PRESIDENT'S LETTER

I have heard a lot about trees over the last few weeks and I have had several requests to give lectures about trees at this time of the Queen's Platinum Jubilee. I am very pleased about this attention to trees as they are so important for the environment in this age of climate change and also because trees have been the topic of my research for the last sixty years. Recently Botanic Gardens Conservation International (BGCI) brought out a publication *The State of the World's Trees* (available on: https://www.bgci.org/resources/bgci-tools-and-resources/state-of-the-worlds-trees). It is very informative, but quite alarming, as it shows that 30 percent of the world's trees are threatened with extinction and another seven percent of tree species are possibly threatened. In addition, 142 tree species are known to have become extinct. The report also outlines the main causes of extinction and threat: agriculture for crops 29%; logging 27%; livestock farming 14%; residential and commercial development 13%; fire and fire suppression 13%; energy production and mining 9% and other causes 15%. This is a sad loss of biodiversity and the deforestation is also one of the major causes of climate change. I write this as deforestation has greatly increased in the Amazon rainforest over the past two years. Trees are so important to us for their many useful products such as timber for construction, medicines, fuels, foods and in horticulture, yet we are diminishing our options for the future.

The Mighty Oak, Nottingham

Photo: Ken Southall

On the positive side I am pleased to see tree planting and conservation initiatives arising all over the world. What a lead Prince Charles has made through the Queen's Green Canopy initiative (https://queensgreencanopy.org). There are many ways in which anyone can get involved in tree planting through such organisations as the Woodland Trust, The National Forest or the International Tree Foundation (https://internationaltreefoundation.org/uk). I am particularly enthusiastic about the latter because, in addition to being President of WFS, I am also the president of ITF which was founded exactly one hundred years ago by the famous tree man, Richard St. Barbe Baker. Of course, if you have any land available it is easy to contribute to tree planting and carbon fixation by simply planting on your own land. It is my hope that all of us in WFS will pay some attention to the needs of trees during this jubilee year. Trees also have interesting flowers that also need to be recorded in our Wild Flower Diaries and this year many of them are flowering too early because of the changing climate.

GHILLEAN PRANCE

EDITORIAL

I hope you have all been watching David Attenborough's latest series on *The Green Planet*. Its good to see plants being given a higher profile and presence in the public's eye. It has really helped to emphasise the significance of plants to all other living organisms and their place in the ecosystem. To go with the series and, in conjunction with the Open University, the BBC have produced a stunning poster, *The Power of Plants*, which would look good on any botanist's wall and well worth applying for if you haven't done so already. On one side it weaves together some of the interactions between plants and their associated invertebrates within a meadow community, together with an idea of the balance between carbon, oxygen, nitrogen and water in that ecosystem. The other side has panels relating to each of the programmes in the series. An excellent promotion on the value of plants.

This magazine too hopes to whet your appetite for the beauty of plants with reports of field meetings, our regular autumn hunt, a look at some beautiful landscapes such as the North York Moors and limestone pavements. We are also hoping to highlight the value of involving the next generation and enthusing them about plants at a younger age so that hopefully the love of plants will stay with them throughout their lifetime. If you have any ideas about how to contribute to this new initiative please do get in contact.

ANNE KELL

NOTICES

Corrections:
The dates for the Members' Weekend are Friday 2nd - Monday 5th September not 3rd to 6th as published in the Yearbook.

The image on the back cover of the Winter 2022 issue should be labelled Upright Brome *Bromopsis erecta.*

Apologies for omitting to print the details of the Exotics Secretary in the 2022 Yearbook. Please add the following to page 32:-
Exotics Secretary Matthew Berry email - m.berry15100@btinternet.com

Changes/additions to details in Yearbook re: Field Meetings

Thursday 14th July: Darwen - Sunnyhurst Woods, adjacent meadows and a decommissioned reservoir:
Leaders: Peter Jepson and Sheila Wynn

Meet for a 10:30 start in Sunnyhurst Woods Car Park, Sunnyhurst, Darwen BB3 1JX Grid Ref: SD679224. The decommissioned reservoir area is likely to be wet in places underfoot so please wear waterproof footwear, but Wellingtons are not necessary unless there has been heavy rain beforehand.

We will first explore the woods and adjacent meadows where the plants we should see include Upland Enchanter's-nightshade *Circaea x intermedia*, Ostrich Fern *Matteuccia struthiopteris,* Melancholy Thistle *Cirsium heterophyllum,* as well as four native species of Lady's-mantle *Alchemilla* spp. and circa nine species of Sedge *Carex*. There should be an interesting variety of terrestrial and wetland plants in the old reservoir. **To book, contact Janet John wfs.meetings@gmail.com or phone 01753 884490**

The field meeting on 23rd July is now at Angley Wood not Holborough Marshes as published in the Yearbook. The details are as follows: -
Saturday 23rd July: Angley Wood, Cranbrook, Kent
Leader: Stephen Lemon
Meet at 10:30 using roadside parking along Sheafe Drive where space permits TQ770362. Alternative roadside parking along adjacent section of Angley Road, TQ769362 or nearby Wheatfield Way. Meet up and enter the wood at the entrance onto Angley Road TQ768359.
High Weald woodland. Hay-scented Buckler-fern *Dryopteris aemula*, Lemon-scented Fern *Oreopteris limbosperma*, Marsh Fern *Thelypteris palustris*. Chestnut coppice woodland, also with heath, bogs and a small relic fen. Good paths but may be hilly and wet if you want to see all habitats.
To book, contact Janet John - details above

Future field meeting:

Field Meeting to North Wales in June 2023

We intend to run a 4 day meeting to North Wales at the end of June 2023. This would be led by Chris and Hazel Metherell who have run courses for the FSC in the area. The focus of the 4 days would be sedges, about 60% of the British species can be seen in North Wales. However a wealth of ferns and mountain plants would also be seen *en passant*. The number of participants will be limited to 14. Details have yet to be decided but the meeting may be based at the Idwal youth hostel or perhaps around Bangor.
Please drop a line to Janet John, email above, to indicate your interest in this meeting as details will need to be confirmed prior to the 2023 Year Book.

Botanical Books
Chris Pogson has donated a number of his botanical texts to the WFS. Please contact Sheila Wynn, wfs.gensec@gmail.com for a list of the books and to express your interest in any of the texts. They will be available to pick up either at Field Meetings or the AGM, if that can be arranged. In exchange, we would appreciate an appropriate donation to the Society.

***Concise Flora of the British Isles* by Clive Stace**
A new concise version of *New Flora of the British Isles*, based on the second reprint of the fourth edition, will be published at the beginning of May with the above title. It will be priced at £30 plus postage, but there will be a pre-publication offer at £24 plus postage. WFS members can take up this offer by visiting www.clivestace.com (please note that this site will not be operating until the end of April**)**. Otherwise contact cstace@btinternet.com for details.

WILDER CHURCHYARDS

From theory to practice.

Photo: Gill Read

A sea of False Oat-grass

In my part of Somerset, Wilder Churchyards, launched in March 2021, is a partnership initiative between Somerset Wildlife Trust and the Diocese of Bath and Wells that is supporting communities to learn about the wildlife in their local churchyard and work together to find ways to increase the value of these special places for wildlife.

Churchyards are often the oldest enclosed pieces of land in a parish and may still support a rich variety of wild flowers and wildlife, having remained unscathed from the widespread loss of habitats seen in the wider countryside due to changing management practices.

Wilder Churchyards sounds a great idea and it is. However, as most things are when looked into a little more deeply, it is not all 'plain sailing' and it has to strike a balance and be understood. The idea that letting all the grass grow, becoming a sea of waving False Oat-grass *Arrhenatherum elatius* and cutting but once a year, then the next Spring a sea of orchids will appear is not quite right! Although, it is possible that an orchid may appear if it has been so regularly mown that no one has noticed the leaves. Cutting grass late in the year is a good idea too as this gives plants time to seed and often leaves bare patches where the seed may drop and germinate. However,

what is not there will not magically blossom. The secret is knowing what is there and working with it.

Some parishioners regularly tend their family graves and the sight of a waving sea of grass with the difficulty of getting to the graves can be upsetting. But long grass can be valuable, especially for butterflies such as Ringlets and Meadow Browns, as here they lay their eggs. It also affords shelter for small invertebrates such as voles, a favourite dish for Barn Owls. And so the cycle of nature is continued.

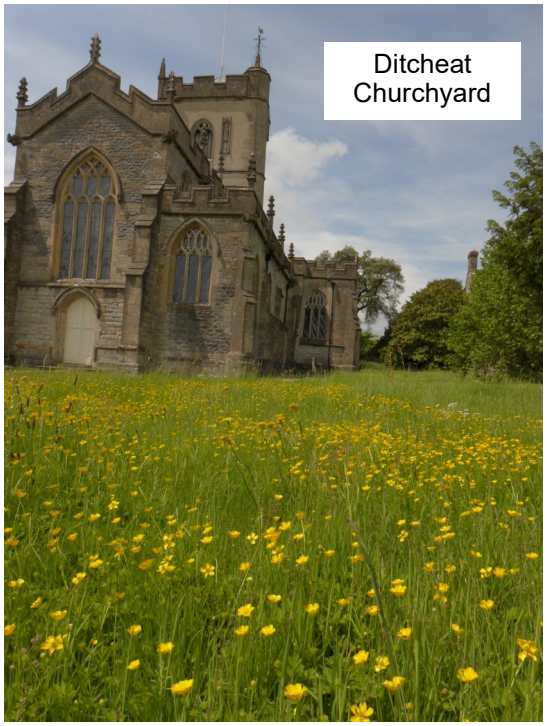
Each churchyard is unique and has its own problems that can be overcome with learning and cooperation. With careful management and knowledge of what plants are growing in the churchyard, a balance may be achieved. As botanists we are drawn to the plants that grow in the churchyards but fungi, lichens, ferns, mosses, liverworts, bees, butterflies, beetles, bugs, bats, birds, reptiles, amphibians and mammals all may have a place.

The first churchyard that we recorded for plants was an ideal churchyard. It was very spacious, with few gravestones. There was an enthusiastic band of volunteers that had already started to manage it for conservation. It looked neat and tidy, although patches had been left to grow and would be cut at varying times to allow for the regeneration of plants. Under the hedge corrugated iron sheets had been laid and beneath them we found slow worms curled. We recorded a grand total of 107 plant species, none rare, but that churchyard became the model of how to sensitively manage a churchyard.

Another large churchyard wrapped around an Anglican Free Church built in 1818 but thick with graves was part managed by the church and part by the council. One part had been put down to gravel between and on the graves; here weeds had not been tolerated! The grass between the remaining graves was cut and left to rot. This rotting grass was not only unsightly and smelly but stopped the plants beneath from growing. A wall encompassed the grave yard on three sides but only Rusty-back *Asplenium ceterach* and Ivy-leaved Toadflax *Cymbalaria muralis* were to be found. This survey produced a total of 68 plants, which included shrubs and trees. Suggestions were made to remove grass cuttings and also leave small areas of the more herb-rich turf which included Common Bird's-foot-trefoil *Lotus corniculatus*, Selfheal *Prunella vulgaris*, Oxeye Daisy *Leucanthemum vulgare* and Ground-ivy *Glechoma hederacea* to flower, thus providing resources for pollinators as well as an attractive display of flowers. The plan was to leave an area around some rubble uncut to allow for poor soil loving annuals and grass to grow.

