the flora means a constant battle between strong wind and Soay sheep grazing. There were wet ground, rocky ground and slopes supporting many plant communities. The growth of plants at high altitude was stunted but the flowers were not compromised.

List of plant photographs used in the posters

<i>Apium nodiflorum</i> (Fool's-water-cress)	<i>Pinguicula vulgaris</i> (Common Butterwort)
<i>Asplenium marinum</i> (Sea spleenwort)	<i>Plantago maritima</i> (Sea plantain)
<i>Athyrium filix-femina</i> (Lady fern)	<i>Polygala serpyllifolia</i> (Heath Milkwort)
<i>Dactylorhiza maculata</i> (Heath spotted orchid)	<i>Rumex acetosa</i> (Common Sorrel)
<i>Drosera rotundifolia</i> (Round-leaved Sundew)	<i>Saxifraga oppositifolia</i> (Purple Saxifrage)
<i>Festuca vivipara</i> (Viviparous Fescue)	<i>Selaginella selaginoides</i> (Lesser clubmoss)
<i>Hygrocybe splendissima</i>	<i>Taraxacum faeroense</i>
<i>Hypericum pulchrum</i> (Slender St John's-wort)	<i>Taraxacum pankhurstianum</i>
<i>Pedicularis sylvatica</i> (Lousewort)	<i>Thymus praecox</i> (Wild Thyme)

Dandelion Clocks

Michael Braithwaite

A poem that sets out a mystery waiting to be solved by you! See p.30.

Botany, Inspiration for Art!

Susan White

I have been interested in drawing, especially plants, all my life but as the years passed I seemed to be doing less and less drawing. After listening to BSBI Wildflower Half Hour Podcast and visiting their website I discovered an interesting link to "Identiplant", an online course for Beginner Botanists! I signed up for the course; I was fascinated by all the plant parts and loved

dissecting and using a hand lens to discover the inner world of plants. *Identiplant has proved an Inspiration and I have enjoyed every minute.*

I joined BSBI and have been involved in recording expeditions. It was great to be outdoors, looking and helping to record British Wildflowers, experiencing all weathers. I have been to beautiful locations, been bitten by horseflies and waded through rivers up to my knees, all great fun! I decided to keep a notebook/diary and it has proved a turning point for me, as it has re-kindled my love of drawing, which has now become central to my life.

In the summer I volunteered in the Herbarium at RBGE for two weeks as part of the British Data Blitz Project. The Herbarium is a treasure trove of beautiful specimens. I was very kindly given permission to draw in the Herbarium, and am currently visiting the Herbarium for two days a week to sketch Marine Algae! I am now working on Textile Designs based on recent Art Work.

On display are examples of my notebooks and watercolours of plants and algae.

Proposed Multi-Access Keys for *Taraxacum* (Dandelions) Leslie Tucker

Dublin Naturalists' Field Club hosted *Taraxacum* studies in May 2018, providing good company, fine weather and luxuriant herbs. Unfortunately, John Richards' hip-replacement surgery intervened; exposing the rump group's jizz-recognition weaknesses.

First day out, a robust clump, evidently section *Ruderalia* (Weeds), precociously keyed "petioles white to green"; but only unrecognisable options followed. Circumspect back-tracking revealed more-appropriate "pink"_rosette forms. Belatedly, we also admitted getting 'first sight' prejudice from disorderly involucre bracts; subsequently justified.

Had Plant Crib characters actually matched latterly, *T. dilaceratum* (Lacerate-leaved D.) might have been first-recorded. Conversely, its typically Dutch-described "rosafarvede bladbaser" forms would be mis-keyed!

Retrospectively, Handbook advises: p11 "[Consider] the range of possible forms." p16. "... three-dimensional, subtleties of leaf-shape [accentuate on pressing flat. Conversely,] involucre bud characteristics are mostly lost in herbaria; e.g. *T. aequilobum* (Twisted-Bracted D.) readily identified in the field." p17: "Because [developmentally] so plastic, identification depends on consideration of several characters at the same time; [so, dichotomous] keys are impracticable. [Alternative,] multi-access character state profiles [indicate] fewer species to be checked in systematic accounts."

Reviewing van Soest's (1969) pioneering interior and exterior leaf distinctions later, enabled identification of Dundee-growing plants as Swiss-described endemic *T. (sect. Hamata) paradoxachrum* (Lutescent Hook-Lobed D.). Tables condense descriptions into cryptic qualitative criteria and 5-grade least-most quantifications (or Handbook letter equivalents), including intra-rosular lamination-dissection differences.

The ecology of hybrid speciation in Eyebrights

Max Brown

Eyebrights (*Euphrasia*) are a group of 21 hemiparasitic plants in the UK. They poach resources from host plants yet can still photosynthesise. *E. vigursii* is an endemic hybrid species only found in Cornwall. It is thought to be the product of *E. micrantha* and *E. anglica*. For a newly formed hybrid species to establish, it must be reproductively isolated from the parent species. We hypothesise that reproductive isolation can be caused by differential specialisation of host species. To test whether *Euphrasia* species might be specialised on different hosts, we used common garden experiments, as they are ideal to study *Euphrasia* under standardised conditions. We firstly try to understand the variability in lifetime reproductive output (fitness) of one *Euphrasia* species on many different host species as a baseline. We then looked at the hybrid species *E. vigursii* with the parental species and grew them with hosts that occur in each of the *Euphrasia* species habitats. If there is specialisation of hosts we will see that some hosts confer large fitness benefits for one species while simultaneously lowering fitness for the other two. Results from two years' worth of common garden experiments in *Euphrasia* are presented.

Seed quality improvement for grassland restoration (Scotia Seeds)

Giles Laverack

Habitat loss and degradation has led to increased grassland restoration and demand for native seeds. However there has been little work to establish quality testing of native seeds. A survey of 8 European native species from 25 EU suppliers was conducted and the results show the potential for developing testing methodology and the great variation in the quality of seeds available in the market.

Winter Twigs: identifying woody plants in winter

John Poland

Identifying native and non-native trees, shrubs and woody climbers (xylophytes) once the leaves have dropped might seem impossible, but it is surprisingly easy and provides an enjoyable (and useful) activity on otherwise botanically dull winter days.

Following the culmination of six year's work, printed copies of the *Field Key to Winter Twigs* (visit <http://www.bsbi.org/twigkey> to order at pre-pub price) will be available for use alongside a wide selection of fresh specimens showing many of the unique characters found in twigs and buds. It will also be an opportunity for tree veterans to pit their ID skills against the specimens! Many will already know about the 3-whorled brown buds of *Fraxinus angustifolia* (Narrow-leaved Ash) compared with the opposite black buds of *F. excelsior* (Ash) but perhaps not about the stomata on the bud scales of *Salix repens* (Creeping Willow) - absent from *S. arbuscular* (Mountain Willow) or the helpful differences between *Quercus robur* (English Oak) and *Q. petraea* (Sessile Oak) buds.

This exhibit and field guide aim to make winter botany accessible by unlocking a whole new world of identification and aims to further extend the recording season to a year-round pursuit, as well as pique the interest of those who currently record by looking down and not up!

Botanical Society of Scotland (BSS)

Julia Wilson

The work of the Botanical Society of Scotland is highlighted this year by a series of 4 posters, showing undergraduate student work by Seth Ratcliffe and Robert Engstrom, and progress on our Urban Flora project. Seth won our prize for the best undergraduate final year dissertation on a botanical topic and Robert was awarded a grant for a student project. We also have two posters about this year's progress on our Urban Flora Project, by John Grace and David Chamberlain.

Assessing Epiphytic Lichen Diversity at a Whole Tree Scale in Edinburgh

Seth Ratcliffe, BSS Student Dissertation Prize Winner

The UK's epiphytic lichen flora is important for biodiversity on an international level; however, since the onset of the industrial revolution many species have disappeared from the urban landscape. Epiphytic lichens promote biodiversity and ecosystem function. However, they face many threats in urban habitats, such as nitrogenous pollution and modern arboricultural management. Most contemporary urban lichen studies have focused on data gathered only from tree trunks. This can lead to significant underestimations of diversity at the whole tree level and represents a fundamental gap in our understanding of urban biodiversity.

This project applied the OPAL air quality lichen survey at a whole tree scale in *Acer pseudoplatanus* across Edinburgh and investigated the response of diversity metrics across pollution gradients. It has shown for the first time that the diversity of OPAL indicator taxa is highest in tree crowns, is spatial-

ly stratified across the canopy and is maintained in high pollution areas. This study has provided new baseline information in a understudied area. It highlights the importance of tree crowns for urban epiphytic lichen diversity and urban biodiversity. Finally, it raises the need for further research into the effect of arboricultural management techniques on urban epiphytic lichen diversity.

Alternative Treatments for Giant Hogweed (BSS-funded project)

Robert Engstrom, Charlotte Neary, Jay Mackinnon and Rob Briers

Heracleum mantegazzianum (Giant Hogweed, GH) is strongly competitive and can reduce species richness and diversity of other plants. It is a public hazard as its sap contains photosensitising chemicals which can cause serious blistering of the skin. Management of smaller hard-to-reach stands is usually by glyphosate-based herbicide (GBH) and knapsack sprayers. Glyphosate is effective and cheap but can have adverse effects on non-target organisms and possibly on human health. The City of Edinburgh Council uses an estimated 4700 litres annually and is looking into alternatives to reduce this; however, little information is available to compare efficacy and practicality of alternatives.

Here we show that root cutting and a reduced concentration of GBH are not significantly different from the widely used standard when applied over consecutive years in difficult riparian terrain. In total, 75 quadrats were set up to record different GH growth variables (numbers, height, % cover) and one of three treatments randomly assigned (root-cutting, standard GBH, reduced GBH). Regrowth was recorded on average 23 days later. Data collection from permanently-marked quadrats is intended to continue for several more years. Future work will also test the effectiveness of above-ground cutting and stem injection in comparison to existing treatments and survey catchment area managers and conservation workers to explore acceptability of alternative treatments.

BSS Urban Flora of Scotland: Project Update

John Grace

Since 2015 we have been recording the urban flora of Scotland, creating a database that will be available for anyone. We record all plant species including mosses and liverworts, and we tag the record with habitat information. In this way we can explore how the changing townscapes are bringing about floristic changes. Moreover, we will be able to make direct comparison of east-west and north-south differences, and track species which are moving north under the influence of warming. We work closely with BSBI and several natural history groups. So far, we have visited a large

number of towns and cities but there are many more to look at. We have collected 25,000 records and encountered 1,218 species.

In the poster we illustrate a few of the interesting plants that have turned up in our survey, and we also present our species-accumulation curve, which relates the number of species found to the recording effort. This enables us to chart our progress and it also will provide an estimate of how many species there are altogether i.e. the species 'seen' and the 'unseen' species. For this we will use a family of theoretical models which began to be developed in the 1970s.

A Promenade along the Shoreline of Auld Reekie, BSS Urban Flora Project

David Chamberlain

This project has been designed to assess the effects of salt spray and urban pollution on the bryophytes along Edinburgh's shoreline. Mosses and liverworts have been recorded from each 1km square to a maximum of 100m from the High Tide mark between the city boundary west of S. Queensferry to the Musselburgh boundary at Eastfield. From the western semi-natural wooded shoreline to the uncompromising cityscape of Leith and Portobello the contrasts are stark, yet there are mosses and liverworts, even in the most challenging habitats.

