PRESIDENT'S LETTER

I must start this by remembering our past WFS President David Bellamy who died on 11th December 2019. He was a fine naturalist who did so much to promote plants and botany during his 30 years as a broadcaster. He also inspired and helped many students at Durham University. His book *Botanic Man* inspired many people and he was also a ceaseless environmental campaigner. I took part in several activities with David including, in 1994, burying a time capsule in the Royal Botanic Gardens, Kew to be opened fifty years later as an apology for what our generation was doing to the environment. My only disagreement with him was on global warming, which he did not accept as man-made. David did much for botany and plants and we are grateful for his service to the Wild Flower Society. We will miss his energy and enthusiasm for plants.

I am in the process of downsizing. I have an almost complete set of the journal *Addisonia*, published by the New York Botanical Garden from 1916-1964 in 24 volumes. They illustrate many species of wild and cultivated plants in colour. If there is anyone who would like them they are available for collection from my home in Lyme Regis.

GHILLEAN PRANCE

EDITORIAL

Welcome to the Spring issue. I should like to agree with our President's opening sentiments and an obituary to our former President, David Bellamy, appears on page 44. He was certainly an inspiration to me in choosing a career in ecology and teaching.

Lyn Jones has written a fascinating appraisal of a range of mobile phone apps that are now available to download, which just goes to prove that you never want to believe everything the internet tells you, although the apps do seem to have some merits.

Peter Leonard has produced a very useful key to the Geraniums, which is reproduced on the centre-page spread. As with other keys that have been printed in this manner, the idea is to pull out the spread, laminate it and use it in the field. I have already found it beneficial in trying to distinguish between Common Stork's-bill *Erodium cicutarium* and Musk Stork's-bill *E. moschatum* for my Winter Months Hunt. If anyone has any ideas for future keys please do let me know.

Sadly, since writing my original editorial, we have had to cancel all the field meetings for 2020. Enjoy reading the reports from 2019 and remember better times in the past. Why not take this opportunity to participate in the 1km or 10km square studies and now would be a golden opportunity to get your Record Books up to date.

ANNE KELL

NOTICES

Stace 4 changes
In the list of name changes relating to our Record Book it has been incorrectly stated that *Salix fragilis* has changed its name to *Salix euxina.* The new name for *S. fragilis* should be *Salix* x *fragilis* agg. not *S. euxina.* Please correct any lists that you may have run off.

Back copies of the Wild Flower Magazine
Rachel Rabey has copies of the WFM going back to 1987 and she wondered if anyone would like to re-home them. Please bear in mind that Rachel lives in Guernsey but she says that if anyone is planning a trip over there then they could pick them up. Please contact the editor, if you are interested, for further details.

WHAT PLANT IS THAT?
Artificial Intelligence for plant identification in the field using smartphones

Artificial Intelligence (AI) and "deep learning algorithms" are becoming more and more pervasive, not only can they provide us with Alexa, self-driving cars and fridges that do your shopping, but they are now taking over plant identification. There are many plant keys available as Apps for smartphones; these often make use of multi-access ability to aid identification, but in this article I am concerned only with those free Apps that provide an identification automatically with little or no user input.

Searches of the internet and the App Store (for Apple devices) and Play Store (for Android) gave a total of 10 free Apps or websites (see opposite) that used automatic algorithms to identify unknown plants from photographs taken by the inbuilt camera. These are listed, together with their web addresses, at the end of the article. All Apps could be either used in the field or photographs saved for uploading later. The Apps were tested using a common set of 38 contrasting images of a wide range of plants (from the visual-flora.org.uk website) that included grasses, sedges, trees, shrubs and herbs as well as photographs of leaves, flowers, fruits and whole plants. Because results were (surprisingly) variable with many of the Apps, five replicate identifications were attempted with each App. Some of the images (including rare and common species) are shown in Figure 1 (page 5), together with results for the four best Apps. I expected that some of the images should be easy to identify and that some would be challenging, but I was not able to predict which images were going to be successfully identified.

The results for the four most recommended Apps (all of which can be used on Android or Apple devices) are summarised in Table 1, where the percentage of identifications across the full 38 samples that were correct to species, genus or family are shown for each App. On average the four best Apps identified nearly 50% of samples to species level and around two thirds of samples to family. Flora Incognita identified the greatest proportion of flower and leaf images to species, while Seek performed best for whole-plant images. There was not much to choose between the top four Apps, though Seek has the particular advantages that it is the only App that does not require an internet connection and also gave the fewest incorrect identifications.

Interestingly there were no clear, consistent differences in ranking of the different Apps when evaluating images of flowers, leaves or whole plants; nor were there clear differences when used on herbaceous dicots, monocots or woody plants.

Table 1. Summary of results for the four most highly recommended Apps.

The figures represent the % of identifications of each type of image (flower, leaf or whole plant) that were identified correctly to species (Sp.), genus (Gen.) or family (Fam.). In addition, the overall error rate (defined as the % identifications to incorrect genus or family) is also shown.
The best Apps in each category are shown in bold.

	Flower			Leaf			Plant			Error rate
% success	Sp.	Gen.	Fam.	Sp.	Gen.	Fam.	Sp.	Gen.	Fam.	
Flora Incognita	**58**	**62**	70	**40**	50	50	42	50	65	19%
Google Lens	48	**62**	**75**	38	**52**	**64**	42	52	71	33%
PlantNet	43	52	62	30	40	44	34	48	54	48%
Seek	27	55	60	34	50	58	**43**	**54**	**77**	**11%**
Average	44	58	67	36	48	54	50	51	66	

Conclusions

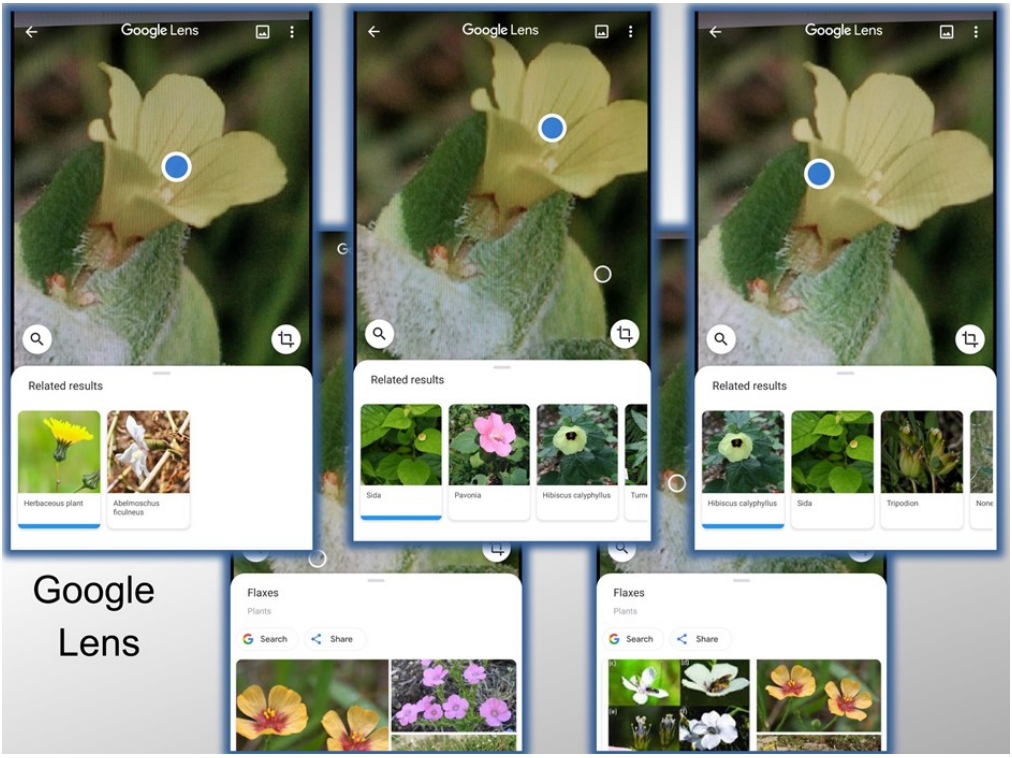
- Overall the best four Apps are truly amazing (identifying around half the disparate set of images to species level)
- Any one of these can be of value to amateur botanists as they provide a valuable first suggestion, though further validation against a hard-back Flora or a good App with a key remains essential for any rigorous study.
- The Apps that provide a clear indication of confidence in an identification are particularly useful (Flora Incognita and PlantNet).
- Seek is particularly valuable for use in the field, as it is the only App that operates without the need for internet access (for the others photos can be taken for later testing on return to base) and it is rather conservative (rarely giving incorrect IDs.)

LYN JONES

Figure 1

Sample of 12 contrasting images (from full set of 38) with an indication of how well each App performed on each image, The performance of Flora Incognita (●,◉,○), Google Net (●,◉,○), PlantNet (●,◉,○) and Seek (●,◉,○) are indicted, with filled circles showing some id to species, heavy open circle id to genus and open circles id to family. (Photos Lyn Jones)

Surprisingly, many of the apps were often very inconsistent in their identifications - shown here is one example, in this case for Google Lens, illustrating the variability between repeat identifications of the same image of a Marsh St. John's-wort *Hypericum elodes* where repeat IDs gave "Herbaceous plant", "*Sida*", "*Hibiscus calcyphyllus*", "Flaxes" and "Flaxes". All Apps are subject to the same problem.



Web addresses for the Apps tested:
Google Lens (*https://lens.google.com*); PlantNet (*https://identify.plantnet.org/*); Seek (by iNaturalist) (*https://www.inaturalist.org/pages/seek_app*; Flora Incognita (*https://floraincognita.com/*). Other Apps tested included: Plant.id (*https://plant.id/*) - this was actually the best App on test but as it only allows 5 IDs/week it was excluded from the detailed analysis. Candide (*https://candidegardening.com/*) and PlantSnap (*https://www.plantsnap.com/* - which only allows 10 ID/day without Premium subscription) were both worth considering, but at best identified only 35% of images to family. The others tested that gave very poor identification rates and are not recommended were: Bing (*https://www.bing.com/*); iPlant Plant identifier (iOS only) (*https://apps.apple.com/gb/app/iplant-plant-identifier/id1372113110*); and Plant identifier by Rakata Tech (*https://play.google.com/store/apps/details?id=rakta.plant.identification&hl=en_GB*).

