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Editorial

Our year

As well as sociable and entertaining site visits, we have had a busy year gathering data for the BSBI 2020 national plant Atlas update. Members responsible for 10 kilometre squares and their helpers have worked hard to make coverage as complete as possible and we have had several group meetings to tackle under-recorded areas. Sharon Pilkington's reflections on the project are included in this newsletter.

In this newsletter

We have our usual collection of visit reports, written by a variety of members, but with Martin taking a big share. Members also provide photos; unless taken by the editor, these are acknowledged in the captions. We went to two new sites, visiting the RSPB Franchises Lodge reserve near Hamptworth once as a winter walk and once to survey their SSSI meadows. The other was Morningside Farm, recently bought by the Wiltshire Wildlife Trust – flower-filled meadows beside the canal near Royal Wootton Bassett. Among other notable visits, we spent two days in North Devon and include a photo collage of what we saw.

We also have a selection of other articles: rare plants of the Salisbury Plain tracks by John Moon; an update from the Plantlife-led Colour in the Margins project; new plants that you may see on agricultural field margins from Martin Buckland; an introduction to pollen identification; and 'My

County', an appreciation of Wiltshire plant life by Sharon Pilkington originally published in BSBI News.

In previous newsletters we listed all the species newly found in each ten kilometre square every year under 'Plant Records'. There were so many for 2018 that we have only included the highlights and the full set will appear on the WBS website.

Old Wiltshire floras

So far, there have been five printed floras of Wiltshire: T. B. Flower's (yes!) 'The Flora of Wiltshire', published in instalments in the Wiltshire Archaeological and Natural History Society magazine (WANHM) between 1858 and 1874, followed shortly by the 'Flowering Plants of Wilts' by the Reverend T. A. Preston as a book in 1888. There was a long gap before the next effort in 1957 by Donald Grose in 'The Flora of Wiltshire', a scholarly combination of expert botanising and delving into old records and herbaria. Grose had previously compiled his own and other botanists' observations annually in WANHM and he continued to do this after publication. L. F. Stearn assembled these later records into a 'Supplement to the Wiltshire Flora', published in 1975.

Then came the 'Wiltshire Flora Mapping Project', a systematic survey of the whole county, mapping the occurrence of all plants at least within each tetrad (a 2 kilometre by 2

kilometre square). This was published in 1993 as 'The Wiltshire Flora', edited by Beatrice Gillam, with summaries and distribution maps for each species and a number of at-length articles.

With such a long history of botanical recording, we should be able to spot changes in the abundance and distribution of plants. This is difficult because the older records were haphazard and thinly spread. However it is possible to see dramatic changes. For instance, the agricultural 'weed' Shepherd's-needle *Scandix pecten-veneris* was listed as 'common in all areas' by Flower, common in 5 out of 10 Wiltshire districts by Grose, but was only found once and only as a garden weed according to in the 1993 Flora. Recent recording for the BSBI Atlas has produced a scattering of occurrences, so it may be making a small comeback.

However, we now have two surveys which cover Wiltshire in a systematic way and so these can be compared to see how plant distributions have changed over the past 30 years with all the pressures that wild spaces have seen. We also have the data to produce a 'Wiltshire Flora 2020'. Watch for developments.

Cover Photo - Sharon Pilkington: Four-leaved Allseed *Polycarpon tetraphyllum*, from a pavement crack in Trowbridge, a new species to Wiltshire and VC8 in 2019. She found a much larger population about 1km away, also in the town, later in the summer. This is an example of a rare native spreading into new habitats perhaps as a consequence of global warming (it was also seen in Cornwall and London during her work surveys this year).

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You can download this newsletter (and other recent newsletters) from www.wiltsbotsoc.co.uk

Saturday 23rd March 2019

Franchises Wood

Leader: Pat Woodruffe

We gathered on a fairly warm but drizzly March morning to investigate the new RSPB reserve which is on the northern edge of the New Forest, but in Wiltshire.

The reserve has several areas designated as part of the Loosehanger Copse and Meadows SSSI and our walk was in the largest of these that lies within the reserve. Until last year (2018) when the RSPB took possession of the land, access had been restricted to the public rights of way. Records from the area were, as a result, limited and so this was an opportunity to see what we could find early in the year. We varied the walk from that publicised because some tracks had become very muddy as a result of forestry extraction and so we made a circular route from the car park near Telegraph Hill. The designated woodland is described as 'Ancient Semi-Natural' and we did indeed find a mixture of tree species

including English Oak *Quercus robur* and possibly Sessile Oak *Q. petraea* also, Beech *Fagus sylvatica*, Scots Pine *Pinus sylvestris* and one of the Southern beeches, probably *Nothofagus alpina*. The last of these was conspicuous because it was the only deciduous tree coming into leaf. Although superficially like Hornbeam *Carpinus betulus* the teeth on the leaves are quite blunt in this Southern Beech but sharply pointed in Hornbeam. It was clear that many of the trees had been planted but there were some large oak and beech along wood banks which could have been naturally occurring.

In summer the canopy is quite closed in this area and the resulting ground flora is poor. We did find a few areas with good numbers of bluebells but, in general they were sparse. None the less, the number of indicator plants mounted up and included Wood Spurge *Euphorbia amygdaloides*, Primrose *Primula vulgaris*, Tutsan *Hypericum androsaemum*, Early Dog-violet *Viola reichenbachiana*, Wood Sorrel *Oxalis acetosella* and, amongst the ferns, Hard Fern *Blechnum spicant* and Lemon-scented Fern

Oreopteris limbosperma. Most of these species provided a fair indication of the wet, acidic nature of the soils. Our walk took us through three 1 km squares and we managed to increase the total species counts for each of these quite substantially.

It is clear that the RSPB needs some base-line data to use in the development of much-needed management plans. Hopefully, our contribution is valuable and will show that a range of good woodland plants does exist and can form the basis of increased populations in the future. We hope, in May, to be able to make a similar contribution when we investigate some meadows to the north of the reserve.

Pat Woodruffe

There are two species of *Nothofagus* used in UK forestry and considerable variation in the specific names that have been attributed to them. According to Stace ed. 4 (2019), *N. alpina* is also known as *N. procera* and *N. nervosa* and is commonly referred to as 'Rauli'. *N. oblique* is also widely planted and is also called 'Roble'.

Southern Beech - 'Rauli'

Nothofagus alpina
(*N. nervosa* ~ *N. procera*)



Hornbeam

Carpinus betulus



The leaves of these two species are very similar. However, the leaves of Rauli have crenate margins, but those of Hornbeam are finely biserrate. The flowers and fruits provide easy ways to distinguish them.



An identification training day led by Jenny Bennett - Photo Sharon Pilkington

Reflections on the BSBI Atlas 2020 Initiative

Sharon Pilkington

Back in 2002, when I was a newly qualified botanist, one of the most important reference books I bought was the *New Atlas of the British and Irish Flora*. A weighty tome in more ways than one, it included distributional information about 2412 flowering plants and ferns found in the British Isles and replaced the first *Atlas of the British Flora*, published in 1962. The *New Atlas* brought together the efforts of more than 1600 volunteers, which resulted in 9 million records collected between 1962 and 1999. For the first time, species maps were broken down into date classes, which demonstrated the many changes which had taken place in the range and frequency of many species over the four decades since the publication of the first Atlas.

In 2010 the BSBI announced its ambition to publish a third national Atlas ‘sometime in the twenties’ and so Atlas 2020 was born. It will build on the excellent work accomplished by the *New Atlas* by incorporating all records submitted between 2000 and 2019. As well as the standard ‘dotty maps’ for both native and introduced

plants, it will include interactive maps able to display frequency and distribution at a variety of scales and an analysis of change, summarising the state of the British and Irish flora in 2020.

A call to arms went out to all BSBI county recorders, urging them to get involved. The basic objective was clear – to document (record) the plant species of Britain and Ireland hectad by hectad. However, a hectad (a 10km x 10km Ordnance Survey map square) is a large area and although ideal for the purposes of representing spatial distribution of a species on a map of the British Isles, it is too large to be useful as a recording unit. Many counties, including Wiltshire, sought ‘hectad adopters’, volunteer botanists who were willing to undertake fieldwork and data collection in a 10km square, often in their local area. The idea was simple – to survey a representative sample of different vegetation types within each hectad and record all plant species found. Records were to be submitted at monad (1km x 1km square) resolution, with notable species being given a more precise grid reference wherever possible.

For all of the BSBI’s county recorders, Atlas 2020 represented a major step-up in local survey effort, data entry and validation. The BSBI provided guidance on recording but, by and large, CRs were left to deal with the huge volumes of data coming in as best they could. In

Wiltshire I considered myself very fortunate that the Wiltshire Botanical Society embraced Atlas 2020 with great enthusiasm from the start and by the end of 2011, many keen members had adopted hectads and the project was well underway. Quickly, the volume of records coming in every year jumped from a few thousand to 30,000 or more. In 2019, the final year of recording, more than 60,000 records were submitted, which is quite phenomenal. From a personal perspective, I faced considerable challenges managing data flow and providing Atlas 2020 recorders with the tools they needed to hit the ground running. Atlas 2020 coincided with my work as a professional botanist taking off and time available to devote to recording duties became increasingly limited. At this point I was very pleased and more than a little relieved to welcome Richard Aisbitt as BSBI co-recorder. As well as being a highly competent botanist, Richard's knowledge of spreadsheets and databases is second to none and he was able to quickly put in place a number of data entry and verification tools that streamlined and speeded up the whole process of data management. Between us, we were able to provide support to Atlas 2020 volunteers and ensure a fast and accurate data stream up to the BSBI each year.

Atlas recording does not interest everybody of course and so the WBS started to organise specific field meetings to fill data gaps, targeting poorly recorded parts of the county. Every year we held two or three of these, ranging all over the county. Such meetings proved to be highly valuable in collecting data. Typically, between 10 and 15 members would turn up, armed with hand-lenses, recording forms and maps. Deployed to record one or more monads in one area, a gentle rivalry would usually develop, with groups vying to record the most species on the day. A by-product of such meetings was the sharing of knowledge within the recording groups. It has been a privilege to observe how much members' botanical identification skills have improved over the last decade, particularly in certain difficult groups such as grasses and sedges. In the first few years of the project, Atlas 2020 recorders (and all WBS members) were invited to attend training courses and workshops organised by other members. Ferns, grasses (more than once), confusing dandelions and daisies and other training events were well attended, and no doubt helped improve field recording skills and confidence.

Wiltshire is very fortunate in having a resident group of highly knowledgeable amateur botanists who enjoy structured species recording. The BSBI recommended that 'at least five tetrads (2 x 2km squares) should be surveyed in each full hectad' to get the right level of coverage for Atlas 2020. However, from the outset, some of the society's most enthusiastic members went well beyond this level and two things became clear. First, given enough time, it would be possible to survey Wiltshire on a monad-by-monad basis. Secondly, this data would be invaluable for a future county flora to update the existing *Flora of Wiltshire* published in 1993.

So, how did we do and what happens next? Between 2000 and the end of 2019, a staggering 619,540 botanical records were submitted, covering 1985 taxa (species, subspecies, hybrids and varieties) in Wiltshire. Compared to earlier date-classes, 346 taxa were not refound, but 502 new taxa were added to the county list. The latter is due mainly to the increased colonisation of habitats by introduced species, as well as a greater awareness by field surveyors of the importance of documenting the spread of such taxa. Wiltshire's most diverse monad is SU01393, which includes part of Clattinger Farm, Mallard Lake and Swillbrook; this single square has no fewer than 395 taxa.

Every single record has now gone to the BSBI and many are also already in use at the Wiltshire & Swindon Biological Records Centre. The Atlas 2020 project has now moved onto the next stage, which is validation of records, work undertaken by county recorders and taxonomic referees. This work is essentially quality control and will ensure that data published and analysed in the final form of the Atlas is reliable. With such high volumes of data coming in, it is inevitable that some errors are made in identification or entry of records and validation aims to minimise these. Many people are already working to make publication of the third Atlas happen, although no publication date has been given yet. Here in Wiltshire, individual recorders and the WBS will continue to survey the county monad by monad until there is full coverage.

Everyone who has contributed time and energy collecting data for the Atlas 2020 project in Wiltshire should be very proud of what has been achieved and I thank you for your hard work and support over the past decade.



