WILTSHIRE BOTANICAL SOCIETY NEWSLETTER

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Contents

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If you go down to the woods today…

well, specifically Bentley Wood on

Sunday 24th April 2022

You would have been very happy indeed. This was the first outdoor meeting of WBS for 2022 and 14 keen and eager botanists gathered in the pleasant spring sunshine to explore the plants of the area under the expert leadership of Pat Woodruffe and Kat Newbert (Wiltshire's recently appointed Co-recorder for plants, alongside Richard Aisbitt).

Keen botanists listening to Kat.

Bentley Wood to the east of Salisbury is a privately-owned woodland, but access is allowed on the tracks and rides. It is a Site of Special Scientific Interest and classified as a Plantation on an Ancient Woodland Site, meaning it has been a woodland since at least 1600. Clear-felled during and after the 2nd world war, it was replanted with a mix of broad-leaved and non-native conifers but is now being gradually managed towards native woodland. Although initially designated primarily for butterflies, the site now has a much greater scientific interest due to the sensitive management by Bentley Wood Charitable Trust.

In the morning, the assembled botanists split into two groups: a beginners and improvers group led by Kat, and a much smaller group of experienced hands led by Pat.

Cover pictures: Fly Orchid - Martin Buckland, Frog Orchid - Richard Aisbitt

Everyone reconvened for lunch and the afternoon session.A wide variety of AWIS (Ancient Woodland Indicator Species) was seen including Moschatel *Adoxa moschatellina*, Ramsons *Allium ursinum*, Wood Anemone *Anemone nemorosa* and, of course, Bluebells *Hyacinthoides non-scripta*. Kat pointed out the key features of the native Bluebell – narrow leaves, drooping inflorescence, colour – and that the true Spanish Bluebell probably doesn't occur to any great extent in the UK. It is suspected that the majority of such records are mis-identifications of the hybrid *Hyacinthoides x massartiana*, which interbreeds with the native diluting the gene pool.

Other AWIS were also seen including Woodruff *Galium odoratum*, Herb Paris *Paris quadrifolia*, Solomon's-seal *Polygonatum multiflorum*, and Yellow Archangel *Lamiastrum galeobdolon*. The latter should be differentiated from the garden variety subspecies *argentatum* by the lack of large silvery blotches on the generally more pointed leaves.

Spot the Herb Paris!

Wood Speedwell *Veronica montana* was distinguished from Germander Speedwell *V. chamaedrys* by hairs all around the stem in the former but two lines of hairs on opposite sides of the stem in the latter. Two Figworts were also seen - Common and Water (*Scrophularia nodosa* and *S. auriculata*) - they have distinct leaves and Water Figwort has clearly winged square stems.

Common Figwort (left) and Water Figwort (right).

Wild and Barren Strawberry (*Fragaria vesca* and *Potentilla sterilis*) were also recorded, Kat pointing out that in the former the terminal tooth of the leaflet is longer than the teeth either side, and that in Barren it is shorter. Creeping Cinquefoil *P. reptans* was also seen - and despite the name, some leaves have seven leaflets!

Seven-leaved Creeping Cinquefoil.

Orchids included Common Twayblade, Greater Butterfly-orchid and Early-purple Orchid (the hyphenation of some plant names always seems a mystery to me!).

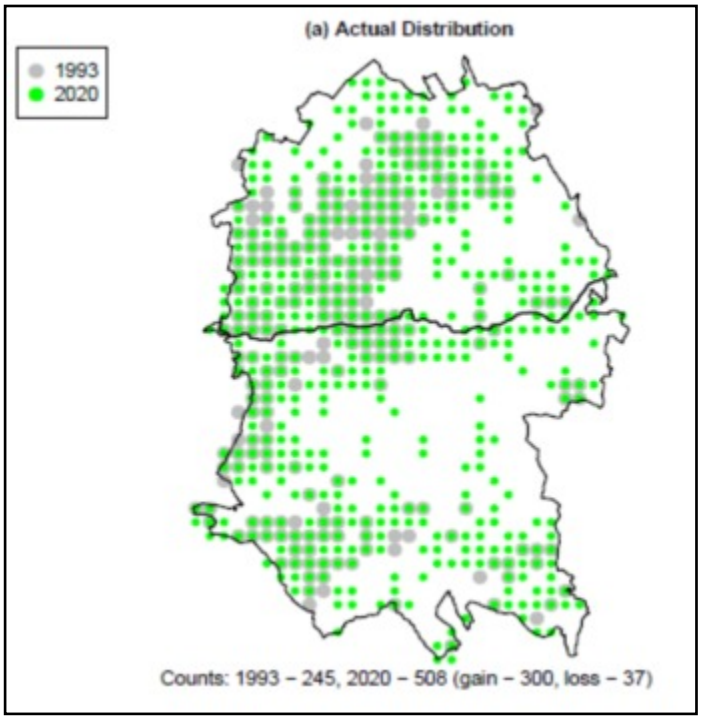
Changing Forget-me-not.

Other interesting species encountered included Changing Forget-me-not *Myosotis discolor* (the flowers changing from yellow to pink to blue); Goldilocks Buttercup *Ranunculus auricomus* (which may have from 0-5 petals, not necessarily all the same size); Dyer's Greenweed *Genista tinctoria* (used as a yellow dye); Toothwort *Lathraea squamaria* (parasitic on Hazel and Elm); Hemlock Water-dropwort *Oenanthe crocata* (a highly toxic plant with nasty side effects and may have been used for the ritual killing of older people considered a burden); and Meadow Saffron *Colchicum autumnale*. Pat recalls farmers telling her that this plant was much more widely distributed in the fields around the wood. Numbers in the wood frequently exceeding 3000 flowers with a peak of 6182 flowers in 2017.

Kat and Euan examining the variety of leaves on Goldilocks Buttercup.

Although not in any great abundance several ferns were noted including Lady Fern *Athyrium filix-femina* (fine and delicate), Golden-scaled Male-fern *Dryopteris affinis* (with conspicuous gingery scales at the base of the fronds and a dark patch where the side branches meet the main frond stem), and Broad Buckler Fern *D. dilatata* (the scales having a dark brown central stripe). Pat Woodruffe has produced a useful guide to Wiltshire's ferns.

OK. Here we go! Sedges and grasses – not to everyone's taste but often critical in defining vegetation types. The AWIS encountered included: Remote Sedge *Carex remota*, Wood Sedge *C. sylvatica*, Thin-spiked Wood Sedge *C. strigosa*, and Pendulous Sedge *C. pendula*. The latter has expanded its occupancy over the last 40 years or so and in Wiltshire its tetrad occupancy has increased between two and three times. As for grasses, Wood Melick *Melica uniflora* was probably the most attractive and has the interesting feature of a bristle or spike on the sheath opposite the ligule.