FIELD MEETINGS 2019

BEN LAWERS AND GLEN CLOVA 8th - 11th JULY

Monday 8th July
Ben Lawers

And so to Ben Lawers again! It was a pleasant, mild, very still morning, with just a bit of high cloud. The perfect day for nine of us to meet Lyn Jones and Dan Watson, the Senior Ecologist of the Scottish National Trust, for a walk up Ben Lawers. The meeting was fortuitously arranged because, when Lyn heard that Glen Clova was in this year's programme, he offered a repeat of last year's meeting, so I just had to book in again. Any opportunity to get to Ben Lawers: this would be my fifth time!

I first became aware of Ben Lawers many years ago when I attended a professional conference in Edinburgh. On the compulsory golf afternoon, I thought that I would walk up Arthur's Seat instead. It was a brilliantly clear day and when I got to the summit, I noticed an outstanding peak on the horizon to the northwest. Checking on the topograph, I established that it was Ben Lawers nearly 60 miles away. I thought then that I wanted to get to that lovely mountain. It remained an ambition until I had the opportunity to go up with a walking group a few years ago. This was before the WFS came into my life and I must admit that it was a bit disappointing - a very long walk in, then a very, worn popular track to the summit. Not what I had expected. The next three visits were rather different: botany had intervened. Two involved National Trust meetings, one led by Helen Cole, and then last year, a really great botanical day.

Before preparing this report, I thought that I should check on last year's account. I found in the Spring magazine no.507 not one, but 2 articles; the first, from Janet John, a very full account of the day and of all the remarkable flora; the second a personal odyssey from Sue Grayston in search of the Drooping Saxifrage *Saxifraga cernua*. So a great deal about the wonders of Ben Lawers has already been said!

Steve Little and I had arrived a day early, so we took the opportunity to look for rare sedges. We walked up the Lawers Brook path to the col between An Stuc and Meall Garbh. We found Bristle Sedge *Carex microglochin* in some quantity in the high inclosure, but Scorched Alpine-sedge *C. atrofusca* eluded us, though we were sure that we were in the right flush. Next day we were informed that we were just the wrong side of the fence! Anyway, I digress.

The group started off in fine spirits, with much conversation about the changing ecology of Ben Lawers. The large inclosure always stimulates interest because the contrast with the grazed areas is so great. Dan explained that the SNT was still trying to buy grazing rights and wished to increase the sub-alpine inclosures. The area inclosed in 1990 was showing some regeneration and there was also some tree planting, including Rowan *Sorbus aucuparia*

and Birch *Betula pendula*. Higher up there was less growth and in the high inclosure, up to 900 metres, Woolly Willow *Salix lanata* had also been planted. Dan pointed out that when sheep are excluded, tall herbs and mature scrub tend to be encouraged at the expense of lower growing plants such as Selfheal *Prunella vulgaris* and Thyme *Thymus drucei,* plus Bryophytes and Lichens. Insect life, though, does seem to increase, with many species of sawfly and also butterflies and moths. We were impressed that, for the first time this year, a Reed Warbler *Acrocephalus scirpaceus* had been heard in the willows, joining the Meadow Pipits *Arthus pratensis*.

We all climbed down a bank from the path to admire a single Spignel *Meum athamanticum* plant. This has been known for some years, but it does not increase. This is unlike the next plant we looked at, Prickly Heath *Gaultheria mucronata*, which is very invasive and was promptly removed by Dan.

Many of the plants, particularly Sedges seen last year, were noted and we had considerable debate about an *Alchemilla* species, *glabra* or *wichurae*. These are difficult to differentiate on Ben Lawers as they seem to be very similar, those in Teesdale apparently having more variation. *A. glabra* is usually bigger but many are small on Ben Lawers, so a conclusion was not reached.

The big flush attracted our attention because of the three zones of Sedge growing in relation to the degree of wetness: those in water, the margins and the higher and more windswept. The species included Water Sedge *C. aquatilis*, Russet Sedge *C. saxatilis*, Common Sedge *C. nigra* and Stiff Sedge *C. bigelowii*. The more intrepid members of the group then ventured down a near-vertical slope to find Black Alpine-sedge *C. atrata*, Net-leaved Willow *Salix reticulata*, Downy Willow *S. lapponum* and Roseroot *Rhodiola rosea*.

After all this lunch seemed necessary, so we stopped by the burn with our old friend from last year, the Chestnut Rush *Juncus castaneus*. Then on to the popularly named Hanging Gardens, perhaps one of the most important botanical spots in the British Isles (much of it now does indeed seem to be hanging; is this due to the drying out caused by the changing climate?). We found most of the plants described by Janet but not the Alpine Gentian *Gentiana nivalis* or Alpine Fleabane *Erigeron borealis*. Further plants noted were Alpine Cinquefoil *Potentilla crantzii*, Alpine Lady-fern *Athyrium distentifolium* and Marsh Violet *Viola palustris.*

After this we took the rocky route towards the summit and again had the great thrill of seeing the Snow Pearlwort *Sagina nivalis*, Alpine Saxifrage *Micranthes nivalis* and Drooping Saxifrage *Saxifraga cernua*, before finally ascending the ridge to the summit and an appreciation of the spectacular landscape.

Many thanks to Lyn, as always the most careful and considerate of leaders, and to Dan, a great ambassador for the Scottish National Trust.

DAVID ALBON

Yellow Oxytropis

Photo: Charles Whitworth

Tuesday 9th July Corrie Fee

Day one of what must surely rank as one of WFS' more extreme events! The omens were not good. Carol Kirkwood had us down for what looked like three days of near constant rain to add to the challenge of steep, rocky terrain and the fact that most of the more unusual plants elect to grow in the higher and more inaccessible nooks of the corrie. However, after a pep-talk from VC90 recorder Theo Loizou at the visitors' centre, we sallied forth to see what we could find. We will be eternally grateful that each day we were allowed to take a few cars to the start of our botanising, cutting out miles of trudging along not-very-interesting tracks. That said, the short stretch of track leading into Corrie Fee was where we found our first plants of interest, Lemon-scented Fern *Oreopteris limbosperma* and Lesser Twayblade *Neottia cordata*. It was then on into the drizzle and onto the damp, grassy floor of the corrie where we enjoyed something of a sedge-fest, encountering Green-ribbed *Carex binervis*, Dioecious *C. dioica*, Pale *C. pallescens*, Sheathed *C. vaginata,* Pill *C. pilulifera* and Tawny *C. hostiana* to name but six. After I'd pleaded with the group to please find something other than sedges for my write-up, Chris Metherell our leader duly obliged with Scottish Eyebright *Euphrasia scottica* and its 'hybrid' with Arctic Eyebright *E. arctica* ssp. *borealis*. I say 'hybrid' because, as Chris pointed out, *Euphrasias* have thus far proved peculiarly resistant to cytological testing to establish their hybridity and all that you have to go on are their morphological features.

As we slowly ascended, more of the plants began to have 'Alpine' in their names, e.g. Alpine Bistort *Bistorta vivipara* (formerly *Persicaria vivipara*) and Alpine Meadow-rue *Thalictrum alpinum*, but the 'Alpine' that we were really interested in, Alpine Woodsia *Woodsia alpina*, was much higher up. Theo managed to track it down on its rock-face abode and we all took it in turns to edge along a wet, slippery and not very wide ledge with a respectable drop beneath it to take a look. Keeping it company or nearby were Upland Eyebright *Euphrasia frigida*, Hoary Whitlowgrass *Draba incana*, Northern Bedstraw *Galium boreale,* Mountain Melick *Melica nutans* and the ubiquitous Yellow Saxifrage *Saxifraga aizoides.* After a somewhat damp lunch, we laboriously made our way across to see the Alpine's sister, Oblong Woodsia *Woodsia ilvensis*, a few

clumps of which cling to rocks towards the top of the corrie. We then had another awkward traverse to get to Yellow Oxytropis *Oxytropis campestris*, another Glen Clova speciality, encountering en-route Mountain Everlasting *Antennaria dioica*. Almost all of the Oxytropis, at least on the scree, showed no evidence of having flowered, this being due, according to Theo, to grazing by deer, although we did manage to find a few in bloom on the less accessible rocks above. It wasn't terribly yellow, more cream.

From our lofty vantage-point, we got a sense of just how high up we were and just how steep it was to get back down again. As we neared the bottom and our knees were about to give up the ghost, Theo had a thought: as by some miracle it's stopped raining, why don't we go and look for Purple Colt's-foot *Homogyne alpina* across the way? It didn't look very far, but even 'not very far' in Clova terms requires a certain amount of time and effort. Some of the group chose (very sensibly) to withdraw gracefully at this point, while the rest of us negotiated streams, fences and vegetation just tall enough to be annoying in the quest of this great British rarity. "But is it really British?" I hear you cry. I seem to remember reading somewhere that it is the only 'British' alpine plant not also found in Scandinavia and that this fact alone casts some doubt on its native status. The suspicion is that it was planted by Scottish botanist and nurseryman George Don in the early 19th century; it was certainly 'discovered' by him in Corrie Fee in 1813. Another 138 years went by before its rediscovery in 1951.
Did we find it? Yes, with a little help from our friend the Garmin, on its lonely ledge, but it is not doing well. Indeed, there were only a few leaves to be seen and no sign of any gone-over flowers. Theo was of the opinion that if it was going to survive long-term, it would need some form of help. Glad that we'd made the effort we descended the tricky slope back to the cars, grateful indeed that we didn't have a three-mile hike back to the visitors' centre as most people would. A grand first day!

STEVEN LITTLE

Wednesday 10th July
Glen Doll

The second day was to Glen Doll, where we started off by examining Slender Eyebright *Euphrasia micrantha.* From here we walked out of the forest and then split into a high level group led by Chris Metherell and Theo Loizou and a low level group led by Lyn Jones.

In the open glen, we started straight up the steep hillside. Here the Heather *Calluna vulgaris* is thinner than in Corrie Fee as it is heavily grazed, so this also made for easier walking. Near the bottom we found the two sub-species of Tormentil *Potentilla erecta* ssp. *erecta* and the rarer subspecies *P. erecta* ssp. *strictissima*. Interrupted Clubmoss *Lycopodium annotinum* was then spotted at a relatively low altitude. Further species seen on the ascent were Few-flowered Spike-rush *Eleocharis quinqueflora*, Three-flowered Rush *Juncus triglumis* and the Silver Lady's-mantle *Alchemilla conjuncta,* which could be native here. Also some common woodland species such as Yellow Pimpernel

Lysimachia nemorum and Raspberry *Rubus idaeus.* Difficulty then ensued whilst looking at Dark-leaved Willow *Salix myrsinifolia*, although it could have been the hybrid with Eared Willow *S. aurita*.