One village churchyard had little space but had built a five star bug hotel. Maybe not so good for plants but a great idea for many churchyards that have little space.

With acreage to spare another Church had used the land to plant wild flower seeds. These formed a spectacular display bringing the



Ditcheat Churchyard

parishioners to wonder at the sight. Whatever we may think of planting wild flower seeds, this field aroused interest and provided nectar for bees and so a link into the natural cycle. (See image on back cover.)

My own village churchyard was surveyed on a very wet day, with a good score of the more common plants. At one entrance to the churchyard a spectacular Dragon Arum or Voodoo Lily *Dracunculus vulgaris* was in full bloom. This may have been planted on a grave or, more likely, had popped over the wall from the adjoining garden. Here it was decided to open the church and the churchyard one weekend and invite the parishioners to come along to see and help find the treasures of the flora and fauna. Luckily it was a dry bright day. I went along with books, lenses and clip board and was surprised at how many people turned up, all eager to learn what was hidden in their churchyard. We had a large blackboard listing the species found and it was rewarding to think so many people including the young were interested.

The Somerset Botany Group visited and recorded in over twenty churchyards sometimes returning more than once. For each churchyard a report was sent with practical suggestions as to how to enhance and conserve the wildlife. Their work was so well received that they were chosen for the Volunteer Group Award, given by the Somerset Wildlife Trust. Congratulations to all who did such stalwart work.

There are so many churchyards to visit, my own local town has 23 churches, some now converted into dwellings but 13 still remain. I hope this glimpse into these discoveries may excite some of you to take part in future years. May this work filter through to a wider audience to encourage people to learn more about their natural surroundings with respect and love and to preserve them for future generations.

GILL READ

Chalking up the finds

CHALFONT ST GILES CHURCHYARD, BUCKS

"A fantastic science lesson which the children loved. A huge success and the children really enjoyed it." The words of a teacher following a Primary school class visit to Chalfont St Giles churchyard.

Like most churchyards, ours has a diversity of flora, insects, textures, colours and shapes. The Vicar and myself felt this was an ideal environment to inspire and provide children with enriching natural science learning. The local Primary school is within walking distance so there was an ideal opportunity waiting to be exploited.

To make sure our ideas and any resources we produced were relevant we approached the school at the outset and were delighted that the Deputy Head was enthusiastic and willing to guide and be involved. Armed with the Key Stage 2 National Curriculum we noted that the children need to make systematic and careful observations, take measurements, gather, record and classify data, use simple scientific language in recording findings and identify differences and similarities. All good skills – and fitting in splendidly with what we could offer.

The Vicar, coincidentally with a degree in botany, and myself, photographed insects (usually on plants!), surfaces, flowers and trees throughout a year. We created packs of cards, a flower on one side, details of common name, scientific name, time of year for flowering, colour and number of petals on the other. The cards provide a flexible resource which can give opportunity for use of scientific language, identifying, classifying, noting similarities and differences. Worksheets were produced of surfaces to explore e.g. bark, moss, flints, lichen covered headstones, with space to describe the look and feel with some descriptive words suggested. A worksheet for identification of trees and seasonal sheets for noticing and identifying plants was added. We aimed to create resources that were adaptable and easy to use and produce.

This was the first time that resources and ideas have been developed that target the use of our churchyard as a 'CSSSI' a 'Children's Site of Special Science Interest'! Were we successful? Well the only way to tell is the feedback from the Science Lead Teacher at the school. These were his comments from an early visit with a Year 2 class.

"The children worked in pairs and initially had a sheet with 4 images of things with different textures and had to find the relevant object and give two adjectives to describe the textures. I joined some of them examining the flint walls, which proved interesting with the smooth flint faces and the overall 'bumpiness' and most of them realised this and appreciated the different scales! The cards to find plants and learn more about them were also great. Feedback from the children was that they really enjoyed it, learnt some new things and were encouraged to look at different wild flowers in the

future. The staff also thought that it was good as the children were obviously enjoying it, were very responsive and positively learning something at the same time."

This was a worthwhile and enjoyable project that fits in with the requirements of the teaching curriculum and also rather well with the aims of the Wild Flower Society.

JANET JOHN

WILD FLOWERS FOR YOUNG PEOPLE

One of the aims of the Wild Flower Society is 'to promote a greater knowledge of field botany among the general public and in particular among young people'. The Executive Committee feels that there is more we could do to encourage young people. We do have a Junior section which you can find on the website under the Activities tab. We encourage Juniors to keep a Beginner's Diary. There is a Branch Secretary specifically for Juniors who will answer queries and we have a Herbology Spotter sheet for every month. However, we feel that there is potential to do a good deal more. We have set up a sub-committee to think how we can reach out to young people and help them to get to know more about and enjoy the wild flowers around them.

We are considering how to achieve our goal. We could produce resources, such as identification sheets, games involving wild flowers, labels to put near wild flowers, simple videos to aid identification, quizzes, competitions, a Junior page in the magazine and more. It is envisaged that we could contact schools, wildlife trusts, youth groups, family contacts, amongst others.

Our members, and we have over 700 of them, could help by generating ideas and trialling resources. Just let me know if you we can involve you!

Let's start now. Go to the Herbology Sheets. Choose the appropriate one, either look at it or print out a copy, take it with you into the garden, round the park, on a walk together with a young person and see if they can spot any of the flowers. If you do, please drop me an email saying the age of the child, the reaction, whether the sheet was helpful, how it could be more helpful or better age-targeted. Your help would be valued.

Together we can make a difference. The future of our wild flowers will be in the hands of these young people.

JANET JOHN

FIELD MEETINGS 2021

STAFFORDSHIRE 30th JUNE - 1st JULY

Wednesday 30th June - Cannock Chase

About 20 of us met at the Glacial Boulder Car Park at Cannock Chase in central Staffordshire, delighted that we had a sunny warm day to do our foraging.

The habitat was stony heath dissected by stream valleys and it is a Special Area of Conservation. As we walked across heathland we saw swathes of the beautiful False Oat-Grass *Arrhenatherum elatius* shivering in the light breeze. Before long we saw one of my favourite plants, namely Cowberry *Vaccinium vitis-idaea*, a low creeping evergreen with terminal clusters of pale-pink, drooping flowers. On the walk down into the first valley we saw a lot of gorse which we were told was mostly Western Gorse *Ulex gallii*. Even though the flowering was mostly over, Martin Godfrey, our leader, showed us the very tiny bracteoles which are a good way of distinguishing it from Gorse *U. europaeus.*

We were a diverse group ranging from experts to beginners and Martin was good at being inclusive when talking about the different ferns. We were lucky enough to see a big patch of Marsh Fern *Thelypteris palustris* with its distinctive pale green fronds. There was a colony of Wood Horsetail *Equisetum sylvaticum* growing gracefully nearby. We could clearly see the green sheaths with three to six rufous-brown teeth. Another good fern find was Narrow Buckler-fern *Dryopteris carthusiana* with the distinctive, uniformly brown leaf stalk scales. On the track nearby was some Sand Spurrey *Spergularia rubra* and we were able to see its characteristic triangular seeds. Later on, we saw the rich purple Bell Heather *Erica cinerea* and rose-pink Cross-leaved Heath *Erica tetralix* contrasting with the attractive, shining, purplish-silver spikelets of Wavy Hair-Grass *Avenella flexuosa.*

After a refreshing picnic we walked through an ancient woodland of oak where the gnarled twisted branches were a feast for one's imagination. In another ancient woodland Martin showed us a fine example of Japanese Larch *Larix kaempferi* and a Hybrid Oak *Quercus x rosacea.* We then crossed a clear stream, a welcome home for crayfish though we did not see any. Growing along the edges of the stream were a lot of big Lady-ferns *Athyrium filix-femina* and some large Golden-scaled Male-fern *Dryopteris affinis* while in the soggy parts of the stream valley were some very large cushions of Greater Tussock-sedge *Carex paniculata.* Next, we walked a long expanse of Cannock Chase heathland, certainly a longer walk than we had realised. Along the dry path edges some people were able to find Heath Wood-rush *Luzula multiflora* ssp. *multiflora* and could compare it with the sessile-flowered ssp. *congesta.* Thank you, Martin, it was good to explore a new area.

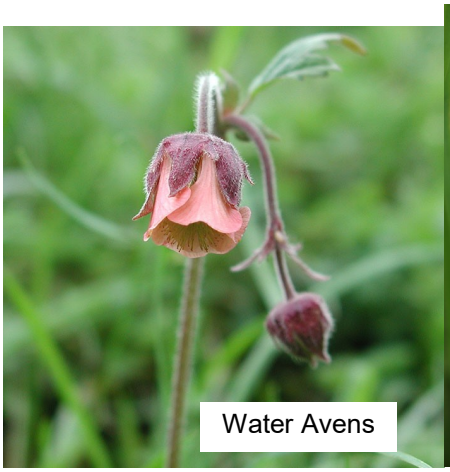
JAN ARMISHAW

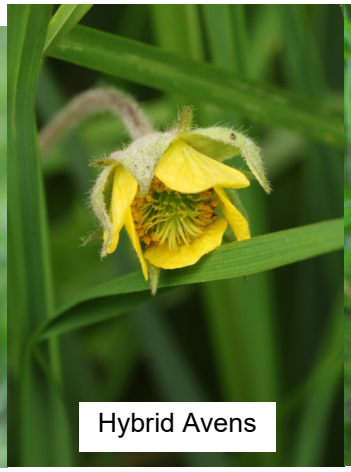
Doxey Marshes
Doxey Marshes lies within two miles of the centre of Stafford, overlooked by both the West Coast Main Line and the M6 motorway. It is in the floodplain of the River Sow and plays an important part in flood prevention. It is designated as a SSSI for its wet grassland habitat, wading birds and wildfowl and has a large breeding population of Snipe. Staffordshire Wildlife Trust manage the site, using cattle to graze the marshland. The entrance lies on the edge of a housing estate. Our leader, Martin Godfrey, had been keen to show us this site as a contrast to Cannock Chase and because of the connection between botany and the industrial development of the area through the Midlands Enlightenment and the Lunar Society. However, we had so much enjoyed Cannock Chase that we had stayed there longer than intended, time was short and energy likewise, so our numbers were down to just two for this site.

On the walk from the car park to the entrance we saw Many-flowered Rose *Rosa multiflora* growing in the hedgerow. We entered the reserve by a large pond enjoyed by bathers and ducks, with Water Dock *Rumex hydrolapathum* growing at the margin. Continuing past water channels, we saw Flowering-rush *Butomus umbellatus* and a Branched Bur-reed *Sparganium erectum* whose orrery-like form would surely have been appreciated by Lunar Society members. Celery-leaved Buttercup *Ranunculus sceleratus* was growing close to the path. Floating in the channel on the other side of the path was Water Fern *Azolla filiculoides*. There was Duckweed which we did not examine closely, but *Lemna minor*, *L. gibba* and L. *trisulca* have all been recorded there. We continued towards the site of a bird hide that had sadly been vandalised, seeing Blue Water-speedwell *Veronica anagallis-aquatica*, Tubular Water-dropwort *Oenanthe fistulosa* and Water Horsetail *Equisetum fluviatile*. Buttonweed *Cotula coronopifolia* was flowering near the gate by the ex-hide. Turning by that gate, we came to Marsh Ragwort *Jacobaea aquatica*, Great Yellow-cress *Rorippa amphibia* and Lesser Water-parsnip *Berula erecta*. There was a large patch of Common Valerian *Valeriana officinalis* attracting numerous recently-emerged Small Tortoiseshell butterflies *Aglais urticae*. After reaching a good display of Great Yellow-cress and a family of Mallards *Anas platyrhynchos*, we returned past a drier area of grassland, where we saw Chalk Knapweed *Centaurea debeauxii*. Thanks to Martin for the personal tour – for those who did not come, I would recommend a visit to this site.