Spread of Pendulous Sedge in Wiltshire. Courtesy of R. Aisbitt.

Finally, Pat introduced Paul Read's study of Crab Apples, the main aim of which is to determine whether *Malus sylvestris, M. domestica* and their hybrids can be distinguished in the field. Pat went through the very simple recording sheet and members are invited to participate if they so wish. Selected trees will be chosen at a later date for DNA analysis.

Crab Apple blossom.

We were accompanied by bird song throughout and it was particularly pleasing to hear at least one male Cuckoo and see a Kite over the Draining Field at the southern end of the wood.

Many thanks to Pat and Kat for leading an excellent trip.

Steve Jackson

Marlborough College Nature Trail

Saturday 1st May 2022

A mixture of habitats from urban to rural was the order of the day. From the car park we started with the college pond and followed this with a walk along a stream. This enabled those attending to pick out some of the more common moisture loving plants such as Meadowsweet *Filipendula ulmaria,* Yellow Iris *Iris pseudacorus* and Water Mint *Mentha aquatica.*

From here we ventured along a shadowy path toward the Church marking off common woodland species such as Red Campion *Silene dioica,* Hedge Woundwort *Stachys sylvatica* and Wood-sedge *Carex sylvatica* on the way. The churchyard grass looked quite rich and inviting, as many are, but our attention was drawn to a dozen or so part-trampled plants at the edge of the gravelled path. They appeared familiar to many of us but not without confusion also. Was it a Rock-cress *Arabis spp.* or a Whitlow-grass *Draba* or *Erophila?* Specimens were taken to be observed and determined later until one member realised that they had seen this plant for sure and a quick check in Rose's 'The Wild Flower Key' showed that we were looking at Wall Whitlowgrass *Draba* (now *Drabella*) *muralis.* This proved to be only the second recent record in VC7 and only the third for Wiltshire as a whole.

The forest of Wall Whitlowgrass - Martin Buckland

I would have to say that the attendees were quite smug at this point and the enjoyment continued as scores of Meadow Saxifrage *Saxifraga granulata* were seen amongst the gravestones and a plant we would be more likely to encounter on a chalk downland perhaps. However, we were still not finished with the 'good' plants yet for a quick foray into the Church car park, on our way up to the hill, produced thousands more Wall Whitlow-grass plants around the edge and again growing within gravel. How it got here remains a mystery and the way the car park is maintained clearly enables it to survive rather well. In addition, and amongst the

Whitlow-grass were several hundred plants of Little Mouse-ear *Cerastium semidecandrum* and another species that is recorded rather infrequently.

We paused for lunch up on the hill and played the 'what am I sitting on' game. Dwarf Thistle *Cirsium acaule* was the easiest if not the prickliest, Fairy Flax *Linum catharticum* the most diminutive with Spring Sedge *Carex caryophyllea* the most pleasing find.

Venturing back to the car park we continued past and up to the main road where we tried to seek out the rosettes of Deptford Pink *Dianthus armeria* previously recorded on a grass embankment. The site was located but no plants found but their origin was certainly obvious as a well-produced sign in the grass announced that more than one scarce plant could be observed in the verge.


Spring Sedge- Martin

A scarce plant for many of us, and only because 'we don't see it' was found on top of a wall by Sharon. Spreading Meadow-grass *Poa humilis* was seen in a typical spot, on an edge in dry and free draining position.

Back to the cars we paused at a relatively new soil bund that had been colonised by the largest ruderal weeds one could imagine. 'Giant' Groundsel *Senecio vulgaris*, 'Atmospheric' Spear Thistles *Cirsium vulgare* and carpets of Chickweed *Stellaria media.*

Our thanks go to Paul for arranging this event with Marlborough College.

Martin Buckland

Brean Down

Saturday 21st May 2022

Leader: Kat Newbert


Milk Thistle

Many members attended this meeting, gathering in the National Trust car park. We were grateful for a sunny day as the windy top of Brean Down on a rainy one would have been interesting!

Botanists are usually heard to say that car parks are difficult to get out of but this one turned out to be too 'tidy' giving us only some Buck's-horn Plantain *Plantago coronopus* and some Pearlwort to look through for Sea Pearlwort *Sagina maritima* but without success. The first house wall we came to proved of interest as Sharon did her usual magic trick of finding Spreading Meadow-grass *Poa humilis* on the top. (See trip notes for Marlborough College). Next we came across a rather steep-sided ditch filled with green gloopy water but it looked of interest so a couple of members clambered down for specimens. At this point we were approached by a beleaguered youth from a local business claiming his boss 'wouldn't like us doing that' (the footpath runs through private land) and so we departed smiling having gathered a sample of Lesser Water-parsnip *Berula erecta* for closer scrutiny.


Sea Carrot - Martin

It was now time to ascend the hill and thankfully we took the easier option of reaching the top by traversing the sloping path rather than climbing the steps. This proved to be the best route for we were not only able to find many of the common chalk-loving plants we are used to seeing in Wiltshire but a few different ones as well. A few Milk-thistles *Silybum marianum* stood out, particularly one covered in snails. Why were they there? For protection or just enjoying the danger whilst munching? We couldn't miss a rather robust, chunky umbellifer at the side of the path; it was Sea Carrot *Daucus carota ssp. gummifer.*

Common Ivy *Hedera helix* was a common ground cover plant and here we saw it being parasitised by Ivy Broomrape *Orobanche hederae* at many spots including an individual growing out of a notch in an inspection chamber cover!


Ivy Broomrape - Martin

At the top of the hill, Kat pointed out the first of many sightings of Somerset Hair-grass *Koeleria vallesiana*, a local speciality in this area and the Mendips and a new species for some members. Small-flowered Buttercup *Ranunculus parviflorus* was another unfamiliar species. It is a small hairy annual, which had both flowers and fruits, with achenes that have tiny, hooked spikes. We also found Slender Thistle *Carduus tenuiflorus,* a thistle not confined to the coast but one that survives well in this situation.


Examining Slender Thistle


Pale St John's-wort

Red Valerian *Centranthus ruber* gets 'everywhere' and not least the rocky exposed edge of the down but we had to admit its benefit to insects being as it was covered with bees and butterflies. We came across some Milkworts *Polygala spp.* and had to have 'that talk,' you know the one; holding a petal up to the sky and trying to pronounce *anastomosing.* (If you don't know the term just look up the difference between Common and Chalk Milkworts in your guide book).

A target of the day was Pale St. John's-wort *Hypericum montanum* and this we found on the steepest parts of the north-facing slopes but sadly not in flower. On many of the anthills was a delightful small, annual grass with spikelets that shimmered silver; only around 10cm tall this was Silver Hair-grass *Aira caryophyllea.* We then suddenly noticed Dwarf Sedge *Carex humilis* hiding in plain sight – how many had we walked by and simply missed? One plant we did miss, or at least 'pass' on was an Eyebright *Euphrasia spp.* It stood less than 1cm tall with just two florets and a couple of leaves. It was a challenge and that's where it stayed!