Botanical news from Ben Lawers (v.c.88) and Glencoe (v.c.99)

Dan Watson (National Trust for Scotland)

Details of some of the work carried out by NTS ecologists over 2018, including monitoring of *Saxifraga cernua* (Drooping Saxifrage) and *Minuartia verna* (Spring Sandwort) at Ben Lawers and finds of new locations for nationally rare and scarce plants at Glencoe including *Carex lachenalii* (Hare's-foot Sedge), *C. saxatilis* (Russet Sedge), *Juncus castaneus* (Chestnut Rush) and *Poa glauca* (Glaucous Meadow-grass).

The point made is that interesting finds can be made in botanically interesting upland sites by searching areas other than the hotspots already known. Also, news of how *Sagina nivalis* (Snow Pearlwort) is faring on Beinn Heasgarnich, thirty-seven years after it was last recorded there.

BSBI Plant Families Workshops 2018

Faith Anstey

We held three very successful workshops this year: two on Plant Families, at Barony College Dumfries, led by Chris Miles, and at Hazlehead Aberdeen led by Aileen Meek, plus a Grasses workshop at Mugdock Park outside Glasgow. We also ran a Grasses workshop at the request of the BSS at Holyrood Education Centre.

There were two associated field meetings, for workshop participants and any other people interested in improving their field ID skills. One was at St Cyrus NNR and the other in Perthshire at Richard's Island on the Tummel.

Next year we hope to hold two or three Plant Families workshops – in the Borders, in the Aberdeen area and in Edinburgh, plus a Grasses workshop in the Stirling area. There is a new workshop in the pipeline, on Sedges and Rushes, which will probably be at Mugdock Park [see p.55, editor].

Plantlife Scotland

Alistair Whyte

For over 25 years, Plantlife has had a single ideal: to save and celebrate wild plants, fungi and the places where they live. We work with land managers, government, businesses, local communities and conservation organisations to save wild plants and their habitats. We **conserve and restore** native plant diversity on nature reserves, Important Plant Areas and local habitats through innovative programmes that lead the way. We **develop and lead restoration programmes** for our most important habitats so their future is secured for wildlife and people. We work with citizen scientists and academics to **build a body of evidence** to ensure the value of wild plants and fungi are taken into account by decision makers. We **campaign** for better recognition, protection and conservation action for wild plants. We **reconnect people** with the extraordinary heritage of our wild plants and fungi. We work with global partners to **identify, protect and manage** Important Plant Areas in key bio-geographic regions around the world.

We can't do it alone! If you, like us, believe that wild plants and their habitats should be thriving, please help us realise our vision. We are looking for people to... **get involved** by volunteering on conservation projects or on our outreach and education programmes; **share knowledge** by joining in our citizen scientist programmes, and supporting our campaigns; **support us** by joining our membership or donating to our projects.

<https://www.plantlife.org.uk/scotland>

Botanical Society of Britain and Ireland (BSBI)

Jim McIntosh

The BSBI is the leading organisation for amateur and professional botanists in Britain and Ireland.

- We promote the study of, and interest in, the British and Irish vascular plant flora

- We support and encourage, carry out and participate in research into the taxonomy, ecology, biogeography and conservation of our flora.

If you are not already a member of the BSBI - and would like to support and participate in our work – please join us! Pick up our membership leaflet and ask me, Jim McIntosh if you have any queries about joining. There is no better way to improve your field skills than by going on our field meetings & workshops. BSBI membership is also a great line in your CV if you are looking for related work.

A range of leaflets, including the most recent BSBI Annual Review and BSBI News are available to take away; recent issues of BSBI Scottish Newsletter and other BSBI publications are displayed. I would be pleased to supply promotional material to anyone who plans to go to events, such as conferences or workshops, which potential new members might attend. Check out the BSBI Scottish webpages on <https://bsbi.org/scotland>.

Invasive non-native plants – priorities for surveillance

SNH (Scottish Natural Heritage)

The EU Regulation on invasive alien species identifies twenty-three plant species whose potential adverse impacts are such that concerted action across Europe is required. As well as placing restrictions on keeping and selling these plants, the Regulation requires governments to consider how best to manage them within their territory.

The Scottish Non-Native Species Action Group has identified a Prevention List of species not yet established in the wild in Scotland and likely to become invasive here. It has also identified a short-list of established species as Management Priorities, which can be controlled effectively at a landscape-scale.

This poster highlights six of these species as priorities for recording in Scotland. Of these, two species (*Ludwigia grandiflora* (Water Primrose) and *Myriophyllum heterophyllum* (Variable-leaves Water-milfoil)) have not yet been recorded in Scotland, two (*Hydrocotyle ranunculoides* (Floating Pennywort) and *Myriophyllum aquaticum* (Parrot's Feather)) have been recorded in a very limited number of locations and have been or are in the process of being eradicated, and two, *Lysichiton americanus* (American Skunk-cabbage) and *Gunnera tinctoria* (Giant-rhubarb) are already established in certain geographic areas but generally absent from others.

BSBI recorders can help with national surveillance efforts by being on the lookout for these species. Any records submitted to the BSBI database,

Scotland's Environment Website or iRecord will be assessed by SNH and SEPA, enabling an appropriate response.

The British Pteridological Society for fern enthusiasts **Bridget Laue**

The British Pteridological Society (BPS) has a Scottish group that visits and monitors ferns in the wild and enjoys cultivating them in our gardens; everyone is welcome to join our excursions. We have leaflets offering suggestions for growing ferns and also an assortment of books about ferns and lycophytes (clubmosses and allies).

Please talk with us for more information. This year our display will also include information about a possible new species of moonwort (*Botrychium nordicum*) in Scotland.

BSBI Photographic Competition **Natalie Harmsworth**

A beautiful display of 74 photographs for this year's competition is on show. Vote for your favourites in each of the two categories: Plants and People and Plants and Pollinators. The winning photographers will be announced after the main talk and, if present, will be awarded their prizes. The winning photographs will be displayed at the prize giving and will also appear in future BSBI publications.

BSBI Plant Identification Table **Douglas McKean**

A great opportunity to get expert help with identification with so many experts in the audience! Remember to bring your specimens and handlens!

Introducing the iRecord plant card **Oliver Pescott**

iRecord (www.brc.ac.uk/irecord), and its associated app (<https://irecord.org.uk/app>), is an increasingly popular online biological recording system, allowing for both personal data management and flow to other organisations (including the BSBI and the NBN). This poster overviews a new "grid-based" or "Atlas" mode of recording available on that platform, developed in association with the BSBI and its recorders.

RBGE Library **Lorna Mitchell, Head of Library, Archives & Publications**

The Library of the Royal Botanic Garden Edinburgh (RBGE) is Scotland's national reference collection for specialist botanical and horticultural resources. With more than 60,000 books, the earliest of which dates back to the 15th century, 150,000 journal volumes, maps, nursery catalogues, botanical art, photographs and *hortus sicci* the RBGE Library is one of this country's largest research libraries. Subjects covered include systematic botany, floras, plant biodiversity and conservation, economic botany, medicinal

plants, botanical illustration, plant collecting and botanical history and biography.

The RBGE Archives holds manuscripts, images and photographs relating to the history of the Garden from its beginnings in 1670 to the recent past. The collection also includes correspondence and diaries relating to plant collecting in India and China in the 19th and 20th centuries, for example papers relating to George Forrest and Joseph Rock.

The Library is open for anyone to use on a reference-only basis from 10am to 4pm, Monday to Friday. Access to the Archives and Special Collections (Rare Books collection, Illustrations, Nursery Catalogues, etc) is by appointment. The Library catalogue is available to search at <https://rbge.kohapfts.co.uk/> and a collection-level listing of the Archives can be found at <http://atom.rbge.info/>.

RBGE Herbarium

Elsbeth Haston, Deputy Herbarium Curator

The Herbarium of RBGE currently houses 3 million specimens, of which we estimate that over 500,000 were collected in Britain and Ireland. These specimens are an incredible resource for botanists for a wide range of scientific research and we have many researchers from UK and from around the world coming to work with the collections. They represent over 300 years of plant and fungal diversity, including many rare or extinct species. We welcome more Scottish botanists to use these collections and we are also working to make them more accessible through digitisation.

We have been holding an annual Datablitz to increase the number of specimens with a basic catalogue record, we are managing projects to image more of these specimens, and we have been making these images available on citizen science websites for volunteers to transcribe the labels. There are now over 130,000 specimens catalogued from Britain and Ireland of which over 31,000 have been imaged. They are available on the Herbarium Catalogue at <http://data.rbge.org.uk/herb>. We also have a dedicated Herbarium Catalogue for the British and Irish collections where you can also search by Vice County at <http://data.rbge.org.uk/search/herbarium/?british=1>. You are very welcome to visit and use the collections. To arrange, please contact us at herbarium@rbge.org.uk. You can also follow us on Twitter @RBGE_Herbarium.

Dandelion clocks

Michael Braithwaite

This poem was exhibited at the Scottish Botanical Conference. Any suggested answers should be addressed to Michael, or to the editor.

As spring turned into summer a line arose along the lane –
The flowering stems of dandelions elongate in synchrony,
When the flowers are all over, the flower-heads shut up tight
Then, once the stems have straightened, the heads open once again –
Open to reveal the wonder of the clock with many hands,
The seed-topped domes covering of feathery parachutes.

When I saw the long line of clocks late one sunny afternoon
A stiff breeze was gusting, so I thought I'd see them blow.
I walked onward down the lane and slowly back again
Not a single seed detached though intently I watched
I tried again the next day, the weather much the same.
Of the clocks I had seen before, full half had blown in the wind
So I watched those remaining, once again no movement seen.
Then I picked a clock low down in quite a sheltered spot
And I lifted it up slowly to the level of the hedge –
Whoosh – it all disintegrated, lifted in a gust of wind
Seeds parachuted far and wide, just as they properly should.

One fine day in late September yet another open clock
But this time home at Clarilaw alongside my tarmac drive.
The wind was blowing near a gale, but just half the clock had gone,
So expectantly I waited, stood still and watched in vain,
Then I left impatiently and walked along the lane.
Now by the time I had come back the wind was even stronger –
Saw the stem of the dandelion bending almost to the ground
Still no movement in the seed-clock, it was quite beyond belief.

Clocks are there to tell the time
But with these I know not where to look,
So their time of day for blowing
Is a mystery still not solved.