The climb up was certainly steep and hard work and half way up we encountered a gully, with Bog Bilberry *Vaccinium uliginosum* and Net-leaved Willow *Salix reticulata* growing beside it. At one point, one of our group ventured into the gully, where some Wintergreen *Pyrola* leaves were spotted, but with no flowers it was very hard to identify which species.

After lunch we continued upwards, seeing Hair Sedge *Carex capillaris* by the path. We soon reached the top of the slope at about 800m on the Dounalt. On the crags there were the willows, Downy Willow *Salix lapponum* and Woolly Willow *S. lanata*.

From here we headed north-west through the bog and moorland, something that is not often done by botanists, according to Theo. However, it did prove worthwhile as we saw Alpine Clubmoss *Diphasiastrum alpinum,* meaning that most of the UK's clubmosses had been seen on the trip. The tricky to identify Alpine Willowherb *Epilobium anagallidifolium* and Chickweed Willowherb *E. alsinifolium* were also seen, followed by a debate about a moderately tall sedge in a damp bog which turned out to be Water Sedge *Carex aquatilis*.

We started to descend, with Scottish Pearlwort *Sagina* x *normaniana* on the way down. However, I think the best of the day was saved to the last, as we crossed beneath a crag which contained Holly-fern *Polystichum lonchitis*, Mountain Avens *Dryas octopetala* in fruit, Brittle Bladder-fern *Cystopteris fragilis*, Green Spleenwort *Asplenium viride* and the fantastic Alpine Fleabane *Erigeron borealis* which were not only in full flower but also easily accessible. Theo said the Fleabane were the best he had seen them and it proved to be an excellent photography opportunity.

Alpine Fleabane

Photo: Charles Whitworth

Near to the crag was Scottish Asphodel *Tofieldia pusilla*. Further along the crag another Wintergreen *Pyrola* was spotted up on the cliff

and, although in flower, we could not identify it as it was too high up. Then, before descending, a few of us searched and found Alpine Milk-vetch *Astragalus alpinus* which was neither flowering nor in fruit. We finished the day with a hard to identify Willow *Salix* by the cars, before returning to the hotel for a well-earned dinner. We had been lucky, as, despite the forecasts, it had stayed dry all day. The low-level group, meanwhile, had a very pleasant day exploring the heath flora on the lower slopes of the Dounalt, but unfortunately failing to find any Twinflower *Linnaea borealis*.

CHARLES WHITWORTH

Thursday 11th July
Corrie Sharrock

Lowland Group

Our third and final day. Once again we had been promised a most unpromising day of continuous thunderstorms but we were very lucky, well, we lowlanders were. We decided to separate into two groups: The Highlanders who braved the upper contour lines and the Relative Highlanders who decided to range the lower slopes.

Our trusty few were led by the enthusiastic Theo. We started by a bog and amongst the plentiful Bog Pondweed *Potamogeton polygonifolius* were the tiny flowers of Blinks *Montia fontana*. I exhorted the others to look at the seeds and to marvel at their beauty - small comma-sized fruits which are polished jet-black and relatively smooth with no tubercles and, in doing so, it proved to be the rare sub-species found in the north, ssp. *fontana.*

We had seen many grasses but to spend time in a small group and to look carefully at the small bits and key something out was edifying. To find a grass and know that it was a Bent, an *Agrostis* species, was one thing but we then had to look at the second culm leaf to determine the shape of the ligule! In this case it was relatively long and obtuse to make it Brown Bent *A. vinealis*.

A flush-meadow was wonderfully rich in so many species, a carpet of Meadow Buttercup *Ranunculus acris*; a swathe of pink of Ragged-Robin *Silene flos-cuculi*; a forest of Marsh Lousewort *Pedicularis palustris,* identified by its two-lobed calyx and flowers that have a hood ending in minute teeth but subtended further back by another minuscule point (compared to Lousewort *P. sylvatica* with a calyx of dissected lobes and a flower similar to *palustris* but lacking those tiny teeth behind the hood).

On the way back we stopped at a riverside spot to revel in the soft feel of Spignel *Meum athamanticum* and to squash the developing fruits which reminded us of the Indian spice, fenugreek. Within ten minutes of returning back to the hotel there was a deluge and we were so grateful that we got back just in time!

STEPHEN CLARKSON

Highland Group

The overwhelming sense of awe and wonder that is felt in the detail of each flower can happily be a purely aesthetic response, but it can also be of this higher order: a sacred moment; a mediated encounter with the divine. And if the setting of that

encounter is Corrie Sharroch, a present-day wilderness for all its historic usage, it is truly glorious, its beauty taking your breath away. We (or in my case, others) may be able to identify the flowers to subspecies level, but that does not affect their Otherness, that we were in truth the guests of the flowers and frogs, welcomed like careful drivers passing through a remote community.

"Yes, yes, that's all very well and good (*sigh!*) but what flowers did you see?" I hear your ask. Alright, here goes.

On the third day of our visit to Glen Clova, the excellent Theo Loizou told us briefly about the history of the valley and the previous grazing regime, causing the montane willows to be much reduced. Was it enough to protect those remaining with deer fences or, given the apparently limited regeneration, should there be an expensive programme of planting and reintroduction? And what effect might their expansion have on other special plants here? Mmm..

So we were given the choice of climbing up to the highest levels for these willows and rare sedges, or staying at a lower level, and we pilgrims voted with our feet. Mine took me upwards, led by the equally excellent Chris Metherell.

Our first target was Mountain Bladder-sedge *Carex x grahamii*, a hybrid of Russet Sedge *C. saxatilis* and Bladder-sedge *C. vesicaria*. We were delayed, inevitably, by two other possible hybrids, one involving Common Sedge *C. nigra*, alerted by the stomata on both sides of the leaves. This was later identified by Mike Porter as 'probably just an odd looking *C. nigra* although he thought it could have some Stiff Sedge *C. bigelowii* in its ancestry. The other was an apparent Shade x Wood Horsetail *Equisetum pratense* x *E. sylvaticum* = *E.* x *mildeanum*.

It was soon recognised that our sedge was growing way up on top of a plateau, the home to a family of three peregrine falcons, so we sent a search party ahead, led by the redoubtable Steve Little *Oreamnos alpinus*, whilst the rest took a more circuitous route lower down. In due course we received the semaphore message: *Eureka*. The only problem was that to join them we now had to inch our way along a remarkably narrow ledge below a rock outcrop with a 200ft drop. If it is ever made into a based-on-real-life-events drama, it will star a Burt Lancaster lookalike, who will catch a damsel-in-distress (representing Sheila Wynn) with an absurdly muscular arm and restore her to this side of eternity. In truth, though, three of us decided that the goal was so worthwhile that we could entrust ourselves to the strong root system of Bilberry *Vaccinium myrtillus*, grasping its woody stems to cross over and see the sedge in all its splendour; together with, as a bonus, Common Wintergreen *Pyrola minor* in flower, Downy Willow *Salix lapponum* and numerous Alpine Saw-wort *Saussurea alpina*, most in bud, but one or two breaking into flower.

Lunch was a potentially meagre affair for two who had left their sumptuously filled rolls in the fridge and packed two empty ones instead. But there was a quick whip-round –

Close-headed Alpine-sedge

Photo: Lyn Jones

Lyn Jones selflessly offered the last of his marmalade – and we were soon off for our second target, Close-headed Alpine-sedge *Carex norvegica*. After much diligent searching and scratching of heads we triumphed, finding a single specimen. After consulting Theo, however, the one we identified as Close-headed Alpine-sedge was more probably Black Alpine-sedge *C. atrata*, while the one that looked like a very odd Stiff Sedge *C. bigelowii* was the sought-after Close-headed Alpine-sedge, after all. If you're following me, we were still triumphant, albeit in a roundabout way.

It was growing near some 'proper flowers' (not my words on this occasion): Dwarf Cornel *Cornus suecica*, an abundance of Mossy Saxifrage *Saxifraga hypnoides* and a remarkably attractive group of Alpine Meadow-rue *Thalictrum alpinum*. There were other plants new to the three-day trip: an Eyebright hybrid probably *Euphrasia scottica x E. arctica* carefully explained by Chris, Hairy Wood-rush *Luzula pilosa*, Alpine Lady-fern *Athyrium distentifolium* and Cloudberry *Rubus chamaemorus*, but all too soon it was time to go.

Very many thanks go to Theo and Chris and also to all whose expertise in the field and effort in the planning beforehand made this meeting such an exceptional three days.

DAVID CAALS

DOWNS OF SURREY & SUSSEX 12th - 13th JULY

Friday 12th July
Happy Valley, Surrey

Happy Valley is a beautiful area of flower-rich chalk grassland and ancient woodland. It was purchased in 1937 under the Green Belt scheme, became a designated SSSI and its 250 acres now form part of London's third National Nature Reserve (South London Downs NNR) which has just been officially launched.

I am fortunate that this area is literally 'on my doorstep' and so I was pleased to see that Branch M were leading a meeting here this year. This was my first experience of a WFS meeting and so I was unsure what to expect - would they all be very knowledgeable and serious and would I be out of my depth?


Greater Yellow-rattle

Photo: Moira Smith

Priscilla Nobbs and Gareth Bursnall led a group of 16 and I soon realised that I need not have worried - everyone was very friendly and welcoming, there was a wide range of knowledge and experience and everyone was more than happy to share their knowledge and answer questions.

Even before leaving the car park Gareth highlighted the distinguishing features of Large Bindweed *Calystegia silvatica* (bracteoles pouched and overlapping, hiding the sepals) and how to differentiate Greater Burdock *Arctium lappa* (all leaf stalks solid) from Lesser Burdock *A. minus* (basal leaf stalks hollow).

He then suggested that we make fast progress along the concrete path to get to the richer areas - a good try but he hadn't reckoned on so many queries along the way!

Eventually we diverted into a field where there was much excitement among the group as they had their first encounter with Greater Yellow-rattle *Rhinanthus angustifolius*. This is a plant which is nationally very rare and found in only a few places in Britain. However in Happy Valley there are acres of it! As other members of the group snapped away I soon realised how privileged I am to wade through it every day. The identifying features when compared to Yellow-rattle *R. minor* are quite subtle but apparently a couple of distinguishing features are that the violet teeth are slightly longer and the lower lip is horizontal instead of down-turned as in Yellow-rattle.