White Rock-rose *Helianthemum apenninum* now appeared on the very dry, south facing slopes along with the more familiar Common Rock-rose *H. nummularium* but where was the hybrid we had been told about? A long walk toward the end of the down proved fruitless until one of the back-markers gave a shout and a few members walked back. The others continued searching on the south slope but I was determined to find a plant or two in an area I had been told about and with Pat's company we managed to find a single hybrid flower of *H. x sulphureum* among the many yellow and whites.

A surprise perhaps, was finding Heath Speedwell *Veronica officinalis a*nd Germander Speedwell *Veronica chamaedrys* growing together and made for an interesting discussion over its place on the rock and the identification features. A long pause by some limestone scalping steps where the grass was almost shaved thin produced some excellent and attractive plants, albeit less than a centimetre tall, particularly when looked at very closely with a hand lens. They were Subterranean Clover *Trifolium subterraneum*, Lesser Chickweed *Stellaria pallida*, Dwarf Mouse-ear *Cerastium pumilum*, and Sea Stork's-bill *Erodium maritimum*.

Thanks must go to Kat for an excellent day out and not least for buying everyone an ice cream back at the cars.

Martin Buckland


White Rock-rose


Common Rock-rose


and the hybrid

Morgan's Hill

Saturday 4th June 2022

Leader: Martin Buckland


Fly Orchid - Martin

It was 2010 when the Society last ventured to Morgan's Hill Wiltshire Wildlife Trust nature reserve so a visit was well overdue. As there were a few newer members amongst the group we took a leisurely walk along the Wansdyke path to the reserve entrance pointing out a few of the shrubs on the way such as Wild Privet *Ligustrum vulgare* and Wayfaring-tree *Viburnum lantana.* Richard discussed the difference between Dogwood *Cornus sanguinea* and Buckthorn *Rhamnus cathartica* whose leaves can look superficially the same but showed us that by carefully tearing a leaf across the blade, that in Cornus the two halves are secured apart by 'stringy sinews' whereas in Buckthorn they do not.


Frog Orchid

Honesty *Lunaria annua* was found along the path edge and is proof that garden escapes can persist for many years as Martin commented that this was growing here 10 years or more ago, well before he became a botanist. One member asked about a climber in the hedge, Black Bryony *Tamus communis* and its difference to White Bryony *Bryonia dioica.* This started a few 'Martinisms' of the day - Black Bryony has a leaf shape of the playing card Ace of Spades [that is black] whereas White Bryony has a cut-shaped leaf like the shape of the letter W.

The downland to the north of the path was not particularly floriferous however there was a shimmer of reddish-green grass flower heads that turned out to be all Upright Brome *Bromopsis erecta* a chalk downland speciality.


Lesser Butterfly-orchid

Juniper *Juniperus communis* is a near threatened species in England and believed to be in a continued and accelerating decline. It is also a species of 'principal importance for the purpose of conserving biodiversity' under section 41 NERC Act 2006 so it was a surprise to find a female bush replete with berries (Juniper is dioecious, having separate sexed plants) but being overgrown and out-competed by other vegetation just two metres outside a reserve. More worryingly was to find another shrub in a similar condition within a protected area.

What was a surprise to those of us who are more familiar with the reserve was the tall vegetation. An area on a slope that normally burgeons with *Primula spp.* and known in the past to be a site for butterflies, not least the Duke of Burgundy was very overgrown with bramble and rose. In fact, the short turf we expected to see all over the reserve was not at all apparent and was a little disconcerting. [It is now


Common Twayblade

understood that the grazing regime has changed to appease the Marsh Fritillary butterfly population on site.]

Another Martinsm, this time over a Restharrow *Ononis spp.* found. How do you tell Common Restharrow *Ononis repens* and Spiny Restharrow *O. spinosa* apart? The first thing is not to rely on spines or lack of them as Common may have a few spines and Spiny may be lacking! **C**ommon has hairs that en**c**ircle the stem whereas **S**piny has hairs stuck out on opposing sides like a **s**carecrow's arms. [Martin apologises at this point.]

Only just a short way further on Martin stops at a couple trying to work out whether they were looking at Weld *Reseda luteola* or Wild Mignonette *Reseda lutea.* It was the latter and Martin's way of remembering was 'Weld' is a simple word and has a simple leaf where as 'Mignonette' is a wibbly-wobbly word [Martin's terms!] and Mignonette has a wibbly-wobbly leaf or deep, pinnately lobed leaf if you prefer.


Chalk Fragrant-orchid

After lunch, we reached perhaps the most interesting part of the reserve, that of a section full of anthills and thankfully short turf. It was here we started to find the first of many orchids. There were plenty of Lesser Butterfly-orchids *Platanthera bifolia* in full flower and then started a competition of who would find the most Frog Orchids *Coeloglossum viride*. I don't think anyone failed to find their own plants and there were so many that we gave up counting and recording their positions. A few Common-spotted Orchids *Dactylorhiza fuchsii*, Chalk Fragrant-orchid *Gymnadenia conopsea* and Pyramidal Orchid *Anacamptis pyramidalis* were also found but few of them quite at their best. An orchid relative, Common Twayblade *Neottia ovata* now became more obvious as we worked our way to a former quarry and many of these plants were much taller here than most of are used to, some perhaps reaching to 40-50cm tall.

As we approached the quarry area the vegetation was much taller again. Martin and Richard had grid references and previous descriptions on where to find one of today's target species, Musk Orchid *Herminium monorchis* that should have been at least in bud if not in flower but sadly none could be found amongst the lengthy greenery. Furthermore, on seeking out another target, Marsh Helleborine *Epipactis palustris* that should have been easily found by the score we only found them by parting long vegetation, something we were worried whether this would affect their long-term survival if the present grazing regime should remain.

The highlight of today though has to belong to Keith Lea. Having never seen a Fly Orchid *Ophrys insectifera* before, Keith descended a slope by the quarry to find a superb flowering specimen at his feet and indeed it was a beautiful plant.

Our thanks must go to Martin for arranging the day and for writing this account.

Swindon Lagoons

9th June 2022

Swindon Sewage Works used to allow sediment from effluent to settle in lagoons before the water was discharged. When the lagoons were no longer needed, they were cleaned out and the site was handed over to the Wiltshire Wildlife Trust as a nature reserve. A team of local volunteers look after the site, and it has become an important home and stop-over for birds. It also hosts a wide variety of plants. The site is secure, partly for safety as some of the lagoons have steep banks and deep water, so visits are by arrangement only.