JANE LOWE

Thursday 1st July
Wetton Mills, Manifold Valley
Our second day in Staffordshire was spent in the hilly northern end of the county near the border with Derbyshire. In the car park and close to the café were Pink Purslane *Claytonia sibirica* and Pineappleweed *Matricaria discoidea*. Maidenhair Spleenwort *Asplenium trichomanes* was growing on the bridge by the café. Stephen Clarkson got out Stace and established that it was ssp. *quadrivalens* from the leaf shape and number of sori per pinnule. We


Water Avens


Hybrid Avens


Wood Avens

Photos: Peter Llewellyn & Ken Southall

walked down an overgrown footpath to avoid a slippery ford, passing Common Bistort *Bistorta officinalis* and emerging in front of huge Butterbur leaves. Our leader, Martin Godfrey, cut off a leaf and counted the vascular bundles in the petiole to check that it was *Petasites hybridus.* The elongated seed pods of Sweet Cicely *Myrrhis odorata* were much in evidence. We examined the small, unscented leaves of Mountain Currant *Ribes alpinum* growing in profusion in the hedgerow. Martin lamented the lack of ripe fruit as he would have liked us to have the opportunity to experience the unpleasant flavour. Bulbous Buttercup *Ranunculus bulbosus*, Crosswort *Cruciata laevipes* and Chalk Knapweed *Centaurea debeauxii* were also flourishing beside the road. There was a Burdock, from which we cut a leaf to check that the petiole was hollow, making it Lesser Burdock *Arctium minus* rather than Greater Burdock *A. lappa.*

We crossed a bridge over a dry watercourse; the flowing river by our meeting point had gone underground, as it does in dry conditions. Martin pointed out a sinkhole in the dry riverbed. Just beyond the bridge was Wall Lettuce *Mycelis muralis* and a willowherb, which we keyed out to Broad-leaved Willowherb *Epilobium montanum*. Along that road we saw both White Campion *Silene latifolia* and Red Campion *S. dioica*. Stephen Clarkson showed us how to distinguish the two from the hydathodes on the leaves.

We turned off the road to a path beside which we could see flowers of Water Avens *Geum rivale*, Wood Avens *G. urbanum* and several different forms of their hybrid *G. x intermedium*. Some had the colour and general shape of *G. rivale*, but faced upwards like *G. urbanum* instead of drooping, others drooped like *G. rivale* but had the yellow colour of *G. urbanum*. We went over a stile into a steeply-sloping chalk field with lots of butterflies – Common Blue *Polyommatus icarus*, Brown Argus *Aricia agestis* and Dark Green Fritillary *Speyeria aglaja* – and Chimney Sweeper moth *Odezia atrata*. There were striking purple patches of Wild Thyme *Thymus drucei*. Quaking-grass *Briza media* and a few Eyebrights *Euphrasia* agg. were also present. The view across the valley to the entrance to Thor's

Cave was stunning. Martin pointed out the location of Jacob's-ladder *Polemonium caeruleum* above the cave entrance.

We continued along the valley path where we saw Greater Burnet-saxifrage *Pimpinella major* and False-brome *Brachypodium sylvaticum*. In shorter grassland we found Barren Strawberry *Potentilla sterilis*. We observed the matt leaves and shorter central leaf tooth that distinguish that species from Wild Strawberry *Fragaria vesca*. Long-stalked Crane's-bill *Geranium columbinum* and Thyme-leaved Speedwell *Veronica serpyllifolia* were also flowering in that area.

We had lunch in a steep, rocky valley grazed by sheep. Dark Green Fritillaries flew by while we were eating and some of us caught a fleeting glimpse of a mammal with a black tail running past the rocks on the other side, probably a Stoat *Mustela erminea*. We turned back towards the rocky area above the café where we had started, seeing a single Harebell *Campanula rotundifolia* on the way. There we saw Orpine *Hylotelephium telephium* growing out of the rocks and Smaller Cat's-tail *Phleum bertolonii* near the path. Martin directed us to nearby populations of Mountain Pansy *Viola lutea* and Hairy Violet *Viola hirta* and we ended the meeting with ice cream at the café. Mountain Currant was fortunately not one of the flavours on offer! Thanks to Martin for leading and to all who shared their knowledge.

JANE LOWE

CAIRNGORMS
12th - 13th JULY

Monday 12th July, Strath Nethy
On the first day, we started at the second highest car park on Cairngorm. The weather forecast was predicting heavy showers later on and there was a certain amount of mist on the tops. I arrived early and identified a Tea-leaved Willow *Salix phylicifolia* near the car park and then went to an enclosure nearby where there were many plants of Serrated Wintergreen *Orthilia secunda* in full flower, which I took great pleasure in photographing.

Once everybody had arrived and our leader, Ian Green, had checked us in, we set off. After crossing a suspect footbridge, we started finding numerous goodies that Ian pointed out. These included Dwarf Cornel *Cornus suecica*, Lesser Twayblade *Neottia cordata*, Bearberry *Arctostaphylos uva-ursi*, Cloudberry *Rubus chamaemorus* in fruit and Few-flowered Sedge *Carex pauciflora*. There was a patch of Small Cranberry *Vaccinium microcarpum*, which was mostly in fruit. Ian explained that this is the species of Cranberry that grows in the Cairngorms and that it had all flowered by now. Having just said this, we then spotted a patch that was flowering very well.

Homo sapiens spp. *botanicus* on Geal-Charn, Invereshie

Photo: Charles Whitworth

Continuing upwards, we ended up taking the high road and started heading up onto the Cairngorm plateau rather than cutting across to a gap in the ridge. On the way we saw Scottish Eyebright *Euphrasia scottica* and Viviparous Sheep's-fescue *Festuca vivipara*. We also saw a series of clubmosses, including Stag's-horn Clubmoss *Lycopodium clavatum*, Interrupted Clubmoss *L. annotinum*, Alpine Clubmoss *Diphasiastrum alpinum* and the rare subspecies of the Fir Clubmoss *Huperzia selago* ssp. *arctica.*

On the summit plateau we saw some typical high-level Scottish species such as Stiff Sedge *Carex bigelowii,* Three-leaved Rush *Juncus trifidus*, Spiked Woodrush *Luzula spicata* and Thrift *Armeria maritima,* which is also an alpine species. Trailing Azalea *Kalmia procumbens* was also seen although unfortunately it had gone over. I was amazed by the smallness of the plant and its leaves,

From here we had to descend into Strath Nethy. Unfortunately, rather steep slopes and crags blocked the way. Fortunately, further along the edge of the plateau, a steep, heathery gully was found that people could carefully descend. It was slow work, with thick heather intermixed with boulders. However, part way down, we were rewarded with a patch of Alpine Lady-fern *Athyrium distentifolium*, Alpine Willowherb *Epilobium anagallidifolium* and Oak Fern *Gymnocarpium dryopteris*.

Once at the bottom, we all rested. From here we headed down Strath Nethy to our target species, Issler's Clubmoss *Diphasiastrum* x *issleri*. I had the grid reference from Ian and reaching it involved another climb through thick heather to the location. I was the first to arrive and, at first, I could not find it. I also worried about the weather. There were spits of rain - were we ready for a downpour? I need not have worried. Lynn, who arrived just after me, soon found the first specimen of the clubmoss and the downpour never appeared.

We then spent some time looking at the Issler's Clubmoss which was growing in gaps in the heather. It was relatively easy to distinguish from Alpine Clubmoss. It was yellow-green

rather than glaucous, had a flattened stem and cones on erect, elongated peduncles with only a few scale-like leaves whereas, Alpine Clubmoss has its cones at the end of leafy branches. There were also some details about the underside of the leaves, explained in the BSBI Plant Crib, which I had brought with me.

From here we descended back to Strath Nethy and headed down-stream. We saw a patch of Hawkweed by the stream, later identified as Shining-leaved Hawkweed *Hieracium nitidum.* We all crossed the stream by a range of methods, heading for the gap in the ridge. From here we wound our way up through thick heather until, finally, after passing through the gap, I think we were all relieved to see the start of a track and the car park in the distance.

We all got down safely, although for the last of our group that was at 9:00pm. This illustrated the importance of mountain fitness and the difficulty of botanising in the mountains with a large group in rough terrain with no paths.

CHARLES WHITWORTH

Tuesday 13th July, Invereshie

The meeting point for our second day was a clearing in some wonderful pinewoods, where, whilst gathering in the car park, we heard a Crossbill. As we set off to go up through the pinewoods, Ian soon found the first *Euphrasia* of the day, Arctic Eyebright *E. arctica,* quickly followed by Slender Eyebright *E. micrantha* which has bright-pink flowers. There was a small population of Common Wintergreen *Pyrola minor* beside the path and Heath Spotted-orchids *Dactylorhiza maculata* were dotted in the open areas amongst the Bilberry *Vaccinium myrtillus* and heathers.

We eventually walked out from the under the trees onto an open path heading upwards. Our next plant was Petty Whin *Genista anglica* which members of the group surmised was ssp. *subinermis* as it was spineless (*inermis* translates into harmless or unarmed). We soon also found Lesser Twayblade *Neottia cordata* orchids under the heather. A rare orchid in the South and new to some of us, it was found in relative abundance throughout the upland heath on both days of the meeting.

As we climbed higher, we started to see Cloudberry *Rubus chamaemorus* fruits and then two plants in flower! We had seen a lot of the fruits the previous day but no flowers, so a few of the group stopped for photos. The next part of the route was a difficult and very steep climb up through scree and heather; the climb was necessary though as alpine plants awaited us further up.

Once out onto the open hilltop the vegetation was notably different. There were large patches of Trailing Azalea *Kalmia procumbens* although again, none in flower. All over the stony, open ground we also saw lots of Three-leaved Rush, also known as Highland Rush, *Juncus trifidus*, Stiff Sedge *Carex bigelowii* and Alpine Clubmoss *Diphasiastrum alpinum*.

We had a lunch break and then set off to find our target species for the day, Hare's-foot Clubmoss

Photos: Charles Whitworth and Peter Llewellyn

Stag's-horn Clubmoss; Hare's-foot Clubmoss

Issler's Clubmoss; Interrupted Clubmoss

Alpine Clubmoss

Fir Clubmoss

Lycopodium lagopus. We walked slowly, scouring the ground as we approached the bank we were aiming for. Once the first person had found some, then another did and then another, it soon became clear how large this population of the species was. *L. lagopus* looks similar to Stag's-horn Clubmoss *L. clavatum* but each stem only has one or two cones rather than up to five. It has probably been recorded as *L. clavatum* for some time, so more populations of this scarce species may be awaiting discovery in the Highlands.

Some of the group headed on to look for Highland Cudweed *Omalotheca norvegica* but, as the previous day had been so long and we still had a lengthy descent, Ian led the rest of the group back down.