MEB, Clarilaw, 15 October 2018

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Reports from the vice-county recorders

Dumfriesshire (vc72) *Chris Miles*

Just over 5,700 records have been collected and submitted via Mapmate in 2018. These fell in 97 monads (34 with more than 40 records), 70 tet-rads and 26 Hectads. Progress with Atlas coverage is pretty good. Only 5 hectads now have less than 70% of all taxa not refound since 2000 a fall from 11 last year. These will be a focus for the Dumfries Botany Group in 2019. Progress has been made with validation but there is a task to work through the remainder this winter/spring. This year saw the setting up of a new Dumfries Botany Group. We met 9 times with up to 11 folk visiting a range of habitats and locations. Interesting species found on our meetings included *Imperatoria ostruthium* (Masterwort), *Lepidium didymum* (Lesser Swinecress) twice and *Bidens tripartita* (Trifid Bur-marigold) the first post 2000 record. I led a Plant Family workshop at the Barony College in June attended by 15 or so people. I attended the Wigtownshire BSBI recording week and helped digitise the records from this. Some significant finds, including *Hierochloa odorata* (Holy-grass) in the Black Esk valley were shown at the Annual General and Exhibition Meeting at Ormskirk. Other highlights this year include a NCR for *Trichophorum caespitosum* s.s. (conf. J Roberts), refinding *Hymenophyllum tunbrigense* (Tunbridge Filmy-fern) near Langholm after 56 years and *Erysimum cheiranthoides* (Treacle Mustard) near Lockerbie after 45 years.

Kirkcudbrightshire (vc73) *David Hawker*

Fewer monads were recorded this year, mainly in the VC's south & central parts. c.3500 records from many contributors were entered into MM, grateful thanks to all. Native taxa highlights were *Viola reichenbachiana* (early dog-violet, 3rd VC site), *Ophrys apifera* (bee orchid) and *Knautia arvensis* (field scabious) (both 2nd VC sites), 2 *Epilobium* hybrids (NCRs) with a third hybrid (2nd VC site), and *Lagarosiphon majus* (horned waterweed, 2nd VC site, only previous record 1978); new sites/hectads for VC scarcities *Osmunda regalis* (royal fern), *Chaenorhinum minus* (small toad-flax), *Radiola linoides* (allseed), *Centunculus minimus* (chaffweed), *Scutellaria minor* (lesser skullcap), *Sanguisorba officinalis* (great burnet) and a large population of *Botrychium lunaria* (moonwort) on a disused rail-bed. Non-native NCRs included *Petasites japonicus* (giant butterbur), *Acaena ovalifolia* (pirri-pirri bur) and *Ceratophyllum demersum* (rigid hornwort). A successful joint VC72/73 Plant families workshop in May attracted 15 people, while 15 RSPB staff/volunteers attended a coastal species training day. The KBG held 11 field meetings between March-October, one to

monitor the only two *Thelypteris palustris* (marsh fern) colonies in Scotland, submitting details to SNH to support their SCM. A rush training day attracted 11 local people. We surveyed a species-rich community buy-out site, and populations of several CRP species were monitored during the year including *Meum athamanticum* (spignel) and *Pyrola minor* (common wintergreen). I gave two talks to local groups. 2019 plans are to blitz the upland areas and survey the rarely visited westernmost sites. Complete coverage of the VC is unlikely.

Wigtownshire (vc74) Alan Silverside

The Recording Week in June based at Lagafater Lodge near Stranraer, collected over 6,600 records in 54 monads in 40 tetrads in 21 hectads. These included 312 new hectad records, and 23 New County Records of mostly alien shrubs and trees but including a few natives such as *Avenula pratensis* (Meadow Oat-grass) at Culhorn Loch and *Carex elata x nigra* = *C. x turfosa* at Elrig Loch which is only the second record of this hybrid in Scotland. There were some particularly nice finds of *Corallorhiza trifida* (Coralroot Orchid), *Orobanche hederæ* (Ivy Broomrape) and *Utricularia stygia* (Nordic Bladderwort) - the latter unusually in flower. Thanks to all the Recording Week participants and to Marion Moir & Chris Miles for digitising the records. Record cards were also digitised for various sorties into Wigtownshire by neighbouring recorders Nick Stewart and David Hawker, resulting in a further 2,000 records (various years). There was also a nice contribution of rare records from the Mull of Galloway from Trevor Lording including an NCR of *Catapodium rigidum* (Fern-grass). While all this has gone a long way to plug gaps in Wigtownshire's coverage, there is still much to be done in the final Atlas 2020 field season. We would warmly welcome records from visiting botanists.

Ayrshire (vc75) Dave Lang

2018 saw the Ayrshire recording group continue its recording trips – informed more than ever before by the fantastic level of Atlas 2020 coverage analysis available through the BSBI Database. Though we had no BSBI-wide field meetings this year, we were helped from some novel sources, such as one member concentrating recording in the area around their home. This yielded numerous post-2000 firsts and confirmed *Vulpia myuros* (Rat's-tail Fescue) as a new addition to the County flora. We were also fortunate that the base for the Wigtownshire Recording Week was on the Ayrshire border – allowing for some additional recording in parts of our County that are furthest from where many of us live. This too yielded numerous records of notable taxa and added another first - *Apium nodiflorum* (Fool's Water-cress). A trip to Ailsa Craig was also organ-

ised where, though the hot summer scorching had led to a lower species count than we might have hoped for, we re-found *Malva arborea* (Tree Mallow) in one of its two Ayrshire stations. Outwith the season we continued validating data on the DDb and will probably have largely completed this task by the time fieldwork begins again in earnest for 2019. A priority for the coming year will be to try to re-find all of Ayrshire's notable aquatics records from the 1996 Scottish Lochs Survey in order to avoid any appearance of a sharp decline in aquatic species across the County when the Atlas 2020 analysis is undertaken.

Renfrewshire (vc76) Keith Watson

The key achievement this year been the successful transfer of the BioBase database records to the BSBI DDb. This now holds a full set of the records used to generate the maps for the Flora of Renfrewshire, published in 2013. Additionally some more recent records for VC76 (and a few other VCs) have also been transferred to the DDb. Actual fieldwork in Renfrewshire has been unfortunately limited but it is estimated that about 45000 post 2000 records are now in the database. Priority maps will be generated which will hopefully provide an incentive to target squares in the coming 2019 field season. Any local recorders who want to get out and enjoy the delights of Renfrewshire, please get in touch!

Lanarkshire (vc77) Michael Philip

There are now 53 people in our network, many of whom have been active in fieldwork, photography or sending in records. We held 33 field outings in 2018, recording 949 species in 515 monads. 11,668 records were added to the database, including 352 new hectad records and 52 new vice-county records. The latter, somewhat surprising, statistic does include many escaped plants in the back lanes of Glasgow and a number of less common variants, e.g. the 'white forms' of *Geranium robertianum* (herb robert), *Epilobium hirsutum* (great willowherb), *Lunaria annua* (honesty), *Chamerion angustifolium* (rosebay) and *Campanula trachelium* and 'flore pleno' forms of *Saponaria officinalis* (soapwort) and *Tanacetum parthenium* (feverfew). However, there was particular excitement about finding only the 4th Scottish location of *Plantago afra* (Glandular Plantain). This was on a quayside near the Glasgow Science Centre and is the first record of the species in the west of Scotland. Another nice NCR was *Dactylorhiza purpurella* var. *cambrensis*, recorded in a muddy pond margin during very low water levels at Lochend Loch. And we are pleased to report that Scotland's only recorded colony of *Hordelymus europaeus* (Wood Barley) has slightly grown in extent since previously visited in

1999. There is a good prospect of our entire vice-county meeting the notional data targets for Atlas 2020 (i.e. every hectad with 5 'good' tet-rads and 75% of our all-time species list found or re-found this century). All that's needed is a determined and well-focused team effort right through 2019. All help welcome!

Peeblesshire (vc78) Luke Gaskell

It has been another productive year with 4235 new records at monad or better resolution and 30 monads surveyed. These records are now in the DDb. Most of Peeblesshire is reasonably well covered with about 45,000 post 2000 records and 11,000 in previous date classes. This year I have been concentrating on the more remote uplands in the south of the county.

Some plants have been flourishing. *Saussurea alpina* (alpine saw-wort) was re-found at the three sites visited though it's disappointing that some new "natives" *Betula nana* (dwarf birch) and *Salix lapponum* (downy willow) had been planted on one of these craigs. *Hypericum hu-mifusum* (trailing St John's-wort) has now been recorded at six sites, up from one pre 2000 record. 2017's wet summer may have contributed to its spread. *Armeria maritima* (thrift), a new halophyte for Peeblesshire was growing on a wet verge on the A72 together with abundant *Triglochin palustris* (marsh arrowgrass) [sadly not *T. maritima*]. Nearby *Allium carinatum* (keeled garlic) was spreading along a dry bank. This is a second vc record and while this alien garlic is not uncommon in the warmer districts to the east and west its only previous station was at Pee-bles. Another attractive new garden escape was *Symphytum grandiflo-rum* (creeping comfrey) which as its name suggests was covering quite a bit of ground in mature broad-leaved woodland.

This season I hope to further explore the uplands and validate some old records ,for example *Carex vaginata* (sheathed sedge) for which I have no records in this date class. All help would be appreciated.

Selkirk and Roxburgh (vcc79/80) Rod Corner and Jeff Waddell

Rod is making progress with his Flora. He attends meetings of TWIC for the botanical assessments of Wildlife Sites and checks the validity of the records they hold. He was able to help with Pete Stroh's verification que-ries of rare and threatened plants. The arrival of BSBI Conifer referee Matt Parratt to the area has given a welcome boost to the recording of non-native trees and shrubs with several species of interest found on trips to Cavers House and Floors Castle, both in Roxburghshire, e.g. *Ju-glans regia* (walnut) and *Tropaeolum speciosum* (flame nasturtium) at

Cavers. A very productive Selkirkshire conifer recording trip to Bowhill in December led by Matt with Jeff and Sarah Sanders recorded 30 species of conifer including several new county and country records, e.g. *Wollemia nobilis* (wollemi pine), many not in the Mapmate taxon dictionary!

1,150 records were collected from Selkirkshire in 2018 with contributions from Jeff, Sarah Eno, Luke Gaskell, Rod Corner & Faith Anstey. The botany group, comprising Jeff, Matt, Roger Holme and Stuart MacPherson visited the Eldinhope Burn, finding a new colony of *Rubus saxatilis* (stone bramble) and updating *Mycelis muralis* (wall lettuce), with three sites in the county and last recorded here in 1976. Other significant records included new sites for *Antennaria dioica* (catsfoot) and *Eriophorum latifolium* (broad-leaved cotton-grass) from the Scabcleuch Burn by Jeff; *Listera ovata* (twayblade) & *Sanguisorba officinalis* (great burnet) from Dunhogg Moss by Sarah Eno; *Ononis repens* (rest-harrow) from Murray's Cauld by Rod; *Echium vulgare* (viper's bugloss), *Onopordum acanthium* (cotton thistle) and *Isatis tinctoria* (woad) from Philiphaugh by Luke and *Hymenophyllum wilsonii* (Wilson's filmy fern) from Kirkhope Linns also by Luke. The last species hasn't been recorded from Selkirkshire for 20 years.