Hairy Bindweed *Calystegia pulchra*, increasingly seen in Wiltshire - Sharon Pilkington

19th May 2019

BSBI Atlas Recording on Salisbury Plain

Leaders: Sharon Pilkington & Sarah Grinsted

Some parts of the army training area on Salisbury Plain have been well recorded since 2000 but Atlas recording progress has been slow in others, not least because few active WBS members have the clearance needed for access. Our meeting on the edge of the Imber and Warminster Ranges set out to partially rectify this. With fourteen members turning up at Coulston Hill on a fine sunny day, two recording groups set out, one led by Sarah and the other by Sharon. It was particularly nice to meet a few new members of the society for the first time.

All of the target monads could be reached on foot from where we'd parked our cars on the edge of the training area. Sharon's group tackled ST9451 and ST9452, notching up 121 species in the former and 148 in the latter. Much of the area is reversion grassland; formerly improved or



White Helleborine



Germander Speedwell, also white

ploughed ground being left to revert to chalk grassland. As such it was not particularly diverse and our progress was steady rather than rapid. Many of the grasses were just coming into flower and the glistening flower-spikes of Downy Oat-grass *Avenula pubescens* looked particularly striking. We also found a little Narrow-leaved Meadow-grass *Poa angustifolia*, which is widespread but under-recorded on the plain.

Lunch was enjoyed in a small planted copse among an abundance of Greater Butterfly-orchid *Platanthera chlorantha* and White Helleborine *Cephalanthera damasonium*. Another, older copse along the Imber Range Perimeter Path produced the inevitable garden throw-outs of Garden Yellow-archangel *Lamium galeobdolon* subsp. *argentatum* and Garden Solomon's-seal *Polygonatum x hybridum*.

Moving further into the training area, we looked at a bit of chalk grassland that had many of the characteristic species of unimproved swards but lacked others. It was most odd. Our return towards Coulston Hill took in an old hedgerow. There are a few former hedgerows on Salisbury Plain, most of which are now unmanaged stubs. This one has long been known

for its outlying population of Spiked Star-of-Bethlehem *Ornithogalum pyrenaicum* and we did find one struggling patch in deep shade. The rest of the hedgerow was rather overgrown but other patches may still be there somewhere.

On reflection, our part of the hill did not produce any particular surprises or botanical riches but we did both squares pretty thoroughly for the time of year, had some good exercise and enjoyed some fine views in congenial company.

Sharon Pilkington

BSBI Atlas Recording on Salisbury Plain - the second group

This group, led by Sarah Grinsted, was quite large and our list of plants grew quickly. An early highlight near our start in ST9552 was a group of Star-of-Bethlehem *Ornithogalum umbellatum* subsp. *campestre* in full flower by a hedgeline, and as we followed this we found more and more of these delicate flowers, the patch extending for about a hundred metres! Walking across the next grassy field and slope, we added many chalk grassland plants to our list before exploring some woodland and adding yet more variety. The path here led us beside some electric-fenced grazing grassland which the cattle had clearly feasted on, so after



Yellow-wort

lunch we moved to the next square and recorded there. Good chalk

grassland was also here, including Yellow-wort *Blackstonia perfoliata* and Saw-wort *Serratula tinctoria*, and we searched for previously-recorded Tuberous Thistle *Cirsium tuberosum* and its hybrid. We found some leaves that were one or other of these, but in the absence of flowers could not decide whether it was pure-bred or not – a pity, as hybridisation with Dwarf Thistle *Cirsium acaule* is affecting most of our populations. The highlight in this square was a bush of Sherard's Downy-rose *Rosa sherardii* with noticeably glaucous foliage – a species not at all common in Wiltshire. The persistence of old hips helped confirm the ID. Returning via woodland and tracks, we added some ruderal variety near the farm, and followed the tracks back north to ST9552 again, recording Spreading Meadow Grass *Poa humilis* several times on the tracks, and finding some naturalising Goat's-rue *Galega officinalis* near a reservoir building. It was altogether a very rewarding visit, with the added satisfaction that we had made a contribution to updating the records of the county's flora with over 250 for the day.

Sue Fitzpatrick



Star-of-Bethlehem

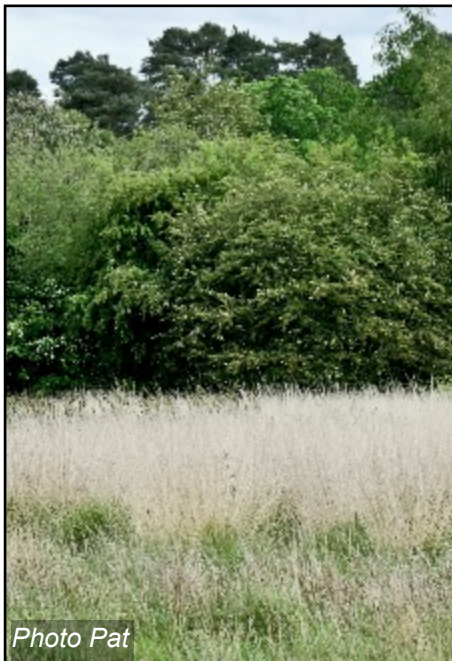
25th May 2019

RSPB Franchises Lodge and Pimlico Fields

Leaders: Pat Woodruffe and
Vanessa Williams

[A repeat visit to do some serious
plant recording].

A group of 16 walked a very pleasant
track through woodland on our way to
the Pimlico Fields. The woodland on
both sides of the track is not in RSPB
ownership but is part of the New
House Estate. Despite this, keen eyes
could not pass a 'good plant' and so,
before we had reached our
destination, Slender St John's-wort
Hypericum pulchrum, Tutsan *H.
androsaemum*, Southern Wood-rush
Luzula forsteri, Common Cow-wheat
Melampyrum pratense and Thin-
spiked Wood-sedge *Carex strigosa*



had all been noted. Not a bad start to
the day!

The fields now in the ownership of
the RSPB are a group of eight, two
small sections of which have SSSI
status as part of the Loosehanger
Copse and Meadows SSSI designated
in 1992 and within Wiltshire and
VC8. The citation describes the fen
meadows as supporting a wide range



of plants which have developed
through centuries of grazing without
the use of fertilisers. Named examples
include Meadow Thistle *Cirsium
dissectum*, Marsh Valerian *Valeriana
dioica*, Bog Pimpernel *Anagallis
tenella*, Bristle Club-rush *Isolepis
setacea* and several species of



Dactylorhiza orchids and their
hybrids.

Throughout the day we recorded
almost 200 species of plants but,
sadly, none of the above although I
did find two non-flowering plants of
Dactylorhiza which seemed most
probably to be hybrid material. The
fields varied considerably both in
their wetness and also in the
occurrence of Purple Moor-grass
Molinia caerulea tussocks. The SSSI
locations, in particular, were
dominated by this grass. It would
seem that over the 27 years since the
site was designated, management has
been less than favourable and water



no longer stands sufficiently to
support some of the more notable
plants.

A return visit is called for, especially
if the summer proves to be a wet one.
In the meantime our findings will be
passed to the RSPB staff and will be
used to help determine the future
management of the meadows.

My grateful thanks to those who
attended and recorded, despite this
being a bank holiday Saturday. Let us
hope that, in years to come, the
meadows may return to something of
their former interest.

Pat Woodruffe



Saturday 20th April 2019

Collingbourne Woods

Leader: John Moon

A glorious day of sunshine greeted the 17 members on this the first day of our Summer Programme and what a contrast with last year when we froze at Fonthill. Whilst we basked in warmth we had to wait for our leader who unfortunately woke to find his car wouldn't start and so instead cycled the 10 miles from his home. Top marks John!

Although our group had been to the western and central sections of this wood many times, today we ventured through the eastern half. We soon came across Yellow Archangel *Lamiastrum galeobdolon* and Greater Stitchwort *Stellaria holostea* was plentiful.

Why can't violets be less argumentative? A putative hybrid with the 'wrong' colour spur and 'was that a notch in the tail?' kept us busy and I'm not sure we answered the query. [Parents - Common Dog-violet *Viola riviniana* and Early Dog-violet *V. reichenbachiana*; the hybrid - *V. x bavarica*]. Moving on, a find by one member was Moschatel *Adoxa moschatellina* hiding in the grass; a good spot indeed as the plant though in flower is all green.



Golden-scaled Male Fern croziers

Scaly Male-ferns were just 'awakening' with many fine unfolding croziers worthy of a camera shot or two and nearby the sight and perfume of Bluebells *Hyacinthoides non-scripta*.

As promised by John we were shown a patch of Wood Vetch *Vicia sylvatica* and although not in flower we were directed to the wide stipules with pronounced jagged teeth that are a feature to look for in this species.

A large patch of Thin-spiked Wood-sedge *Carex strigosa* stopped many of us. Like a relaxed and smaller version of Pendulous Sedge *Carex pendula* we were reminded to tear back a leaf to look at the impression of the ligule; it lies off centre.

Two other plants highlighted for the day, Herb-Paris *Paris quadrifolia* was seen quite readily at edges to the rides as was Meadow Saffron *Colchicum autumnale* that didn't seem to mind growing in the more trampled areas even in the centre of tracks.

A patch of Solomon's-seal turned out to be the 'genuine' article i.e. *Polygonatum multiflorum*. It is worth checking out any patch you find as Garden Solomon's-seal *P. x hybridum* is commonly found. The former has a smooth rounded stem whereas the garden one has a ridged stem.

We ventured through a small patch of downland that sadly had not been grazed and so had a lot of thatch build-up within the turf and lacked for flowers however we did find Hairy St John's-wort *Hypericum hirsutum* and also carpets of Common Dog-violet *Viola riviniana*.

Plants were rather sparse under the planted Beech wood but Orpine *Sedum telephium* was spotted just off a path and there were several fern species not least Narrow Buckler-fern *Dryopteris carthusiana*. A pointer to look for is the scales; they are universally pale and have no stripe unlike its broader brother *D. dilatata*.

Our special thanks to John for a good day out.

Martin Buckland



Beech wood with ...



... and without Bluebells

Saturday 8th and Sunday 9th June 2019

North Devon Weekend - Hartpiece Farm

Pat Woodruffe arranged a two-day stay and Dave Green led our excursions. Here is a selection of photos from the weekend. We explored two very different habitats, the dunes of Braunton Burrows (left four columns) and damp woods beside the cascades at Watersmeet in Exmoor National Park (the remaining two columns).



Lesser Water-plantain



Sea Sandwort - Penny Lee



Marsh Pennywort



Sea Stock



Sand Toadflax - tiny introduced alien



Yellow Bartsia



? Marsh-orchid - Penny Lee



A broomrape



Water Germander - all we saw of this rarity



Sea Bindweed



Welsh Poppy



Irish Spurge - flowers



Wasp Orchid



Welsh Poppy



... and fruits - Penny Lee



? Wild Pansy



Common Cow-wheat



Rock Stonecrop - top of stone wall



Close examination - Penny Lee

On our last evening and the following morning, we wandered up the lane by the farm, recording 140 species on the flowery banks. This was our small contribution to the Devonshire Atlas Update.

Parsonage Down NNR

Leader: Seb Mephram

Seventeen members met at Natural England's offices at Cherry Lodge Farm where we were greeted by Seb Mephram. He explained that the area that we tend to call Parsonage Down is around 271 hectares in total but comprises the lands of Parsonage Down and Cherry Tree Farm. It is only Parsonage Down itself (189 Ha) that is designated a SSSI and a SAC (Special Area of Conservation, European Directive). It is also the only working farm run and managed by Natural England.

As is often the case with today's nature reserves, we are indebted to a previous owner's dedication or would it be bloody-mindedness? Seb explained that during WWII the Government requested that much of Parsonage be put under the plough to grow food however whilst I believe it did not escape completely, the owner Mr Wells refused overall, and in turn the land was used for training troops. The odd bomb crater still shows today.

The site is well known for its Longhorn cattle and a herd of the same has been on site since 1927. The NNR is now totally organic with the animals kept out all year but at low intensity numbers (Presently 37 adults and 26 calves).