The next field was a treat with good views and colourful displays of many typical chalk grassland flowers such as Wild Marjoram *Origanum vulgare*, Wild Basil *Clinopodium vulgare*, Burnet-saxifrage *Pimpinella saxifraga*, Small and Field Scabious *Scabiosa columbaria* and *Knautia arvensis*, Common and Greater Knapweed *Centaurea nigra and C. scabios*a, Perforate St. John's-wort *Hypericum perforatum* and Imperforate St. John's-wort *H. maculatum* and many more. This led to the next burst of excitement as some of the more experienced members of the group discovered the hybrid of these latter two, *H.* x *desetangsii,* which apparently has denticulate sepals with an apical point.

The next treat for the group was seeing another plant which is nationally rare - the stunning Round-headed Rampion *Phyteuma orbiculare* which is thriving in Happy Valley this year. In the same area we

also saw Fairy Flax *Linum catharticum* and Gareth told us that just three leaves of this beautiful but tiny plant can be eaten for it to live up to its other name of Purging Flax but none of us felt ready to test this out!

We then made faster progress along the valley bottom, passing swathes of Scabious, which looked beautiful amongst the grasses, to search out (successfully) Common Valerian *Valeriana officinalis* ssp. *collina*, which is found in drier habitats.

The list of plants identified was very lengthy by the end of the day and we returned to the car park a weary but happy group. I really enjoyed my first WFS adventure - many thanks to Gareth and Priscilla for organising and leading such a fascinating walk.

MOIRA SMITH

Saturday 13th July
High and Over Hill, Sussex

Sixteen WFS members met at High & Over Hill. This is a hill with wonderful views over the River Cuckmere meanders with its estuary in the distance. We descended the slope gradually looking for characteristic species of chalk grassland.

A meadow further down gave us our first excitement, a large clump of Musk Thistle *Carduus nutans* with White Horehound *Marrubium vulgare,* a densely hairy plant with white flowers used in cough mixtures. Nearby was the attractive grass Meadow Barley *Hordeum secalinum* and Hairy Buttercup *Ranunculus sardous*.

Above the White Horse carved into the hill in the 1800's and recarved in 1927 we stopped to look at Squinancywort *Asperula cynanchica*, Dropwort *Filipendula vulgaris* and Slender Thistle *Carduus tenuiflorus*. The genus *Carduus* differs from *Cirsium* (Spear Thistle, Creeping Thistle) in having a pappus of single hairs above the achene rather than feathery. The hybrid Campion *Silene x hampeana* i.e. *S. dioica x S. latifolia* with its pink petals was a pleasant surprise along with Henbane *Hyoscyamus niger* and Common Broomrape *Orobanche minor*.

We then moved to Cradle Hill. The National Trust has done an excellent job of management here and the result was spectacular. On the path was the local speciality Red Star-thistle *Centaurea calcitrapa* and in the scrub nearby Hound's-tongue *Cynoglossum officinale*, Creeping Jenny *Lysimachia nummularia* and White Bryony *Bryonia dioica*.

Photo: Gareth Bursnell

Red Star-thistle

This sheltered dry valley was awash with so many flowers it took our breath away. On one bank I counted over 50 flowers of Round-headed Rampion *Phyteuma orbiculare* in just over a square metre! Several spikes of Burnt Orchid *Neotinea ustulata* (formerly *Orchis ustulata*) were found still in good flower. For those who had seen the Greater Yellow-rattle *Rhianthus angustifolius* the day before at Happy Valley it was interesting to note the much smaller teeth on the lip of the corolla in the Yellow-rattle *Rhinanthus minor* flowers here.

Greater Knapweed *Centaurea scabiosa* was abundant and even some with pure white flowers glistening in the sun. Hoary Plantain *Plantago media*, Kidney Vetch *Anthyllis vulneraria*, Small Scabious *Scabiosa columbaria,* Field Scabious *Knautia arvensis* and Pyramidal Orchids *Anacamptis pyramidalis* were also admired along with Marbled White, Dark-green Fritillary and Chalk-hill Blue Butterflies flying about.

The late-flowering Upright Hedge-parsley *Torilis japonica* was looking fine along with Wild Carrot *Daucus carota* with its ruff of bracts and central purple flower. At the far end of the valley Bastard-toadflax *Thesium humifusum* was located; a good conclusion to the day.

We all agreed we had not seen a downland bank as good as this in many years, a joy to behold and savour in our memories for recalling in the winter.

Many thanks to Janice Reynolds for sharing her local knowledge of the area and where to see the best plants.

GARETH BURSNALL

COUNTY DURHAM 20th - 21st JULY

The weekend saw a visit by WFS members to Durham's magnesian limestone terrain and its flora. Leading the meeting were Steve Gater and Keith Robson, with assistance from Carole Lloyd, all from the Durham Botany Group. The weekend was split into three visits to different sites starting with Bishop Middleham Quarry which is managed by Durham Wildlife Trust. This ceased to be worked as a quarry in 1934 and was designated as a SSSI in 1968 because of the range of plant and animal life that has adapted to the thin magnesian limestone soils. The surrounding area is known for its working quarries and others that have since been abandoned.

Our group of eleven started by looking at the Dark-red Helleborines *Epipactis atrorubens* that grow throughout the quarry noting how tall the species is. The quarry is known for these and visitors from many parts of the country arrive to see them. Fragrant-orchids *Gymnadenia* spp. were the next plants we looked at causing a great deal of discussion

which lasted for much of the day and only ceased when we saw the different species side by side later in the afternoon that more clearly showed the differences. We thought we were looking at Chalk Fragrant-orchid *Gymnadenia conopsea* and Heath Fragrant-orchid *G. borealis.* We could only distinguish the two by measuring the width of the florets, lip length, lip shape and other important key features. We came to the conclusion both were growing on the site but they are very difficult plants to accurately identify.

Photo: Derek Risbey

Dark-red Helleborine

Moving on to Eyebrights *Euphrasia* – another large and complex group of plants to identify - we had fun keying the species out and came to the conclusion we were looking at Arctic Eyebright *E. arctica.* It seemed very easy when working as a group to reach a clear conclusion.

Our path then led us to higher ground with particularly poor soil which, along with the rabbits, has had a noticeable influence on all the plants, leaving them stunted and at times hardly recognisable. Miniature specimens of Autumn Gentian *Gentianella amarella* ssp. *amarella,* which were just coming into flower, and Common Centaury *Centaurium erythraea,* for example. We were hoping at that point to find Moonwort *Botrychium lunaria* which has been found here in the past. This is a small fern so named because of the shape of its leaves which are fan shaped and resemble a half moon. Unfortunately, on this occasion, it wasn't to be.

Just before our stop for lunch we saw several large specimens of Pyramidal Orchid *Anacamptis pyramidalis* and the only Bee Orchid *Ophrys apifera,* which was well past its best.

After lunch we moved on to Thrislington Nature Reserve for the second part of the day. This is a SSSI site and a National Nature Reserve (NNR) near Ferryhill and next to a working quarry. It is an area of thin, magnesium lime-rich soils which has developed as unique grassland supporting a variety of plants including Common Rock-rose *Helianthemum nummularium,* Small Scabious *Scabiosa columbaria* and Blue Moor-grass *Sesleria caerulea* (formerly *S. albicans*). It is a very interesting site because the first meadow was formed by relocation of soil following the closure of the original quarry. The area is also

home to the Durham Argus Butterfly *Aricia artaxerxes* ssp. *salmacis*, a subspecies of the rare Northern Brown Argus *A. artaxerxes,* the former whose larvae feed on the Rock-roses. There were many interesting plants but we were looking in particular for Perennial Flax *Linum perenne,* with its beautiful and delicate blue flowers. This was very difficult to find but once we got our eyes in we found quite a sizeable patch. We found many more Dark-red Helleborines *E. atrorubens* and a large site of very tall Agrimony *Agrimonia eupatoria.* Agrimony used to be collected to be waved in churches to get rid of any evil spirits. Two very heavy showers didn't deter us for long and after continuing our walk through the meadows we quickly started to dry out before finishing the day.

The third part of the weekend started with us meeting the next day at Noses Point which is just south of Seaham on the Durham coastline. Noses Point was once the site of Dawdon Colliery which was one of the last pits to close. Colliery waste was dumped onto nearby Blast Beach, which we passed, having a devastating environmental impact. The beaches have all been cleaned up now and Noses Point, a SSSI site, forms the gateway to the start of Durham Heritage coastal footpath and a small part of the footpath round Britain. The meadows have been restored and contain many wild flowers growing on the Magnesian Limestone soil. There was so much to look at but one plant we looked at closely was Pepper-saxifrage *Silaum silaus* although few could detect any hint of pepper. It has solid ridged stems and sulphur-yellow flowers which were just beginning to open. We compared it to a plant we looked at yesterday, Burnet-saxifrage *Pimpinella saxifraga* with its distinctive once-pinnate basal leaves and stem leaves which are twice-pinnate. Finding Frog Orchid *Coeloglossum viride* was a real treat, even if the plants had gone over.

We walked on towards Hawthorn Dene and more flower meadows. Denes are a feature of the Durham coast formed by waters from melting glaciers. They are little wooded ravines where the streams cut through the limestone before entering the sea. The meadow at Hawthorn Dene is managed by the Wildlife Trust and is full of the flowers you would expect in this location. Our route took of us onto Easington, another former mining village, with the path following the railway track which seemingly influenced some of the conditions for the plants. It seemed to be warmer there and as a consequence plants seemed to be taller including the Perennial Sowthistle *Sonchus arvensis.* These plants reach 1.5 metres and certainly the specimens we saw were that height. It can also be known as Corn Sowthistle or Milk Thistle.

Reaching Easington we car-shared to our next destination of Blackhall Rocks to look at the coastal flushes. Blackhall also had its coal mine and much colliery waste was deposited on the beach at Blackhall Rocks. Although it has been cleaned up to a large extent there are still many large stones on the beach along with bricks. Many look very orangey, affected by iron and other mineral

deposits. Along the beach there were several small shrubs of Creeping Willow *Salix repens.* This hardy plant tolerates salt from the sea.

Our final stop of the day was to climb up a flush in the cliff side. Flushes are areas of damp ground hollowed out by water that flows down the cliffs but does not follow a definite channel. Here the soil has a top layer that is acid encouraging a different variety of plant life. Climbing halfway up a steep path we found Grass-of-Parnassus *Parnassia palustris* which was just coming out in flower and Common Butterwort *Pinguicula vulgaris*. Happily we all got down safely from our climb and we wandered back to the car park with the promise of an ice cream. What was the highlight of the weekend? Really too difficult to say but I think everyone enjoyed the company of keen botanists who delighted in the large areas of traditional wild flower meadows. The group appreciated seeing the Dark- red Helleborines *E. atrorubens* and the number of common varieties that had a white flowering version including Common Centaury *Centaurium erythraea* found at Bishop Middleham, Selfheal *Prunella vulgaris* and Agrimory *Agrimonia eupatoria* all by the coast.