A forest of Blue Water-speedwell

Swindon is a long journey for some and only three of us made the trip. We aimed to explore an interesting and inaccessible site, but also to update the species list for the warden and WWT. Our star finds came on gravel tracks, on newly-created islands in one of the lagoons, in the River Ray which runs beside the lagoons, and in the lagoons themselves.

- On the island: both Blue and Pink Water-speedwells *Veronica anagallis-aquatica* and *V. catenata*, and a diminutive Marsh Yellow-cress *Rorippa palustris*. Nearby, Meadow Rue *Thalictrum flavum* had established itself and was in flower.
- In a fast-flowing section of the River Ray, a broad leaved pondweed had its leaves submerged by the current. It looked like the actual Broad-Leaved Pondweed *Potamogeton natans*, but the flexible petiole joints were not apparent. Further examination confirmed that it had all the features of *P. natans*, which is ecologically tolerant and able to grow in a wide variety of wet situations. We saw it again later in still water in a lagoon. I also took some Water Starwort *Callitriche* sp. home from the river in the hope of identifying it (no luck – no fruits), but found Curled Pondweed *P. crispus* in amongst it – a species able to grow in nutrient-enriched water.
- Another lagoon further increased the pondweed count: rafts of thread-like growth in open water turned out to be Small Pondweed *P. berchtoldii*.

Moving on to Rivermead, a nearby WWT reserve beside the River Ray, we found quantities of strikingly pink-flowered Grass Vetchling *Lathyrus nissolia*, Marsh Valerian *Valeriana dioica*, and more Blue Water-speedwell *Veronica anagallis-aquatica*. The downside was a patch of New Zealand Pigmyweed *Crassula helmsii*, the virulent invasive alien, originally released as throw-outs from aquaria. The wardens had previously identified it and the area was taped off waiting for a decision on its removal.

The final highlight was in a small patch of woodland ("The Mound"), where the rare Green Hound's-tongue *Cynoglossum germanicum* was well-established and thriving. It had been sown, deliberately, without permission (and illegally?). Unlike ordinary Hound's-tongue *C. officinale*, it has glossy green leaves, but Like *C. officinale*, it has large seeds with Velcro on one face. However, the seeds are smaller and lack the border present in *C. officinale* seeds. Critically Endangered in England and on Schedule 8 of the Wildlife and Countryside Act, it shouldn't have been introduced, but now, as a protected species, it cannot be removed.

Stop press: A Natural England surveyor has discovered a colony of *C. germanicum* on Salisbury Plain – origin open to speculation.

Richard Aisbitt, June 2022

East Knoyle

3rd July 2022


Climbing Corydalis - Pat Woodruffe

A group of us assembled at the windmill in East Knoyle to enjoy a day of botanising led by Jenny Bennett, who lives locally. Opposite the windmill is an area of Common Land which is managed by the Parish Council. It was particularly interesting to have a member of the council with us who was keen to learn more about the species present and how best to manage the area. The acid grassland supported quite a number of species which are relatively rare in Wiltshire including Ling *Calluna vulgaris* and Sheep's Sorrel *Rumex acetosella*. In this grassland and throughout the day we saw many plants of the delicate and beautiful grass Wavy Hair-grass *Deschampsia flexuosa*, so unlike its close relative Tufted Hair-grass *D. cespitosa* which is so easily recognised by its very rough leaves, especially if you try to run your fingers down the blade . Wavy Hair-grass has very fine leaves, often less than a millimetre wide, and an open inflorescence which looks purple to silvery in the sward. On the edge of the grassland there was a canopy of bracken under which grew some Climbing Corydalis *Ceratocapnos claviculata* with, in this instance, almost white flowers.

We walked downhill through woodland onto a lane with a lovely range of ferns and other plants of shady places. It was here that we first found Corky-fruited Water-dropwort *Oenanthe pimpinelloides,* a plant which I rarely see but, by the end of the day, I felt that I had become truly acquainted with it. The basal leaves had withered away but the stem leaves were 1 / 2 pinnate with quite narrow, entire blades which were at least as long as the petiole. The most obvious characteristic was the neat, rounded umbels of crowded white flowers which become flattened when in fruit. Although the question 'why Corky-fruited' was, inevitably, asked, it was never truly resolved!


Corky-fruited Water-dropwort - Pat Woodruffe


Corky-fruited Water-dropwort (fruits) - Pat Woodruffe

Our second stop was in a field which is designated as a County Wildlife Site. It had a rich assemblage of plants made interesting because alkaline flushes meant that calcicoles and calcifuges were able to grow more or less alongside each other. For example we found Quaking Grass *Briza media* and Rough Hawkbit *Leontodon hispidus* growing close to Heath-grass *Danthonia decumbens* and Carnation Sedge *Carex panacea*. Other nice plants included Devils-bit Scabious *Succisa pratensis,* Pignut *Conopodium majus* and Sneezewort *Achillea ptarmica*. We did our best to record all that we could find as opportunities to visit such privately owned fields are not that frequent.

After lunch we were joined by Jonathan Thomson who owns nearby Underhill Wood Nature Reserve. He kindly topped off our lunch with the offer of tea or coffee, biscuits and cake. A rare treat on a WBS visit! Jonathan has encouraged a wide range of animals to make his land their home and is justifiably proud of his success with dormice, various amphibians and reptiles, barn owls, bats and much more. He acknowledged that his plant identification skills were limited and was delighted when we set about explaining what we found. For us, it was rewarding to think that we could help him in a small way. For me the plant that stood out – in all senses – was Giant Hogweed *Heracleum mantegazzianum*. Only one plant, but one that could hardly be missed. Its large, flat umbels were a complete contrast to those of the Dropwort seen earlier; a beautiful plant although an alien from SW Asia which usually is removed because of its ability to cause photo-dermatitis in humans. It is an offence to cause it to grow in the wild in both England and Wales (Schedule 9, Wildlife and Countryside Act 1981)).

A very varied day made all the more interesting by the local contacts that Jenny had established and the notion that our visit might have helped land owners and managers. Many thanks Jenny!

Pat Woodruffe

Giant Hogweed causes amazement

Lesser Reed-mace showing the gap between the male and female inflorescence

Savernake Forest

30th July 2022

Leader, Dave Green


Epiphytic Dryopteris dilatata - Pat Woodruffe

A full quiver of us assembled and we were delighted to welcome several new members on their first outing with us.

Dave gave us a potted history of the forest and its varied management in the past and present before we wandered down a drive doing a bit of work on the grasses and sedges before entering the shelter of the trees. Plants here were so much greener – and more identifiable – than those outside which were crisp skeletons of their proper selves.

Of course our day was dominated by the mature trees. We gazed and marvelled at their forms and manner of growth. We speculated on such matters as variation in bark patterns, how competition with neighbours was managed and the reactions of surrounding trees and ground flora when a giant fell. There was also much discussion about the Wood Wide Web – the mycorrhizal network – and its functioning. It was not just the oaks that had us enthralled. There were mighty beeches, with huge spans where there was room for them to spread their skirts, and some tall sweet chestnuts. Also other lesser trees but hardly any sycamore and no ash.