WBS members were here 10 years ago and I clearly remember seeing hundreds of Burnt Tip Orchids



Roses for identification - Martin



Neotinea ustulata but they were not to be seen today. We were perhaps a little late but Seb mentioned that this had been a quiet year for them, instead a few members with keen eyes found some nice Frog Orchids *Coeloglossum viride*. Being green this was like finding the proverbial needle in the haystack, so we took care in taking down grid references for them. Much easier to find were Bee Orchids *Ophrys apifera*, some freshly opening Pyramidal Orchids *Anacamptis pyramidalis* and Chalk Fragrant-orchids *Gymnadenia conopsea* (even a pure white one) that appeared quite numerous in local spots.

We had our usual debate when coming across milkwort. Would it be Chalk, would it be Common? Does it have anastomosing veins (veins that divide and join again usually at the edges)? If



you don't know this word yet, then you will soon hear it; botanists seem to love to quote it and hold up tiny blue petals to the sky to peer at with their lenses. Yes, I do too, and we saw both Common Milkwort *Polygala vulgaris* and Chalk Milkwort *Polygala calcarea*.

A plant I'm often told to look out for when on chalk downland is Dwarf Sedge *Carex humilis*. It was not at all difficult here; there were great carpets of the plant and no need for grid reference recording today. Surprisingly two guides I looked in both say that the leaves are dark green and can be difficult to find amongst fescues. Perhaps that's true at other times of year but today I was drawn immediately to the limey-green tufts as I believe most people were.

There were plenty of typical chalk plants on view not least Common Rock-rose *Helianthemum nummularium*, Dropwort *Filipendula vulgaris*, Squinancywort *Asperula cynanchica* and Fairy Flax *Linum catharticum* but a special plant we hoped for was Early Gentian *Gentianella anglica*. Again we were probably a little late and Seb mentioned that he was a little worried that their numbers may be dropping so, not a group to miss an opportunity, we agreed that we visit again but in mid-May in 2020. If you missed today's trip then you'll have another chance.

Our thanks to Seb and Natural England for permitting this visit.

Martin Buckland



Dark Green Fritillary - Martin

Sunday 30th June 2019

Morningside Farm, Royal Wootton Bassett

Leaders: Richard & Judy
Gosnell

I think it would be fair to say that without the harrying and cajoling of the Wiltshire Wildlife Trust by our hosts for the day, Richard and Judy Gosnell, then these meadows would possibly not have been saved for the future and from the plough and bags of nitrate.

Judy gave a rundown on the history of the site and its variable maintenance over the years. There are five fields of which three are botanically very good to excellent, one very reasonable and another quite poor having been heavily grazed by horses. It did seem quite incredible that these fields have survived entirely unprotected or designated in any way.

First impressions from the barn were a little doubtful as all one could see was grasses. However, we were soon to be pleasantly surprised. This first field was just pink with masses of Common Bent *Agrostis capillaris* flower heads blowing in the breeze and was joined by Great Burnet *Sanguisorba officinalis* and Meadowsweet *Filipendula ulmaria*. When we ventured further, more species joined parade; the rayed form of Common Knapweed *Centaurea nigra* and the flower heads of Saw-wort *Serratula tinctoria* were particularly nice. It was good to see the ridge and furrows too with the variety of plants changing within the undulations. How did this all escape the plough when seemingly all the neighbouring landscape is improved grassland?

Great patches of Sneezewort *Achillea ptarmica* seemed to like the damper spots and surprised many by its abundance and it was also well blessed by Betony *Betonica officinalis*. Judy informed Martin that there were a couple of limes on the

site and considering it unlikely that a Common Lime *Tilia x europaea* found its way out here, he set off to investigate and was very pleased on his return to announce that Small-leaved Lime *Tilia cordata* could be added to our day's list.

Then we hit the 5-star field, an SSSI-quality meadow in the far corner of the site that's as good as any MG4 NVC community meadow. I don't think I've heard so much ooing and aahing for years. Great clumps of Dyer's Greenweed *Genista tinctoria* (far more than at Clattinger); the beginnings of Lady's Bedstraw *Galium verum*, more Betony, Saw-wort, Common Knapweed, the odd stand of Marsh Thistle *Cirsium palustre* and many plants of Peppercress *Silaum silaus*. Down in the sward, Tormentil *Potentilla erecta*, Creeping Cinquefoil *Potentilla reptans* and also the hybrid between the two, *Potentilla x mixta*. Furthermore, the second lime was also Small-leaved. Nature's palette is super!

Morningside Farm is truly a precious addition to Wiltshire's protected places.

A worn Forester Moth - Paul Darby



Compiled by Martin Buckland from
whispers by Richard & Judy
Gosnell, Martin Buckland,
Rosemary Duckett and Stephen
Beal.



Saturday 6th July 2019

BSBI Atlas Recording at Kitchen Barrow Hill

Organisers: Martin Buckland
and Simon Smart

'I hope you had a good day recording; thanks for your efforts towards the greater botanical good. Martin, Jane, Paul and I went to Easton Hill – lots of Round-headed Rampion *Phyteuma orbiculare* and Clustered Bellflower *Campanula glomerata* but no Field Fleawort *Tephrosieris integrifolia*. We also found Dwarf Sedge *Carex humilis* (Known there but last recorded 1978), plenty of Squinancywort *Asperula cynanchica* but no Bastard-toadflax *Thesium*



Mayweed with ray florets only -
Pat Woodruffe



Photo- Pat Woodruffe

This meeting was organised to tackle several poorly-recorded squares in the Pewsey Downs, with special access arranged to private farmland by Simon Smart. The article has been compiled from some of the notes and emails passed around after the event.

humifusum (not previously recorded). 100+ species.'

'... and well done all ... until we reached the downland slopes (Easton Hill) it was all very quiet, botanically and invertebrately (!?) ...and then there it all was, the chalk flora, a million or so grasshoppers, butterflies, soldier beetles and so on .. it did feel alive and reassuringif a bit hot!'

'Penny, Rosemary, Mark, Simon and I had a fabulous time in gorgeous and very rich chalk grassland up on Kitchen Barrow Hill. I'm not sure what the final total was but it must be 130+.'

'Like you we found plenty of *Phyteuma orbiculare* but no *Carex humilis*. There was, however, the largest population of *Thesium* I've ever seen. In the end we decided there must be 1000 plants or more. Lovely. Mark spotted a bit of Rye Brome

Bromus secalinus on farm waste dumped in an old chalk pit, but the arable margins were otherwise almost sterile – a big contrast to the wonderful chalk grassland on the hill above.'

'I'd like to echo Richard's thanks to all who turned up yesterday to help. We too had a very good day doing the unrecorded square - it was great! Starting from the field barn in a lovely old track with many beautiful Knapweed Broomrape *Orobanche elatior* and some Common Broomrape *O. minor*, and most of the chalk flora you would expect - and swarming with butterflies. Then along the edge of a rape field we found good arable plants - hundreds of Dwarf Spurge *Euphorbia exilis*, Henbit Dead-nettle *Lamium amplexicaule*, and Yellow-juiced



Nodding Thistle - Pat Woodruffe



Knapweed Broomrape - Pat Woodruffe



Round-headed Rampion - Pat

Poppy *Papaver lecoqii*. Then onto a lovely bit of the Wansdyke, with *Phyteuma*, Horseshoe Vetch *Hippocrepis comosa*, Common Rock-rose *Helianthemum nummularium* but no *Thesium* or *Asperula* or *Carex humilis* but again, lots of butterflies. Total records for square: 170. We

came back to the car via the next square - a bit more Wansdyke (not nearly as good!) and a good track leading to Martin's car, then we cut across back to our original square on the top of the hill. A few more arables in this new square, Long-headed Poppy *Papaver dubium* and Narrow-fruited Cornsalad *Valerianella dentata* being the best. Total just over 100 so not too bad!

‘So thanks, Martin, for organising this trip.’

‘I (Martin) must add my thanks to everyone that attended yesterday and for recording so many good plants. Special thanks to Simon for arranging the permissions as well.’

‘Botany is good!’

Many thanks to sharp-eyed plant spotters, writers of plant lists and



Sainfoin - Pat Woodruffe

those who typed the records onto spreadsheets.

For Easton Hill, we made:

109 records for SU0564
20 records for SU0565 (a field corner on our travels)

For Kitchen Barrow Hill, we made:

160 records for SU0664
171 records for SU0665
2 records for SU0764
105 records for SU0765

Martin Buckland



Photo- Pat Woodruffe

Chittoe

Leader: Dave Green

Nine of us set out along the lane from our meeting place and almost immediately spotted Yellow-juiced Poppy *Papaver lecoqii* on the verge followed by Spring-sedge *Carex caryophylla* and Heath Spotted-orchid *Dactylorhiza maculata* in a churchyard. Round-leaved Crane's-bill *Geranium rotundifolium*, mainly found in the west of the county was also seen. The distinctive spiny fruits of Spotted Medick *Medicago arabica* confirmed the presence of this plant, although the black-spotted leaves that usually alert us to the plant were less evident. Appetites duly whetted, we crossed the A342 to the area of market gardens on sandy soils to look for arable weeds and were not disappointed. In places, there was so much Field Penny-cress *Thlaspi arvense* that it almost looked like a crop! Other highlights included Bugloss *Anchusa arvensis* Corn Spurrey *Spergula arvensis*, Henbit Dead-nettle *Lamium amplexicaule*, Shaggy-soldier *Galinsoga quadriradiata*, and Small Nettle *Urtica urens*. Bristly Oxtongue *Helminthotheca echinoides* was locally abundant by the track. We also saw two nightshade species, the familiar Black Nightshade, *Solanum nigrum* and the less frequent Leafy-fruited Nightshade, *S. sarachoides*. The latter was first found in market gardens at nearby Bromham in 1964. There were also two species of fleabane, Canadian, *Conyza canadensis* and Bilbao's, *C. floribunda*. The first county record of the former was from Salisbury in 1931, but the latter is a more recent addition to the British flora, not found in the UK until 1977. In the latest edition of Stace's New Flora of the



Harebells

British Isles their genus has changed to *Erigeron*. We could not fail to see the large white trumpets of Thorn-apple, *Datura stramonium*, although the spiny fruits had yet to develop. According to Geoffrey Grigson in 'The Englishman's Flora' (1955) infusing two or three seeds of this plant in surgical spirit and then shining a light through the glass produces 'the most delectable green fluorescence'. How and why did someone discover this?! Our final notable finds in this part of the visit were grasses. First there was Cockspur, *Echinochloa crus-galli* and then Dave showed us California Brome, *Ceratochloa carinata*, the latter new to me and I suspect most of our group. Finally, Sharon pointed out Black Bent, *Agrostis gigantea*, a plant of disturbed sandy soils that is probably often overlooked. We retraced our steps and had lunch on the common land near where we had parked, before heading off through some woodland for the afternoon, noting and giving a wide berth to a bees' nest in a beech tree. The woodland was notable for its ground

cover of Atlantic Ivy, *Hedera hibernica* rather than our usual Common Ivy, *H. helix*. Emerging from the woodland, we walked along the margins of some maize fields and found many of the species we had seen in the morning, including abundant Bugloss. Additional plants included Long-headed Poppy, *Papaver dubium*, Slender Parsley-piert, *Aphanes australis*, Field Woundwort, *Stachys arvensis* and Rat's-tail Fescue, *Vulpia myuros*.

Having had our fill of arable weeds, we went into Spye Park to look at acid grassland and heath, both rare habitats in Wiltshire. Well-worn paths were carpeted in places with tiny rosettes of Buck's-horn Plantain, *Plantago coronopus* and Sand Spurrey, *Spergularia rubra*, a plant of acid soils, was locally abundant. Other species of acid soils included Early Hair-grass, *Aira praecox*, Heather, *Calluna vulgaris*, Pill Sedge, *Carex pilulifera*, Heath Bedstraw, *Galium saxatile*, Tormentil, *Potentilla erecta*, Wood Sage, *Teucrium scorodonia* and Sheep's Sorrel, *Rumex acetosella*. Sharp eyes spotted some Bird's-foot, *Ornithopus perpusillus*. The hybrid between Trailing Tormentil, *Potentilla anglica* and Creeping Cinquefoil *P. reptans*, which is *P. x mixta*, was also found.

All in all it was a very interesting visit with plenty of variety and opportunities to learn. Thanks very much to Dave for leading and informing us, to Sharon for help with identification and of course to Martin for organising and arranging access.