On the descent Ian pointed out the hybrid between Common *Trichophorum germanicum* and Northern Deergrass *T. cespitosum, T.* x *foersteri* which has slender stems. It isn't fertile and the spikelets soon drop off, leaving characteristic bare stems.

We also saw Lesser Clubmoss *Selaginella selaginoides* in an upland flush, which means, throughout the two-day meeting we had seen every native clubmoss bar one (Marsh Clubmoss). A true clubmoss bonanza!

Many thanks to Ian for leading the meeting and sharing his knowledge of these special plants and places.

MATT JONES

From a newbie

This year I attended my first WFS field meeting held in the Scottish Cairngorms.

On the first day we met at the Coire na Ciste car park and my initial impression was how friendly and welcoming everyone was, greeting me like a regular member and completely putting me at ease. I quickly moved from feeling I didn't know anyone to feeling very included and a part of the WFS team. What a great start!

On both days great care was taken to ensure that everyone saw the plants that were spotted along the routes taken. I am trying to learn the scientific names for plants but it was very re-assuring that common names were also called out so that "newbies" like me knew what plants we were looking at. I took the opportunity to practise some of the scientific names that I had learnt and found everyone very helpful in either confirming or gently correcting my efforts. I was also extremely grateful to Ian and others in the party for explaining the key identification features of plants and giving tips on what to look for. This was just so helpful and contributed immensely to increasing my botanical knowledge.

I thoroughly enjoyed both days and it was great to botanise with other WFS members who had travelled the length and breadth of the country to attend the meeting. Will I be travelling next year to attend other WFS meetings and events? You bet!! Looking forward to it already.

LYNN YOUNGS

SUSSEX
23rd - 24th JULY

Friday 23 July, Amberley Wildbrooks
Although an almost complete beginner in the identification of any flowers, I have so enjoyed the two meetings that I have attended that I thought it would 'do me good' to involve myself more and write a report!

We were a group of 12 who started the meeting in the very attractive village of Amberley. We were met by Richard Robinson (our leader) and his very able assistants Bob Connell and Sue Adams. The weather was beautiful, warm and sunny and the village itself was overflowing with flowers – not only in the gardens but it seemed all the lanes had more than their fair share of wild flowers!

We walked down a shady track which, at the bottom of a slight hill, opened out into the area known as Amberley Wildbrooks. It was glorious – wonderful views across the open countryside that we were going to explore.

Amberley Wildbrooks is a SSSI, SPA and Ramsar site. It is owned by 6 organisations, including the village of Amberley, and its 180 hectares are managed by Sussex Wildlife Trust as a Special Area of Conservation. The area of grazing marsh is dissected by drainage ditches and Sue had managed to get us special permission to enter the private land. It has over 400 species of plants and is a flood plain of the River Arun.

Richard gave a very amusing and informative commentary on the plants we saw giving details of medicinal use, scents to be experienced and folklore, which I found really helped me to remember the different species that we came across. This became very useful to me as the day went on given that everything was new!

Having passed some elm trees, about which there was some discussion, we were shown the quite rare Almond Willow *Salix triandra,* whose leaf branches, when crushed, smelt of rosewater (though I thought more Earl Grey tea!). When we emerged into the open area there was an abundance of Meadowsweet *Filipendula ulmaria* which we were told contains salicylic acid. This was first used in 1897 to make acetyl salicylic acid which in turn led to the development of Aspirin which is named after this plant genus, *Spiraea*.(Meadowsweet was formerly known as *Spiraea ulmaria*).

We were told that Greater Plantain *Plantago major* was introduced to America by European settlers as seeds on their shoes and in trouser turn-ups. It was known to Native Americans as 'white man's footprints' as they were a reliable sign on paths that white settlers had passed that way. At this point I was stung on my ankle and Gail rubbed a plantain leaf on it which relieved the soreness; plantains, like docks, neutralize the formic acid of nettle stings.

I learnt that Mugwort *Artemisia vulgaris* used to be hung in doorways and was used to stop evil from entering and to ward off infectious diseases and epidemics (I wish we'd done this pre-Covid!). Exeter Cathedral has Mugwort leaves on a 14th C Presbytery corbel.

My favourite scent came from Pineappleweed *Matricaria discoidea* – such a true, strong smell of pineapple.

After lunch Richard and Bob tried using a grapnel in a more open area of water in a search for the Curled Pondweed *Potamogeton crispus* but with no luck as it was too muddy to get close enough to the water to be effective.

We were taken to an area where some very rare True Fox-sedge *Carex vulpina* had been recorded and confirmed its presence. False Fox-sedge *C. otrubae* was also thereabouts, as well as some plants with intermediate characteristics – presumably the hybrid. No rest was allowed before we were taken to an area where another rare plant had been recorded , Cut-grass *Leersia oryzoides* which was found on the day by Steve Jackson after much very careful searching on the banks of a muddy ditch.

After we all returned, tired but happy, to Amberley we were invited to enjoy Richard's garden, with a wonderful view, for tea and extremely delicious cakes. Many thanks to those that did the baking!

I have been left with a novice's head full of previously unknown terms to sort out … ligule, pappus, keel, glume, glands to name but a few. I was amazed by the knowledge, curiosity and friendliness of all the WFS members and am looking forward to more meetings.

BARBARA HILL

Saturday 24th July, Swanbourne Lake, Arundel

We started the walk in light drizzle with overcast skies. The first plant of note was Box *Buxus sempervirens* growing on a steep chalk bank similar to its classic site at Box Hill. Heading off towards Swanbourne Lake we were pleased to see Common Gromwell *Lithospermum officinale*. Lithospermum means stone fruit and the fruits looked like small pebbles. Nearby was the very attractive Vervain *Verbena officinalis* with its pale lilac flowers.

Higher up the path the terrain became more Down-like and we all

Nettle-leaved Bellflower

Photo: Peter Llewellyn

Dwarf Thistle

admired a lovely stand of Nettle-leaved Bellflower *Campanula trachelium*. Soon all the usual chalk loving plants (calcicoles) began to appear such as the 'Picnic Thistle' - beware sitting down when it is not in flower! Officially it is called Dwarf Thistle *Cirsium acaule*. Some of the plants are herbs containing essential oils which enhance flavours in cookery. For example, Large Thyme, *Thymus pulegioides* with the leaves confined to the four angles of the stem not on two opposite faces, Wild Basil *Clinopodium vulgare* and Majoram *Origanum vulgare*. On a hot summer's day the scent can be amazing.

Pride of place went to the Sussex county flower, Round-headed Rampion *Phyteuma orbiculare,* a new plant for many participants.

Amongst the turf was Common Rockrose *Helianthemum nummularium*, Small Scabious *Scabiosa columbaria*, the quivering Quaking-grass *Briza media*, Restharrow *Ononis repens,* with its tough roots capable of stopping a plough, Harebell *Campanula rotundifolia* plus the southern species, Squinancywort *Asperula cynanchica.* A close relative of this is the Lady's Bedstraw *Galium verum.* This was used as a strewing herb because, when dried, it smells of new-mown hay. This freshened up the reeds on the floor in Tudor times. Also here was Wild Parsnip *Pastinaca sativa*, an easy umbel to identify with its yellow florets.

After lunch we explored the slopes higher up the dry valley. I suddenly remembered that the Common Calamint *Calamintha ascendens* likes a slightly disturbed soil and good drainage. On reaching the top we were rewarded with this beautiful fragrant plant. On the opposite slope was Fairy Flax *Linum catharticum,* a good purgative if you've eaten dodgy oysters or prawns and Hound's-tongue *Cynoglossum officinale* with its spiny fruits.

On our way back we descended by another path and all admired several large bushes of Deadly Nightshade *Atropa belladonna*, a very useful drug in eye surgery as it dilates the pupils or makes the ladies look more beautiful. The ladies in our group of course were pretty enough.

Almost back at the road Jill Oakley spotted Broad-leaved Helleborine *Epipactis helleborine* lurking in the shade and just before we all rushed off for an ice-cream or pot of tea we found Small Teasel *Dipsacus pilosus* with its small white flowers. A perfect end to the day.

Thanks go to all the members for their keen eyesight and Stephen Clarkson for his expert input on difficult genera.

GARETH BURSNALL

BLUEBELLS

I wonder if you've had time to look at our Facebook page? We have over 3,000 members who like to share their photographs of wild flowers and in many cases ask for the identification of a plant.

The posts we see tend to reflect the wild flower seasons, so in late summer we see quite a few requests for the identification of Himalayan Balsam *Impatiens glandulifera* with the inevitable discussion about its invasiveness. Earlier in summer Common Ragwort *Jacobaea vulgaris* comes into flower and this often produces lively debates between horse owners who hate it because it can poison cattle, pigs and horses and entomologists who point out that it is native and an essential plant for the lifecycle of many insects.

However, in Spring, around April and early May confusion reigns. This is Bluebell flowering time and we need to try our best to distinguish Spanish Bluebells *Hyacinthoides hispanica*, Hybrid Bluebells *H. x massartiana* and Britain's favourite flower, the Bluebell *H. non-scripta* but it isn't at all straightforward.

The purpose of this article is to point out the morphological differences between them and to try to dispel some myths about characteristics you can use for identification.

All photos by Peter Llewellyn

NATIVE BLUEBELLS

It is usually fairly easy to distinguish pure native bluebells from the non-native species or the hybrid using well known characteristics.

Shape, colour and structure of the inflorescence

The most obvious character, even from a distance, is that the flowers are narrow, dark blue and the peduncle (stalk bearing the flowers) bends over at the top, so the flowers point down. All the florets are on one side. This one-sided drooping, inflorescence character is a strong one for identification purposes.

Leaves

Leaves are all narrow, 0.4 cm to 1.5 cm wide with most around 0.5 cm. There isn't as much variation in leaf width as in the Spanish Bluebell, but some hybrid bluebells can have a quite similar range of leaf widths.

Pollen colour

White or cream and the fully dehisced (all pollen dispersed) anther and filament (stalk holding up the anther) is also white/cream. The florets all usually hang down but occasionally some point upwards which is convenient for the photographer.

Habitat

They are most famous for growing in the shade of bluebell woods and will tolerate and even thrive in deep shade. At the seaside it is not uncommon to see swathes of native bluebells in the open. Quite often they are flowering in the midst of Bracken patches the fronds of which have not appeared at Bluebell flowering time. By the time the Bluebell flower is withering and setting seed the plant is in the shade of the Bracken fronds.

SPANISH BLUEBELLS

Photos by Peter Llewellyn and Brenda Jones

The confusion over characteristics of Spanish Bluebells which might grow in Britain and Ireland is so common that it is best to use examples which grow in Spain. The photographs here were taken in Andalucía, Southern Spain in areas where no *Hyacinthoides non-scripta* or the hybrid *H. x massartiana* have been recorded in the wild.

Shape, colour and structure of the inflorescence

When mature and fully out in the hot Spanish spring sunshine, the floret opens flat, or nearly flat, often with reflexed tepal tips (the petals and sepals look the same so are often known as tepals). At first the flower is more campanulate (bell-shaped) and will point down and this can cause it to be confused with hybrids. The flowers typically flower at right angles or slightly upwards to the flower stem and are usually a uniform mid-blue colour with little or no stripe on the outer tepals. The florets themselves are quite sparsely distributed around the erect flower stem in contrast to the usually denser flowering in hybrids.