Our thanks to Steve and Keith for the leading the weekend.

CAROLE LLOYD

White and pink forms of Common Centaury

Photo: Derek Risbey

Botanical Latin Quiz Number 2

Plants are often named by the places they are found in or came from e.g. *Canadensis* for Canada. Which places do these names imply?

cretica
arctica
californica
norvegicum
neapolitanus
balticus
danica
scotica
anglica
cambrica
hibernica
monensis
groenlandicus
europaea
orientalis
occidentalis
italica
germanica
maderense
pyrenaica
australis
borealis
persica
capensis
hispanica

Answers on page 41

GARETH BURSNALL

MORE THAN WEEDS

"More than weeds", a new project aimed at changing the perception of urban plants growing on walls, pavements and in tree pits has been launched at the recent Annual Exhibition Meeting of BSBI. Through walks, social media campaigns and publications, the project hopes to increase recording of urban plants and persuade local authorities to manage urban flora in a sustainable way. To find out more, visit - www.morethanweeds.co.uk

SOPHIE LEGUIL

ONE DAY MEETINGS 2019

ST. AIDEN'S NATURE PARK, LEEDS
29th JUNE

On one of the hottest days of the year we met our leader, Jesse Tregale, and members of the Bradford Botany Group to explore St. Aidan's Nature Park. This Country Park is managed by the RSPB and has been developed on land which was formerly an opencast mining area that was flooded in 1988 after the banks of the River Aire collapsed. It contains a variety of habitats including reed bed, wetland, meadows and woodland.

We had been promised a good variety of docks and before we'd even left the car park Jesse was already pointing out Greek Dock *Rumex cristatus* with its dense inflorescence of large-tepalled fruits, growing next to its hybrid with Broad-leaved Dock, *R.* x *lousleyi.* This was clearly a hybrid as most of its fruits were sterile and easily fell off the plant when touched.

Walking into the reserve we stopped to look at two different Hawk's-beards, Rough *Crepis biennis* and Beaked *C. vesicaria.* As the name suggests, the achenes of Beaked Hawk's-beard have long beaks which are almost half of the total length, whereas those of Rough Hawk's-beard are un-beaked.

The grassland along the path contained a good variety of plants from the Pea family Fabaceae, including both Smooth and Hairy Tares *Ervum tetraspermum* and *Ervilia hirsuta* (formerly *Vicia tetrasperma* and *V. hirsuta*), Alsike Clover *Trifolium hybridum* and the larger, introduced variety of Bird's-foot-trefoil *Lotus corniculatus* var. *sativus,* which could easily be mistaken for Greater Bird's-foot-trefoil *L. pedunculatus* except for the fact that it doesn't have the hollow stem of that species.

Growing along the edges of the water of the wetland area were large numbers of Golden Dock *Rumex maritimus*, together with a few plants of the very similar Marsh Dock *R. palustris*. The main difference between them was the shorter, neater teeth on the tepals of Marsh Dock.

These were growing together with an interesting selection of water plants including Buttonweed *Cotula coronopifolia,* Pink Water-speedwell *Veronica catenata,* Trifid Bur-marigold *Bidens tripartita* and Thread-leaved Water-crowfoot *Ranunculus trichophyllus.*

Here, also, was the Great Soft-rush *Juncus pallidus,* a native of Australia and New Zealand, looking like a very large Soft-rush *J. effusus*. We searched, without success, for the hybrid between these two species which had been found here previously.

Leaving the wetland area, many of us were flagging under the relentless

glare of the sun as we headed back towards the car park just stopping briefly along the way to admire the Yellow-wort *Blackstonia perfoliata* and the Lesser Centaury *Centaurium pulchellum.*

Many thanks to Jesse for showing us the plants of this unusual site.

SHEILA WYNN

PARKLAND WALK 6th JULY

The Parkland Way follows the course of an old railway line from Alexandra Palace to Finsbury Park via Highgate and Crouch End. The line was closed in 1954 and in 1990 its route was given protected status. It is the longest linear Local Nature Reserve in London.

Five of us met David Bevan at Highgate Station. We began by walking to the old tunnel that, in the past, connected to the northern part of the railway track to Alexandra Palace. Here we examined the flowers of Hedge Bindweed *Calystegia sepium* to see if they were the hybrid. Most plants were the hybrid Large Bindweed x Hedge Bindweed *C. x lucana* (*C. sepium x C. silvatica*). In the hybrid the sepals show between the bracteoles whilst in the Large Bindweed the bracteoles are more inflated, more or less obscuring the sepals below (see *Plant Crib* p.232). Also here was a hybrid swarm of Druce's Crane's-bill (Pencilled Crane's-bill x French Crane's-bill, *Geranium endressii x G. versicolor = G. x oxonianum)*. The Stingless Nettle *Urtica dioica* ssp. *galeopsifolia* with its longer, narrower leaves was a new find for some members. It is common in fenland areas. Nearby was the plentiful American Willowherb *Epilobium ciliatum* with its rounded leaf-bases and numerous glandular hairs. A single plant of Pale Willowherb *E. roseum* had its characteristic long petioles. A very large Canadian Fleabane *Erigeron canadensis* (formerly *Conyza canadensis*) was admired along with the Narrow-leaved Ragwort *Senecio inaequidens,* a plant which is now relatively common in the London area.

Many of us loved the large planted Himalayan Birch *Betula utilis* var. *jacquemontii*, just to enjoy and stroke its beautiful white bark. A bit of


Druce's Crane's-bill

Photo: David Bevan

"tactilicity" does you good! Highclere Holly *Ilex x altaclerensis* (*I. aquifolium x I. perado)* was frequent in this part of London, happily growing on the old railway banks.

At Crouch End near the old platform was Greater Burdock *Arctium lappa* with its solid petioles plus an easy to identify bramble, Himalayan Giant *Rubus armeniacus* with leaves white-felted beneath and a very large terminal leaflet. The most unusual plant here was a garden form of Coralroot *Cardamine bulbifera* f. *ptarmicifolia* with more deeply serrate leaves (see *Plant Crib* p.125).

Further along the old track was Turkey Oak *Quercus cerris* with its spiny acorn cups. When an old Victorian Railway bridge collapsed David was very worried that the only site for the Black Spleenwort *Asplenium adiantum-nigrum* would disappear. Luckily it managed to survive on the wall above the graffiti, whilst still on the old bricks.

We now left the London Borough of Islington and entered Harringey. We explored a bank of acid grassland and noted Mouse-ear-hawkweed *Pilosella officinarum*, Common Knapweed *Centaurea nigra*, Sheep's Sorrel *Rumex acetosella*, and Common Bent *Agrostis capillaris*. Other plants included Yarrow *Achillea millefolium* and Bittersweet *Solanum dulcamara.*

On the final stretch was a magnificent Fig *Ficus carica* and Mugwort *Artemisa vulgaris* was just starting to flower. David searched for an unusual dark-flowered Meadow Crane's-bill *Geranium pratense* which he photographed on his earlier recce. Unbelievably it had completely vanished! The mystery is still unsolved!

Very many thanks to David for all his hard work and taking time to show us one of his favourite walks. I'm sure all of us went home delighted with all the unusual species they had seen.

GARETH BURSNALL

STAMBOURNE, ESSEX
28th JULY

Four of us assembled on a rainy morning for a wander round the fields, hedges and woods near Stambourne. The first area was arable desert but the margins held a few plants including Dwarf Spurge *Euphorbia exigua* and both Fluellens, Round-leaved *Kickxia spuria* and Sharp-leaved *K. elatine*. The rain eased off for the rest of the day but the mud was very wet and clung to our boots as we crossed the arable footpaths stepping over Redshank *Persicaria maculosa* and Common Knotgrass *Polygonum aviculare*. The hedges provided the plant of the day Greater Burnet-saxifrage *Pimpinella major*.

A small area of field margin held a nice selection of plants including the scarce Gold-of-pleasure *Camelina sativa* (which was also located here last year) amongst Flax *Linum usitatissimum* and other common arable plants. It was time for a quick

lunch stop, where we noted how quiet the area was apart from the barking muntjac in the wood, which was our next stop.

Here we broke out Stace for a selection of sedges, which included masses of Thin-spiked Wood-sedge *Carex strigosa* (samples of which were taken to confirm) and a form of Tufted Hair-grass found in lowland woods on heavy soils, noted by its narrower and less scabrid leaves and its smaller spikelets, *Deschampsia cespitosa* ssp. *parviflora*.

The roadside hedgerow on the way back to the car produced a conundrum to confirm later. It proved to be American Guelder-rose *Viburnum trilobum*, unfortunately not in flower. Dewberry *Rubus caesius* and Duke of Argyll's Teaplant *Lycium barbarum* were in fruit and concluded our walk.

An interesting day of sedges, hedges and edges and the weather was much better than expected.

Gold-of-Pleasure

Photo: Mark Hows

MARK HOWS

POOR'S ALLOTMENT, WYE VALLEY 1st AUGUST

This was my fourth WFS field meeting and it seems that this is when you reach the top of the list to write the day's report. I was like a rabbit caught in the headlights as everyone else backed away muttering about 'other various commitments' or 'already having numerous reports to complete'. The advice given to me was 'the English comes first'. So here goes……my very first Field Meeting Report!

Although I live only an hour away from this Gloucestershire Wildlife Trust's reserve I had never visited before and was fascinated to know more about it. The SSSI site was originally allocated as grazing land for the poor of the parish. There is a very varied combination of lowland heath, calcareous limestone and broad-leaved woodland. The Gloucestershire Wildlife Trust are battling the encroaching bracken with a 5-year plan and using Exmoor

ponies and local rare breed cattle to help. Hence our walk was punctuated with the moo of cows often hidden from sight in the bracken.

Ten of us met to be led by the hugely knowledgeable Mark and Clare Kitchen. We started in Poor's Allotment and we could soon see that we were on a ridge about 200m high as we saw views of the River Severn below us.