Approximately 6,000 records were collected from Roxburgshire this year, 2,175 of these were made during the three day field meeting based at Kelso in July. Jeff hosted trips with his local botany group, covering about 15 tetrads during the year. Tetrads with no or few records and promising habitat are targeted, and this turns up lots of new all-time and post-2000 hectad records. For example: *Dactylorhiza incarnata* (early marsh orchid) at Threepwood; *Cicuta virosa* (cowbane) at Hog Ground Loch Oxnam; *Equisetum hyemale* (Dutch rush) at Wauchope Forest; *Trollius europaeus* (globeflower) at Southdean and *Datura stramonium* (thorn-apple) at Lempitlaw. Jeff also refound a lost colony of *Gagea lutea* (yellow star-of-Bethlehem) on Kelso Anna, last seen there in 1996. A late season trip to Essenside Loch by Jeff and Matt literally got a good haul of aquatic plants with *Chara aspera*, *Potamogeton lucens* (shining pondweed) and *P. praelongus* (long-stalked pondweed). Two new populations of *Scabiosa columbaria* (small scabious) were found at Cavers Knowe by Jeff, Matt and Laura Copley. Luke also made a significant contribution of 550 records including the infrequent hybrid *Carex x involuta* at Muirhouse Law Tile Works and *Lactuca virosa* (great lettuce) at Charlesfield. Luke also got a good range of arable weeds and introductions at Leaderfoot in *Fumaria bastardi* (tall ramping fumitory), *Setaria viridis* (green bristle-grass) and *Silene noctiflora* (night-flowering catchfly). Rod refound *Calamagrostis canescens* (purple small-reed) at Linton Loch and recorded *Berberis buxi-*

folia (box-leaved barberry), established at Wolfelee. Michael Braithwaite made the NCR of *Ligularia dentata* (leopardplant) in Jedburgh.

Jeff has begun planning for a 2019 BSBI Atlas recording meeting, based in Hawick and is likely to undertake an increased amount of recording next year as he is due a four-week RSPB sabbatical in 2019, which will likely be botanical recording based. If anyone would like to borrow Jeff for a week or four to do botanical recording in your county get in touch!

East Lothian (vc82) Helen Jackson

Tremendous thanks to Jim McIntosh and Marion Moir for organising, respectively a three-day recording meeting based in Haddington in June and follow-up recording, also for digitising and MapMating the resulting records and many more. At least 33 tetrads were visited and 18,000 records added to the DDb from these and other sources. Many thanks to everyone who came to record or contributed records in other ways. I was pleased to meet some of you in Haddington and at the Scottish Botanists' Conference and at the BSBI Christmas lunch. NCRs include *Chenopodium murale* (Nettle-leaved Goosefoot), *Spirodela polyrhiza* (Greater Duckweed) and the first confirmed record of *Crepis vesicaria* (Beaked Hawk's-beard) from the meeting; *Malus sylvestris x pumila* (Crab Apple x Apple) and *Rubus tricolor* (Chinese Bramble) from earlier data. Meanwhile I am continuing to sort out and feed in the backlog of paper records and generally trying to catch up with what still needs to be done.

Midlothian (vc83) Barbara Sumner.

8204 records were added to MapMate, gathered from 189 monads in 15 hectads. Grateful thanks to the 29 individual recorders (6 of whom recorded monads) and 4 groups, and to the determiners. Remaining gaps in monad-recording are mostly in the uplands. Rarities remain to be re-found. Difficult species require attention. Volunteer help will be much appreciated. Validation is proceeding slowly.

A highlight of 2018 was a New Record for Scotland. *Lotus dorycnium*, formerly *Dorycnium pentaphyllum* was recorded by Richard Milne on 17th July in waste ground near the River Almond at Newbridge, and determined by David Pearman (see photo on inside front cover). Nine other NCRs were found elsewhere. A rarity not seen in VC 83 since pre-1934, *Lithospermum officinale* (Common Gromwell), was found near Loanhead Farm east of Pathhead by Marion Moir. Another rarity, *Plantago media* (Hoary Plantain) was re-found at Carrington, its long-known churchyard site (1987 and earlier). The other long-known site, around the lime kiln

near Newtongrange, is now a private zoo. No *P. media* plants were found there in 2018, but two new sites were found near Ratho by David Merrick.

I helped at Faith Anstey's grass ID class at the Holyrood Park Education Centre (BSS event), and led a plant ID walk for students in Roslin Glen Country Park (RSPB event). I also joint-led a recording walk at North Berwick with John Grace (BSS Urban Flora project). Representing the BSBI I attended steering group meetings for Local Biodiversity Sites, and for the Edinburgh LBAP. Conferences attended were BSBI and TWIC events.

West Lothian (vc84) Jay McKinnon

I was appointed VCR for West Lothian in October 2017 following the retirement of Jackie Muscott. Thanks to local recorders and largely to Jackie and her excellent work over many years, West Lothian is already rather well recorded. Nevertheless, there are a few gaps which I plan to fill in 2019, targeting seven tetrads and 21 monads in six of the nine hectads which the VC overlaps. Notable recent finds include *Barbarea verna* (American wintercress), *Rorippa amphibia* (great yellow-cress), *Trifolium aureum* (large trefoil) and *Campanula lactiflora* (milky bellflower) (all 1st VC records), found on Pumpherston Bing by David Merrick in 2015-17 but only newly added to the DDb. David also recorded *Potentilla indica* (yellow-flowered strawberry, new to the VC) at Kirkliston.

Together with Hannah Humphreys, a student at Edinburgh Napier University, I have started a local botany group, The Foliage Fraternity. The group is aimed particularly at beginners and improvers, especially those who are new to recording and may never have been on a BSBI excursion before. We would also warmly welcome any experienced botanists who are happy to help beginners and don't mind a slow pace with lots of keying things out. So far, the group has 29 members and have met twice. Contact us by email to thefoliagefraternity@outlook.com. I also contribute to The Wildlife Information Centre recording excursions, Local Biodiversity Steering Groups for VC84 and neighbouring counties and to the Botanical Society of Scotland committee.

Fife (vc85) Sandy Edwards

About 12 tetrads and 50 or so monads were recorded in 2018. This was about 2,700 records but a lot more were uploaded to the DDb from other people or older records, about 4,500. Still a few gaps in West Fife, but a 4 days BSBI field meeting is planned for June 5th - 9th based near Dunfermline. Also, this year's recording, with the help of a few other people, will concentrate on the tetrads with few records. The records are always entered soon after recording and then validated about a week later on

the DDb. Most of the post 2000 entries have been validated except for the hectad in the NE of Fife. The photos of rare plants are updated on Flickr, the link is on the BSBI website for vc85. There were a few outings with various groups, the two biggest were Cullaloe and Morton Lochs at Tentsmuir. Other outings included two in winter with a group who wanted to practise using the Vegetative Key. Emails are sent to a list of about 15 people who are interested in outings in vc85, recording and learning; a newsletter is sent to them. I am sent either individual records of interest or the occasional voucher specimen from a few people and also questions on the Facebook (FifeandkinrossPlants) page.

The most interesting new records this year were *Bidens cernua* (Bur-marigold) at Morton Lochs, *Conyza canadensis* (Canadian Fleabane) at the Park & Ride at Inverkeithing and *Galinsoga quadriradiata* (Shaggy-soldier) from an allotment at Inverkeithing (see abstract p.14). A second record of *Cryptogramma crispa* (Parsley Fern) was found in the Lomonds by the Dundee Naturalists. Also new sites for *Apium inundatum* (Lesser Marshwort) and *Juncus balticus* (Baltic Rush) were recorded.

Stirlingshire (vc86) Philip Sansum

6500 records of about 600 species have been made and digitised for 2018 and a small amount of survey work remains to be processed at the time of writing. 15 of the county's 10km squares received some recording effort and the number of tetrads with acceptable levels of recording for the Atlas 2020 project rose by a further 13. This was good progress but slightly shy of our target and leaves a considerable challenge for the final season. Plans are underway to mobilise a local recording group to help address this in 2019. A rainy recording weekend based at Drymen in the west of the county in August was attended by 12 people and produced several interesting records including the first of *Tofieldia pusilla* (Scottish Asphodel) known to us since 1877 and a number of upland sedges with restricted distributions in the county. Elsewhere an extensive survey of the Castle Mound in Stirling was organised by Roy Sexton in partnership with the SWT and BSS, and local BSBI members Jill Williams and Rick Goater undertook useful monad-based surveys in the east of the county. Natalie Harmsworth kindly contributed records from TWIC summer excursions to Kippen Common and Killearn Glen.

Matt Harding was appointed joint VCR and is continuing to generate much-needed records for Atlas 2020. He has begun work drafting an RPR for vc86 and we hope to progress this project rapidly once recording for Atlas 2020 has come to an end.

West Perth (vc87) Jane Jones and Liz Lavery

In 2018 we and others have collected over 8,000 records for VC87. Parts of the VC still needing attention are the extreme west and east of the VC, parts of the Ochils and the mountainous area surrounding Balquhiddel Glen. We held two meets with PSNS, one at Doune Ponds and the second at Braco. In May Liz and Brian Ballinger led an 'Urban Flora' meet to Menstrie village. Liz helped SNH with the Chris Packham Bioblitz at Flanders Moss in July. Also in July there was a BSS Alpine Meeting to Stob A' Choin, Balquhiddel, two groups tackled different areas of the cliffs and found a good selection of rare plants typical of such habitats. A joint outing was also held with the Woodland Trust in August when we explored some cliffs in a remote part of the Trust's estate which without transport would have been difficult to do in a day. A small party went on an expedition to hunt for *Saxifraga hirculus* (Marsh Saxifrage) to Maddy Moss walking in from Glen Sherrup. Several interesting flushes were discovered with *Ranunculus hederaceus* (Ivy-leaved Crowfoot) and *Sedum villosum* (Hairy Stonecrop). But we found no sign of Marsh Saxifrage, last recorded from here in the 1850s. Some work has been done on a checklist for Perthshire. Interesting finds in 2018 included: *Phalaris aquatica* (Bulbous Canary-grass), *Potamogeton crispus* (Curled Pondweed), *Nitella flexilis* s. l. (Smooth Stonewort), *Hymenophyllum wilsonii* (Wilson's Filmy Fern), *Persicaria runcinata* and *Ranunculus lingua* (Greater Spearwort). Finally, for *Carex x subgracilis* (*C. acuta* x *acutiformis*) see abstract p.15

Mid-Perth (vc88) Alistair Godfrey and Jim McIntosh

Just short of 9,000 records were made in VC88 in 2018 including 118 new hectad records and four new county records. Only seven out of a total of 55 hectads now have fewer than the target number of five tetrads per full hectad surveyed. A highlight for the recorders was a week spent in a remote self-catering cottage in upper Glen Lyon, with Tim Rich and John Holland and Dan Watson joining us on excursions. Over the week we collected a total of 2,700 records from 21 tetrads in 5 hectads - many of which had been very poorly recorded previously. We explored high corries and some summit ridges on Stuchd an Lochain, Meall Ghaordaidh, Meall Buidhe & Beinn Heasgarnich and obtained many quality records from these areas. Most notable finds were 11 populations of *Bartsia alpina* (Bartsia) and 4 populations each of *Hammarbya paludosa* (Bog Orchid), *Juncus alpinoarticulatus* (Alpine Rush) and *Dryas octopetala* (Mountain Avens). The hydro-electric dam Lochan an Damh provided many surprises including *Leontodon saxatilis* (Lesser Hawkbit) & *Potentilla anglica* (Trailing Tormentil). Neale Taylor also made a very valuable

contribution of records, many of which were new hectad records of arctic alpiners. We have begun an exercise to revisit populations of Agrimony that have been variously identified in the past, to collect specimens and get them refereed. But one of the main targets in 2019 will be the under-recorded hectads - mainly around Loch Rannoch. It would also be great to focus on aquatics which are generally under-recorded. We would warmly welcome help from any local or visiting botanists.