Anne Appleyard



Sand Spurrey

Colour in the Margins

Back from the Brink project update

Colour in the Margins/Back from the Brink is an ongoing project, led by Plantlife, to bring back and safeguard threatened and unique species of arable margins. The species include invertebrate, mammal, bird and plant species. One of the species of interest is Red Hemp-nettle *Galeopsis angustifolia*.

There is an extant population of this plant on Salisbury Plain where it

thrives in small quantities as a result of disturbance caused by military vehicles which also help distribute seed. I was asked by Plantlife/Kew Millennium Seed Bank this year to collect tissue samples from this population for DNA testing. It is thought that because this plant exists in isolated sites that different geographic populations could be genetically different.

There has to be a rigorous protocol in place to achieve this. Firstly, permission from Natural England. Each sample of plants had to have a grid reference and be placed immediately into coffee filter papers and then into sealed bags containing

large amounts of silica granules - plant tissue for DNA testing must dry quickly. Each sample had to be photographed in order to identify any morphological differences. Everything had to be meticulously labelled!

On arrival at Kew Millennium Seed Bank, the tissue samples would be taken down to 15% Relative Humidity. They will be DNA tested to determine any differences with other geographical populations. Eventually seed will be reintroduced to suitable donor sites, matching geographically similar plants.

Penny Lee



Red Hemp-nettle - Penny Lee

Sunday 4th August 2019

Manor Farm, Collingbourne Kingston

Leader: Jane Brown

On another of the summer's glorious days about a dozen WBS members parked our cars at a pre-arranged spot on the farm. From here there were distant views across the surrounding countryside as well as over the mixed farmland.

The present farmer, Richard, and Jackie his daughter, welcomed us and gave us background information which added meaning to our visit. The 500 acre farm has been in the family since 1885. It includes arable, old and new woodland, downland, and the large conservation area that has been out of arable for 10 – 15 years. Three quarters of the conservation area is topped every 2 -3 years to prevent the development of too much scrub. It has been seeded with a chalk-loving mix,



Photo - Jane Brown

and was a colourful haze of yellow and purple. The remaining quarter has self-seeded with Buddleia *Buddleja davidii*, though far from any gardens. There are also Stone Curlew plots, managed by the RSPB, also of benefit to lapwings. I understand a Great Bustard was once seen here!

Though not seen as best farming practice, it was serendipitous that the game strips had not been sprayed this year, which, for us, meant a good variety of interesting 'arable weeds'. Plants which were found in the arable included Small Toadflax *Chaenorhinum minus*, a large amount of Marsh Woundwort *Stachys palustris*, Thorn-apple *Datura stramonium* and Dwarf Spurge *Euphorbia exigua*.

At lunchtime we settled amongst the *Buddleja* and enjoyed the spectacle of large numbers of butterflies, as you might expect ... Painted Lady, Red Admiral, Small Tortoiseshell, Peacock, Brimstone, and various whites.

The downland slope has never been ploughed, and while it has had Dexter cattle grazing in the past, now welcomes a small number of Wensleydale sheep from August to spring. The visit to the downland was a bit late in the season for any orchids, but there was a good range of downland botany to be enjoyed, including a display of Dropwort *Filipendula vulgaris* seed-heads.

Richard joined us here again, and Jackie spent the day with us – she is now a member of WBS so hopefully will join us on other outings! Many thanks to them for making us so welcome.

Jane Brown



The tiny Small Toadflax - Jane Brown



Thorn-apple - Jane Brown



Botanists at work - Pat Woodruffe



It must be Buddleja - Sharon Pilkington

The Lizard Orchid

A very fine Lizard Orchid *Himantoglossum hircinum* was spotted in flower near Salisbury in 2018. It is not a typical plant for Wiltshire, but one that pops up occasionally here and there.

Martin went searching and successfully found it.

“As you well know I was formerly a train-spotter and occasional bird twitcher so found myself drawn to Salisbury today to look for the Lizard Orchid (I was away last year so missed it).

Interestingly, a friend of mine has said that he heard of it on Facebook but that no details of its whereabouts were given thankfully.

Anyway, to whet your appetites see photos.”

Martin Buckland



Photo - Martin Buckland



Photo - Martin Buckland



Photo - Martin Buckland

Sunday 11th August 2019

Savernake Forest

Leader: Dave Green

A good number turned out on what felt like a rather autumnal day.

As we set off, we soon found Oxford Ragwort *Senecio squalidus* along the path edges.



Photo - Pat Woodruffe

Our first off-piste foray produced Slender and Smooth Tares growing almost on top of one another. This sparked discussion over the new names in the Fourth Edition of Stace as these two species are now called *Ervum gracile* instead of *Vicia*



Climbing Corydalis - Pat



Slender Tare - Pat Woodruffe

parviflora and *Ervum tetraspermum* instead of *Vicia tetrasperma*. We are going to have to get to grips with these new names!

In this first of three ponds - rather low on water - we found Water-purslane *Peplis portula* and Bulbous Rush *Juncus bulbosus* the latter showing its interesting viviparous habit - producing live young. In the margins were Climbing Corydalis *Ceratocarpus claviculata* and hemp-nettle *Galeopsis* - now was it Common Hemp-nettle *G. tetrahit* or Bifid Hemp-nettle *G. bifida*? Rather late in the season were toadpoles which have apparently been sparse this year, perhaps due to the dry winter.

As well as the wonderful veteran oak *Quercus* spp. trees which are characteristic of Savernake we came across a number of sickly-looking Ash *Fraxinus excelsior* trees affected



Fallen Beech tree - Pat Woodruffe



by Ash Dieback *Hymenoscyphus fraxineus*.

At last the Violet Helleborines *Epipactis purpurata* were spotted in all their splendour in the gloom of the Beech *Fagus sylvatica* understory near the track. This species is usually hemi-parasitic but can also occur as totally parasitic when the species has no chlorophyll at all.

We paused at the Monument erected to celebrate the return to health of King George III. Here the ride had been flailed to control Bracken *Pteridium aquilinum* and the tree margins had had their canopies lifted to benefit the view as well as the flora. We found Lesser Stitchwort *Stellaria graminea*, Tormentil *Potentilla erecta*, Trailing St. John's-wort *Hypericum humifusum* and this time Bifid Galeopsis *Galeopsis bifida*.

At our second pond most of us took shelter from a heavy shower under trees whilst Dave braved it to explore the pond and find Water-soldier *Stratiotes aloides*.

Between ponds, capsules of a *Viola* spp. were found. Sue pointed out a useful tip to determine whether the plant is Common Dog-violet *Viola riviniana* or *V. reichenbachiana* at this stage – *V. riviniana* has sepal appendages which stick out away from the sepals.

By the time we reached the third pond of the day, which contained White Water-lily *Nymphaea alba* and a pondweed *Potamogeton* spp. the weather had set in for the worst and we rather hurriedly called it a day.

Penny Lee



Violet Helleborine - Pat Woodruffe

Thursday 22nd August 2019

Calshot and the Solent Coast

Leader: Steve Jackson

A day at the seaside is what everyone needs, and we were fortunate with brilliant weather. No buckets required here...no sand!



Our start commenced amongst beach huts where a couple of escaped aliens showed themselves; Apple-mint *Mentha x villosa*, no doubt from a garden and Bilbao's Fleabane *Conyza floribunda* no doubt a lot further, but a plant I am increasingly seeing in all places. Along the pebbled beach, plants were a little thin at first possibly due to a little 'gardening' by hut residents but I thought also because of shore maintenance; the beach had relatively new groynes and I guess the pebbles had been pushed up however as we walked the expected suspects of Yellow Horned-poppay *Glaucium flavum* and Sea Beet *Beta vulgaris* subsp. *maritima* showed themselves. Amongst the huts I was pleased to see Sticky Groundsel *Senecio viscosus*; so different from our garden variety and a diminutive Herb-Robert got the guide books out to check that it was in fact Little-Robin *Geranium purpureum*.

Around an electric sub-station a few of us were temporarily stumped on seeing a white flowered *Geranium* but recognised immediately by Richard as a white form of Hedgerow Crane's-bill *Geranium pyrenaicum*. Tucked up against some boarding another white flower caught Richard and my eyes as *Bacopa Chaenostoma cordatum*; mild enough here to stay I'm sure.

Occasionally I see Spear-leaved Orache *Atriplex prostrata* when I'm out recording but those plants do not have



to cope with sea spray and water deprivation; I noted the coastal plants were a lot more prostrate and fleshy on this gravel. Toward the end of the line of huts the vegetation was a little more common with Sea Kale *Crambe maritima*, Rock Samphire *Crithmum maritimum* and Grass-leaved Orache *Atriplex littoralis*. A stand of ragwort proved to be mostly Oxford Ragwort *Senecio squalidus* and it was good to compare the plants with a few Common Ragwort *Senecio jacobaea*.

From here we turned and walked toward the power station where the landscape changed to saltmarsh. Lots of expected subjects; Annual Sea-blite *Suaeda maritima*, Saltmarsh Rush *Juncus gerardii*, Common Saltmarsh-grass *Puccinellia maritima*, Common Sea-lavender *Limonium vulgare*, Sea Aster *Aster tripolium* and Common Cord-grass *Spartina anglica*. At least a couple of glassworts presented themselves and we forced ourselves to check them out. (They can be quite difficult). We were quite satisfied though with Common Glasswort *Salicornia europaea* and Perennial Glasswort *Sarcocornia perennis*.

A couple of scrappy spurreys got me thinking I knew what I was talking about, but I was clearly wrong and why bother discussing it when just moving on a few metres we found both Greater and Lesser Sea-spurreys *Spergularia media* and *S. marina* for comparison!

When I spotted a beautiful small clump of Hare's-foot Clover *Trifolium arvense* I felt very pleased with myself until Steve said, 'wait until we get around the corner' and there we saw carpets of the plant alongside the fence of the power station; quite a sight indeed.

A crucifer had us all puzzling for a few minutes when 'things don't look right' but Sue debated well, and it was settled on as Hoary Mustard *Hirschfeldia incana*.

Wood Small-reed *Calamagrostis epigejos* was spotted amongst bramble but as this now grassy but industrial landscape opened up one could see the change in soil substrate; one moment we had a sea of Wild Carrot *Daucus carota* subsp. *carota* (or should that be Sea Carrot?) with Perforate St John's-wort *Hypericum perforatum* then it changed to Yarrow *Achillea millefolium* and Sheep's Sorrel *Rumex acetosella*.

Lastly walking back through a small paddock it was unusual to see perhaps Lesser Hawkbit *Leontodon saxatilis* and Autumn Hawkbit *Scorzoneroidea autumnalis* growing together but brilliant for comparison; a lesson I suspect is not to select just one 'little yellow-job' when out recording!

Back to the cars now, a few including me leaving at this point with others moving a little westwards along the coast to the village of Lepe.

I had a thoroughly enjoyable time and I'd like to add my thanks along with all those present to Steve for suggesting, organising and leading the day's event.

Martin Buckland

All photos - Pat Woodruffe



Saturday 21st September 2019

BSBI Atlas Recording at Great Somersetford

Leader: Martin Buckland

The last of the Indian summer weather was too good an opportunity to miss. The added bonus was recording in squares where there are no previous records.

We split into two groups and Sharon, Jenny, Martin and I set off towards the river. It was not long before Sharon's industrial grapnel came out and was slung over the bridge to enable identification of Fat Duckweed *Lemna gibba* looking uncharacteristically thin with small amounts of Water Fern *Azolla filiculoides*. Passing cars looked askance at our fun.



Great Yellow-cress

This was the perfect day for a wander along the River Avon recording Great Yellow-cress *Rorippa amphibia*, Square-stalked St John's-wort *Hypericum tetrapterum*, Arrowhead *Sagittaria sagittifolia* and Common Club-rush *Schoenoplectus lacustris* amongst others. On the banks amongst the nettles were Purple-loosestrife *Lythrum salicaria*, Wild Angelica *Angelica sylvestris*, Common Valerian *Valeriana officinalis* and Water Chickweed *Myosoton aquaticum*. There were plenty of confusing willows, all



Arrowhead

looking rather browned-off by the dry season. Most were White Willow *Salix alba* and Osier *Salix viminalis*. One riverside willow supported a rare bryophyte at its base which Sharon got all excited about. It was the nationally rare *Dialytrichia saxicola*, recorded for the first time from the Bristol Avon and Wiltshire in 2016. She had thought that it wouldn't occur upriver of Melksham but was pleased to be wrong. A new 10km square record.