Crossbills - Fran Sinclair

In the afternoon Dave took us to a splendid pond with late tadpoles, Reed Sweet-grass *Glyceria maxima,* and Yellow flag *Iris pseudacorus* in the shallows, and Purslane *Portulaca oleracea* and Starwort *Callitriche stagnalis* on the mud. It was here that Keith heard, then saw, then told us of a pair of Crossbills nearby. They flew across then – what magic – came down to drink scarce three metres from our feet. A first proper sighting for many of us.

One intention of the trip was to see the Violet Helleborines *Epipactis purpurata* and indeed saw them a-plenty in several places, including dust-covered right beside a drive.

As we returned to our cars another particular amazement occurred. There was a fluttering of something falling and there on the ground, too busy to mind close cameras, was a copulating pair of Purple Hairstreak butterflies.

Rosemary Duckett


Dave, Sharon and Kat in the pond - Pat


Violet Helleborine - Pat

Lumpers, splitters, and name-changers

- Don't ya just love 'em!

Common, Chalk, and Brown Knapweeds

Steve Jackson

Are you a 'lumper' – a person who puts plants that may show some variation in their characteristics into one taxon (usually species); or a 'splitter' - those that suggest that the variation between plants, that are in many respects similar, should be placed into separate, distinct taxa (usually different species)? Or, on the other hand, would you be one who goes for the middle ground and places plants that show some degree of variation into subspecies, forms, or varieties?

This is not a new issue and is often related back to Darwin[1], who in a letter to JD Hooker in 1857 wrote that it:

"seems to me one of the most important arguments I have yet met with, that varieties are only small species—or species only strongly marked varieties"

and that *"It is good to have hair-splitters & lumpers"*

presumably because it fosters debate. Branch (2014)[2] suggests, however, that these terms were used separately before then and perhaps for the first time together in 1845 by Edward Newman, founder of ***The Phytologist***.

To shed light on this issue, we need to answer three questions:

1. What characteristics should we consider when creating groups of plants?
2. How much of a difference should there be to separate plants into different groups? and
3. What do we call the groups of plants that we create?

To fully explore this issue requires two disciplines of botany:

1. Taxonomy (or classification) – the task of producing groups of plants; and
2. Nomenclature (or naming) – the task of giving the groups names.

Let's look at this in practice in relation to knapweeds. The current thinking according to Stace 4th ed.[3] is that we (might) have two quite similar species (Table 1) – Common Knapweed (*Centaurea nigra*) and Chalk Knapweed (*Centaurea debeauxii*). To complicate matters further, the two may produce fertile hybrids with intermediate features. This might suggest that we do *not* have two species! And, for even more complication, each species occurs in two states – radiate[4] and non-radiate (which have been given sub-species names but which Stace does not think worthy of this status!). And both may hybridize with Brown Knapweed (*C. jacea*), a scarce naturalised introduction that may now exist only as a hybrid. As Stace says 'it is difficult to distinguish the 3 hybrid combinations and indeed often the 3 parent spp.' But this situation has not always been the case and the recognition and naming of these plants has varied over time.

Why is this important? Because it affects the scientific data that we record during fieldwork. Bob Leaney[5] examined populations in Norfolk and Cumbria and found plants conforming only to *C. debeauxii*. Martin Rand[6]

[1] https://www.darwinproject.ac.uk/letter/DCP-LETT-2130.xml
[2] https://ncse.ngo/whence-lumpers-and-splitters
[3] Stace, C 2019, *New flora of the British Isles*. C & M Floristics, Middlewood Green.
[4] Having longer ray florets extending beyond the main central group as is common in Greater Knapweed.
[5] Leaney, B 2012 Common problems with identification experienced by the Norfolk Flora Group – 2. ***BSBI News*** 121, 8-18.
[6] Rand, M 2020 *Flora News* 58. HIWWT.

has suggested that *C. debeauxii* is probably more common than *nigra* in Hampshire and Ken Adams[7] has reported that *C. debeauxii* is 'turning out to be the main form in Essex.' This might also be true for Wiltshire as Marsden-Jones & Turrill[8] suggested that 'On the chalk or near it the populations of knapweeds are generally *C. nemoralis* [=*C. debeauxii*]' and that 'Over much of Wilts *C. nigra* is rarer than *C. nemoralis*' although these assertions are not (yet) borne out by the data (Table 2). Harris[9] thinks that *C. debeauxii* may gradually be replacing *nigra*. It is also important because the groups of plants may have had alternative names and may currently have a number of synonyms (i.e., alternative accepted names) and it is usually necessary to equate the same plant across different time periods and floras. Even Linnaeus listed other previous names for *C. nigra and C. jacea* and recognised different forms.

Table 1. The two key taxa under discussion.

Pics courtesy of Mick Crawley. @crawley_mick		
Currently accepted name (Stace 2019)	***Centaurea nigra***	***Centaurea debeauxii***
Recent synonyms[10]	*C. obscura* *C. nigra* var. *nigra* *C. nigra* spp. *nigra*	*C. nemoralis* *C. nigra* var. *nemoralis* *C. nigra* spp. *nemoralis*
Common names	Common Knapweed Lesser Knapweed Black Knapweed	Chalk Knapweed Slender Knapweed
Suggested identification (from key in Stace 2019)	Capitula 15-20 mm across; stem markedly swollen immediately under the capitula; central part of each **phyllary ovate**.[11]	Capitula 9-14 mm across; Stem slightly swollen immediately under the capitula; central part of each **phyllary lanceolate**.
Phyllaries Courtesy of Ken Adams Essex 'hardhead' Knapweeds (kenadams.org.uk)		

[7] Adams, K Essex 'hardhead' Knapweeds (kenadams.org.uk)

[8] Marsden-Jones, EM & Turrill, WB 1954. *British knapweeds. A study in synthetic taxonomy*. London: The Ray Society. [This is an interesting if impenetrable book. Marsden-Jones lived at Potterne and is buried in the cemetery there. Many of the wild specimens were collected in Wiltshire and he conducted breeding experiments, under the auspices of the British Ecological Society, in the grounds of Church House – the 'Potterne Biological Station'. The book contains photographs of the type specimens of the three species considered here and many pictures of the phyllaries of the three species as well as from the many crosses he made during breeding experiments.]

[9] Harris, M 2017. A morphological analysis of *Centaurea nigra* and its associated taxa in Hertfordshire. *New Journal of Botany* 7 (2-3), 169-181. https://doi.org/10.1080/20423489.2017.1408193.

[10] Extensive lists of synonyms can be found at World Flora Online.

[11] Check the lower third of the capitulum (Leaney 2012).

Table 2. Number of relevant Centaurea records in Wiltshire from the BSBI database (16.4.22).