East Perth (vc89) *Martin Robinson*

4,932 records were made in 2018, well up on 2017. The records were made in 64 monads within 35 tetrads. The low water levels in the summer were a great boon, making it much easier to reach some excellent limestone crags in upper Glen Tilt. In this area, over several days, new sites were added for *Alchemilla glomerulans* (Clustered Lady's-mantle) and *A. wichurae* (Rock Lady's-mantle), *Carex rupestris* (Rock Sedge) and *C. vaginata* (Sheathed Sedge), *Coeloglossum viride* (Frog Orchid), *Dryas octopetala* (Mountain Avens), *Equisetum pratense* (Shady Horsetail) and *Juncus alpinoarticulatus* (Alpine Rush). Another highlight was following up an unrecorded burn on Dalnamein in the forest of Atholl and finding two extensive colonies of *Drosera anglica* (Great Sundew), which is rare as far east as this. At the top of the burn was *Carex limosa* (Bog-sedge), also quite rare in the vc. A new colony of 30 spikes of *Pseudorchis albida* (Small-white Orchid) was found within 1.25 km of my house by the estate owner, who had attended my orchid course at Kindrogan. No new native species were added to the VC list in 2018, though confirmation of a new VC record from 2017 was made: *Fumaria reuteri* (Martin's Ramping-fumitory) in Strathmore. The next edition of the Rare Plant Register should appear later in winter 2018/19, including 31 new records from 2018 and a large number updated.

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

Despite the fine weather, all three Angus Recorders were occupied with other activities and only a modest amount of recording was accomplished. Some new partners were pressed into helping with recording and several 'blank' tetrads were filled including areas of grouse moor which, unsurprisingly, proved to have very few species of vascular plants away from wetlands and watercourses. One highlight of the coverage of grouse moors was the discovery of several new populations of *Betula nana* (dwarf birch) in areas of blanket bog. Ash dieback appears to be on the increase in Angus. More recording is planned for the coming year. Little validation of DDb records has been undertaken. Reports by other

botanists were gratefully received and entered. In addition, we were delighted to receive a bundle of record cards from late 2000's and these have now swelled the numbers on the DDb.

Kincardine/North Aberdeenshire (vcc91/3) David Welch & David Elston

It has been a welcome development for an elderly recorder (DW) to be joined by a younger fitter one (DE), so the heavy workload can be shared, some hard-to-reach places can be visited, and the accumulated knowledge on rich sites can be securely passed on. Tetrad recording was again a high priority this year, but we also directed attention to hectads in which a sizeable proportion of the species observed before 2000 had not since been recorded. At least 70% of the tetrads in most hectads in our vcc now have some post-2009 records, and 180 tetrads have 100+ recent records, the average for these tetrads being c. 150 species. Much validation was done. Hectads very lacking in recent records were mostly in the central Buchan lowlands of vc 93, but one part-hectad in vc 91 had no recent records and contained Mount Battock, the highest peak in vc 91. So DE made the long trek to its summit at 778m and was rewarded by finding *Cornus suecica* (Dwarf Cornel), an NCR. Elsewhere, DE found for vc91 a second colony of *Astragalus glycyphyllos* (Wild Liquorice) in a rather inaccessible bay north of Tod Head, a second colony of *Melica uniflora* (Wood Melick) in a gorge near Clattering Brig, and *Ceratophyllum demersum* (Rigid Hornwort) in Loirston Loch, an NCR. DW made two NCRs in vc 91, *Trifolium incarnatum* (Crimson Clover) in farmland and *Allium sphaerocephalon* (Round-headed Leek) in a farm storage area, and added a second record for vc 93 of *Gaultheria shallon* (Shallon) from woodland north of Cuminestown.

Monitoring *Saxifraga hirculus* (Marsh Saxifrage) flowering at a Cabrach site was a major task that DE took over this year. The count was similar to the two previous ones by DW and somewhat greater than when the system of marker pegs was set up 20 years ago. Another pleasing hand-in-on was DE's recording of *Salix herbacea* (Dwarf Willow) on Oxen Craig, a colony first found by DW in 1982 and its furthest east in Scotland. The usual one-day SWT field meeting returned to Maryculter in 2018, and checked that the long-known colony of *Paris quadrifolia* (Herb Paris) was still flourishing despite the construction very close-by of the Aberdeen by-pass. We also visited the grounds around the former RC seminary at Blairs, checking on hedgerow plantings that included *Euonymus europaeus* (Spindle) and a tall exotic juniper, possibly *Juniperus rigida* (Temple Juniper). Refereeing duties for DW on *Myosotis* (Forget-me-nots) were rather less than normal this year, but instead he gave long-

distance help on *Rubus fruticosus* (Brambles) to the group that Angus Hannah has set up.

South Aberdeenshire (vc92) Ian Francis

A small number of botanists continued to visit mainly blank and under-recorded areas during 2018, and some 3,500 records were captured and uploaded to the DDb. Several rare and notable species were found, with a number of new hectad records. Overall atlas coverage for VC92 is quite comprehensive, though the number of records for some taxonomic groups remains low, and some strategic gaps persist in the west, in the heart of the highest mountains of the Cairngorms National Park. These will be tackled in 2019.

Banffshire (vc94) Andy Amphlett

I collected 8284 records in 2018, but as in recent years, most (95%) were from outwith vc94 (mainly vc96). However, six NCRs were made (five by Ian Green), including two aliens new to Scotland: *Cynoglossum amabile* (Chinese Hound's-tongue) and *Gypsophila elegans* (Annual Baby's-breath). *Frankenia laevis* (Sea-heath) was found as a naturalised garden escape on the coast. A new location for *Agrimonia procera* (Fragrant Agrimony), found by David Elston, was one of the best of the other finds. Digitisation and validation of records is complete for post 1999 records, and only a handful of pre-2000 records are still to be checked. I plan to carry out some gap-filling in 2019. A paper (re. *Solidago sempervirens* (Salt-marsh Goldenrod)) and a short note (re. stem stomata in *Juncus balticus* (Baltic Rush)) were published in BSBI News. A paper on inland records of *J. balticus* was submitted. VC tetrad coverage maps for GB & Ireland were updated several times, a presentation on record validation was given at one of the Scottish VCR workshops, and an ID guide to subspecies of *Puccinellia distans* (Reflexed Saltmarsh-grass) was produced (available via the BSBI website). I assisted VCRs for vc92 and vc108 in getting their records to the DDb. I have given notice that I wish to stand down as VCR for vc94. While the vc is fairly well recorded for Atlas 2020, more could be done. As a medium sized vc, with all records entered and almost all validated, it would be an enjoyable and varied vc for someone to take on.

Moray (vc95) Ian Green

2018 was another good year in vc95 with 22,621 records made. I had hoped to get all tetrads visited but didn't manage this, hopefully will do this in 2019. Most records were made at monad level or better, but a few were made at tetrad level. Working on a flora of vc95, this seemed to

make recorders more willing to go out and do recording, which was very pleasing. I only managed to organise two local botany walks in 2018 in vc95.

West Inverness (vc97) Ian Strachan

2018 was a remarkable year for Westernness with 23,800 records made, by far the highest total ever. About one third of these were collected during the very successful BSBI recording week at Kingie Lodge in July (see 2019 Yearbook), another third by the VCRs and the remainder by various other recorders, to whom we are very grateful. These records have filled some important gaps for Atlas 2020, notably in the north of the VC from Knoydart to Glen Garry, as well as places such as Glen Righ, Blarmafoldach, Ben Alder, Ardnamurchan, Ardgour and the Great Glen. Particular effort has been directed towards recording aquatics, but more remains to be done.

Amongst many notable achievements were 2,900 records made by Marion Moir from 30 monads along the north side of Loch Leven, and 2,000 records by IS from a neglected hectad, NG70 in western Knoydart, during a week based at Airor. A bramble workshop held in Ballachulish by Angus Hannah also produced useful records for VC97. In June IS ran a wildflower meadows day with the Lochaber Biodiversity Group, including a visit to the stunning orchid-rich grasslands in Glen Roy. Highlights of the year's activities and finds were exhibited at the SBC in November (see p.16). A draft checklist for Westernness has been almost completed, including national and VC status for each species. About half the 2018 records are now in the DDb (mostly validated) with the rest to be done before the 2019 field season.

Dunbartonshire (vc99) Pamela Murdoch

The year began with a record sent in to me for *Saxifraga tridactylites* (Rue-leaved Saxifrage) a new vc record. Further patches were found in an adjoining square. There were records for *Arctostaphylos uva-ursi* (Bearberry) and *Lysimachia ciliata* (Fringed Loosestrife) both only the 2nd vc record and *Mimulus moschatus* (Musk) and *Hammarbya paludosa* (Bog Orchid) were found, both with very few post-2000 records. Priority was given to recording for Atlas 2020. As vc 99 is one of the smallest vc areas my brief is to record a minimum of two monads per tetrad. Last year 10 new tetrads were tackled, leaving only four tetrads in the southern half of the vc with no records at all. It should be possible to deal with these this coming season. 42 additional new monads were recorded to give better coverage overall and to ensure records for two or three monads per tet-

rad in the botanically richer areas which happen to be in the wider Glasgow conurbation. Progress in the more mountainous northern half of the vc is slower but further efforts this year should make a noticeable difference. Any help would be appreciated. Thanks to all who sent in records, including, for the far NE of the vc, the best set of alpine records for the vc, ever, and much needed records for the some of the Luss Hills. Alison Rutherford contributed about 1000 detailed records for urban areas along the railway from Helensburgh to Glasgow and there were records from a Bioblitz overlap with vc77 in Glasgow. Outings with Glasgow NHS and Glasgow Botany Group were productive and enjoyable.

Clyde Isles (vc100) Angus Hannah

2018 being the last fieldwork season for my Bute Flora I concentrated on filling gaps. In May I looked for §*Erythrosperma* dandelions, finding three species at six sites. In June Claudia Ferguson-Smyth and Sally Pollock visited Bute for a week to record aquatics. We refound all but one of the 13 previously recorded pondweeds as well as other interesting water-plants such as *Elatine hexandra* (six-stamened waterwort). Later I turned my attention to oaks. Following and then modifying methods described in literature, I recorded 150 trees from 50 sites on Bute, finding 30% robur, 20% petraea and 50% intermediates (see p.9). This led to a workshop at the Scottish Botanical Conference. I ran a recording week in June at Carrick Castle in vc98 with a dozen botanists, and eight more attending for a day at least. We made about 5000 records for a much neglected corner of Argyll. In August, I led a bramble weekend at Glencoe with Marion Moir, making records for vcc98 and 97. I spent occasional days in vc75 (including a visit to Ailsa Craig) and vc77, and taught three courses at Millport. Bute Flora work occupied the remaining time. Significant finds included *Erophila majuscula* (hairy whitlowgrass), a new vc record, *Viola canina* (heath violet) and *Carex muricata* ssp. *pairae* (prickly sedge), both first Bute records for over 40 years. Since October I have been fully occupied preparing the Flora text for the printer. Publication is expected shortly.