Leaves

Leaves are often broader than in our native Bluebell but there are narrow leaves as well, contrary to some guides.

Pollen Colour

Pollen colour is uniformly dark blue but when an anther has lost all its pollen the empty sac is a whitish colour – again a source of confusion.

Habitat

Spanish Bluebells are found most frequently in open, often arid, sunny positions, in mountains, on rocks and cliff faces, typically in limestone country. Spanish Bluebells are not very common plants in southern Spain. You must hunt for them. There are no swathes of Spanish Bluebells similar to our native bluebell woods.

HYBRID BLUEBELLS

Shape, colour and structure of the inflorescence

The peduncle tends to be erect but can droop a little. Very occasionally a hybrid has so much native genetic material that it does nod like the native and is a much deeper blue. The majority of the flowers are mid-blue like the Spanish Bluebell but some have a stripe on the outside of the tepal which is usually absent in the true Spanish Bluebell. The inflorescence, even in those hybrids closest to the native, is rarely as one-sided as the true Bluebell but you must look carefully. The vast majority of the mid-blue hybrids flower in any direction around the erect stem and are clearly not one-sided like the native Bluebell.

Leaves

The leaf width is very variable because hybrids are formed at the native and the Spanish end of the hybrid spectrum. The widest leaves are found in hybrids, contrary to descriptions in some guides. In some garden hybrids these can be more than 4 cm wide which is four times wider than the typical width of a native Bluebell.

Pollen Colour

Very variable, contrary to some guides. The colours range from white, greyish, dull yellow, to blue and so is a fairly useless characteristic for distinguishing Hybrids from pure Spanish Bluebells. When the pollen sac (anther) is empty it is whitish. At a distance this can look as though the flower has white pollen when none is actually present.

Habitat

Hybrid Bluebells tolerate shady habitats but are very often found in the open on grass verges. This may be a character inherited from the true Spanish Bluebell, which is usually found in open, often arid, sunny positions. Most often found near or not far from human habitation but since hybrids have characteristics of both parents it can probably thrive in a variety of habitats. I have never seen hybrids in deep shade though.

‘Garden’ Hybrid Bluebell

All photos by Peter Llewellyn

Summary

1 Native Bluebells (*Hyacinthoides non-scripta*):
Despite the worry that our world-famous bluebell woods may be invaded and taken over by Spanish or Hybrid Bluebells, there isn’t too much clear research evidence that this is happening in a big way although some places known to have once supported native Bluebells are now dominated by Hybrids. The British Isles and Ireland are still home to between 40% and 60% of the world population of this plant.

The drooping, one-side peduncle with dark blue, downward pointing flowers and narrow leaves is distinct enough to be able to identify this plant and distinguish it from other non-native bluebells.

2 Spanish Bluebells (*Hyacinthoides hispanica*):
Contrary to what is indicated in many guides, it is likely that there are very few, pure Spanish Bluebells growing in the wild in Britain. The confusion probably originates from horticultural sources where Hybrid Bluebells bred for colour, size and vigour, are sold as Spanish Bluebells.

In hot sunshine Spanish Bluebell florets will open nearly flat, something only occasionally seen in hybrids. However, some plants showing this character have been photographed in Britain (see opposite).

3 Hybrid Bluebells (*Hyacinthoides x massartiana*):
These are hybrids between our common Bluebell and Spanish Bluebell. This simple hybrid has been further cultivated by the horticultural industry to produce pure pink varieties such as ‘Queen of the Pinks’, pure white ones such as ‘White City’ and blue ones such as ‘Excelsior’. They tend to be erect, bigger and more floriferous than the F1 hybrid. These are often referred to as Garden Hybrids.

Hybrid Bluebells are usually fertile. This means they can reproduce amongst themselves or with any other nearby suitable bluebell species. Reproducing among themselves or backcrossing produces a new hybrid generation, the majority of which are like the hybrid parents. However, a few are more like the original pure Spanish Bluebell or the native Bluebell and this is where the identification confusion arises. Further back-crosses can result in hybrids which do look almost like one of the parents, but close examination tends to show characters which are not typical of either parent but not always.

Hybrid Bluebells tend to be found in their greatest numbers near human habitation. They will flourish in some shade but very rarely in deep shade and are perfectly at home in the open sunshine.

4 Triploid Bluebells
The existence of these has been postulated in the past but more recently they have been positively identified in published bluebell population studies. As yet we don't know enough about the characteristics of these to be able to describe their special features. If they are in the wild in reasonable numbers that will only serve to confuse our identification attempts further but it adds an interesting new chapter to ongoing studies of bluebell species in Britain and Ireland.

5 Separating Hybrid from other Bluebells
In most cases the erect, campanulate hybrid flowers look different enough from the true Spanish Bluebell to be able to distinguish them but when the second or third generation hybrids are close to the Spanish parent it becomes very tricky to be sure which is which. Researchers into bluebells tend to classify our British and Irish Bluebell populations as **native** and all the rest **non-native**, which includes Spanish Bluebell, Hybrid or Garden Bluebell and any other escaped and naturalised garden species such as Italian Bluebell (*H. italica).*

As field botanists we love to find characters in plants which are reproducible and quite distinct from others in the genus but sometimes, as in this case of bluebell hybrids versus Spanish bluebells, there are not always such clear clues to help identification. In difficult cases like this, a combination of features may lead you to a fairly certain, but never 100%, identification.

An example of evidence could be flowering time if, near you, you have observed that hybrids generally flower earlier than natives. In my part of the world in West Cheshire, hybrids are often in flower two or three weeks before native Bluebells. This could be used to help separate hybrids with many native genes from pure natives but it isn't foolproof. Another example could be clues from the bluebells flowering nearby. A Spanish looking bluebell flowering in amongst a swarm of normal hybrids at the same flowering time as hybrids is likely to be hybrid even if it has a strong Spanish accent. But again, this is indicative but not definitive for identification.

Separating hybrids from the rest will always be a problem with fertile bluebells but with careful observation it can be done in most cases.

PETER LLEWELLYN

Photo: Peter Jepson

Spanish Bluebell growing in Darwen, Lancashire

AUTUMN WEEK HUNT 2021

		TOTAL:	WEEK	DAY
Sue Poyser & Doug Grant	Kent		151	35
Caroline Bateman	Surrey & Kent		114	
Enid Barrie	Kent		164	
Sheila Anderson	Kent		90	
Stephen Clarkson's group	Norfolk			136
Andrew Toomey	Suffolk			53
John Swindells	London		130	
Susan Grimshaw	Berkshire		111	
Priscilla Nobbs	Surrey			75
Gareth Bursnell	Surrey & Sussex		126	
Janice Reynolds	Sussex		95	
Ann Haden's Group	Jersey			137
Ann Haden's Group	Guernsey			120
Alli Singleton	Jersey			74
Christine White	Northamptonshire		64	
Pauline Wilson	Gloucestershire		102	
Sally Maller	Devon		134	
Jackie Hardy	Worcestershire		81	
Anthony & Rita Grainger	Yorkshire		107	
Barbara Allen	Lancashire		126	
Dorothy Ross	Lancashire		115	
Sheila Wynn	Lancashire		69	
Julie Clarke	Cumbria		74	
Ian Green	Scotland		171	

Autumn Hunt members braved the rather mixed weather to record a total of 501 different species and subspecies during the week. Daisy *Bellis perennis* and Common Chickweed *Stellaria media* were the only plants recorded by everybody. Only one member failed to find a Bramble flower *Rubus fruticosus* agg., only one person didn't find a flower on Smooth Sowthistle *Sonchus oleraceus* and one didn't see a Dandelion *Taraxacum* sp. in flower.

Some lucky members were able to access good botanical spots, but many members did all their recording locally to home. Not that local recording impeded Sue and Doug in

Kent, as they found an excellent total of 151 during the week, including two plants which they were surprised to see flowering in autumn, Alexanders *Smyrnium olusatrum* and Ground-ivy *Glechoma hederacea*. Caroline also concentrated on urban botany, finding Basil Thyme *Clinopodium acinos* in paving cracks and gutters as well as a garden weed. Enid, as well as recording more locally, was able to join the WFS East Anglia meeting where she was pleased to see a couple of flowering plants of Dame's-violet *Hesperis matronalis*. Sheila Anderson remarked on the

Photo: Peter Llewellyn

Dame's Violet

number of different clovers still in flower in her area.
Stephen's WFS East Anglia meeting (see next article) was based at Wymondham and produced several interesting plants including Glaucous Spurge *Euphorbia myrsinites* and Striped Goosefoot *Chenopodium strictum* - a plant which he comments "now seems to be growing everywhere". So look out for it if you live a bit further west! We also welcome Andrew to the hunt. He sent his own list from Suffolk having found Chalk Knapweed *Centaurea debeauxii* and Ragged-robin *Silene flos-cuculi.*

Recording locally in London, John was pleased to see Cape-gooseberry *Physalis peruviana,* which was the first time he had found it in the wild. He also recorded Marvel-of-Peru *Mirabilis jalarpa* and Tall Nightshade *Solanum chenopodioides* as street weeds. He comments that his London Borough Council has ceased using glyphosate weed killer and this has allowed many 'street weeds' to flourish.

Susan also did her botanizing very near her home. Her best find was Spotted Spurge *Euphorbia maculata* growing as a pavement weed. Priscilla did her botanizing walking from her home on a route she uses every year during the Autumn Hunts. Gareth accompanied her on this walk and at Salfords Railway Station they found Blue Fleabane *Erigeron acris* at the end of the platform and Priscilla found Narrow-leaved Ragwort *Senecio inaequidens* in the Station Car Park. Gareth also went out on his own recording on other days, finding Silver Ragwort *Jacobaea maritima* and Tree-mallow *Malva arborea.* From Sussex Janice sent an interesting list including Sticky Groundsel *Senecio viscosus* and Rosemary *Rosmarinus officinalis* and she was the only person to see Hairy Violet *Viola hirta*. Over in the Channel Islands the Botanical Group had day hunts on both Guernsey and Jersey. On Guernsey their star find

was Least Adder's-tongue *Ophioglossum lusitanicum.* In Jersey they found Jersey Thrift *Armeria arenaria* and Guernsey Fleabane *Erigeron sumatrensis*.

In Northamptonshire Christine was pleased to find Common Valerian *Valeriana officinalis, a* new one for her Diary. In Gloucestershire Pauline also hunted locally, her best find being Gallant-soldier *Galinsoga parviflora.* Sally in South Devon was able to enhance her list with coastal plants when out walking along cliff paths with her dog. She found Common Knapweed *Centaurea nigra* and Greater Knapweed *C. scabiosa.* Jackie was out recording every day and was the only member to record Bearded Couch *Elymus caninus.* Moving northwards to Yorkshire, Anthony and Rita went out whenever the weather allowed. They were surprised to find a Hawthorn *Crataegus monogyna* with flowers. They saw Sulphur Cinquefoil *Potentilla recta* and also Knotted Crane's-bill *Geranium nodosum* - a plant which I have still to find for my own list!