We started the day with three species of Birch trees, Silver Birch *Betula pendula*, Downy Birch *B. pubescens* and the rare Iberian White Birch *B. pubescens* ssp. *celtiberica*. We then looked at the bright splashes of colour of the typical heathland plants, Western Gorse *Ulex gallii* and three types of heather conveniently growing side by side, so easy for a novice to compare, Bell Heather *Erica cinerea*, Ling *Calluna vulgaris* and Cross-leaved Heath *E. tetralix.*

On an old stone garden wall we saw Caucasian-stonecrop *Phedimus spurius* (formerly *Sedum spurium*) which probably escaped from the garden and two ferns common on walls, Maidenhair Spleenwort *Asplenium trichomanes* and Rustyback *A. ceterach*. The homeowner came out to join in.

After going through another small wood we passed through a gap in the hedge between fields and one of the highlights of my day appeared, an 80-metre field-edge strip of English Eyebright *Euphrasia officinalis* ssp. *anglica*. In the colourful meadow were spikes of Agrimony *Agrimonia eupatoria* and Des Etangs' St. John's-wort *Hypericum perforatum x maculatum*. Clare's sharp eye spotted a lone flowering Cowslip *Primula veris* which had got out of kilter with the seasons.

On the way back for lunch we found two spikey plants in the hedgerow, Spiked Sedge *Carex spicata* and, from the Bedstraw family, Wild Madder *Rubia peregrina.*

After lunch we had a pleasant foray in and around the ponds on Poor's Allotment and saw several sedges including Oval Sedge *Carex leporina,* the very appropriately named Star Sedge *C. echinata,* and Common Yellow-sedge C. *demissa*. I was pleased to be able to see the tiny flowers of Marsh Pennywort *Hydrocotyle vulgaris* and Ivy-leaved Crowfoot *Ranunculus hederaceus.* Lesser Skullcap *Scutellaria minor* was also in flower with pale pink speckled bells. Mark also pointed out a Water Scorpion!

We then walked to the viewpoint at Devil's Pulpit with amazing views of Tintern Abbey below. There was plenty to see along the way including hedgerows lined with Hemp-agrimony *Eupatorium cannabinum*, Ribbed Melilot *Melilotus officinalis* and a local specialty, Small-leaved Lime *Tilia cordata*. One of Mark's highlights, which we saw on Offa's Dyke, was a grass that is rare to the area, of which we only counted four clumps. This was Wood Fescue *Drymochloa sylvatica* (formerly *Festuca altissima*) which has a purple sheath at the base of the stem.

There was a penultimate stop at an old dung heap to look at Fig-leaved Goosefoot *Chenopodium ficifolium*

and Spear-leaved Orache *Atriplex prostrata* before walking back to the cars discussing where the nearest place was to get a pint of Uley ale to round off the day.

As it was getting late in the afternoon the party began to fragment but after a very short car ride those who stayed to the end were rewarded with Least Stonecrop *Sedum lydium* and Lesser Caucasian-stonecrop *Phedimus stoloniferus* (formerly *Sedum stoloniferum*), two aliens both well-established on the top of a dry-stone field-wall.

Many thanks to Mark and Clare. I learned a lot and we all had a really good day out.

SUE KNIGHTS

WHISBY NATURE PARK, LINCOLN 2nd AUGUST

Every field meeting is different and gives memorable moments. Perhaps an impressive swathe of a particular flower that is just in the right place at the right time and is giving its all; it could be a plant that you have long wished to see or to be reunited with and here it is, found at last; or that special insight that someone gives you which is a key to identification not mentioned in the book, but so helpful; that unexpected and unwanted moment when something definitely not on the plan happens; a serendipitous occurrence that excites. Our field meeting to Whisby Nature Reserve near Lincoln had them all.

We were met at the Education Centre by Sarah Lambert, VC recorder for South Lincolnshire, Sue Fysh from Lincolnshire Wildlife Trust and Richard Davidson, a local entomologist. There, alongside the car park, was an impressive show of Pennyroyal *Mentha pulegium* var. *erecta*, a native species but introduced here and loving it. The smell of the mint wafting over us was amazing. This is a protected plant - so no picking! Later in the day we saw fields full of Blue Fleabane *Erigeron acris*

We found plants that I don't see too often, but, perhaps because of their names, you get a thrill out of seeing, Ploughman's-spikenard *Inula conyzae* and Hare's-foot Clover *Trifolium arvense.*

Great Lettuce *Lactuca virosa was* a cinch to identify with its dark purple fruits, while Prickly Lettuce *L. serriola* has pale brown fruits (a useful hint from Geoffrey Hall, VC recorder for Leicestershire, who was one of the meeting participants). And, as for Umbellate Hawkweed *Hieracium umbellatum,* I will now be able to impress with my easy identification of the plant - it has lots of black involucral bracts with strongly recurved tips - thanks Sarah!

The moment that didn't go to plan? Well, off we went into a wood to see Green-flowered Helleborine *Epipactis phyllanthes,* Broad-leaved Helleborine *E. helleborine* and also *E. helleborine* var. *viridiflora.* Did we

see them? Yes. But we had been warned by Sarah that they were guarded by voracious mosquitoes. I had plastered insect repellent everywhere but clearly they spotted a clearing in the application and within seconds I had bites on the back of both my hands and I beat a hasty retreat. Strange, someone in the group had no repellent on, was wearing shorts and a short-sleeved shirt and got NO bites.

And special, unusual moments that put a smile on your face? We had those as well. The Greater Water-parsnip *Sium latifolium* flowers were covered with Marmalade Hoverflies *Episyrphus balteatus.* What a sight! And for our last plant, but certainly not our least, we tracked down the Heath Cudweed *Omalotheca sylvatica* (formerly *Gnaphalium sylvaticum*) in a far corner of the Nature Park, a first for a number of us and Sarah's first sighting in Lincolnshire. A winner for those of us that persisted in our search until we found them. As is often the case, once we found one our eyes got tuned in and we found a good number.

A very satisfying day of botanising. Thanks to Sarah, Sue and Richard.

JANET JOHN

HOLFORD COMBE, SOMERSET 11th AUGUST

Trying to re-find old records for uncommon plants usually involves historical research – reading old county floras, looking at herbarium specimens, searching for journal articles – but this time the inspiration for the meeting came from a happy chance rather than hard work! A small team of Somerset Rare Plants Group (SRPG) members works on the Somerset county herbarium **TTN** which is housed in Taunton Heritage Centre and on our regular day we eat our sandwiches in the reception hall. Last year surplus back numbers of Somerset Archaeological and Natural History Society (SANHS) *Proceedings* were offered there for sale at £1 a copy and they made interesting lunchtime reading. The Botanical Section report for 1933 told of a meeting in Holford Combe and listed some of the plants seen. These included a number of Quantock target species such as Cornish Moneywort *Sibthorpia europaea* and Allseed *Linum radiola* (formerly *Radiola linoides)*. This area has a rich list of uncommon plants and it turned out that many records had not been updated post 2000, so the idea was formed to meet for a concerted search, close to the time of year of the original meeting.

This proved popular and more than 20 members gathered from three societies, WFS, SRPG and SANHS. The start was made memorable by a noble SANHS member bringing his beautifully maintained Austin 7 car, made in the year of the original meeting, to set the scene, and a traditional vasculum was also produced. Two groups were organised, with Graham Lavender

leading the fittest up to the watershed between Holford Combe and Hodders Combe, where a cluster of the most challenging records are located at an altitude of about 250m. As well as plants which might reasonably be expected in damp parts of the hill, the historic records have two 'one offs' – Chamomile *Chamaemelum nobile*, which is almost extinct in Somerset, and an introduced population of Large-flowered Butterwort *Pinguicula grandiflora*. The latter was known here for about 30 years, but had not been seen since the 1990s, though another population still flourishes on Exmoor. These were carefully searched for (the locations are reasonably identifiable) and are almost certainly lost. Other plants recorded round here, such as Marsh St. John's-wort *Hypericum elodes* were not found but might still be there in some hidden damp hollow, though bracken growth seems to be increasing. Searches were made difficult for part of the time by weather turning to torrential rain! However this group had a number of splendid finds, Cornish Moneywort *Sibthorpia europaea* proving to be pleasingly frequent, the sometimes elusive Hay-scented Buckler-fern *Dryopteris aemula* being confirmed, and best of all Ivy-leaved Bellflower *Wahlenbergia hederacea* was found in good quantity in several places, adding a new monad dot to the Quantock populations.

Photo: Ro FitzGerald

The other group took a more leisurely look at the lower end of Hodders Combe and then explored the village and churchyard. The Green twins had recorded many 'escapes' here, up to about 1997, and Holford still has plenty of roadside interest. Before the rain we also enjoyed excellent sightings of the magnificent Silver-washed Fritillary flitting among willows near the former bowling green. It was interesting too, to be following the road above the famous gorge, home of the rare Tunbridge Filmy-fern *Hymenophyllum tunbrigense* in its only Quantock site, and also the mysterious 'gametophyte' form of the Killarney Fern *Trichomanes speciosum*. These plants are in the adjacent monad to the one we were recording, but some people went down the steep track to look at the gorge, where one of the odder Holford records *Hydrangea macrophylla* has persisted for more than 20 years on the bank of the stream! Sodden conditions were beginning to lower the mood by the middle of the afternoon, so a stop for hot coffee at the welcoming Plough Inn was a great reviver, though our clothing style possibly lowered the tone a bit from when Virginia Woolf (who was notoriously difficult to feed) was reported by Leonard to have enjoyed 'a good supper' there on

their honeymoon! Although the road edge village habitats were always going to yield modest finds, we were very pleased to have raised the monad total to a very respectable 268 and, of course, we had plenty of lively discussions about whether things near gardens were 'in' or 'out' for the purpose of *Atlas 2020* recording!

All in all, a lucky flip through an old journal had led to an adventurous meeting and a valuable exercise in identifying and searching for local target species.

RO FITZGERALD

SILVERDALE, LANCASHIRE 22nd AUGUST

On a very wet and windy day, members of the WFS with our leader Julie Clarke and a few members of the Liverpool Botanical Society (14 in all) set off in rather slippery conditions for a walk in Silverdale. This is an Area of Outstanding Natural Beauty (AONB) north of Lancaster comprising several coastal habitats such as saltmarsh, shingle and sandy beaches, and limestone cliffs with a rich variety of flora.

We met at Woodwell to park cars and gather round the nearby man-made 'well' to see Water Mint *Mentha aquatica*, Greater Spearwort *Ranunculus lingua* and Meadowsweet *Filipendula ulmaria* in flower and Brooklime *Veronica beccabunga* and Altar-lily *Zantedeschia aethiopica* in fruit. Julie showed us Bullate Cotoneaster *Cotoneaster rehderi* also in fruit; a shrub new to some of our party. We then walked along the road to Jack Scout; a limestone outcrop owned by the National Trust with wonderful views of Morecambe Bay (when the weather is fine!) to see a good range of flora including Common Rock-rose *Helianthemum nummularium,* Small Scabious *Scabiosa columbaria* and both Trailing and, the lovely, Slender St. John's-wort, *Hypericum humifusum* and *H. pulchrum*.