Kintyre (vc101) David and Pat Batty

Continued progress was made on hectad coverage and several hectads need little further work with only one requiring more extensive survey. For the rest certain areas, habitats and species will be targeted in 2019 to fill in gaps. We have inputted all the 2018 records and have started to validate some rare and anomalous records in the database. We gratefully received help from Inverness Botany Group on their visit to Knapdale and

continued help from the Kintyre Botany Group. We finally obtained details of the record of *Hierochloa odorata* (Holy-grass) from Sanda in 2012, an NCR. Another NCR was the hybrid sedge *Carex x sooi* (*C. acutiformis* x *C. riparia*) from the banks of the Crinan Canal, identified by Mike Porter. Other notables were *Galium album* (Hedge Bedstraw) not seen since 1970 and *Cirsium heterophyllum* (Melancoly Thistle) not seen since 1996. Several alien species were NCRs this year, e.g. *Scrophularia auriculata* (Water Figwort) growing extensively on the Breakerie Water in Kintyre and *Malus pumila* (Apple) as a single tree at Carsaig.

South Ebudes (vc102) Malcolm Ogilvie

Visiting botanists again contributed good numbers of records for all three main islands and some of the smaller ones. Simon Smart visited Scarba off the northern tip of Jura, and Garbh Eileach and Rubha Fiola, rarely-visited small islands at the entrance to the Firth of Lorn. *Neottia cordata* (Lesser Twayblade) was recorded new for Scarba, while on Rubha Fiola the infrequent sedge *Carex canescens* (White Sedge) was found. A visit to Jura in September with Oli Pescott focused on montane species associated with the Paps. Large populations of *Carex bigelowii* (Stiff Sedge), *Alchemilla alpina* (Alpine Lady's-mantle) and *Saxifraga stellaris* (Starry Saxifrage) were all confirmed as still extant. Oli also did more work on Islay, and Jeff Waddell contributed records from some of Islay's less well-covered tetrads. For the fifth year running, five botanists visited Colonsay, finding 489 taxa and collecting 2,300 records. Highlights included a new location for *Hammarbya paludosa* (Bog Orchid), and new locations for *Drosera anglica* (Great Sundew), including one for its hybrid with *rotundifolia*, the first record since 1930. Perhaps the best find of the five years was a population of *Cirsium dissectum* (Meadow Thistle), the most northerly record for the species globally. We were also told about a patch (1 x 1m) of *Crithmum maritimum* (Rock Samphire), found by Sophie Furze growing on coastal rocks. This very uncommon species for the island had not been seen here for at least 50 years. My orchid monitoring on Islay revealed better results than in 2017 for both Butterfly Orchids, and *Cephalanthera longifolia* (Narrow-leaved Helleborine) reappeared after being absent last year, while 66 flowering spikes of *Epipactis palustris* (Marsh Helleborine) at their main site were a delight to see. Digitisation of records is almost up-to-date. Validation is ongoing.

Mid Ebudes (vc103) Lynne Farrell

Several visits were made to Mull and the smaller islands off the coast including Iona, Treshnish Isles and Little Colonsay. Altogether 34 tetrads

were updated from pre-2000, but there are still 14 to update in 2019. This will then give total tetrad coverage for Mull, Coll and Tiree and the islands- something I am aiming to complete. The last visit was in October and on a cold, frosty morning but nevertheless I recorded 138 taxa in 3.5 hours that day. A few more sites for *Hymenophyllum wilsonii* (Wilson's filmy-fern) have been found on Iona and the locals are reconsidering whether they will erect some wind turbines there, following views and advice from myself, NTS, visitors and island inhabitants. Joyce Watson, amateur botanist who lives on Iona has just sent me a copy of her booklet Wild Flowers of Iona (some of the more common species) in memory of Jean Millar, former resident and local botanist. Joyce has helped with recording and is able to distinguish many more species following my working with her over the past few years. On Tiree, John Bowler RSPB representative, has sent his more interesting records for 2018. All tetrads well-recorded. David Pearman paid his annual visit to Coll and has sent through some notable records. All the tetrads are now well-recorded.

NPMS and Ash Splash was not undertaken this year as recording for Atlas 2020 was the priority. But both Ash splash plots were briefly investigated and no trace of ash disease found, thank goodness. Advice was provided to Mull rangers on machair grazing and recording at Calgary Bay. After many years of trying to reduce the level of sheep grazing and sand erosion by increasing numbers of visitors, this has now been achieved resulting in blooming machair which everyone has enjoyed. The resurfaced path out from Tobermory to the Lighthouse was walked and, although some of the *Epipactis helleborine* (Broad-leaved Helleborine) sites had gone under the new walking surface, at least 16 plants were still growing, some flowering and some vegetative. It is hoped that more will be found in future, and perhaps even at a few new spots as the soil was moved around. This is the best population of this rare species on Mull. A visit to a tetrad on the Ross on one of the hottest days in June, saw some of us paddling in Loch Assapol, then discovering another lochan nearby which did not appear on the OS map! There we discovered a strong population of *Carex paniculata* (Tussock sedge) growing round the margins. The largest population of *Platanthera chlorantha* (Greater Butterfly Orchid) was counted at Pennyghael: slightly fewer this year but still over 1000 flowering plants in one meadow. Another population near Kintra, towards Fionnphort, was counted for the first time, with 31 flowering plants. The local owners run the organic nursery and are interested in managing the site to encourage the floral richness. Records have been received from quite a few visitors, including for *Hieracia* and other critical

groups. Altogether another successful year, some good records found and updated, and help from other BSBI members much appreciated.

North Ebudes (vc104) Stephen Bungard

Over 12,500 records were made in VC104 in 2018 including 203 new hectad records, although a few of these are the result of subspecies or aggregate recording. Only five tetrads with >5% land now have zero post-1999 records; nine more have 1 to 49 such records and a further 28 have 50 to 79. (There are 709 tetrads in VC104.) All recent records are digitised; validation of outliers in the BSBI Database has been attempted but for many old records their status must remain uncertain. Skye Botany Group met four times with most meetings aimed at re-finding old records. A talk was given to the Skye Gardening Society entitled "Where do Plants Belong?" For the first year in many, the vice-county recorder achieved a whole season without falling off a cliff or into a loch.

Ten additions were made to the vice-county list, all garden escapes/throw-outs or planted trees. *Hieracium ascenditides* (Harris Hawkweed) was recorded for only the second time in the VC. *Leycesteria formosa* (Himalayan Honeysuckle or Pheasant Berry) was found spreading near Raasay House. This is new to Raasay in the wild and seems to be increasing rapidly on Skye (and the adjacent Scottish mainland). *Acaena inermis* (Spineless Acaena) continues to spread on Skye with a new site found on the Quiraing path. Determination of further *Arctium* specimens as *A. minus* subsp. *pubens* (Lesser Burdock) suggests that this is the common taxon in the vice-county, though more work is needed.

Wester Ross (vc105) Duncan Donald

It is unfortunate that so much recording activity is needed for the Atlas when other aspects of my life are making even greater demands. My retirement from my day job, planned for mid-2019, will come too late to allow me significant time to catch up on the 120 or so sites I've already identified as 'high priority', but I'll continue to work away at these over the next few years with a revised Flora in mind (ideally, by 2029 – 100 years after Druce published the last one). Meanwhile, I should be happy to pass on suggestions to visiting field botanists who anticipate having the opportunity, while hereabouts, to venture 'off the beaten track' (sometimes by a long way!). My personal highlights in 2018 have been an NCR for *Melica uniflora* (Wood Melick); a new site for locally-rare *Polystichum setiferum* (Soft Shield-fern); re-recording *Dactylorhiza traunsteinerioides* (Narrow-leaved Marsh-orchid) from a site not recently reported; and recording *Asplenium septentrionale* (Forked Spleenwort) in a

new hectad as well as re-finding it at two historical sites. I am also very grateful to Mary Macdonald for re-reporting it from a third one. As ever, the 'day trip' by Inverness Botany Group enabled us to tackle a poorly-recorded area: this time, at Inverlael. My sincere gratitude as well to other recorders who submitted valuable findings after their visits: notably, Diana Gilbert, Rose Kirk, Ian and Marion Moir, and Dan Watson.

Easter Ross (vc106) *Brian Ballinger*

Recording has continued and we have some recent records for all tetrads mainly located in the vice-county, but species numbers are still low in some places. We are also a bit short on species refinds in some hectads, and this will receive attention in 2019. Once more I am very grateful for all the support I have received over what is often very difficult terrain. Digitisation is nearly up to date and verification is well advanced. Together with Mary Dean I held a joint field meeting with the Botanical Society of Scotland at Strathpeffer, partly devoted to urban recording but also venturing elsewhere. There were also joint events with the Inverness Botany Group. More joint meetings are planned for 2019. Among useful finds Peter Wortham found a new site for *Alopecurus magellanicus* (Alpine Foxtail) at Furan Riabachan, the fourth recent record for VC106. There was also a fourth site for *Hammarbya paludosa* (Bog Orchid) at Moine Mor. *Pilularia globulifera* (Pillwort) was found at another location in the Kyle of Sutherland nearer to the sea than previously. Terry Easter recorded *Pimpinella saxifraga* (Burnet saxifrage) by Geanies, the first recent record for the vice-county. There were 3 new locations for *Sibbaldia procumbens* (Sibbaldia) found by Peter Wortham and Diana Gilbert.

East Sutherland (vc107) *Mick Crawley*

The only remaining gaps are in very barren and unrewarding areas. The interesting areas (including all the summits) are complete. The data for 2018 are awaiting loading to the DDb. Atlas 2020 validation is complete to date. The 2019 version of the Flora of East Sutherland using Stace 4 names and order is nearing completion. It will be free from the web site soon. *Myosurus minimus* (Mousetail), new to Scotland in 2016 continues to increase in abundance at Lairg Auction Mart.

West Sutherland (vc108) Please see under abstracts p.17 for details of activities and new finds in this vc.

Caithness (vc109) *Francis and Margaret Higgins*

Between May and September 2018, we covered 46 monads (16 hectads) and MapMated 4,101 records. In June, John Crossley, the Orkney VCR,

spent a long day out with Francis, going as far west as our County Border – previously very under-recorded. On The Child's Seat (Suidh' an Fhir-bhig) they found good patches of *Arctostaphylos alpinus* (Alpine Bearberry), that monad never before recorded. John later visited Stroma and sent us his recording cards. We've found *Artemisia vulgaris* (Mugwort) growing beside Wick River – never found there, though recorded elsewhere in Caithness. With the invaluable help of the County Butterfly Recorder we have found some new species to us, and, mysteriously, *Goodyera repens* (Creeping Lady's-tresses) growing in the middle of the Flow Country – no trees anywhere! We spent a day with two SNH girls surveying the very rare *Calamagrostis scotica* (Scottish Small-reed). They sent their findings to the BSBI but it was interesting for us to see a plant that only grows in one place in the whole world, and in our County! We spent another useful day with Ian Evans in West Sutherland near our western border; later, Ian, in turn, recorded a couple of our monads for us. We were told that *Polypogon viridis* (Water Bent) grows on Whaligoe Steps; we MapMated it under Dr Tim Harrison's name, who found it – and it turns out to be an NCR.