Barbara sent a list from the St. Helen's area. She found Greater Musk-mallow *Malva alcea* and was the only member to find Corncockle *Agrostemma githago.* Both Dorothy and Sheila Wynn recorded in the Clitheroe area during the week reporting several alien species including Thorn Apple *Datura stramonium* and Cockspur *Echinochloa crus-galli,* plus both sub-species of Black Nightshade *Solanum nigrum,* ssp. *schultesii* with the dense eglandular hairs and the almost glabrous ssp*. nigrum.* Julie's surprise find was Slender Borage *Borago pygmaea.*

Lastly to Scotland where the only list I received was from Ian. His work caused him to travel widely during the week and he sent an impressive list including Cape-gooseberry *Physalis peruviana* and Orange Mullein *Verbascum phlomoides.*

I thank all the members who submitted lists to the Autumn Hunt 2021 and I shall be looking forward to receiving your lists in 2022.

HEATHER COLLS

AUTUMN ONE DAY HUNT
WYMONDHAM, NORFOLK 30th OCTOBER 2021

The weather forecast for the morning was not very good but due to improve in the afternoon. Seven of us started out from Bill and Carol Hawkins' house and began our list with Thyme-leaved Sandwort *Arenaria serpyllifolia* and an unusual but established Glaucous Spurge *Euphorbia myrsinites*. Within a few minutes we had collected over a dozen species including a lovely blue Borage *Borago officinalis* and the white potato-like flowers of Black Nightshade *Solanum nigrum*. With us were a couple of novices so it was good to go back to first principles and describe the make-up of many of our finds. Gary was a guest and is Carol's new gardener and he was used to seeing garden flowers and

shrubs and their large cultivars, so he was delighted to be shown where many of these had originated.

It didn't take long for the weather to take a change for the worse which warranted a dash back to my car to pick up a few umbrellas as the rain began to fall with monsoon-like intensity. The gutters soon filled with water with reckless car drivers wheeling their way through it creating waves and splashing us, which brought back vivid memories of a similar happening last year! Thankfully the rain did ease and it brightened up considerably for the rest of the day.

In my eyes Selfheal *Prunella vulgaris* has had a good year and it was still flowering in fairly tall purple spikes where it had not been mown. The bright yellow flowers of Californian Poppy *Eschscholzia californica* and the orange-red ones of Atlas Poppy *Papaver atlanticum* caught our attention along with the bright pink of Sowbread *Cyclamen hederifolium*. On a wall above us we saw the bright green fronds of Hart's-tongue *Asplenium scolopendrium* with its showy rusty-brown sori gleaming in the sunshine.

It was actually warm enough for us to sit outside for lunch so we took advantage of a pub garden to have a drink, enjoy our sandwiches and a plateful of tasty chunky chips! Our walk took us through a large grassy area where we picked up a few species still showing their exserted anthers and down by the stream to catch a fragrant Meadowsweet *Filipendula ulmaria*, a not so fragrant Water Mint *Mentha aquatica*, an unexpected Dame's-violet *Hesperis matronalis* and a lonesome Carrot *Daucus carota*. Above us were clumps of Mistletoe *Viscum album,* not yet flowering, but draping the branches whilst below were the tail-ending purple flowers of Chalk Knapweed *Centaurea debeauxii*. On the roadside verge were a few plants of Striped Goosefoot *Chenopodium strictum* which, for some reason, seems to have colonised East Anglia this year. Nearby was a colourful orange clump of Fox-and-cubs *Pilosella aurantiaca* together with, what seems to be the colour of the day, more purple flowers of Purple Toadflax *Linaria purpurea* and Argentine Vervain *Verbena bonariensis*.

Selfheal

Photo: Peter Llewellyn

A colourful, flower-filled day spent in good company which ended back at Bill and Carol's place. A quick trip to the chippie and a few fish and chip suppers were thoroughly enjoyed together with a couple of species checks for the day along with some great conversation. Thank you.

STEPHEN CLARKSON

RESEARCH INTO LIMESTONE PAVEMENT FLORA

Photo: Carly Stevens

Limestone pavement at Ingleborough, Yorkshire

At the start of 2018 I had not long returned to work after maternity leave and, after many years of travelling all over Europe for my research, I was looking for a project that would provide me with plenty of opportunity to undertake field surveys but also keep me closer to home. Limestone pavements seemed like an ideal focus. Most limestone pavements in the UK are found in the North-west of England so being based at Lancaster University meant I was ideally placed to survey them, as a majority of sites were within an hour's drive from home. I love working in the uplands and I was excited that not only could I draw upon my previous knowledge of the species found in calcareous grasslands but I would get the opportunity to learn fern identification. I set out to repeat the Ward and

Evans survey, a national survey of limestone pavements conducted in the 1970's. The reality was that I had vastly underestimated the undertaking. There are 538 areas of pavement and it is only now, after four field seasons that the end is finally in sight. However, during the course of the survey I have fallen in love with these harsh and demanding habitats and their flora. I have also gained a considerable knowledge of the limestone pavements in the UK.

Limestone is a sedimentary rock. It was formed millions of years ago from marine sediments and has a high content of calcium carbonate from the shells and bones of marine creatures. It is common to find fossils of shells and other marine creatures on these pavements. During the ice ages, scouring by glaciers revealed the limestone pavements and over the last 10,000 years they have been weathered to form the pavements we see today. Limestone pavements are made up of clints and grikes (or grykes); the clints are the lumps of rock and the grikes are the cracks. Pavements vary a lot in terms of the size of the clints and the width and depth of grikes. Unfortunately many pavements have been damaged over the last few hundred years, initially because they were a relatively easy source of stone at the surface and later because they provided interesting and decorative stones for rockeries and garden walls. These pavements are now protected by limestone pavement orders and, in many cases, have the status of Sites of Nature Conservation or Geological Importance.

It is the humid and shaded habitats of the grikes that give limestone pavements their unique flora. They support an unusual mix of species normally typical of calcareous grasslands and woodlands. It is not unusual to find grassland species intimately mixed with species much more typical of woodlands. Ferns, such as Hart's-tongue *Asplenium scolopendrium* and Male-fern *Dryopteris filix-mas* are commonly very abundant. Limestone pavements also support a number of species that are nationally or locally rare such as the Rigid Buckler-fern *Dryopteris submontana*, Holly-fern *Polystichum lonchitis* and Dark-red Helleborine *Epipactis atrorubens*.

Over the last three years I have surveyed all of the limestone pavements in Cumbria, Lancashire and Wales as well as starting on those in Yorkshire. In 2021 I concentrated on the pavements in Yorkshire. With the help of funding from The Wild Flower Society I have surveyed 125 pavement units from the Ward and Evans survey. This has included some of the most famous limestone pavements in the country, like the one at the top of Malham Cove, as well as many others that receive very few visitors. As in previous years, it has been an amazing experience that has taken me to many remote and beautiful places that I would not have visited otherwise. During my visits I have also been fortunate enough to make contacts in Natural England, the Peak District National Park, the National Trust as well as meeting many different land owners, many of whom are passionate about the pavements on their land.

Wood Anemone in grike

Photo: Carly Stevens

While the data are yet to be formally analysed my initial impression of the results is that there is a very mixed picture. The number of pavements that have been lost entirely or reduced in their area is actually very small which is a real positive. Where pavements have been lost it has been through quarrying. There have been a number of pavements where plant diversity has been very reduced, mostly due to a lack of management. This is not the case everywhere though and a lot of pavements have showed little change over time. Despite this, so far the number of pavements that have shown big improvements has actually been quite small which suggests we need more research into how best to manage limestone pavements.

This year I hope to complete my survey. I still have to survey some limestone pavements in the Ingleborough area and to take a trip to Scotland to survey the limestone pavements there. I am also looking forward to the opportunity to continue building connections with conservation agencies and landowners so that we can move towards working together to protect this amazing habitat. Over the last few years I have observed the need for a stronger evidence base for the management decisions that need to be made on limestone pavements and I really hope the data that I am collecting will begin the process of building that evidence.

CARLY STEVENS

How to receive updates on Field Meeting information:

The WFS Alerts service is now discontinued. If you have previously signed up for this and would still like to receive updates about changes to meeting information, availability of places etc, please go to our new website (https://thewildflowersociety.org.uk/) and sign up for the newsletter.

ONE DAY MEETINGS 2021

NEW FOREST
1st AUGUST

Janet John is sweet-natured at heart, I'm sure, but once she gets you in her sights, there is no means of escape. Nag, nag, nag. There is no peace for the wicked, according to the Book of Isaiah. None for the virtuous either, according to the Gospel of Janet. I resigned myself to lead yet again: *noblesse oblige*. So we met at Cadnam Green on a temporarily sunny Sunday. 17 members had skipped church to attend; two others would have come but were victims of the pingdemic.

It is a common mistake to take your local area for granted and this is a trap that I can fall into even for the New Forest. But it is a truly beautiful place and so varied in its landscape. Cadnam Green is an expanse of lawn kept short by the ponies. The vast number of 'daisies' around us were in fact Chamomile *Chamaemelum nobile* and where there were slight depressions further gems could be found. Pennyroyal *Mentha pulegium* was right at the start of its flowering season. Richard Coomber received a gong for finding a particularly fine example, only to have it rescinded when it became apparent that he was trampling on two even better specimens.

The other magnet for botanists is Small Fleabane *Pulicaria vulgaris*, a two-star rarity but locally abundant. If you visit the lawns nearby where cows have trampled everything into mud, you might think the forest is being trashed. But these are the ideal conditions for this annual that cannot abide competition. Otherwise there were the usual suspects of damp acid soil, including Water-purslane *Lythrum portula* and Creeping Yellow-cress *Rorippa sylvestris*, a patch of which had been infected by the gall midge *Dasyneura sisymbrii.*

On then to Hatchet Pond, avoiding Lyndhurst and its traffic jams at all costs. Recently the Forestry Commission has had to increase its patrols because, despite its rare flowers, the stoneworts, and its great crested newts, people have been found paddle-boarding and canoeing there. Why do I have an atavistic urge to strangle such characters?

Anyway we set off, intending to walk all the way round it. We saw a whole host of plants whose names begin with water and bog, but those which seemed to attract most interest were Creeping Forget-me-not *Myosotis secunda* with the distinctive arrangement of hairs on its stem; Hampshire-purslane *Ludwigia palustris* in vast quantities; Duck-potato *Sagittaria latifolia*; Saw-wort *Serratula tinctoria,* noticed first by Steve Clarkson; Lesser Water-plantain *Baldellia ranunculoides;* Lesser Skullcap *Scutellaria minor*

Hengistbury Head
Staying happy against all the odds

and Pale Butterwort *Pinguicula lusitanica*. Saving the best, the Olympic gold, until the end, I took the group to see the diminutive Bog Orchid *Hammarbya paludosa*. I had hoped to continue around the Pond and show them another one (there would be another hundred or so in the deeper bogs), but the heavens opened soaking us, or at least those who'd left their waterproofs behind in the cars.

So there were just three members who had no home to go to and wanted to visit Hengistbury Head. This is a phenomenal Iron Age fort defended by double ramparts jutting out into The Solent. In Roman times it was one of Britain's busiest ports, importing wine and luxury goods, and exporting hunting dogs and slaves. However, our main purpose was not to trade Sally Maller for a case of Shiraz, but rather to see the latest addition to the Hampshire flora - Jersey Pink *Dianthus gallica*, that was discovered only last year. The four plants grow at the base of the cliffs on dunes that were formed in the 1950s. How they got there is a mystery, as the seeds cannot remain viable in salt water. We got to the site in the middle of another downpour, but we found about a dozen flowers, half in very good condition.