The busy grapnel found three look-alikes at a nice ox-bow in the river, Stream Water-crowfoot *Ranunculus penicillatus*, River Water-dropwort *Oenanthe fluviatilis* and Fennel Pondweed *Potamogeton pectinatus*. Luckily, we had Sharon with us as they certainly looked very similar.

On the far side of the river, we found Curled Pondweed *Potamogeton crispus* but as it looks quite similar to Opposite-leaved Pondweed *Groenlandia densa*; paddling had to be involved to get hold of this specimen.

Alongside a desert of Maize on our return journey we found only a few arable weeds, mainly Fat Hen *Chenopodium album* and Many-seeded Goosefoot *Chenopodium polyspermum*. We also found Yellow Bristle-grass *Setaria pumila*.

A good day out producing numerous records in three grid squares which will add to the Atlas Update.

Penny Lee



Common Club-rush

Thursday 17th October 2019

Westonbirt Arboretum

Martin Buckland organised a visit to see autumn colours and other wonders. Here is a selection of photos by Martin and by Richard Aisbitt and Richard Gosnell.





Track plants on Salisbury Plain Training Area

One of the notable botanical features of the eastern Plain is the interesting vegetation that grows on or beside the many tracks. The grassier tracks are home to good populations of Lesser Centaury *Centaurea pulchellum* and Knotted Pearlwort *Sagina nodosa* which both seem to thrive in conditions of low vegetation height and occasional



Lesser Centaury – photo John Moon

disturbance. Fern-grass *Catapodium rigidum* is another uncommon plant found on the edges of many tracks as is



Red Star-thistle – John Moon

Basil Thyme *Clinopodium acinos*, an attractive small annual sporting dark blue flowers with white centres. In the spring three scarce species of mouse-ear, Dwarf Mouse-ear *Cerastium pumilum*,



Hairy Rocket – John Moon

Little Mouse-ear *C. semidecandrum* and Field Mouse-ear *C. arvense*, occur on the tracks west of Sidbury Hill. One needs to be a botanical enthusiast to appreciate the subtle difference between the first two diminutive species, but Field Mouse-ear is a showier plant with 2cm diameter pure white flowers on 10cm stalks which decorate many track edges. All of the above are annual plants and tracks suit them because some disturbance is necessary to produce conditions for germination and often seed dispersal.

One particular area criss-crossed with dozens of wide chalky tracks is the Cross Country Driving Area (CCDA) west of Tidworth and the edges of these are home to a good population of the rare Broad-leaved Cudweed *Filago pyramidata*, this being one of only nine sites in the UK where this species is found. Elsewhere other trackside annuals that can be found in summer include Blue Fleabane *Erigeron acris* and Fine-leaved Sandwort *Sabulina tenuifolia*, with the latter being another species on Wiltshire's Rare Plant Register.

Probably the rarest plant found on the SPTA (E) tracks is the Red Star-thistle *Centaurea calcitrapa* found by WBS members Jenny Amor and Eileen Rollo in 2006 and still the only Wiltshire record. Quite possible it was brought here on the tracks of military vehicles, as was the alien Hairy Rocket *Erucastrum gallicum* which has now spread to nearly every track on SPTA.

One scarce perennial often found near tracks is the attractive Purple Milk-vetch *Astragalus danicus*, an iconic plant of the eastern Plain as this is the only place to find it in central southern England. In early June it can be seen in great



Dwarf Mouse-ear
photo Richard Aisbitt

profusion at Silk Hill on Bulford Ranges, but it is also found elsewhere on track edges within a few kilometres of Silk Hill.

A nice feature of these populations of trackside plants is that no conservation action is needed to preserve them – the regular military activity of the Plain suits them just fine.

John Moon



Broad-leaved Cudweed
– Sharon Pilkington



Purple Milk-vetch – photo John Moon

Cover, Game and Forage Crops

During the BSBI recording season of 2019 I happened across more 'set-aside crops' than I think I have seen before or perhaps I just paid more attention this time. I often walk through 'bird crops' looking for weeds, knowingly ignoring the taller 'crop' plants but this time I have to say that that Fat-hen didn't look right; a bit tall maybe, a heavier seed head? Then those cereals, Barley? Wheat? Rye? And then, those reddy coloured leaves? My horticultural background helped somewhat but it did seem strange to see a few plants as crops that I used to add to ornamental bedding schemes in public parks.

On one occasion my attention was drawn to a small pink flower; rounded with many florets but rather flattened, it was clearly a member of the clover family by its leaf structure. I attempted to look this up first in my field guides to no avail. About this time Dave Green sent me some photographs of a giant fat-hen he had come across.



Quinoa - photo Dave Green

What was it? Quinoa - *Chenopodium quinoa*! After passing off the joke on whether he pronounced it Keen-wah or Quin-oh-ah I thought I really needed to look online for a photograph for this and other plants I had seen. That cereal I saw turned out to be *Triticale* x *Triticosecale* and the red-leaved bedding plants were Love-lies-bleeding *Amaranthus caudatus* and Purple-leaved Maize *Zea mays* and my pink flower was Persian Clover *Trifolium resupinatum*.

Twenty online catalogues later I was more than amazed at the range and type of plant available to the farmer and gamekeeper. Most catalogues offered little on the way to a decent photograph to help identification so more than one may have to be viewed. In addition most companies use only a colloquial name such as 'Vetch' (Tufted Vetch), 'Sheep's Burnet' (Salad Burnet ssp.). I think we are all aware that the farming community cultivate fields of Perennial Ryegrass *Lolium perenne*, Timothy *Phleum pratense* and the like but herbs such as Ribwort Plantain *Plantago lanceolatum* as sheep feed and Yarrow *Achillea millefolium* was a surprise.

Further astonishment came when I realised that a plant I had recorded for the BSBI Atlas was almost certainly one that had originated as part of a game cover crop. I recall walking through a relatively new tree plantation of, perhaps, less than 10 years old and on wet ground where many willows and alder had been planted. I was struck by an almost linear run of Reed Canary-grass *Phalaris arundinacea* in a depression, but I didn't think for one minute it could have been a crop rather a remnant from a filled in ditch perhaps.

During our Atlas recording visits we ignore crops and plantations of any kind i.e. those areas created by man, unless we find a self-sown seedling of a conifer in a forest perhaps, or that rape plant growing in accumulated soil at the edge of a road or the linseed I found growing in a stony track from spilt seed from a past year's crop nearby. However, it was by now quite clear to me that a great deal more species are likely to 'escape' into the environment or are planted with 'natural' plants just to tease botanists.

So what do farmers grow that may turn up a casual in the future? Well, the simple answer is: a great many things!

Cash crops: A crop grown for profit. The easy ones are the cereals such as barley, wheat and oats.

Cover crops: A non-cash crop often planted after the cash crop to manage soil erosion; to improve soil fertility i.e. as a green manure and/or to improve structure. It may also be beneficial in depressing weeds and encourage wildlife if left overwinter before incorporating into the soil ahead of a spring sown crop.

Game cover: An area, often dominated with maize to hold game birds in an area. These can be annual or perennial and can include, for instance, mixtures for wild birds.

Forage (fodder) crops: Plants grown for the consumption by animals. Generally this is the whole plant, leaf and stem e.g. fodder maize gathered as silage for livestock or root crops such as stubble turnips for field feeding.

I'm sure we have all come across plants of unknown origin and the average field-guide does not provide answers either so where can we look? The internet is full of agri-crop companies and I would have liked to advise you of a perfect solution but I don't think there is one however, I can recommend for starters that you check out www.farmseeds.co.uk, www.bostonseeds.com or try www.brightseeds.co.uk. One can always just put in a search option on the internet.

In the following table I list a range of crop plants that turn up regularly within many of the catalogues I have viewed and that are used perhaps, across more than one boundary i.e. used as fodder or within a mixture for game or as a cover crop. These suppliers tend to describe their products by common names therefore, I have listed them by this nomenclature first and the scientific name second. This is not a complete list by any means.

Please note: there are a great many hybrid brassicas involving kale, rape, Chinese mustard and turnip that I have not attempted to list. One view online will show the bewildering range.

Lastly, I have not pursued the seeds available as Conservation, Wildflower, Birds, Butterfly and Beetle mixes nor have I included those plants we deem as aliens in cereal crops such as Cockspur *Echinochloa crus-galli*. That is another thread altogether, but beware, that Cornflower, Corn-cockle and Corn Chamomile may not be what they seem.

What will you find? Here is a list of possible plants that you might meet.

Martin Buckland

Common Name	Scientific Name
Abyssinian Mustard, Texel Greens	<i>Brassica carinata</i>
Agricultural Ryegrass, Perennial Ryegrass, Ryegrass	<i>Lolium perenne</i>
Amaranth	<i>Amaranthus caudatus</i>
Barley, Spring Barley, Winter Barley	<i>Hordeum vulgare</i>
Berseem Clover, Egyptian Clover	<i>Trifolium alexandrinum</i>
Black Medick	<i>Medicago lupulina</i>
Black Mustard	<i>Brassica nigra</i>
Black Oat, Bristle Oat	<i>Avena strigosa</i>
Borage	<i>Borago officinalis</i>
Bristle Oat, Black Oat	<i>Avena strigosa</i>
Broad Bean, Faba Bean or Field Bean	<i>Vicia faba</i>
Brown Mustard, Chinese Mustard	<i>Brassica juncea</i>
Buckwheat	<i>Fagopyrum esculentum</i>
Bulbous Canary Grass, Canary Grass	<i>Phalaris aquatica</i>
Chicory, Forage Chicory, Perennial Chicory	<i>Cichorium intybus</i>
Chinese Mustard, Brown Mustard	<i>Brassica juncea</i>
Cock's-foot	<i>Dactylis glomerata</i>
Common Bird's-foot-Trefoil	<i>Lotus corniculatus</i>
Common Millet (White, Red and Yellow Millet)	<i>Panicum miliaceum</i>
Common Vetch	<i>Vicia sativa</i>
Creeping Red Fescue, Red Fescue	<i>Festuca rubra</i>
Crimson Clover	<i>Trifolium incarnatum</i>
Daikon Radish, Deeptill Radish	<i>Raphanus sativus var longipinnatus</i>
Egyptian Clover, Berseem Clover	<i>Trifolium alexandrinum</i>
Elephant-grass, Miscanthus or Giant Silver-grass	<i>Miscanthus x giganteus</i>
False Flax, Gold of Pleasure	<i>Camelina sativa</i>
Field Bean, Faba Bean or Broad Bean	<i>Vicia faba</i>
Field Beet, Forage Beet	<i>Beta vulgaris ssp. cicla</i>
Field Pea, Fodder Pea, Forage Pea	<i>Lathyrus oleraceus var arvensis</i>
Fodder Beet, Mangel-wurzel	<i>Beta vulgaris ssp. vulgaris</i>
Fodder Burnet, Sheep's Burnet	<i>Poterium sanguisorba ssp. balearicum</i>
Fodder Pea, Field Pea, Forage Pea	<i>Lathyrus oleraceus var arvensis</i>
Fodder Radish, Forage Radish, Oil Radish	<i>Raphanus sativus</i>
Forage Beet, Field Beet	<i>Beta vulgaris ssp. cicla</i>
Forage Chicory, Chicory, Perennial Chicory	<i>Cichorium intybus</i>
Forage Pea, Field Pea, Fodder Pea	<i>Lathyrus oleraceus var arvensis</i>
Forage Plantain, Ribwort Plantain, Sheep's Plantain	<i>Plantago lanceolata</i>
Forage Radish, Fodder Radish, Oil Radish	<i>Raphanus sativus</i>
Forage Rye, Winter Rye, Rye	<i>Secale cereale</i>
Giant Silver-grass, Elephant-grass, Miscanthus	<i>Miscanthus x giganteus</i>
Gold of Pleasure, False Flax	<i>Camelina sativa</i>
Great Millet, Sorghum	<i>Sorghum bicolor</i>