After a much-needed breather and photo opportunity whilst we sat upon the stone Giant's Seat, at the highest point of Jack Scout, we found one of the day's highlights, Autumn Lady's-tresses *Spiranthes spiralis* growing in abundance. These small but exquisite orchids kept us all interested for a while; several people took photographs whilst kneeling on the rather precarious steep slope before we looked for somewhere dry, or drier, to sit and have lunch. Nearby we found Ploughman's-spikenard *Inula conyzae,* Musk Mallow *Malva moschata* and Goldenrod *Solidago virgaurea* to add to our lists.

After lunch we descended to the shingle shore at Jenny Brown's Point, where yet more botanical delights awaited us. Nothing was growing in abundance, but we did find Vervain

A wet and windy day at Silverdale

Photo: David Jarvis

Verbena officinalis, Lesser Sea-spurrey *Spergularia marina,* Parsley Water-dropwort *Oenanthe lachenalii* and Annual Sea-blite *Suaeda maritima,* alongside commoner species like Perennial Sowthistle *Sonchus arvensis,* and Common Stork's-bill *Erodium cicutarium.* We were uncertain as to the identity of an Orache *Atriplex* species; this is a notoriously difficult genus, so its identity was left unresolved.

The final part of the walk involved climbing a steep, narrow and slippery path to the top of the hill with Bramble *Rubus sp* .the only available plant to grasp for balance! Many of the party had sensibly brought walking sticks and, as I hadn't, I was very grateful for the help of Joyce, from the Liverpool Botanical Society, in getting me to the top in one piece. At the summit we crossed a couple of fields and found Selfheal *Prunella vulgaris*, but not a lot else, before we headed back to our cars and an opportunity to get dry.

Many thanks to Julie for arranging a very interesting and botanically rich, if occasionally challenging, walk, with over 100 plant species found despite the very inclement weather.

DOROTHY ROSS

HADLEIGH COUNTRY PARK, ESSEX
14th SEPTEMBER

A small group of us eventually met at Hadleigh, near Southend, the late change of meeting point causing some confusion. Hadleigh Country Park was a sea of Wild Carrot *Daucus carota,* all now in seed, but hidden amongst it were some gems: Narrow-leaved Bird's-foot-trefoil *Lotus tenuis*, Spiny Restharrow *Ononis spinosa,* amongst the commoner Chalk Knapweed *Centaurea debeauxii* and Red Clover *Trifolium pratense*. Hidden amongst the dry vegetation in a small clearing nearby were some Deptford Pinks *Dianthus armeria,* at the end of their season, but with a few still in flower.

It was a very warm day and there were plenty of invertebrates about and we spotted a few while searching for Hairy Vetchling *Lathyrus hirsutus*, viz. a Wasp Spider *Argiope bruennichi* and the enormous Great Green Bush-cricket *Tettigonia viridissima*.

We had a further wander eventually finding some welcome shade under a large oak tree by an expanse of Hartwort *Tordylium maximum* in seed, where we had a leisurely lunch. We wandered back to the car stopping to admire the flowering Ivy with both Honeybees *Apis mellifera* and Ivy Bees *Colletes hederae*.

We all drove the 40 minutes or so to a remote farm near Foulness to the east. Here we were guided by the landowner to see the incredibly rare Pedunculate Sea-purslane *Atriplex pedunculata* growing in profusion alongside a saltmarsh channel, albeit in a rather small area. Sea-purslane *A. portulacoides* was present to allow for comparison. There were plenty of other saltmarsh plants such as Sea Aster *Tripolium pannonicum* (formerly *Aster tripolium*), Purple Glasswort *Salicornia ramosissima* and Greater Sea-spurrey *Spergularia media.* From the channel, Beaked Tasselweed *Ruppia maritima* was keyed out, rounding off a very pleasant trip.

MARK HOWS

CHAILEY COMMON, EAST SUSSEX
15th SEPTEMBER

On a beautiful sunny day Helen Proctor greeted eight of us in Romany Ridge car park and introduced Dr. Jacqueline Hutson, who knows Chailey Common well and was joining her as co-leader of the meeting.

The Common is one of the largest heathland commons in the South of England. It was designated as a Local Nature Reserve in 1966 and is a SSSI for its heathland plants and diverse insect and bird communities. Chailey Common was recorded in 1086 in the Domesday Book and was used for a long time by local people for cutting wood and bracken for fuel and grazing their animals. The common is dominated by Heather

Purple Moor-grass

Photo: Lys Muirhead

Calluna vulgaris, Bell Heather *Erica cinerea* and in damper places Cross-leaved Heath *Erica tetralix*. Recently the site has been grazed by Longhorn cattle to keep tree saplings, brambles and rank grasses under control.

As we set off it soon became clear why Helen had advised us to wear sturdy footwear and carry a walking pole. The ground was very uneven with dense tussocks of Purple Moor-grass *Molinia caerulea*, shrubby heather species and bracken *Pteridium aquilinum*. But before long our struggles were rewarded by coming upon a stunning array of the sky-blue, funnel-shaped flowers of Marsh Gentian *Gentiana pneumonanthe*. A little further on we examined the leaves of Alder Buckthorn *Frangula alnus* which is a food-plant of the Brimstone butterfly and has green berries which turn red and finally purplish-black.

The Common was full of colour with the yellows of Gorse *Ulex europaeus* and Common Fleabane *Pulicaria dysenterica;* the blues and purples of Devil's-bit Scabious *Succisa pratensis*, Lesser Skullcap *Scutellaria minor*, three thistle species and the pink of Common Centaury *Centaurium erythraea.* Towards the end of the morning we were delighted to find a good number of young plants of Royal Fern *Osmunda regalis* which had not been recorded in that part of the Common before. It was surprisingly hot for mid - September and we all sought a shady area to eat lunch. A taste of the nearby Water-pepper *Persicaria hydropiper* gave added pungency to the meal for some.

The wetter heathland areas had dried out considerably over the summer, but we discovered an area that still had a good selection of plants that favour damper conditions which included Marsh Pennywort *Hydrocotyle vulgaris*, Lesser Spearwort *Ranunculus flammula*, Gypsywort *Lycopus europaeus*, Fool's-water-cress *Helosciadium repens* (formerly *Apium nodiflorum*), Water Mint *Mentha aquatica* and Water Figwort *Scrophularia auriculata*.

Thank you Helen for all your expertise and for giving us such a splendid day's botanising. Thanks also to Jacqueline for sharing her local knowledge; we all thoroughly enjoyed familiarising ourselves with the lowland acid heathland flora at Chailey Common.

JILL OAKLEY

SOUTHWOLD, SUFFOLK
28th SEPTEMBER

What an up and down Summer we have had this year and it would have been nice if we could have had an Indian Summer in the Autumn, but it wasn't happening any day soon. Thankfully, the day that we picked to walk around this lovely unspoiled seaside town on the Suffolk coast was full of sunshine but winds of 40mph buffeted us whilst we were on the coast proper. Seven of us started out by the large grassy common, meandered over part of the golf course and followed one of the dykes to see what water plants we could find.

Our first flower was Hedgerow Crane's-bill *Geranium pyrenaicum.* It demonstrated how you can identify many such species just from the hairs on the petioles, in this case, a mixture of short and longer hairs. The lobing of the leaf and the warm mauve colouring of the flower helped confirm the identification. A spoil heap at the edge of the golf course rewarded us with an expanse of Black Nightshade *Solanum nigrum,* now showing its shiny black berries surmounted by small elfin-like caps of its sepals. Growing up through it was a lovely looking grass which proved to be the alien Japanese Millet *Echinochloa esculenta* and a few Sunflowers *Helianthus annuus* still yet to flower.

A weedy looking thistle, probably because it had been mown, caught our eyes and it looked as if it could be a Welted Thistle *Carduus crispus*. There's a sure way of deciding whether the thistle that you're looking at is either a *Carduus* or a *Cirsium* species and that is to look at the pappus. There was a little indecision in the eyesight of our identifiers, but eventually all could see that the pappus hairs were feathery in their appearance, which indicates a *Cirsium* species and thus Spear Thistle *C. vulgare.* The pappus hairs in *Carduus* species are simple.

A fruiting dock head caught my attention because it was so dense. The leaves were those of Curled Dock *Rumex crispus* but the fruits were quite large and instead of showing just one well-developed tubercle on the tepals, there were three, all about the same size, which is a feature of the seaside variant of Curled Dock ssp. *littoreus.*

There weren't many plants to find in the brackish water of the dykes but a fine-leaved Pondweed species was dragged out. The leaves were less than 3 or 4 mm wide but when cut in transverse section showed two tubes running the length of the leaves, which were mucronate at their tips. This is Fennel Pondweed which used to be *Potamogeton pectinatus* but now revels in the new Latin name of *Stuckenia pectinata*!

The boatyard was abuzz with people so we decided to join them and have a short break in a cafe. A shame that all of the outside tables had been taken but whilst sat indoors this gave us a chance to have a close look at a Glasswort that I had picked. And what a find it proved to be. Using Stace's key meticulously and carefully it was identified as Glaucous

Glasswort *Salicornia obscura* which had not been identified in Suffolk before and is not in *A Flora of Suffolk*, but its author, Martin Sanford, has said that this species has most likely been overlooked in the past.

Walking on the shingle by the beach huts and admiring the beautiful autumn light we saw Marram *Ammophila arenaria* and Lyme-grass *Leymus arenarius* side by side for comparison. Our route took us landwards and out of the wind, back to the town, where some roadside verges afforded us a Blue Globe-thistle *Echinops bannaticus*, albeit on its last legs, and one gorgeous blue flower of an Apple-of-Peru *Nicandra physalodes*. Another foreign grass grabbed my eye in a pavement crack, one of its favoured habitats, which was our last plant of the day, Water-bent *Polypogon viridis*.

A beautiful autumnal day.

STEPHEN CLARKSON

AVON GORGE, BRISTOL 28th SEPTEMBER

On a rather damp Sunday morning we all met outside Leigh Wood on the west side of the Avon Gorge, where we were guided by Peter Hilton, Steve Little and Libby Houston, the Whitebeam expert. The expedition started with the Common Whitebeam *Sorbus aria* and then the rarer Bristol Whitebeam *S. bristoliensis* and English Whitebeam *S. anglica*. Many of the rarer Whitebeams are hybrid species, involving a commoner species such as the Common Whitebeam as its mother. The resulting species then reproduce without normal fertilisation, so the trees are identical.