Thereafter it really was time to go home. The general consensus was that it had been a wretched day. For I must now admit some issues that I shamefully redacted from my report earlier: that I not only chopped down a cherry tree, but I failed entirely to include in my risk assessment the huge pig at Cadnam that, in its excitement to join the WFS, chased

several members around the lawns. Another gap in my assessment: I led the group recklessly into the bog where Claire Horder lost her gum boot (twice) and to cushion her fall sent Moira Smith tumbling into the mud. Finally I omitted to advise members to stock up on Beechams Powders and Lemsip. Never again should I be trusted to lead a meeting.

DAVID CAALS

Photos: David Caals

Jersey Pink on Hengistbury Head

GLASSON DOCK, LANCASTER 19th AUGUST

Glasson Dock, once the largest port in the north-west, has changed significantly since the harbour opened in 1787. Today Glasson Dock is a scheduled monument, a quiet village with a marina and the Glasson branch of the Lancaster Canal.

Seven members met on a fine but cloudy morning. Also invited to help us with the meeting was non-member Martin Sherlock. Martin is the son of Roy and Noreen whom many members will remember. They led many meetings around the Guildford area where they lived. We set off to the salt-marsh and soon began to see the blue haze of Sea Aster *Tripolium pannonicum* and Sea-lavenders *Limonium* spp. Just before reaching the marsh we spotted a lone Sunflower *Helianthus annuus.* Next came Sea-milkwort *Lysimachia maritima,* Saltmarsh Rush *Juncus gerardii,* Sea Arrowgrass *Triglochin maritima,* identified by its six egg-shaped fruits, and Long-bracted Sedge *Carex extensa*. We really wanted to find the cross between Common Sea-lavender *Limoniun vulgare* and Lax-flowered Sea-lavender *L. humile* so a bit of detective work had to be done. Sheila came up trumps as she came towards us clutching three Sea-lavenders in her hands – the two mentioned and the cross *L. x neumanii.* Carrying on along the bank were lots of Great Willowherb

Epilobium hirsutum but it was the very distinct form var. *villosissimum,* described by Sell as having dense, short glandular and dense, white, eglandular hairs on the upper stems, pedicels and calyx. This variety really stood out amongst the normal form. Our walk then took us on to the old railway line where Late Cotoneaster *Cotoneaster lacteus* was growing out of the wall, along with Hairy Dog-rose *Rosa corymbifera* further along. We ended the meeting with a look along a small length of canal finding Flowering-rush *Butomus umbellatus.* Red Pondweed *Potamogeton alpinus* was floating in the canal which was a good find. Many thanks go to Martin for his help and to Sheila for her thoroughness.

JULIE CLARKE

YEOSDEN, BUCKS
8th SEPTEMBER

A scorching day and a stunning location. I have seen the Chiltern Gentian *Gentianella germanica* before but never in such abundance and in such good condition. This really was an impressive site with our attention grabbed by an abundance of butterflies as well as flowers. The Adonis Blue was spotted as well as a possible sighting of a Chalk Hill Blue and we kept our eyes open for a Green Hairstreak but that would have been lucky as it was a bit late in the season. There were lots of chalk grassland plants to enjoy including Devil's-bit Scabious *Succisa pratensis*, Wild Basil *Clinopodium vulgare*, Hairy St. John's-wort *Hypericum hirsutum*, Field Scabious *Knautia arvensis*, Small Scabious *Scabiosa columbaria*, Selfheal *Prunella vulgaris*, Yellow-wort *Blackstonia perfoliate*, Marjoram *Origanum vulgare and* Burnet-saxifrage *Pimpinella saxifraga*. Setting aside the fantastic show of Chiltern Gentians, for me the star of the show had to be the Small Teasel *Dipsacus pilosus*. Why? Because this was my first sighting!

As it was a hot day, we retreated to The Boot Inn for welcome refreshment and to talk over our finds. Thank you to Freda Miler and Bob Crabtree for introducing us to such a wonderful site in the Chilterns.

JANET JOHN

Field Scabious

Photo: Ken Southall

MORSTON QUAY, NORFOLK
19th SEPTEMBER

Unusually for a WFS meeting, we gave the car-park short shrift and, leaderless and rudderless (Stephen Clarkson was unable to join us), cast off from Morston Quay into the saltmarsh to see what we could find. We soon came across that East Anglian speciality Shrubby Sea-blite *Suaeda vera* living on the edge, along with its smaller annual sibling *Suaeda maritima*. Then came the glassworts; millions, possibly billions of them! Armed with Lliam Rooney's excellent WFS Magazine centrefold and the relevant pages from the Rich and Jermy Plant Crib, we set to and quickly identified Purple Glasswort *Salicornia ramosissima*, many of which gave us a helping hand by being bright purple. This was soon followed by the characteristically stubby-branched One-flowered Glasswort *S. disarticulata* and its hybrid with Purple Glasswort, *S. x marshallii*, which variously has 1, 2 or 3 flowers.

Where was Common Glasswort *S. europaea*? Bizarrely and not for want of trying, we didn't find any 100% convincing specimens all day. Long-spiked Glasswort *S. dolichostachya* didn't elude us for long though, with its elongated, tapering branches. Nearby, we spotted a small stand of unfamiliar-looking glassworts, with wiry lower stems and upswept yellow branches. These keyed out nicely to Glaucous Glasswort *S. obscura*, one of the rarer species.

An area of bare mud above one of the numerous channels yielded three of the remaining glasswort taxa in one go: Perennial Glasswort *Sarcocornia perennis*, with its sprawling habit and woody stems; Yellow *Salicornia fragilis*, with its bright, round-ended spikes; and, all on its own, a more slender, shiny (once we'd brushed the mud off) and rather elegant plant, different to all the others that we'd seen. After quite a bit of debate and much measuring, we concluded that this was Shiny Glasswort *Salicornia emerici*, another of the rarer taxa. Full house then,

Photo: Steve Little

Glaucous Glasswort

apart from the exasperatingly uncommon Common.

Given the lateness of the season, there wasn't a great deal else still in flower on the saltmarsh, although there was an abundance of both the rayed and unrayed forms of Sea Aster *Tripolium pannonicum* and Common Sea-lavender *Limonium vulgare*. Here and there we also encountered small patches of Greater Sea-spurrey *Spergularia media*, with its broadly winged seeds, and much gone-over Sea-milkwort *Lysimachia maritima*. We thought that there ought to be a few maritime oraches, but it took a lot of hunting just to find a single, rather sad-looking Spear-leaved Orache *Atriplex prostrata*.

From late morning, we'd been stalked to the west by a baleful and ever-darkening sky. At first it stayed parallel to where we were, but just after lunch we noticed it sneaking up behind us. We called its bluff for a while but then it signalled its intentions with a distant clap of thunder, which sent us scurrying post-haste back to the car park. We barely had time to say goodbye to each other before the heavens opened. We scattered to our cars, grateful for the dry interlude that had allowed us to enjoy botanising in a very interesting and species-rich location.

STEVE LITTLE

CHERRY HINTON, CAMBRIDGESHIRE 26th SEPTEMBER

It was perhaps not unexpected that at a moment when 80% of the nation's petrol stations had run out of fuel the Cotoneaster workshop consisted of the 3 leaders, Steve Little, David Albon and Stephen Clarkson, but only 3 learners, Roger Heath-Brown, Sue Denness and myself. Stephen Clarkson knows the site well and Steve Little and David Albon had meticulously prepared the ground with string tied to particularly indicative specimens beforehand.

The Cherry Hinton Chalk Pits are a SSSI on the outskirts of Cambridge. The harder chalk 'clunch' has supplied building material for some of the Cambridge colleges (including the early stages of King's College chapel), softer material being oxidised to lime for cement. There are three pits, East, West and Lime Kiln close together. The cliff edges of the first of these are some 20 metres high. The chalk was deposited some 93-95 million years ago at the rate of 1cm every thousand years. Thus the cliffs represent some 2-3 million years of foraminifera deposition.

The southern end of the East pit (nearest the town) was the first to be worked, at least from the Roman era, quarrying continuing northwards until the early 1980s thereafter. As the earliest workings were abandoned so the plants moved in. Thus a north-south progression of vegetation can be observed, stands of ash now occupying the earliest part, with Cotoneaster establishment starting

Cotoneaster insculptus

Photo: Steve Little

north from this larger vegetation. It has been suggested that thrushes roosted in the trees and carried the seeds more widely through the pits. This still leaves unanswered the question of why there are so many Cotoneaster species here. Perhaps people in Cambridge planted different species in their gardens sourced from a specialist nursery nearby, but this remains supposition.

The day started with the usual getting out of the car-park (in this case lay-by) problem as we were detained by a Hairy Canary-clover *Lotus hirsutus* and Orange Mullein *Verbascum phlomoides*. The Cherry Hinton Pits are well known for a number of unusual non-Cotoneaster species and as we entered the site we paid due deference to gone-over Yellow-flowered Teasel *Dipsacus strigosus*, which appears to be spreading, but we failed to spot Perfoliate Honeysuckle *Lonicera caprifolium* in its usual site.

As we emerged from the trees Cotoneasters began to come thick and fast. 5 different species were seen in the first 20 yards. By and large many examples of each were present through the site and we began to get our eye in. Leaf morphology distinguished the long narrow leaves of Willow-leaved Cotoneaster *C. salicifolius* from the smaller, cupped leaves of Hjelmqvist's Cotoneaster *C. hjelmqvistii* and the prominently bullate leaves of Hollyberry Cotoneaster *C. bullatus.* The bright red spherical berries of Brady's Cotoneaster *C. bradyi* contrasted with the paler pink sprays of Late Cotoneaster *C.lacteus* and orange-tinted Stern's Cotoneaster *C. sternianus.* Habit also provided a strong clue. Nearly all the ground-

hugging plants were Wall Cotoneaster *C. horizontalis* but in one place Tibetan Cotoneaster *C. conspicuus,* with its tiny leaves, plastered the foot of the cliff. Most Cotoneasters are apomictic but Tibetan Cotoneaster is an exception, being sexual. Shortly afterwards we found its offspring, Swedish Cotoneaster *C. x suecicus,* with its other putative parent, Bearberry Cotoneaster *C. dammeri* nearby. Not that this hybrid would have arisen in-situ as it is a well-established and fertile garden shrub with several named cultivars. Likewise for Waterer's Cotoneaster *C. x watereri* (*C. frigidus x C .salicifolius*), with its long but broader leaves than *C. salicifolius*.

Himalayan Cotoneaster *C. simonsii* was typically vertical (and with broadly obovoid berries) but so was Beautiful Cotoneaster *C. amoenus.* No-one should assume that Cotoneaster identification is always easy! Many specimens here, previously identified as Franchet's Cotoneaster *C. franchetii,* are now thought to be Maire's Cotoneaster *C. mairei.* A return visit earlier in the year should distinguish them as the anthers of the former are pale purple whereas those of the latter are white. Spreading Cotoneaster *C. divaricatus* lived up to its name with widely spreading branching. A final preprandial species was Hardy Cotoneaster *C. induratus*.