Italian Ryegrass-----*Lolium multiflorum*
 Japanese Reed Millet-----*Echinochloa esculenta*
 Kale-----*Brassica oleracea* var. *viridis*
 Leafy Turnip, Stubble Turnip---*Brassica rapa* ssp. *oleifera*
 Linseed-----*Linum usitatissimum*
 Lucerne-----*Medicago sativa*
 Maincrop Turnip-----*Brassica rapa* spp. *rapa*
 Maize-----*Zea mays*
 Mangel-wurzel, Fodder Beet---*Beta vulgaris* ssp. *vulgaris*
 Meadow Fescue-----*Schedonorus pratensis*
 Miscanthus, Elephant-grass, Giant Silver-grass
 -----*Miscanthus x giganteus*
 Mustard, White Mustard-----*Sinapis alba*
 Niger-----*Guizotia abyssinica*
 Oat, Spring Oat, Winter Oat-----*Avena sativa*
 Oil Radish, Fodder Radish, Forage Radish
 -----*Raphanus sativus*
 Perennial Chicory, Chicory, Forage Chicory
 -----*Cichorium intybus*
 Perennial Ryegrass, Ryegrass, Agricultural Ryegrass
 -----*Lolium perenne*
 Persian Clover-----*Trifolium resupinatum*
 Phacelia-----*Phacelia tanacetifolia*
 Quinoa-----*Chenopodium quinoa*
 Rape-----*Brassica napus* ssp. *oleifera*
 Red Clover-----*Trifolium pratense*
 Red Fescue, Creeping Red Fescue-----*Festuca rubra*
 Red Millet (form of Common Millet)-- *Panicum miliaceum*
 Reed Canary Grass-----*Phalaris arundinacea*
 Ribbed Melilot, Sweet Clover, Yellow Blossom Clover
 -----*Melilotus officinalis*
 Ribwort Plantain, Forage Plantain, Sheep's Plantain
 -----*Plantago lanceolata*
 Rye, Forage Rye, Winter Rye-----*Secale cereale*
 Ryegrass, Perennial Ryegrass, Agricultural Ryegrass
 -----*Lolium perenne*
 Sainfoin-----*Onobrychis viciifolia*
 Serradilla-----*Ornithopus sativus*
 Sheep's Burnet, Fodder Burnet
 -----*Poterium sanguisorba* ssp. *balearicum*
 Sheep's Plantain, Forage Plantain, Ribwort Plantain
 -----*Plantago lanceolata*
 Sorghum, Great Millet-----*Sorghum bicolor*
 Spelt-----*Triticum spelta*
 Spring Barley, Winter Barley, Barley ----*Hordeum vulgare*
 Spring Oat, Winter Oat, Oat-----*Avena sativa*
 Spring Wheat, Winter Wheat, Wheat----*Triticum aestivum*
 Stubble Turnip, Leafy Turnip---*Brassica rapa* ssp. *oleifera*
 Sudan Grass-----*Sorghum x drummondii*
 Sunflower-----*Helianthus annuus*
 Swede-----*Brassica napus* ssp. *rapifera*
 Sweet Clover, Yellow Blossom Clover, Ribbed Melilot
 -----*Melilotus officinalis*
 Texel Greens, Abyssinian Mustard-----*Brassica carinata*
 Timothy-----*Phleum pratense*
 Tufted Vetch, Vetch-----*Vicia cracca*
 Vetch, Tufted Vetch-----*Vicia cracca*
 Wheat, Spring Wheat, Winter Wheat----*Triticum aestivum*
 White Clover-----*Trifolium repens*
 White Millet (form of Common Millet)*Panicum miliaceum*

White Mustard, Mustard-----*Sinapis alba*
 Winter Barley, Spring Barley, Barley- -*Hordeum vulgare*
 Winter Oat, Spring Oat, Oat-----*Avena sativa*
 Winter Rye, Rye, Forage Rye-----*Secale cereale*
 Winter Wheat, Spring Wheat, Wheat---*Triticum aestivum*
 Yarrow-----*Achillea millefolium*
 Yellow Blossom Clover, Ribbed Melilot, Sweet Clover
 -----*Melilotus officinalis*
 Yellow Millet (form of Common Millet)
 -----*Panicum miliaceum*



Common Amaranth



Tank tracks on the Salisbury Plain Training Area

Introducing my Vice County: Wiltshire

North and South Wiltshire v.c.7 & v.c. 8
Vice-county Recorder: Sharon Pilkington.
Co-recorder: Richard Aisbitt

Author: Sharon Pilkington

Wiltshire is the largest wholly inland county in southern England and part of the ancient kingdom of Wessex. Stonehenge is a familiar sight to travellers passing through the county on the A303 and attracts visitors from around the world. Apart from the sprawling conurbation of Swindon in the north-east however, the county is very rural and its wide, rolling landscapes are not well known to many. For botanical recording purposes it is split fairly equally into the vice-counties of North Wiltshire (VC7) and South Wiltshire (VC8) by the Kennet & Avon Canal.

The county's bedrock is wholly sedimentary. Locals sometimes call Wiltshire the land of 'chalk-and-cheese'; soft Cretaceous chalk underlies more than half of Wiltshire, outcropping as three extensive tracts of downland: Salisbury Plain and Cranborne Chase in the

south and the Marlborough and Pewsey Downs in the north. Thin rendzinas and other calcareous soils dominate but mildly acidic clay-with-flints superficial deposits are present on top of some of the chalk hills. Historically, sheep grazing was the dominant land-use and numerous ancient droveways still criss-cross the landscape.

The 'cheese' is the flatter pastoral landscape of the north-west, where beds of heavy Oxford and Kimmeridge clay prevail, giving way to the Jurassic limestones in the Cotswold borderlands near Bath. Contrary to what some think, Wiltshire is not without sandstone; greensand is exposed in places, most notably in the Vale of Wardour close to the Dorset border and in the Vale of Pewsey.

Chalk downland

Wiltshire's chalk downland is rich in species and home to many rarities, including southern specialists such as *Carex humilis* (Dwarf Sedge) and *Thesium humifusum* (Bastard-toadflax). Salisbury Plain, which is around the same size as the Isle of Wight, has been used by the military for training purposes for more than a century and is now the largest remaining tract of unimproved calcareous grassland in north-west Europe. Its downland has been managed in different ways and this has greatly influenced its grassland communities. In the eastern (Bulford and Tidworth) ranges very rich short chalk grassland supports

numerous specialities and rarities including the southernmost British population of *Astragalus danicus* (Purple Milk-vetch), *Juniperus communis* subsp. *communis* (Juniper) and *Euphrasia pseudokernerii* (Chalk Eyebright). Disturbed chalk track margins are common on the plain and are a nationally rare and mostly unrecognised type of vegetation community. Notable disturbance-dependent annuals in this vegetation include *Cerastium pumilum* (Dwarf Mouse-ear), *Sabulina tenuifolia* (Fine-leaved Sandwort), *Filago pyramidata* (Broad-leaved Cudweed) and *Clinopodium acinos* (Basil Thyme).

The remote central impact area (Larkhill and Westdown Ranges) supports Wiltshire's only populations of *Galium pumilum* (Slender Bedstraw) and *Dianthus armeria* (Deptford Pink) and *Cirsium tuberosum* (Tuberous Thistle) is a national rarity of the Warminster and Imber Ranges. Prior to military occupation, valleys around the abandoned village of Imber used to be cultivated and strong populations of the rare *Galeopsis angustifolia* (Red Hemp-nettle) and other farmland archaeophytes persist where tanks and other military vehicles mimic the action of the plough.

Visitors wishing to see some of the county's best downland plants might consider Pewsey Downs National Nature Reserve (NNR) which is a long winding chalk ridge taking in Wiltshire's loftiest hills (Tan Hill and Milk Hill, both at 295m AOD). These downs have been sheep-grazed for centuries and the resultant tightly grazed turf is rich in plant species. Highlights include *Phyteuma orbiculare* (Round-headed Rampion) and *Tephrosia integrifolia* subsp. *integrifolia* (Field Fleawort). Walkers Hill and Knap Hill are good places to see orchids, including *Neotinea ustulata* (Burnt Orchid), *Coeloglossum viride* (Frog Orchid) and *Platanthera bifolia* (Lesser Butterfly-orchid).

Calcareous rivers and streams

Three main river systems drain the county. In the south, aquifers underlying the chalk of Salisbury Plain and other downs feed the River Avon (also known informally as the Salisbury, Hampshire or Christchurch Avon), a beautiful

clear chalk river of international conservation importance. In the north, the River Kennet rises from the chalk of the Marlborough Downs as a tributary of the River Thames, whose source is in the Cotswold limestone near Kemble, on the county border with Gloucestershire. The ancient Braydon Forest and numerous flooded gravel pits of the Cotswold Water Park are intrinsically linked to the floodplain of the Thames. West Wiltshire is drained by a second River Avon (dubbed the Bristol Avon).

In summer, flowering beds of *Ranunculus penicillatus* (Stream Water-crowfoot) are a particularly distinctive feature of Wiltshire's chalk and limestone rivers. This is one of a number of characteristic riparian species including *Sparganium emersum* (Unbranched Bur-reed), *Zannichellia palustris* (Horned Pondweed), *Sagittaria sagittifolia* (Arrowhead), and more locally, *Oenanthe fluviatilis* (River Water-dropwort) and *Potamogeton perfoliatus* (Perfoliate Pondweed). *Salix purpurea* (Purple Willow) is a frequent sight on the banks of the Salisbury Avon.

Fishing interests restrict access to the best chalk rivers but a visit to the Bristol Avon in summer is certainly recommended. This river flows through the middle of the picturesque town of Bradford-on-Avon and is the locus for several national rarities including *Potamogeton nodosus* (Loddon Pondweed). Careful searches of riverbank nettle beds in late summer are required to find *Cuscuta europaea* (Greater Dodder), a hemi-parasite with larger flowers than its more common relative. *Dipsacus pilosus* (Small Teasel) and *Butomus umbellatus* (Flowering-rush) are also common in this area. The Avon is also good place to see floating plants, including the flat form of *Lemna gibba* (Fat Duckweed) and *Spirodela polyrhiza* (Greater Duckweed).

Floodplain (hay) meadows

Unimproved neutral grassland (hay-meadow) is now one of Britain's rarest lowland habitats but the upper Thames floodplain retains some fine examples. North Meadow NNR at Cricklade is perhaps the best known such site in the county. An extensive Lammas meadow lying between the River Thames and River Churn, its spectacular display



Broad-leaved Cudweed on Salisbury Plain



Round-headed Rampion

of *Fritillaria meleagris* (Fritillary) attracts visitors from far and wide each April. Old flood drains across the site support *Oenanthe fistulosa* (Tubular Water-dropwort), *Carex disticha* (Brown Sedge) and *C. acuta* (Slender Tufted-sedge).

Similar meadows support *Dactylorhiza incarnata* subsp. *incarnata* (Early Marsh-orchid) and *Ophioglossum vulgatum* (Adder's-tongue). Later on, *Dactylorhiza praetermissa* (Southern Marsh-orchid) may be abundant, sometimes alongside *Carex hostiana* (Tawny Sedge) or *C. distans* (Distant Sedge).

A great site to visit is Clattinger Farm NNR, a botanical gem tucked away on the edge of the Cotswold Water Park. Still a working farm, Clattinger's complex of small ridge-and-furrow meadows escaped the agricultural improvement that led to the loss of most traditionally managed lowland hay meadows after the Second World War. The farm lies on hydrologically complex ground, meaning that the meadows have different botanical flavours and in some, calcicoles and calcifuges are juxtaposed with typical neutral grassland plants.

A visit to Clattinger in late spring or early summer is breath-taking but a sad reminder of what's been lost from so much of our countryside. The spectacle begins in April and May, when thousands of *Anacamptis morio* (Green-winged Orchid) and *Primula veris* (Cowslip) carpet the

meadows. By June, the meadows are ablaze with colour and this is the time to see the rare *Carex filiformis* (Downy-fruited Sedge), along with numerous indicators of unimproved neutral grassland e.g. *Sanguisorba officinalis* (Great Burnet), *Silaum silaus* (Pepper-saxifrage), *Serratula tinctoria* (Saw-wort) and *Thalictrum flavum* (Common Meadow-rue). *Brachypodium pinnatum* (Heath False-brome) is common in ungrazed margins of some meadows. Go before the hay is cut in July. The Cotswold Water Park is a very important area for both sexes of *Populus nigra* subsp. *betulifolia* (Black-poplar) and several old males grow in Clattinger's hedges. By June these trees are often infested with *Pemphigus spyrothecae*, an aphid which causes a spiral gall in the petiole.