Taxon	Common name	VC7	VC8	Total
Centaurea debeauxii	Chalk Knapweed	27	118	145
Centaurea debeauxii subsp. *nemoralis*			1	1
Centaurea debeauxii subsp. *nemoralis var. nemoralis*		16	19	35
Centaurea debeauxii x *jacea = C. x moncktonii*		2	2	4
Centaurea jacea	Brown Knapweed		3	3
Centaurea jacea x *debeauxii* x *nigra*			1	1
Centaurea jacea x *nigra* subsp. *nigra*			2	2
Centaurea nigra s.l.		35	159	194
Centaurea nigra s.s.	Common Knapweed	2250	3268	5518
Centaurea nigra subsp. *nigra*		3	3	6
Centaurea nigra subsp. *nigra* var. *nigra*		9	7	16
Centaurea nigra x *debeauxii*		2	1	3
Totals		3611	6525	10136

But let's go back to the 'beginning'. The modern era of scientific taxonomy and nomenclature is generally considered to begin with the publication of Linnaeus' ***Species Plantarum*** in 1753 which formalised the binomial system we currently use. In his book, Linnaeus recorded 50 species of Centaurea including *C. nigra* and *C. jacea*. By the time of the 2nd ed. (1763) the number had risen to 61, still including these two species. Of course, the plants had been recognised and recorded prior to this time, especially in the 'herbals' such as Gerarde's ***The Herball or general history of plants*** (1597) and Culpeper's ***The English physitian*** (1652) but many of the early works are in Latin and difficult to access and it is not until the 1800s that a clearer picture begins to emerge and the books by Babington, Bentham, Hooker, and Sowerby should be consulted. Marsden-Jones & Turrill devote a chapter to the history of the taxonomical and nomenclatural changes of these three key species from the time of Linnaeus to the early 1950s. At this point, Marsden-Jones & Turrill accepted that there were three species (*nigra, jacea, nemoralis*) but that there was considerable cross-breeding to produce 'hybrid swarms'. In the modern era, we can turn to Clapham, Tutin & Warburg for most of the second half of the 20th century and since then Stace (Table 3) and to the three key Wiltshire floras (Table 4) for the local context.

But where did the more recent names *nemoralis* and *debeauxii* come from? According to Marsden-Jones and Turrill, *C. nemoralis* was first used for British plants by A.G. More in 1871 in ***The Journal of Botany***. *C. debeauxii* appears to come from M. Grenier & M. Godron ***Flore de France*** 1850 (Appendix 1).

To summarize so far: the three species (*nigra, debeauxii, jacea*) have at various times been recognised as species in their own right, as sub-species, or varieties, or not recognised at all, or as end members of a continuum that has much natural variation. They have also undergone a variety of name changes; the most significant recently being the acceptance of *debeauxii* as a species by Stace in the 2010 3rd ed. of ***New Flora of the British Isles.***

Some examples of Centaurea capitula and phyllaries are shown in Appendix 2. They have not been allocated to specific taxa. You may like to have a go!

Table 3. Modern treatment of *Centaurea nigra, debeauxii,* and *jacea*.

Modern source	Treatment of C. nigra/debeauxii/jacea	Specific epithet	Synonyms (if given)
Clapham, AR, Tutin, TG, & Warburg, EF 1952 ***Flora of the British Isles*** 1st ed	Distinguishes *jacea* var *angustifolia* as the usual British type. *jacea* x *nigra* = *jungens*; *pratensis*, *drucei*, *surrejana, nemoralis* var. *microptilon* are segregates from this cross. Main entries for the two subspecies of *nigra* which 'on the whole … are geographically and ecologically distinct'.	*nigra spp. nigra*	*C. obscura*
		nigra spp. nemoralis	*C. nemoralis*
Clapham, AR, Tutin, TG, & Moore, PD 1987 ***Flora of the British Isles*** 3rd ed.	Concentrates on the two subspecies. Only notes *C. microptilon* as a segregate from *jacea* x *nigra*.	As above	As above
Stace, C 1991 ***New flora of the British Isles*** 1st ed.	Main entries for *nigra* and *C. x moncktonii* (*nigra* x *jacea* hybrid); *jacea* stated as extinct and included in other species; 'British botanists have been unable to maintain a distinction between *C. nigra and C. nemoralis'.*	*nigra*	*C. nemoralis,* *C. nigra* ssp. *nemoralis,* *C. debeauxii* ssp. *nemoralis*
		C. x moncktonii	*C. x drucei,* *C. jacea x C. nigra*
Stace, C 2019 ***New flora of the British Isles*** 4th ed.	Main entries for *jacea, nigra, debeauxii*, and x *gerstlaueri* (various crosses between *jacea, nigra, debeauxii*, and hybrids between these three). Potential subspecies showing radiate and non-radiate forms in *nigra* and *debeauxii* are discounted. Suggestions that *nigra* and *debeauxii* may not be distinct species.	*debeauxii*	*C. nemoralis,* *C. nigra* ssp. *nemoralis,* *C. debeauxii* ssp. *nemoralis*, spp. *thuillieri*

Table 4. *Centaurea nigra, debeauxii,* and *jacea* in the main Wiltshire floras.

Flora	Treatment of C. nigra/debeauxii/jacea
Preston, TA 1888 ***The flowering plants of Wilts***	Main entry for *C. nigra* (Black Knapweed) but notes a variety '*decipiens*' stating that it is probably just a radiant form of *nigra*.
Grose, D 1957 ***The flora of Wiltshire***	Main entry for *C. nigra* agg. (Black Knapweed, Hardheads, Loggerums, Dromedary, Hard Hack, Sweep's Brush). There is then an entry by Marsden-Jones & Turrill stating that they had seen in Wiltshire: *nigra, nemoralis, jacea x nemoralis, jacea x nigra, jacea x nemoralis x nigra*! Previous names have included: *jungens, angustifolia, obscura, nigrescens, pratensis, nemoralis* var. *nevadensis, nigra* var. *decipiens*.
Gillam, B 1993 ***The Wiltshire flora***	The *C. nigra/C. nemoralis* groups were recorded as an aggregate because 'the level of gradation between these species is such that there is a lack of sustainable evidence to differentiate between the two.'

What about quantitative analysis? Most discussion has been around the differences between, and existence of, *nigra* and *debeauxii* and the degree of hybridization between these and with *jacea*. Supposed differences between *nigra* and *debeauxii* are shown in Table 5. Surprisingly, few studies have tried to establish whether any significant quantitative differences can be detected between these species based on this range of characteristics. Such studies are limited (as far as known) to one by Ockenden *et al*. (1969)[12] in Cambridgeshire (using field data only) and a study in the Sheffield region by Elkington & Middlefell (1972)[13] (using field data and herbarium specimens). Both studies were very localised, small scale, and used limited statistical methods. There is then a long gap until the study noted previously by Harris (2017) in Hertfordshire. Although still localised, this latter study used a much more sophisticated suite of statistical methods as well as field and herbarium data. All three studies attempted to quantify the differences between *nigra* and *debeauxii* and the measurements used are shown in Table 5.