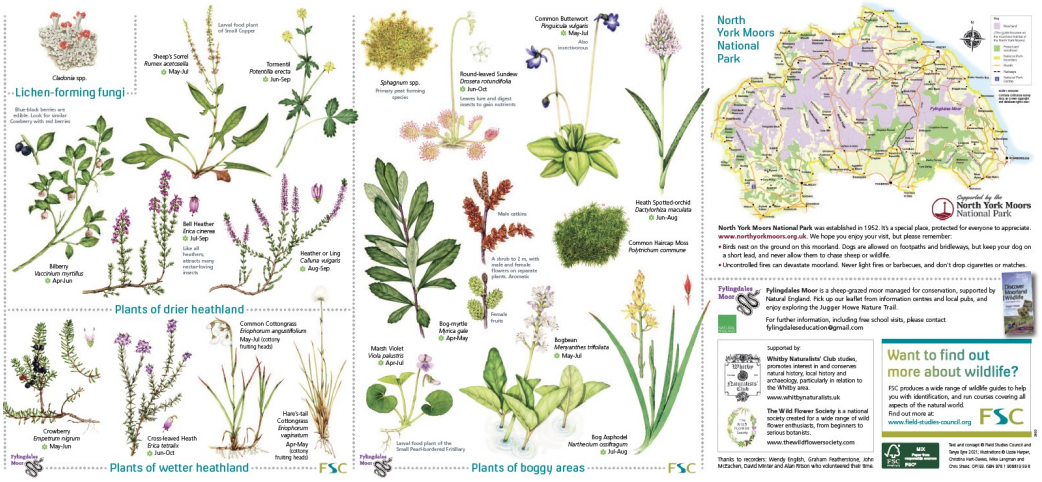
It should not be assumed that our leaders were solely focused on Cotoneasters. Other Rosaceae competed for our attention. Asian Firethorn *Pyracantha rogersiana* displayed an abundance of red berries and Chinese Bramble *Rubus tricolor* lay squat and hairy. Interesting that these other aliens also hail from the same part of the world as the Cotoneasters. We also saw varying Eyebrights *Euphrasia.* These, we were told, formed a hybrid swarm between Common Eyebright *E. nemorosa* and Chalk Eyebright *E. pseudokerneri*. Certainly they varied in flower size with the smaller presumably lying towards the *nemorosa* end of the spectrum and the larger towards the *pseudokerneri* end.

Lunch was used by the learners to assemble their scattered thoughts following this Cotoneaster cornucopia, after which we crossed to the West pit, on the way admiring some gone-over Moon Carrot *Seseli libanotis* spreading casually along the roadside. Our final species at this other site was Engraved Cotoneaster *C. insculptus,* which has deeply impressed veins on the upper side. The day was topped off with a probable hybrid thistle *Carduus x stangii* (Welted Thistle *C. crispus* x Musk Thistle *C. nutans*) with clearly intermediate characteristics.

Really botanical days do not get much better than this. Much interesting information delivered at a pace we could assimilate and a wonderful array of plants. The day was fine and petrol shortages long forgotten. Many thanks to our leaders.

RICHARD ROBINSON

FLOWERS OF THE WONDERFUL AND WILD NORTH YORK MOORS



Fylingdales Moor was appreciative of a donation by the WFS which supplemented one from the North York Moors National Park and enabled them to collaborate with Whitby Naturalists to produce a slim, laminated guide to Wildlife of the North York Moors - see illustration above. In this article education officer for Fylingdales Moor, Tanya Eyre, hopes to enthuse you about the beauty of the Moors and their value as a habitat for flowering plants. She writes:-

The open space, the sense of freedom, the plants that have adapted to the peaty conditions. Let's explore some of the botany we have on the North York Moors.

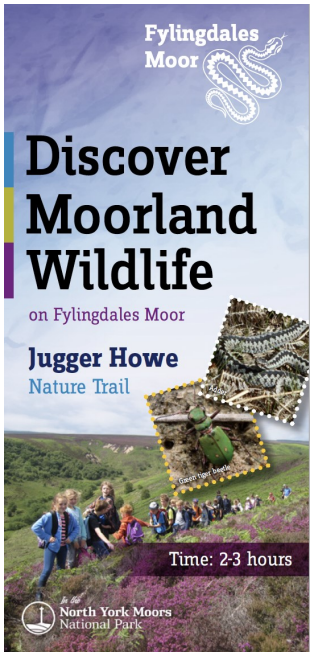
On the high open moor, at ground level, look out for yellow Tormentil *Potentilla erecta* flowers, characterised by their four petals, winding beside the Heathers. See if you can find the three species of Heather, Heather *Calluna vulgaris,* Bell Heather *Erica cinerea* and Cross -leaved Heath *E. tetralix*. At shin height find shrubs of Bilberries *Vaccinium myrtillus*. There is nothing like eating their berries in August. Down into a valley pass gnarled, stunted Birch and Oak trees. I often wonder how long some have grown there, what life has passed them? Now to the boggy mires…down amongst the springy *Sphagnum* moss look out for the yellow star-like flowerheads of Bog Asphodel *Narthecium ossifragum*. The pollen was used by Lancashire women in the 17C to dye their hair. Also look for the dainty Heath Spotted-orchids *Dactylorhiza maculata* and, my favourites, the carnivorous Round-leaved Sundew *Drosera rotundifolia* and Common Butterwort *Pinguicula vulgaris*. To school groups I describe

sundews as our Yorkshire slow versions of Venus fly traps. Lured in by the sparkling dew, the midges and fellow prey find they are stuck to the leaf only for the leaf to take hours to curl around them and enzymes digest their body to liquid nitrates for the plant to absorb.

Around Sheffield and Holmfirth during WW1 there was large scale collection of *Sphagnum* for use as bandages. Their absorbent and naturally antiseptic properties were much needed. *Sphagnum* releases a chemical called 'Sphagnan' which inhibits nitrogen uptake by decomposer organisms. However, I've not heard of this use on the North York Moors. Then there are the aromatic leaves of the bushy Bog-myrtle *Myrica gale* growing up to 2m in height. Its fruits used to flavour gale ale. I've yet to put its midge repellent property to the test.

Photo: Kate Bailey

Fylingdales Moor



So next time you're near the North York Moors, why not visit the east side and Fylingdales Moor. Take a stroll along the 4.3 km Jugger Howe Nature Trail. The trail is accessed from a layby one mile south of the Flask Inn (YO22 4QH) along the A171, between the Robin Hood's Bay turn off and north of Cloughton, Scarborough. The trail leaflet can be emailed from Tanya or picked up free from campsites and pubs local to Jugger Howe, which is also where toilets can be found and that rewarding pint. Anyone with a caravan, you can't get closer to Fylingdales for a stay than Grouse Hill campsite, convenient for a stroll up to the Flask Inn.

The laminated guide is available from the National Park Centres, Dalby Forest and local shops, plus the Field Studies Council.

A recommended book is "Wild Flowers of North East Yorkshire" by Nan Sykes, available from https://place.uk.com/. Nan died last year but what a legacy of books she's left us. The Botany Recorder for Whitby Naturalists, Wendy English, is a fount of knowledge of where to locate

botanical treasures. Amongst her list, she's recorded Narrow-leaved Marsh-orchid *Dactylorhiza traunsteineri* and Black Bog-rush *Schoenus nigricans* down near Jugger Beck and, on dryer ground, Adder's-Tongue (*Ophioglossum vulgatum*) and Petty Whin (*Genista anglica*). Visitors continue to pass records to us; the find of a Royal Fern *Osmunda regalis* in 2013 was a memorable one.

We look forward to seeing you on Fylingdales Moor.

TANYA EYRE

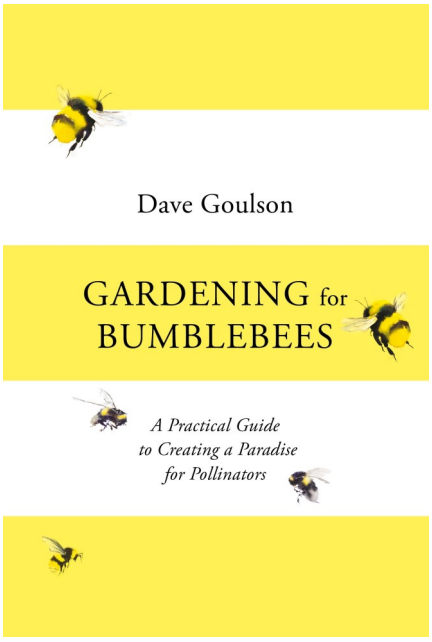
fylingdaleseducation@gmail.com

Round-leaved Sundew

Photo: Heather Mason

BOOK REVIEW

Goulson, Dave. *Gardening for Bumblebees.* Square Peg, an imprint of Vintage (2021) ISBN 9781529110289. Hardback £16.99



I find Dave Goulson's books irresistible. He's Professor of Biology at the University of Sussex, an expert on bumblebees, and a leading campaigner in an important conservation struggle to halt the current catastrophic decline affecting the insect life on which our own ability to feed humanity depends. He's written a number of excellent and expert books around such subjects but their star quality comes from the humanity and charm of his style. Reading one does not just feel as if the subject is approachable but as if you have made a friend. The seriousness of the terrifying facts in the books feels instantly real, but we know that writer and reader are in it together, that we are not alone when such a warm voice is speaking *to* us, which will also be fearless and powerful when speaking *for* us.

This latest book is aimed initially at gardeners because one of the author's messages is always that however small one's patch of world is, it really can contribute to biodiversity, and gardens (even a few pots) are essential in this. I've chosen to bring it to the notice of WFS members because it is a whole degree more relevant to us than the usual 'gardening for nature' literature. It explains the importance and diversity of pollinators, describing many, their lives and the plants they depend on, and this information, illustrated with most helpful photographs, can extend to the insects we see on wild flowers, and knowing these adds to our knowledge of the plants (knowledge often essential in understanding rare species). Many native flowers and shrubs are recommended for inclusion in gardens in a way which shows the author's real familiarity with them, and the advice goes way beyond the usual 'leave a corner for nettles'. The subtitle of the book is 'A Practical Guide to Creating a Paradise for Pollinators', and it's made clear that this can be a paradise for gardeners as well as not having to be the 'mess' which is so often visualised when anything 'wild' is considered.

The practical aspect is never forgotten, though the book feels more of a page-turner than a dry manual. The section dealing with plants is arranged in family order, with a sample of valuable species (or sometimes a whole genus) recommended. Each individual flower or shrub has a note on its good qualities, its preferred habitat, and how best to propagate it as well as which insects it appeals to and its attractiveness to humans as well! There are chapters on providing homes for bumblebees and other pollinators, and these look much more effective than most of the pretty 'bee hotels' offered in gift shops. There's even a chapter on 'Creating Your Own Wildflower Meadow'. I say 'even' because this subject usually enrages me, given the mass of misinformation pumped out by greedy merchants selling expensive seed mixes full of American prairie plants and garden cultivars, without even distinguishing between a perennial mix which *might* one day become a flowery grassland, and the annual arable weeds which need yearly cultivation. Professor Goulson explains the reality of what a meadow should be, summarises the heartbreaking losses of this habitat, and offers real understanding of the whys and wherefores. The book finishes with lists of recommended seed and plant suppliers, addresses of relevant societies, equipment providers (even where to get soil tests) and a list of useful books – so the practical aspects are maintained to the end.

It is also a fascinating and enjoyable read, and most pleasantly produced with lots of photographs. I'm glad to have it as a gardener, of course, but perhaps even gladder because of the way in which it will add to my awareness of the pollination of wild plants, and the problems they too face if our precious insects go on declining.

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