Woodland

Compared to some other counties in southern England, Wiltshire is not especially well wooded but it does have some fascinating tracts of ancient woodland. Specialities of ancient oolitic limestone ash-maple woods include *Sorbus torminalis* (Wild Service-tree), *Lathraea squamaria* (Toothwort), *Ornithogalum pyrenaicum* (Spiked Star-of-Bethlehem), *Polygonatum multiflorum* (Solomon's-seal) and *Helleborus viridis* (Green Hellebore). *Colchicum autumnale* (Meadow Saffron) and *Ervilia sylvatica* (Wood Vetch) are characteristic of some old clay woods and beech hangers on the chalk often



Ranunculus penicillatus in the River Avon at Milston



Species-rich hay meadow, with *Primula veris* and *Anacamptis morio*, at Clattinger Farm NNR

support notable populations of orchids, including *Cephalanthera damasonium* (White Helleborine) and *Hypopitys monotropa* (Yellow Bird's-nest).

It is reproduced here for the benefit of WBS members who may not have seen it.

All text and photos by Sharon Pilkington

Savernake Forest, an ancient wood-pasture dating back 1000 years or more within latter-day deciduous plantation on a hill above Marlborough is always worth a visit. In a Wiltshire context it is unusual because it lies on a hill cap of clay-with-flints and this, together with small deposits of Valley Gravels, Reading Beds and Bagshot Sands, give rise to acid soils. Relicts of the ancient wood pasture remain, represented by distinctive open crowned veteran specimens of *Quercus petraea* (Sessile Oak) and *Q. robur* (Pedunculate Oak). The hybrid between these two oaks (*Q. x rosacea*) is also common.

Savernake is one of the best woodlands in Wiltshire for ferns, supporting at least ten species. Sandy track edges and acid grassland are home to many calcifuges, including *Ceratocarpus claviculata* (Climbing Corydalis), *Ornithopus perpusillus* (Bird's-foot), *Agrostis vinealis* (Brown Bent) and *Avenella flexuosa* (Wavy Hair-grass). Visitors in late summer may be lucky enough to see the beautiful *Epipactis purpurata* (Violet Helleborine) in flower.

This article was originally published in BSBI News No. 143, September 2019, pp. 33-37.



Violet Helleborine at Savernake

Pollen in Honey

Using pollen to identify the plants honey bees forage on

Lynfa Davies, Master Beekeeper, NDB

To many, the process by which a hive becomes full of sweet, golden honey is simply magic! Little regard is given as to where the bees have sourced the nectar from and whether there are some plants that are more bountiful than others. That is, until you become a beekeeper and then it becomes an obsession!

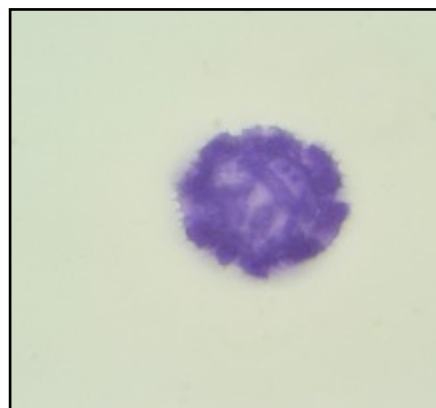
Understanding where bees are foraging and what plants they prefer is an important element in learning to be a beekeeper. It is one of the factors that help us select good apiary sites as forage availability from March to October is essential. We can simply observe what our bees are foraging on, but this is harder than it sounds and very time consuming. This is where pollen analysis comes in. Bees inadvertently pick up pollen while they are gathering nectar from the flowers and some of this will get deposited into the honey combs cells when the nectar is offloaded back in the hive. This pollen can be extracted from the honey and observed using an x400 microscope and with a little practice pollens can be recognised. This gives a fascinating insight into where our bees are foraging.

The most accurate way to identify the pollens in a honey sample is using DNA analysis but this is little out of the reach of most amateur beekeepers. The process of preparing a sample for viewing under a microscope is relatively easy but does require some specialist equipment. Many beekeeping associations offer workshops and training to learn these skills and once you get the hang of it a new world opens before you!

Reproduced with kind permission of the author.

Here is an example of one flower family that is commonly used by honey bees, the *Asteraceae* (also called *Compositae*) or the Daisy family. It is the largest family of flowering plants and many of these make a significant contribution to the nectar gathered by bees. Many of the pollens from this family of plants are very distinctive aiding recognition.

Dandelion, *Taraxacum officinale* agg., is a welcome sight in spring and an important early source of nectar and pollen for honey bees and other wild bees. It is often obvious to the beekeeper if the bees are working dandelions as the pollen is oily and readily stains the landing board of the hive and new comb built at this time takes on a beautiful bright yellow colour. The pollen is very recognisable with a spiny outer shell. The grains are commonly found in spring honey. Their size is 36 µm across.



Above – dandelion pollen

Below – dandelion flower



Sunflower, *Helianthus* sp., is a common garden annual, popular in gardens as it is so easy to grow. Occasionally it is grown as a food crop in the UK, mainly for bird seed but also as a human food crop for the seed or oil. Bees love sunflowers, visiting for the pollen and nectar. A honey crop is possible if you are close enough to a farmed crop and the honey has a very delicate flavour and is light yellow in colour. It is quite a late summer flower, lasting through to the first frosts so is useful for bees later in the season and then of course provides bird food into the winter! It produces another distinctive pollen and finding this in your honey would indicate it is a late summer honey. The pollen grains are 35µm across.



Above – the distinctive pollen grain of sunflower

Below – a sunflower in the garden



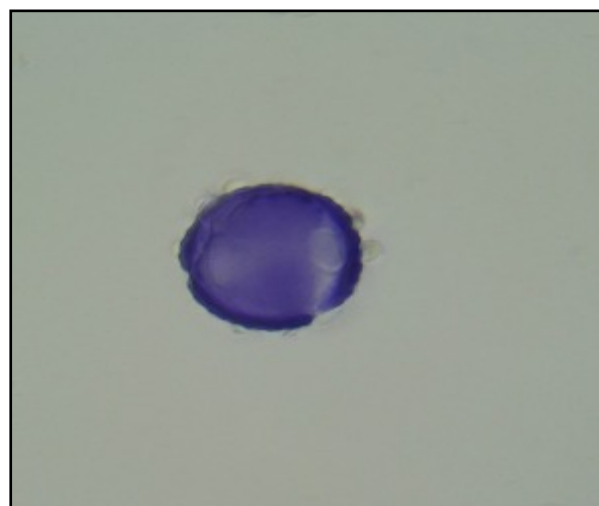
Common Knapweed, *Centaurea nigra*, is a great bee plant. It grows wild and is common in fields and hedgerows. It is not often found in great enough abundance to produce a recognisable honey, but would certainly contribute to a mixed wild flower honey. The flowers are popular with bumblebees, including the red-tailed bumblebee, as well as many solitary bees, hoverflies and other insects. This is another late flowering plant providing a useful source of nectar later in the season. The pollen grains do have the characteristic rough surface of this Asteraceae family, but it is not as pronounced as some of the other members. The pollen grains are 34µm across.



Photo Penny Lee

Above – Common Knapweed flowers

Below – Common Knapweed pollen grain



Common Ragwort, *Senecio jacobaea*, is a notifiable weed in the UK. However, local authorities and land owners are so poor at implementing this legislation that the plant, thankfully, continues to thrive. It can commonly be found on waste ground but also in pastureland and hedgerows. It is problematic to livestock if ingested as it causes liver damage and will eventually result in death of the animal, but to pollinating insects it is a totally different story. It provides nectar and pollen, and honey bees will readily work it although the resulting honey is bitter in flavour and can spoil the honey if present in large enough

quantities. The bitter taste does disappear as the honey matures.

Bumblebees, solitary bees and other pollinating insects also visit ragwort and the Cinnabar moth, *Tyria jacobaeae*, is dependent on the plant as a food source for its caterpillars. These are the yellow and black striped caterpillars that are commonly found stripping the leaves from the plant.

The pollen grains of ragwort also have a spiny surface but these grains are slightly smaller at 27µm in diameter.



Above – Common Ragwort pollen

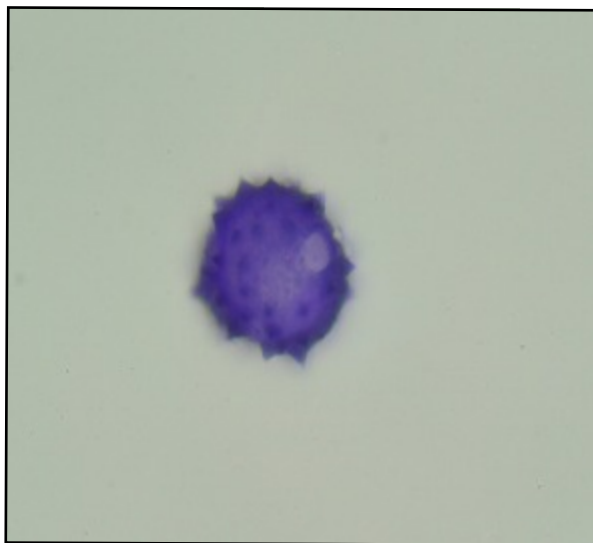
Below - Common Ragwort



And finally, a less common member of this family depending on your location. Sea Aster, *Aster tripolium*, is common among the salt marshes of southern Britain. Flowering from July to September it is an underwhelming flower that has such a low profile it is easily missed when scanning across the marshes. But on careful observation, it is surprisingly abundant. It is a useful source of late nectar and will produce a honey crop if abundant enough, but

that would depend on the weather conditions as these salt marshes are often windy and exposed. It is also widely visited by the mining bee, *Colletes halophilus*.

Another distinctive pollen grain typical of this family. The grains are 30µm across.



Above – Sea Aster pollen

Below – low profile plants of Sea Aster



This is just a small insight into the world of pollen analysis. Taking the time to build up a reference library of pollen slides is rewarding and fascinating. It reveals the variety and complexity of this microscopic world that we are so reliant on.

Plant records 2018

Explanatory notes

The following list contains all species that are new to the County or Vice-counties and those considered of national importance. In this list 'new' refers to records gathered since the early 1980's and the publication of the 1993 Wiltshire Flora. In addition, the word 'recent' refers to this period also.

The recording in 2018 pushed botanists into areas not previously well covered. So many eligible records were gathered that this report would have stretched to 26 pages; as a result the full list will be available to view on the WBS website.

The information contains both scientific and common names based on the New Flora of the British Isles 3rd edition. (Stace), together with site, brief information where supplied and the initials of the recorder. First County or Vice-county records appear in bold italics. For interest some species may have the IUCN threat criteria attached as documented in A Vascular Plant Red List for England (BSBI:2014).

Initials of Recorders

AA ----- Anne Appleyard
ARb --- Alison Robinson
DG ---- Dave Green
DMo -- David Morris
DP ----- David Pickering
HCr --- Helena Crouch
JRM --- John Moon
JWs --- Jasmine Walters
MBu --- Martin Buckland
NBr ---- Nigel Brown
PCa --- Patrick Cashman
PD ----- Paul Darby
PDS --- Paul Stanley
PMW - Pat Woodruffe
PQ ---- Phil Quinn
RAi ---- Richard Aisbitt
SFi ---- Sue Fitzpatrick
SG ---- Sarah Grinsted
SPi ---- Sharon Pilkington
TS ----- T. Smith
VW ---- Vanessa Williams

Qualifying initials

IUCN - International Union for the Conservation of Nature
NS ----- Nationally scarce
CR ---- Critically endangered
EN ----- Endangered
VU ----- Vulnerable
NT ----- Near Threatened

VC7

Allium subhirsutum (Hairy Garlic); Corsham (ST8606170173), six clumps along a footpath, an increasingly recorded species, DG

1st Wiltshire record.

Bromus secalinus (Rye Brome) [GB:VU Eng:NT]; Vastern Wood, Royal Wootton Bassett (SU043811), a small patch in an 'abandoned' arable field, MBu.