Outer Hebrides (vc110) Paul Smith

The main recording activity was three-weeks of targeted recording on North Uist and Benbecula, when several visitors joined the VCR. Three days were spent with Outer Hebrides Biological Recording trips to islands and islets on the east coast, covering several previously unrecorded tetrads and helping with plant id. Diligent observation by visiting botanists resulted in good records for *Anthemis cotula* (stinking chamomile) in several places and a NCR for *Epilobium pedunculare* (rockery willowherb) on Beinn Mhor, S Uist. Atlas recording filled in several under-recorded tetrads, and refound a number of species with only pre-2000 records. Other visitors have been good at sending on records, and these have been very useful in ongoing recording activity for a new flora. The Dutch Mires Group visited and did a good job with aquatics, and the Floodplain Meadows Partnership visited the Uists and passed on many records. Around 4000 records were added in 2018. A big thank you to all those who have contributed.

Orkney (vc111) John Crossley

Good progress again this year and the colours on those alarming maps on the BSBI database showing extent and depth of recording in the VC have mostly changed colour. Most hectads have a re-find rate of at least 70% and tetrad coverage is good if not complete. More effort is now

directed at poorly recorded than unrecorded tetrads, and at re-finding rarities. The total number of records for the year was 2,500. New taxa for the year numbered 23, which sounds impressive, but nearly all were either aliens, some new but others only being now recorded, or taxa now identified to subspecies level, e.g. *Sparganium erectum ssp. oocarpum* (Branched Bur-reed). Among the latter an interesting one was *Ranunculus acris ssp. borealis* (Meadow Buttercup), a distinctive plant in exposed coastal grassland. Efforts to tackle Eyebrights continue to pay off, with sites for *Euphrasia frigida* (Upland Eyebright) and *E. ostenfeldii* (Ostenfeld's Eyebright), the latter in some quantity, both elusive species in this VC for many years. And where there are *Euphrasias* there are of course hybrids, in this case *E. ostenfeldii x micrantha* and *E. ostenfeldii x frigida*. Thanks to Chris Metherell for sorting these out. It was also particularly pleasing to get a firm identification for the first time of *Utricularia australis* (Bladderwort), only possible with a plant in flower; I am sure I have not seen one in flower before.

We had four meetings of the local flora group, three of these on week-day evenings to allow people to come after work. These were popular, drawing people who had not attended previous week-end events - what better way to spend two or three hours on a summer evening after a day in an office. The primary focus of these outings was not on recording, but a good many records were made all the same; an arable weeds-themed event in late summer proved rewarding, turning up three species of Fumitory including *Fumaria purpurea* (Purple Ramping-fumitory) and a second VC record for *Erysimum cheiranthoides* (Treacle-mustard). All records for the year have been entered on Mapmate and I am close to up-to-date with validating records on DDb.

Shetland (vc112) Paul Harvey

An Atlas 2020 recording event was held in July and five keen souls set off to record a suite of squares that had yet to be covered. As might be expected these were in some of the less interesting parts of the islands so yielded no exciting discoveries but much fun was had by all and the team will meet up again in 2019. An introduction to wild flowers course aimed at beginners also managed to cover a square for the Atlas and this enabled participants to get a taste of systematic recording.

Other fieldwork focused heavily on visiting all of Shetland's relict tree sites – this involved rowing out to island holms and scrambling up and down rock-faces. Shetland's few remaining trees hang on in the few places out of reach of sheep. It was pleasing to report that the handful of

Betula pubescens (Birch) *Populus tremula* (Aspen) and *Sorbus aucuparia* (Rowan) present in the islands continue to flourish and that our single remaining specimens of *Malus sylvestris* (Apple) and *Salix lapponum* (Woolly Willow) are still fighting fit. We include *Osmunda regalis* (Royal Fern) as a token tree here and its cover seems to be increasing on those few holms where it still occurs. On a sadder note one of only two of our remaining *Corylus avellana* (Hazel) has finally succumbed. Several new sites for *Ophioglossum azoricum* (Small Adder's-tongue), some numbering several hundred were located and two large plants of *Arctium nemorosum* (Wood Burdock) appeared in new locations in the south of Mainland. Like several of our arable weeds this species is close to extinction in the islands. The most exciting new find and only new species for the VC in 2018 was a small colony of *Dactylorhiza traunsteinerioides* in the north Mainland.

* * * * *

Early season recording Angus Hannah

We have been encouraged recently to begin recording earlier in the season, and I am sure it is true that some things are missed by failing to do so. Recently I had a note from Gill Smart (joint vc75 recorder) to say that she had been inspired to follow this advice, and was rewarded by finding *Stachys arvensis* (field woundwort), apparently only the 4th record for Ayrshire. Now this is not an early annual, and the plants were clearly 'left over' from last year, surviving on account of the mild winter. Perhaps they are more obvious at this season due to the lack of other distracting vegetation.

Looking at the DDb maps, this species seems to be very patchily distributed, and I know that while locally frequent in the south of Bute it is quite absent from the rest of the island. But I wonder if there are not quite a few more localities across the country in which it is simply overlooked.

My conclusion is that early recording will not only pick up new records for the obvious early annuals, such as *Adoxa moschatellina* (moschatel), *Cardamine hirsuta* (hairy bittercress, which isn't hairy), *Cerastium diffusum* (sea mouse-ear chickweed) and *Erophila* spp. (whitlow-grass), but also for other small species that may be much less noticeable later on, such as *Valerianella locusta* (cornsalad). And of course it is a great time to spot evergreens of all sorts, conifers, ferns, ivies, etc., as well as many introduced species.

Coastal Couch-grasses project: *Elytrigia atherica*, its hybrid with *E. repens*, and *E. juncea* x *E. repens* in Scotland.

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The Hybrid Flora (Stace *et al.* 2015) states that the presence of *E. atherica* (Sea Couch) needs more critical study in Scotland to confirm its presence; thus only one record appears to have been mapped. The hybrid *E. x drucei* has a few records mapped but in each case not as many as the records suggest. These taxa are recorded from the following vc's:

E. atherica – (no. of records for each VC in brackets):

72(10), 73(10), 74(2), 90(2), 95(2), 103(1), 104 (1 - 1950 Canna; Heslop Harrison, unlikely to be traced), 105(1), 107(5). Note: those in VC90 have since been revised to *E. juncea* on the Distribution Database (DDb).

E. atherica* x *E. repens – is recorded from four (now three) of these vc's

72(5), 73(8-10), 74(1), 90(1). Note: the one in VC90 has since been revised to *E. juncea* x *E. repens* on the DDb.

The hybrid *E. juncea* (Sand Couch) x *E. repens* (Common Couch) (*E. x laxa*), is more frequent in the north and has been recorded from c.24 vc's. There are approximately eight more vice counties with no records of any of these three taxa; some of that will be to do with available habitat.

As can be seen there are currently 32 records for *E. atherica* and about 16 for *E. x drucei*. Clearly this is not reflected in the Hybrid Flora. I am starting this study to try and verify whether the first taxon is present in Scotland and to check the records for it, and to check its hybrid with *E. repens*. I would be very grateful for help from any recorders in Scotland and/or those visiting, to collect specimens from the coast in summer and beyond. I need two or three stems from the base (include any shoots if attached). Please label and bag each gathering separately with good details. They don't need to be specially pressed and can be folded into A4 size. If more than one site is visited samples can be kept dry and sent together at a later date.

The hybrid *E. x laxa* will mainly be looked at through herbarium specimens from the main herbaria in Britain (including RBGE) (and additionally I will look and check for the first two taxa this way also). Most records of these three taxa, in a modern sense, do not seem to have any voucher specimens (they need to be recollected and verified). If anyone has any Scottish material in their own personal collection of these three I would

be grateful to see it. I will pay the stamp postage required. Note: it is also worth collecting glaucous plants of *E. repens*. The current records and any new ones cannot be verified without a specimen and your help is crucial and much appreciated.

[When this was written the names were in the genus *Elytrigia* but by the time you see this note they will have changed. I have kept them as this so it gives people time to catch up with the new names. Any specimens received will be determined with the new names.]

Please don't hesitate to contact me for more information. I very much look forward to hearing from you.

Stace, C.A., Preston, C.D. & Pearman, D.A. 2015. *Hybrid Flora of the British Isles*. Botanical Society of Britain & Ireland, Bristol.

Dumfriesshire Botany Group

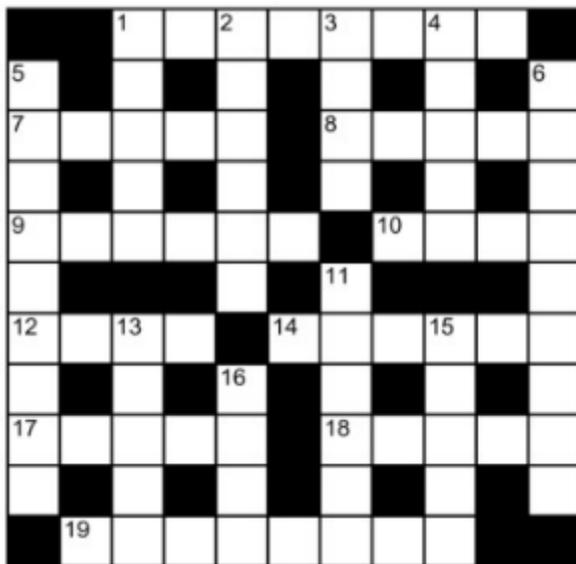
Chris Miles

This newly formed group had 13 meetings in 2018 with 16 people attending at least one of them. The group made a total of 1668 records for Atlas 2020 including 508 distinct taxa. Four species were seen on every trip: *Urtica dioica* (nettle), *Ranunculus repens* (creeping buttercup), *Plantago lanceolata* (ribwort plantain) and *Juncus effusus* (soft rush). A further 32 taxa were seen 10 or more times, but 160 were seen only once.