The number of introduced species of Whitebeam was surprising. These included the Swedish Whitebeam *S. intermedia*, Orange Whitebeam *S. croceocarpa* and Broad-leaved Whitebeam *S. latifolia*. The next species was the Grey-leaved Whitebeam *S. porrigentiformis*. This is a rather attractive tree, although not grey-leaved, and it is often the father species of many of the rarer Whitebeams. The next species, the Wild Service Tree *S. torminalis* is also an attractive species, with distinctive leaves.

There were also hybrids such as *S.* x *thuringiaca*, which is easily identified by its distinctive leaves. However, one of the most exotic trees was *S.* x *proctoriana*, which was similar to the Rowan, but as this is the sole specimen in the world, it is definitely one of the rarest. It was also rather precariously perched on the edge of the cliff but a few people bravely climbed down to it.

After this we descended the goat track to the River Avon, which was steep and slippery. A few people slipped, but we all safely reached the saltmarsh and tow path by the river for lunch. From here we investigated the cliffs and one of the quarries. This introduced us to three new species- Round-leaved Whitebeam *S. eminens*, with its rounded leaves like

a ping-pong bat, Leigh Wood Whitebeam *S. leighensis* and Wilmott's Whitebeam *S. wilmottiana*.

On the way back to the car, we saw Avon Whitebeam *S.* x *avonensis* which grows horizontally across the path and the railway. It is threatened by the development of the railway. We also clambered up to the base of the cliff to look at *S. x houstoniae*, which is also the only specimen in the World. Libby had found it growing halfway up a cliff and we spent a few minutes looking at it with binoculars.

After this, we drove across to a quarry on the opposite side of the river. Here we looked at Bristol Rock-cress *Arabis scabra* and two new Whitebeams, White's Whitebeam *S. whiteana* and Sharp-toothed Whitebeam *S. sellii* (formerly *S. decipiens).*

But the day was still not finished. We drove over to near the observatory to look at the penultimate species, which is a recent discovery called the Obervatory Whitbeam *S. spectans*. This also involved climbing down to the top of a slab, with a fine view of the suspension bridge - see photo on back cover.

A final trip was to walk down to the A4 to look up at another extraordinarily rare tree of which there is only one specimen. Robertson's Whitebeam *S. x robertsonii* grows horizontally out of a patch of sandstone next to a fault line. This finished a rather long and exhausting day, but very interesting, and I am keen to come back and look at these extraordinary trees again.

CHARLES WHITWORTH

Libby points out the determining features of *Sorbus whiteana*

Photo: David Caals

Answers to the botanical Latin quiz

cretica	Crete	*europaea*	Europe
artica	Arctic	*orientalis*	from the East
californica	California	*occidentalis*	from the West
norvegicum	Norway	*italica*	Italy
neapolitanus	Naples	*germanica*	Germany
balticus	Baltic	*maderense*	Maderia
danica	Denmark	*pyrenaica*	Pyrenees
scotica	Scotland	*australis*	from the South
anglica	England	*borealis*	from the North
cambrica	Wales	*persica*	Persia
hibernica	Ireland	*capensis*	Cape (S. Africa)
monensis	Isle of Man	*hispanica*	Spain
groenlandicus	Greenland		

BOOK REVIEWS

Stroh, P.A., Walker, K.J., Smith, S.L.N., Jefferson, R.G., Pinches, C.E. & Blackstock, T.H. *Grassland plants of the British and Irish lowlands – ecology, threats and management.* BSBI (2019). Hardback. £31.50

This is a very fine book – handsomely produced with nearly 400 pages of excellent photographs, the most up-to-date distribution maps and reliably accurate information on the status of some of our most valued species. However, it is in a sense perhaps too serious for amateur botanists. I don't intend to denigrate it in any way at all, but it is more strictly angled to be used by conservation professionals than I'd realised.

It was known to be an important work and so was keenly awaited during 2019. Many members, including myself, will own and value its forerunner *Threatened Plants in Britain and Ireland* (Walker, K.J., Stroh, P.A., Ellis, R.W. BSBI 2017) which gave such insight into the dangers affecting a selection of uncommon wild flowers. I had expected the accounts in *Grassland plants* to be like these, giving a fairly general picture of the history and current situation of a species, as well as its lifestyle. The secret of this new book lies in the sub-title though and the content is precisely what this

says ‘ecology, threats and management’. Botanists who just look for flowers for fun, as a wonderful part of nature which is still widely accessible, are likely to struggle with the content.

Each species account follows a formula: Identification (brief, no keys, aimed at non-botanists); Similar Species (brief clues to possible confusions); Habitats (substrates and conditions, with the occurrence of these in UK and Ireland summarised); Biogeography (global and local distribution, declines); Ecology (including pollination and germination); Threats; Management (specific guidelines). The information really is presented to be most useful to conservation workers needing accurate assessments of the current status of these threatened species and to land managers needing to know how to do just that – manage them.

The species selected are nearly all drawn from the Near Threatened, Vulnerable, Endangered or Critically Endangered conservation categories, with a few of those rather rudely labelled ‘of Least Concern’ but which are known to be suffering population crashes. They come from a range of grassland types much wider than I’d guessed from the title – not just from the downland or hay meadow types which spring to mind, but from narrow ecological niches such as cliff ledges. This is really interesting and I do recommend the book to anyone interested in subtleties of habitat and how these impact rare plants. For instance, I was almost shocked to see *Silene viscaria* Sticky Catchfly included, as in my ignorance I imagined it clinging to ledges on Arthur’s Seat or Stanner Rocks, not in a grass field. However this book does make the reader *think* and keep an open mind. Eventually I realised that, of course, I’d seen it in dry open ‘alvar’ grassland on thin limestone soils in Sweden and only the pressure on land in our countries restricts it to inaccessible rocks.

So I’m in a cleft stick with this review – the book will become a much-used, essential authority on the threats and management of the selected plants and it contains a mass of sound, fascinating information, but it won’t be of great use to amateur botanists. For the keen, I’d recommend pushing your library to buy a copy to be available there and of course anyone involved with the management of a local nature reserve should have access to it. For professional conservation workers there’s no question, YOU HAVE TO HAVE IT!

RO FITZGERALD

Sticky Catchfly

Photo: Peter Llewellyn

Alan C. Leslie. Flora of Cambridgeshire. 2019 Royal Horticultural Society. Hardback £70.00. ISBN 4781907057991.

Cambridgeshire, with the University at its centre, has a long history of botanical recording. Early accounts culminated in John Ray's famous catalogue of 1660. Much erudite and valuable work was contributed over time. Babington's 1860 Flora, Peter Sell and Gina Murrell's recent works spring to mind. Daunting acts to follow when producing a new Flora. The presentation of detailed, factual, information can be quite stultifying , but Alan has attacked the task with verve and panache to produce a most engaging volume that misses nothing. Attention to detail is evident from the outset and the quality of narrative ensures interesting reading. With a high quality of production and careful printing choices this book goes a long way towards setting a new high standard for County Floras.

The early essay on climate and topography ably introduces us to what is to come. The following one, on recorders down the ages, demonstrates the changing demands over an extended time period, while emphasising the considerable expertise involved. The chapter relating to sites of special interest is particularly rewarding containing, among others, accounts on The Devil's Ditch, Chippenham Fen and Wicken Fen - each of national importance. Description of species largely follows that of most of its counterparts round the country. It does, however, eschew individual maps for each entry, using instead the 10km grid numbers in a list to indicate locations - an innovation that works well in my opinion. The individual entries for species are well researched and written; succinct without being skimped. It is good to see a number of varieties covered where appropriate. This is most apparent where aggregate species are described. Fat Hen *Chenopodium album* has 22 entries appended and investigated. Eleven entries for the apomictic Goldilocks Buttercup *Ranunculus auricomus* will be something new to many. The gap between splitters and clumpers is exposed in the critique of Knotweed *Polygonum aviculare* forms. On a personal basis, I was charmed to read that Interrupted Brome *Bromus interruptus* can still be found in the county, albeit under careful management. Always rare, this grass is probably a local endemic. Good to find one local farmer prepared to take it under his wing.

This is a magnificently impressive volume and excellent value despite the expense. There is everything one could desire as a local botanist and much of benefit for those living in counties bordering Cambridgeshire. To a wider audience, the rich variety of the county's diverse wild flower population and its accessibility, coupled with the botanical history, makes an important contribution giving first rate information on a stimulating area of Britain. My copy is highly prized and I am sure I will not be alone in this.

BILL HAWKINS

OBITUARY
PROFESSOR DAVID BELLAMY O.B.E.
18th JANUARY 1933 – 11th DECEMBER 2019

David Bellamy passed away at the age of 86 last December. He was an inspirational botanist with an infectious enthusiasm and an aptitude for imparting knowledge, notably on plants and conservation, in novel and entertaining ways.

His initial interest in Botany was sparked by his biology teacher at Sutton Grammar School. Then followed a degree in botany, a PhD, under the supervision of Francis Rose and a lectureship at Durham University, which was the springboard for his career in television. To those of us who were around in the 1970s David Bellamy will be remembered for his entertaining television shows such as Bellamy on Botany, Bellamy on Britain and Bellamy's Backyard Safari. As a consequence of his fame, the numbers of undergraduates reading botany at Durham increased dramatically during his tenure.

His doctoral research was in Bavaria and embraced the school of phytosociology, led by Josias Braun-Blanquet. In Britain this ecological approach to plant communities led to the development of the National Vegetation Classification that we know today.

David Bellamy became President of the Wild Flower Society in 1994 after Violet Schwerdt retired on reaching the age of 94, having served in this role for 38 years. Prof. Bellamy was President for three years. In the 1996 Spring issue of the *Wild Flower Magazine* he wrote, 'Many of the countries I visit don't have conservation bodies, let alone Wild Flower Societies whose members record the pulse and change in their countryside. The records made by your members over more than a century could tell many a sad tale of loss and change in our countryside.'

His involvement in the Society was limited because of his extensive botanical commitments around the World. In the magazine he wrote, 'since accepting the honour of your Presidency I have only been home for some 20 days. … I may never make Valhalla but every season brings that thrill of discovery once more.' Let's hope that he has at last reached Valhalla!

ANNE KELL

Photo: Ken Southall

Grass of Parnassus *Parnassia palustris* - David Bellamy's favourite flower