Catabrosa aquatica (Whorl-grass) [GB:LC Eng:VU]; Staverton (ST8530461072), about 10 flowering plants in a recently cleared 5m length of ditch adjacent a culvert of the B3105, DG. "Possibly to be the only extant occurrence in the VC" - Sharon Pilkington.

The only previous records for this species in VC7 are 2006 and before that 1993 - ed.

Cerithe major (Greater Honeywort); Bradford-on-Avon (ST8265461824), on a roadside verge, DG, **1st VC7 record.** Holt, south (ST86), in two locations well away from gardens, both DG. **2nd & 3rd VC7 records.**

Colchicum autumnale (Meadow Saffron) [GB:NT Eng:LC]; Prickmoor Wood (ST94586597), forty clumps close to the recorder's finds during the Flora 1984-1991, DG.

Consolida orientalis (Eastern Larkspur); Great Cumberwell (ST82246295), Nine plants both blue and white on landfill area, DG. **1st Wiltshire record.** Before the Wiltshire Flora the earliest record was 1956.

Cyrtomium fortunei (Fortune's Holly-fern); Turleigh (ST80866022), a single plant in Bellcombe Lane, DG. Determined by H. Crouch. **1st Wiltshire record.**

Dianthus armeria (Deptford Pink) [GB:EN Eng:EN]; Marlborough (SU16), Fifty-three plants on a bank opposite Water Meadows car park, NBr; determined by Peter Marren.

Echinochloa esculenta (Japanese Millet); Littleton Drew west (ST8261180080), large numbers in Pheasant crop, DG. **1st Wiltshire record.**

Echinochloa frumentacea (White Millet); Littleton Drew west (ST8261180080), large numbers in Pheasant crop, DG. **1st Wiltshire record.**

Euphorbia characias (Mediterranean Spurge); Box Bridge, Kingsdown (ST802671), several plants on dumped soil within derelict marshalling yard, HCr & DG. **1st Wiltshire record;** Chippenham NE (ST97), a single plant in secondary woodland, DG. **2nd VC7 record.**

Euphorbia exigua (Dwarf Spurge) [GB:NT Eng:VU]; Vastern Wood, Royal Wootton Bassett (SU043811), Thousands in neglected arable field, MBu.

Groenlandia densa (Opposite-leaved Pondweed) [GB:VU Eng:VU]; Ladbroke, Corsham (ST88746933), in a stream near bridge, DG. This is a re-find of a record by Rob Randall of 1985.

Hieracium exotericum sens. lat. (a hawkweed); Somerford Keynes lakes (SU0111794429), approximately 100 plants on almost pure limestone gravel on bank of gravel pit. DG & MBu. Record determined by David McCosh, Hieracium Referee. **1st VC7 record.**

Hydrocharis morsus-ranae (Frogbit) [GB:VU Eng:VU]; Cocklemore Brook near Lackham (ST9363370896), fifteen clumps stretching from the bottom lock of Pewsham Locks into the adjacent pound, DG. The first record for this species was in 1949, VC7 ST86 with the only other accepted record at Great Chalfield Manor (ST860633) in 1987 by J. Bowker and Ellen McDouall.

Lepidium campestre (Field Pepperwort) [GB:LC Eng:NT]; Hannington Wick (SU16769497), At the edge of a harvested cereal field; many green and flowering plants with developing seed pods as well as dried-up specimens, RAi.

Paeonia officinalis (Garden Peony); Pike Corner (SU09), a single plant, MBu & DG. **1st VC7 record.**

Ranunculus flammula (Lesser Spearwort) [GB:LC Eng:VU]; Stock Common, Great Bedwyn (SU26), RAi.

Rorippa islandica (Northern Yellow-cress); Winsley (ST80286128), two plants in pavement, DG and determined by Tim Rich. **1st VC7 record.**

Salvia viridis (Annual Clary); Mouldon Hill Country Park, Swindon (SU118878) garden escape in rubble at end of railway line, RAi, MBu & DG. **1st Wiltshire record.**

Scandix pecten-veneris (Shepherd's-needle) [GB:CR Eng:EN]; Stanmore Copse (SU0722675151), many plants densely packed in two sq.m. of ground at edge of arable field, MBu; confirmed by SPi.

Senecio x albescens (S. cineraria x jacobaea); Kingsdown (ST80916711), HCr. Determined by Fred Rumsey. **1st Wiltshire record.**

Spergula arvensis (Corn Spurrey) [GB:VU Eng:VU]; Avenue Lodge (ST86), DG.

Trifolium fragiferum (Strawberry Clover) [GB:LC Eng:VU]; Kington Langley (ST92677699), many plants in roadside verge, SPi, MBu & JWs.

Typha x glauca (T. angustifolia x latifolia); Broughton Gifford (ST87496321), small population in a relatively newly created fishing pond. Possibly originally planted but expanding. **1st Wiltshire record;** Pockeridge

(ST86056968), in pond, both DG and both determined by R.V.Lansdown. 2nd VC7 record.

VC8

Allium cristophii (Star of Persia); Idmiston (SU13), escaped and/or naturalised in verge, AA & SFi. **1st Wiltshire record.**

Bromus hordeaceus ssp. longipedicellatus (Soft-brome); Lower Westwood (ST829589), SPi. **1st Wiltshire record.**

Capsella rubra (Pink Shepherd's-purse); Stratford-sub-Castle (SU13), campsite, PDS. **1st Wiltshire record.**

Carduus acanthoides (Broad-winged Thistle); Edington (ST95), PQ. **1st Wiltshire record.**

Carex elata (Tufted-sedge) [GB:LC Eng:NT]; Damerham (SU11), SFi.

Chara globularis (Fragile Stonewort); Langford Lakes Reserve (SU03), SFi & VW. **1st VC8 record.**

Chenopodium glaucum (Oak-leaved Goosefoot) [GB:VU Eng:VU]; Great Hinton (ST95), two plants at edge of a maize field, PQ. Confirmed by SPi. **1st VC8 record.**

Choisya ternata (Mexican Orange); Middle Winterslow (SU23), naturalised on path, AA & SFi. **1st Wiltshire record.**

Cichorium intybus (Chicory) [GB:LC Eng:VU]; Ham Hill (SU36), RAi; Shalbourne (SU36), RAi, MBu, SFi & VW.

Clinopodium acinos (Basil Thyme) [GB:VU Eng:VU]; Bemerton Heath, Salisbury (SU13), abundant over two sq.m., SFi.

Cotoneaster rehderi (Bullate Cotoneaster); Collingbourne Ducis Centre (SU25), along old railway line, JRM. **1st Wiltshire record.**

Cyclamen coum (Eastern Sowbread); Eastern Chute North (SU2954), naturalised and spreading on verge outside Upper Chute church, JRM. **1st Wiltshire record.**

Cynoglossum officinale (Hound's-tongue) [GB:NT Eng:NT]; Farm Down, Salisbury Plain (ST95), SPi.

Cyperus eragrostis (Pale Galingale); Corsley Heath west (ST81864516), on a stream bank with a garden paddock, RAi, MBu & PD. **1st VC8 record.**

Cyperus longus (Galingale) [GB:NT Eng:NT]; Longbridge Deverill (ST8723040696), roadside ditch, SFi & VW.

Erodium maritimum (Sea Stork's-bill); Bramshaw: RSPB Franchise Lodge (SU2348016770), numerous plants found in a dense patch along ballast in wood, JAN. confirmed SPi. **1st Wiltshire record.**

Erodium moschatum (Musk Stork's-bill); Stratford-sub-Castle (SU139319), campsite, PDS. **1st VC8 record.**

Euphorbia coralloides (Coral Spurge); Middle Winterslow (SU23); several plants at field entrance, AA & SFi. **1st Wiltshire record.**

Euphorbia exigua (Dwarf Spurge) [GB:NT Eng:VU]; Cradle Hill, Warminster (ST84), disturbed ground by perimeter fence, SG & SPi.

Genista tinctoria (Dyer's Greenweed) [GB:LC Eng:VU]; Martin Down (SU0521219014), on two adjacent anthills, SFi; Winterbourne Downs (SU220392), PCa.

Heuchera sanguinea (Coralbells); Chute Standen (SU35), escape on verge; Ansty (ST92), beside track presumed from garden waste, both SFi & VW; Pitton (SU23), garden escape, SFi, VW & PMW. **1st Wiltshire record.**

Hieracium scotostichum (Dappled Hawkweed); Trowbridge (ST85), Fifty plus plants at entrance to builder's merchants, DG. Determined by D McCosh. **1st VC8 record.**

Himantoglossum hircinium (Lizard Orchid) [GB:NT Eng:LC]; Lime Kiln Way, Harnham, Salisbury (SU0128), A single, robust spike, one metre tall in long grassland / scrub, SFi. First found and reported by Gillian Hawkins.

Laurus nobilis (Bay); Pitton (SU23), well established escape, SFi, VW & PMW; Middle Winterslow (SU23), naturalised, AA & SFi; Middle Winterslow (SU23), within hedgerow, AA & SFi. **1st VC8 record.**

Lonicera henryi (Henry's Honeysuckle); Tidworth NW (SU24), garden escape, JRM. **1st Wiltshire record.**

Melampyrum pratense (Common Cow-wheat) [GB:LC Eng:NT]; Whitsbury (SU11), abundant on roadside bank for fifty metres, SFi & VW.

Nepeta cataria (Cat-mint) [GB:VU Eng:VU]; Collingbourne Ducis Centre (SU25), on verge outside garden, JRM.

Nitella translucens (Translucent Stonewort); Franchises Wood, Fishpond (SU230190), large clump in decoy pond, SFi, VW & PMW. **1st Wiltshire record.**

Papaver orientale (Oriental Poppy); Coombe (SU15), garden dumping or escape, SFi. **1st Wiltshire record.**

Poa chaixii (Broad-leaved Meadow-grass); Franchises Wood NE of Solar Farm (SU22781875), many plants in ditch close to byway; Franchises Wood N of Solar Farm (SU21), many plants in silted pond, both SFi, VW & PMW. Determined by SPi. **1st Wiltshire record.**

Potentilla recta (Sulphur Cinquefoil); Knook (ST94), by roadside; Knook (ST94), abundant in apparent abandoned garden by road, both SFi. **1st VC8 record.**

Pseudofumaria alba (Pale Corydalis); Easterton Sands (SU05), on stone gatepost, SFi. **1st VC8 record.**

Ranunculus flammula (Lesser Spearwort) [GB:LC Eng:VU]; Ridge (ST93), SFi & VW; Lower Chute and Chute Cadley (SU35), JRM; Bedwyn Brail (SU26), four sites, All RAI.

Scandix pecten-veneris (Shepherd's-needle) [GB:CR Eng:EN]; Oxenwood (SU3086856922) about six plants in field headland; Oxenwood (SU3081457042), intermittent plants in stony edge of cereal field for 35m; Oxenwood (SU3077757170), intermittent plants in over 100m of stony edge of cereal field; Oxenwood (SU3077457240), abundant in stony edge of cereal field for 95m and some in crop; many hundreds of plants. All SFi & VW.

Solanum physalifolium (Green Nightshade); Chapmanslade (ST84), in arable field, SPi. **1st VC8 record.**

Spergula arvensis (Corn Spurrey) [GB:VU Eng:VU]; Shalbourne (SU322629), widespread in harvested organic cereal field, RAI, MBu, SFi & VW.

Stachys arvensis (Field Woundwort) [GB:NT Eng:NT]; Perham Ranges (SU247494), in field north of Tidworth-Perham in cultivated but uncropped strip at northern edge, JRM.

Symphytum caucasicum (Caucasian Comfrey); Hilcott (SU15), escape on trackside, SFi. **1st VC8 record.**

Trifolium fragiferum (Strawberry Clover) [GB:LC Eng:VU]; Warminster: Cradle Hill (ST880463), very small amount in chalk grassland, SG & SPi.

Ulmus x hollandica (Dutch Elm: U.glabra x minor); Chute Forest east (SU3151), beside footpath to church, JRM 1st recent Wiltshire record; Heywood (ST849530 and ST850530), two sites of which one had many trees in hedgerow, both SPi. **2nd & 3rd records.**

Veronica scutellata (Marsh Speedwell) [GB:LC Eng:NT]; Bedwyn Brail (SU28286335 and SU28476294), two pond sites, both RAI.

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