We saw 23 taxa that figure in the Dumfriesshire Rare Plant Register. The most interesting of these are in the table below. Other good finds were *Potentilla anglica* (trailing tormentil), first for vc73 since 1999 and *Saxifraga granulata* (meadow saxifrage), first for NY37 since 1969.

taxon	placename	gridref	comment
<i>Bidens tripartita</i> var. <i>tripartita</i>	Kirkhirst Plantation, Castle Loch (NY0981)	NY09338131	Sandy edge of loch; first vc record since 1996
<i>Hymenophyllum</i> <i>tunbrigense</i>	Hollows (NY37Z)	NY39427823	Small colony on E side of burn on rocky bluff beside falls - first find at this site since 1962
<i>Neottia nidus-avis</i>	Hollows (NY37Z)	NY38827817	dead flower-heads from last year
<i>Valerianella locusta</i>	Newbiebarns (NY16S)	NY17536482	coastal bank at back of shore
<i>Vicia sylvatica</i>	Hollows (NY37Z)	NY38907811	dead remains and new growth just started

SN Crossword No. 3 by *Cruciada*



ACROSS

1. You are one who likes messing about in boats, any time (8)
7. Homes for birds found in some orchids? (5)
8. It should beat bean (5)
9. Edible leaf takes off! (6)
10. Cut tip off grass bract at fence (4)
12. I hesitate to claim this aromatic umbellifer (4)
14. Elementary emission from vehicle good in France (6)
17. Dull first appearance of whitlow-grass (5)
18. Chest I packed with filling of grass (5)
19. Indispensable 1 may make music too (8)

DOWN

1. Graduates are in charge of alkali (5)
2. Tests a variety of preferences (6)
3. Palm tree may provide short drink that's first class (4)
4. Warblers I missed in the trees (5)
5. A mad drone crashes into peat-loving plants (9)
6. It comes up every year near pine scrub on left (9)
11. Went by as desirable plant juice was rising (6)
13. Custom of taking high-class herb (5)
15. Sweet patch to throw a rabbit in? (5)
16. Heard to announce time to start this palm product (4)

Solution and crib: p.56

This year we have three workshops being run in association with Plantlife.

Identifying Wildflower Families Saturday 16 June at **Mar Lodge**, led by Aileen Meek. Suitable for anyone from beginners upwards, £25 for the day (full-time students £17). Next day there is a **Field Meeting in Braemar** open to everyone who wants to improve their field ID skills.

Identifying Common Grasses aims to make the study of grasses more accessible to anyone with a basic knowledge of flowering plants. Last year this workshop was a great success, especially with people who need to know common grasses for recording and surveying purposes. It is at **Stirling University** on Saturday **6 July**. £30 (£20 for full-time students).

By popular demand, this year we have a new workshop: **Identifying Sedges & Rushes**. Again the emphasis is on common species, identifying them by field characters rather than peering through microscopes or ploughing through keys. It is at **Mugdock Park** on Saturday **20 July**. £30 (£20 for fulltime students).

To book any of these workshops, go to bsbi.org/scotland and follow link to the booking facility. More details from faithanstey@gmail.com

A further **grasses course** is on **16 June** 10.30 to 4.00 at Borland Village Hall on B723 7 miles north of Lockerbie, **Dumfriesshire**. Contact Chris Miles (chris.miles01@btinternet.com) for more details..

New Publications from Clyde Isles (vc100)

The ***Isle of Bute Flora*** by local VCR Angus Hannah, the first ever for a Clyde island, is newly published, and is available from Summerfield Books at a discount price of £25 (+p.&p.) until the end of May. See flier in BSBI April News. This 360 page book has a full introduction to Bute and its plants, historic records, 90 photographs, a catalogue of 1039 taxa, 500 maps of monad abundance and a wealth of ecological data.

A new fully revised edition of the ***Arran Flora Checklist*** by Tony Church is now available, price £4.50 (incl. p.&p.) from Arran Natural History Society. This attractive 36 page booklet lists all species recorded on the island along with the hectads in which they have been seen. Payment by PayPal (email: arrannaturalhistorysociety@gmail.com) or BACS (sort code 80-05-84, a/c 00453983), or visit Facebook @arrannaturalhistorysociety.

Kirkcudbright Botany Group 2019 Field meetings programme

March	Fri 29	Grey Mare's Tail (S)	Filmy ferns	NX4972
April	Sat 6	Parton /Drumglass (G)	grass, marsh, rail bed	NX7068‡
	Thurs 18	Rumblekirk/Barlocco (G)	Coastal	NX5947 – 5848
May	Sat 11	Urr Water (R)	Riverine	NX7679 – 7577
	Sat 18	Kenmure Holms (R)	Aquatics & swamp	NX6376‡
June	Sat 1	Bombie Glen (R)	Neutral grass & wood*	NX7150
	Wed 12	Training day (T)	TBC	TBC
	Fri 14	Creebank (R)	Grassland & marsh*	NX3477‡
July	Sat 6	Cleugh (G)	Neutral grass & marsh*	NX6186
	25 -28	BSBI Upland meeting (R)	Southern Uplands	various
Aug	Fri 9	MoD Dundrennan (G)		NX7244 – 7344
	Sat 24	Stroanfreggan (R)	Acid grass, marsh, mire	NX6391‡
Sept	Sat 7	Loch Rutton (R)	Aquatic, marsh, swamp	NX8873‡
	Fri 20	Fell Quarries (G)	Granite quarries, grass*	NX4856‡
Oct	Fri 4/Sat 5	Benshinnee (G)	Acid grass, mire, lochs	NX7073‡

*Species-rich sites

‡ Includes adjacent monad(s)

G General recording, suitable for beginners and experts alike;

R Recording, suitable for more competent botanists, but all welcome. All attendees will be expected to help record the flora for Atlas 2020

S Species-specific surveys

T Identification training days, for basic identification skills.

All meetings start at 10 a.m. and aim to finish about 4 p.m. unless otherwise noted.

Further details for each meeting will be circulated about a week prior to the event.

Contact David Hawker, preferably by email (davidhawker3@gmail.com) or on the day 0774 895 0838.

Crossword Solution

ACROSS
1. BAS/IC 2. anag TESTS A 3. NIP/A 4. SYLV(I)A 5. anag A MAD DRONE 6. anag NEAR PINE + L
11. reverse DES/SAP 13. U/SAGE 15. reference to Brer Rabbit 16. say go
DOWN*

ACROSS
1. anagram IN BOATS + T 7. Birds Nest Orchids 8. double definition 9. dd
10. PALE(A) 12. ME/UM 14. CAR/BON 17. DRAB/A 18. chest I Packed 19. dd
CRIB

DOWN
1. BASIC 2. TASTES 3. NIP/A 4. SYLVA 5. ANDROMEDA 6. PERENNIAL 11. PASSED
13. USAGE 15. BRIAR 16. SAGO

ACROSS
1. BOTANIST 7. NESTS 8. PULSE 9. ROCKET 10. PALE 12. MEUM 14. CARBON
17. DRABA 18. STIPA 19. REORDER

Fern Society (BPS) Scottish Meetings 2019

BSBI members are welcome at all these meetings. If you would like to attend any of them, please contact Bridget Laue a few weeks before the date of the meeting, when further details should be available. Contact details:

bridgetlaue@blueyonder.co.uk Home: 0131-258-9592 Mobile: 0793-243-9989

Saturday 27 April Ascog Fernery, Isle of Bute (Leader: Bridget Laue)
Our annual workday at the beautiful Ascog Fernery.

Saturday 1 June Fossil Grove, Victoria Park, Glasgow (Leader: Andy MacGregor)
Working party at the fernery, near the 300 million year old fossilised casts of *Lepidodendron* scale trees.

Saturday 22 June Loch Brandy in Glen Clova (Leader: Steve Munyard)
Botrychium, *Polystichum lonchitis*, *P. x lonchitifforme* and other lime loving ferns.

Sat 13 - Fri 19 July National BPS meeting: Rare Ferns in Scotland (Leader: Roger Golding)
Provisional list of sites: Corrie Fee, Glen Shee, Aberdeenshire sea caves and a serpentine site - Glen Feshie - Meall Buidhe/Corrie Achallader - Bute - Arran.

Saturday 17 August Creag nan Eun, Glen Shee (Leader: Clive Dixon)
A large number of interesting fern species in a small area; also *Equisetum variegatum*.

Sat 28 September Annual Indoor Meeting, Biggar (Leader: Frank Katzer)
Garden tour, book and plant sales, fern-related presentations.

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

BSBI Scottish Field Meetings Programme 2019

Tuesday 14 May 2019 (Recording)

Joint BSS/BSBI/PSNS Urban Flora meet, Clackmannan, W Perth (v.c.87)
Leader and contact: Liz Lavery

Friday 17 to Sunday 19 May (Recording) **Haddington**, E Lothian (v.c.82)

Leaders: Jim McIntosh & Helen Jackson

Contact: Marion Moir. Come for 1, 2 or 3 days; booking essential.

Thursday June 6th 2019 (Recording) **Conon Bridge**, Easter Ross (v.c.106)

Leaders: Brian Ballinger and Mary Dean

Bookings to Brian Ballinger (brian@garrickwood.org.uk)

continued

Friday 7 to Sunday 9 June (Recording) **Dunfermline**, Fife (v.c.85)

Leaders: Jim McIntosh & Sandy Edwards

Contact Sandy Edwards; booking essential.

Sunday 16 June (Training) **Plant Families Field Meeting, Braemar** (vc92)

Leaders: Faith Anstey and Aileen Meek

This is the follow-up field day for participants in the Plant Families workshop at Mar Lodge on 15 June but everyone interested is welcome.

Time and venue to be confirmed; contact Aileen Meek.

Sunday 16 to Friday 22 June (Recording)

Argyll recording week, Dalmally(v.c.98) Leader Angus Hannah

House is full, but anyone in the area is welcome to join us in the field and for evening ID sessions. Contact Angus (butesedge@yahoo.co.uk)

Saturday 22 to Saturday 29 June (Recording)

Whitebridge, Easternness (v.c.96) Residential Recording Week

Leaders: Jim McIntosh & Adam Fraser; contact Jim McIntosh.

Sunday 30 June (Recording)

BSS / BSBI Alpine Meeting: Ben Cruachan, Main Argyll (v.c.98)

Leaders: John Holland, Gordon Rothero & Jim McIntosh

Contact: John; booking essential.

Friday 12th to Sunday 14th July (recording)

Hawick, Roxburghshire (v.c.80)

Leaders: Jeff Waddell & Jim McIntosh

Contact Jeff to book. Come for 1, 2 or 3 days.

Friday 19 to Sunday 21 July (mainly Recording) **Orkney** (v.c.111)

Leader: John Crossley

Contact John for information and booking.

Thursday 25 to Sunday 28 July (Recording)

St John's Town of Dalry, Kirkcudbrighshire (v.c.73)

Leaders/contacts: David Hawker & Jim McIntosh; booking essential.

Saturday 17 August (Bioblitz recording) **Cashel, Balmaha**, Stirling (v.c.86)

Leaders: Matt Harding & Carol Crawford

Contact Matt for further information.

**Many local groups meet all over Scotland. Ask
your vice-county recorder for more information or
check the BSBI website.**



A vc77 miscellany: 1 *Diphasiastrum alpinum*, 2 *Lycopodium annotinum*, both clubmosses growing on Shotts bing (P. Wiggins); 3 *Rubus chamaemorus* on Coomb Dod above Camps Resr. (J. Hawell); 4 *Phalaris minor*, Cuningar loop, Dalmarnock, first Scottish record since 2000, found M. Macneill (P. Wiggins); 5 *Persicaria runcinata*, Hazelbank near Lanark, its only UK site, found P. Macpherson 2001, re-found M. Macneill 2018 (P. Wiggins); 6 *Allium carinatum* beside R. Kelvin, Glasgow Botanic Garden (F. McFarlane)



Malcolm's Point on the Ross of Mull (L. Farrell). Lynne says the basalt is base-rich and a good site for butterflies too [they don't suffer from vertigo: editor]. The Dumfries Botany Group (below) face less challenging terrain on Durisdeer hill (C. Miles).