So, what did these studies show? The study by Ockenden *et al*. based on a sample from a chalk site and a sample from Wicken Fen found a very wide variation in all the characteristics measured and none of them (except flowering time) could be used to distinguish between the two species. They also found that individual plants could be selected from each site that matched the species descriptions but that the majority of plants could not be assigned except in an arbitrary way. The study by Elkington & Middlefell, which covered soils ranging from a pH of 5.3 to 7.2, found an equally wide variation in the measured characteristics and they found it impossible to assign plants to one or other of the two species based on plants from their field study. However, for the herbarium material shown on their charts, there was some degree of separation in the degree of leaf dissection and leaf length:breadth ratio, and complete separation of the head length:breadth ratio.

The study by Harris found, for the herbarium material, that there were significant differences between many of the individual characters measured but examination of the graphs shows that this would not be sufficient to place a specimen in a particular taxon. More complex statistical techniques combining the characters measured were able to establish groupings that separated *C. nigra* and *debeauxii* and the hybrids. Unfortunately, when the field data was included, the results showed no distinct groupings among individuals. Further, when populations were considered, none of them were close to the 'model' features of the herbarium groups. In fact, all the populations studied in Hertfordshire were significantly different from the 'model' *C. nigra* probably indicating that the majority are hybrids between *C. nigra* and *debeauxii*. On a more positive note, *C. debeauxii* sites were dryer and more calcareous.

So where do these quantitative studies leave us? Based on herbarium material, it appears that *nigra* and *debeauxii* can be recognised. But this may be a somewhat circular argument as those herbarium specimens may have been selected because they are clear examples of what might be considered specific taxa. Inclusion of field data does not seem to allow specimens to be conclusively placed in a specific taxon. As Harris says: 'The recognisable morphological differences themselves do not confirm the status of *C. nigra* and *C. debeauxii* as species'. Nevertheless, if *populations* are of interest, then Harris provides a simple method based on phyllary overlap and degree of fimbriae fusion that allows separation of *nigra, debeauxii, jacea* and the various hybrids.

[12] Ockenden, DJ, Walters, SM & Whiffen, TP 1969. Variation within Centaurea nigra L. *Proceedings of the Botanical Society of the British Isles* 7 (4), 549-552.
[13] Elkington, TT & Middlefell, LC 1972. Population variation within Centaurea nigra L. in the Sheffield region. *Watsonia* 9 (2), 109-116.

Table 5. Characteristics cited to differentiate nigra from debeauxii and measurements used in quantitative studies.

Character	*Centaurea nigra*	*Centaurea debeauxii*	Measurements
Leaf shape	Broadly lanceolate.	Narrowly lanceolate.	Length:Breadth ratio of upper leaves, and of lower leaves [1]. Lamina length:breadth ratio of fifth cauline leaf from base [2].
Leaf dissection	Toothed or shallowly pinnatifid.	Entire or sinuate toothed.	Ratio of maximum lamina width:minimum lamina width of a mid-stem leaf [2]
Leaf pubescence	Hispid.	Pubescent.	
Stem	Conspicuously swollen beneath the heads; Stout; Hispid.	Not much swollen beneath the heads; Slender; Woolly.	Stem swelling below head:Normal stem width ratio [1, 2, 3] Stem hairs [3].
Head shape	Scarcely longer than broad.	Markedly longer than broad.	Length:Breadth ratio [1, 2, 3]
Bract appendages	More or less completely concealing pale basal parts.	Not completely concealing pale basal parts.	Degree of overlap [3].
Outer bract discs	Very broadly triangular or ovate; Teeth about equalling the undivided central portion; Dark brown.	More or less equilaterally triangular or lanceolate; Teeth longer than the undivided central portion; Light brown.	Length:Breadth ratio [1, 3] Colour of bract discs [1, 3]. Length of apical tooth, length of longest lateral tooth, and degree of fusion of the teeth [3]. Bract disc shape and appression [3].
Soils	On heavier and moister soils.	On light calcareous soils.	Variety of soil conditions [1, 2, 3].
Location	Commoner in northern Britain.	Commoner in southern Britain.	Not examined in these studies but *C. nigra* has been recorded across nearly the whole of the UK, whereas *C. debeauxii* shows a distinct southern distribution (Figure 1).
	Based mainly on sources to the right. Also see: Lee, P 2019 Recording Centaurea spp. in Wiltshire. ***Wiltshire Botanical Society Newsletter*** Issue 48, 19.		[1] Ockenden et al. 1969. [2] Elkington & Middlefell 1972. [3] Harris 2017.

What about genetic analysis? I have not been able to track down any for the UK but there is an interesting recent paper by Arnelas *et al*.[14] which looks at the genetics of Iberian knapweeds particularly in relation to radiant/non-radiant forms and isolation. This paper examines 16 knapweed taxa including the non-radiant forms *C. nigra* spp. *nigra*, *C. debeauxii* spp. *debeauxii*[15], and *C. jacea* spp. *angustifolia* (Clapham *et al*. consider the latter the usual British form). The neighbour-joining dendrogram in the paper shows all three species very close together originating from the same branch but further multivariate analysis shown in the authors 3-D diagrams suggests, again, considerable overlap in their genetic relationships. So, although, the modern

[14] Arnelas, I *et al*. 2020 Taxonomic Differentiation of Iberian Knapweeds (Centaurea sects. Jacea and Lepteranthus, Asteraceae) and Genetic Isolation of Infraspecific Floral Morphotypes. ***Annals of the Missouri Botanical Garden*** 105, 481-501.

[15] An excellent line drawing of this taxon may be found in Arnelas, I & Devesa, JA 2011 Revisión taxonómica de Centaurea sect. Jacea (Mill.)Pers. (Asteraceae) en la Península Ibérica. ***Acta Botanica Malacitana*** 36, 33-88.

techniques involved in genetic analysis throw some further light on the issue, it does not appear to provide all the answers.

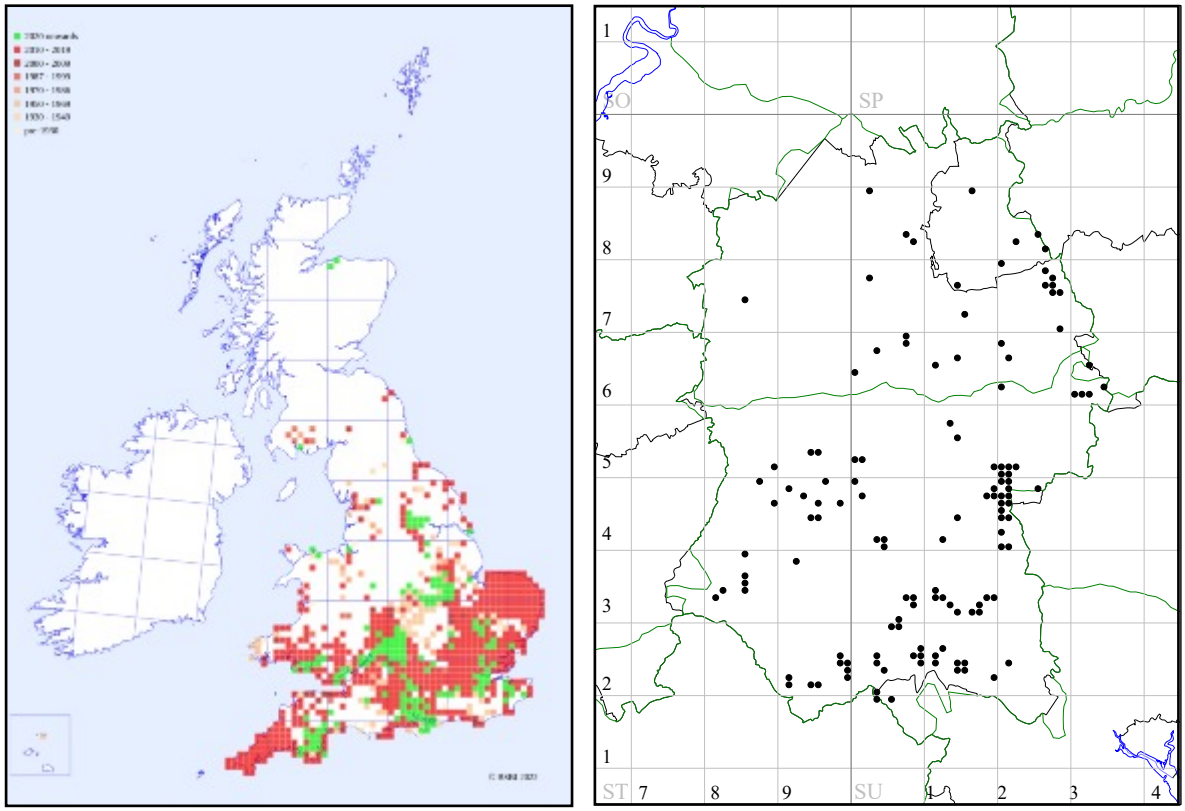


Figure 1. Distribution of *Centaurea debeauxii* [excluding subspecies].

Let's return to the three questions at the beginning of the article. Firstly, a wide range of morphological characteristics may be appropriate to help delineate different taxa. Some of these may be more useful than others, and it may be necessary to use combinations of features to make a species determination. For the Centaurea taxa in this article, phyllary shape and overlap are probably of greatest importance. Genetic analysis may prove useful for detailed studies but is not yet appropriate for field use.

Secondly, some of the differences in the characteristics used to determine species appear quite small and the size of the differences that are important will depend on your philosophy as a lumper or splitter. Perhaps a more important question is whether the differences observed are functional in any way. This may be difficult to answer.

Thirdly, names of species may change if the rule of priority of publication is followed whereby the earliest applicable, properly published name is adopted. Genetic studies may also require name changes.

This article has highlighted the complexities surrounding what might appear a simple issue of identification of two species. The final comments on recording should come from our county recorders Richard Aisbitt and Kat Newbert.

Advice from the county recorders on recording the species in this article

In general, please identify plants as exactly as you can, but don't go further than your confidence allows. With the *Centaurea* knapweeds, identify plants as *C. nigra* or *C. debeauxii* if you are certain. Otherwise, *Centaurea nigra* agg. will cover both.

We have lots of old records of *C. nigra* that were made before we were aware of *C. debeauxii*. Our first Wiltshire record for *C. debeauxii* was made in 2013 (by John Moon), but presumably it was here before and many previous *C. nigra* records should have been *C. debeauxii*. It is probably best to regard these earlier records as *C. nigra* agg.

Appendix 1. *C. debeauxii* description from M. Grenier & M. Godron *Flore de France* 1850 and draft translation (with help from Google Translate and an anonymous friend; suggestions for improvement welcome!).

C. Debeauxii *Godr. et Gren.*—Calathides bien plus petites que dans les espèces voisines, solitaires au sommet de la tige et des rameaux, entourées de petites feuilles florales. Péricline ovoïde, à écailles imbriquées, *non cachées par leurs appendices;* ceux-ci *un peu étalés,* planes, étroits, *linéaires-lancéolés, acuminés,* bruns, bordés de cils brièvement plumeux et trois ou quatre fois plus longs que la largeur de l'appendice. Fleurs toutes fertiles et tubuleuses. Akènes petits, grisâtres, oblongs-obovés, à peine comprimés, un peu pubescents ; ombilic non barbu, ovale, mais échancré latéralement depuis le milieu jusqu'au sommet qui est aigu; aigrette égalant le sixième de la longueur de la graine. Feuilles d'*un vert-grisâtre,* un peu rudes, mucronées, étroites, linéaires-lancéolées, sinuées-dentées ou sinuées-pennatifides; les supérieures *linéaires,* entières. Tige grêle et ferme, *dressée,* anguleuse, très-rameuse dans sa moitié supérieure ; rameaux étalés-dressés.— Plante de 4 décimètres ; fleurs purpurines. Par les longs cils des appendices du péricline, par les akènes pourvus d'aigrette, cette plante se rapproche du *C. nigra;* mais elle s'en éloigne beaucoup par ses calathides six fois plus petites; par les appendices du péricline proportionnément plus étroits, non appliqués et ne recouvrant pas complétement les écailles ; par la petitesse et la forme de ses akènes; par son ombilic ; enfin par son port qui la rapprocherait plutôt du *C. microptilon.* Elle se distingue de celui-ci par ses calathides encore plus petites ; par les appendices du péricline moins évidemment arqués en dehors, bordés de cils plus longs; par ses akènes beaucoup moins atténués à la base et surmontés par une aigrette.

Hab. Coteaux secs. Agen (*Debeaux*). ♃ Septembre.

Calathides much smaller than in related species, single at the top of the stem and branches, surrounded by small floral leaves [=bracts?].

Pericline ovoid, with imbricated scales, not hidden by their appendages; these somewhat spreading, flat, narrow, linear-lanceolate, acuminate, brown, lined with feathery eyelashes that are three or four times longer than the width of the appendages.

Flowers all fertile and tubular.

Achenes small, greyish, oblong-obovate, barely compressed, slightly pubescent; umbilicus [=hilum?] not bearded, oval, but notched laterally from the middle to the apex which is acute; pappus one sixth of the length of the seed.

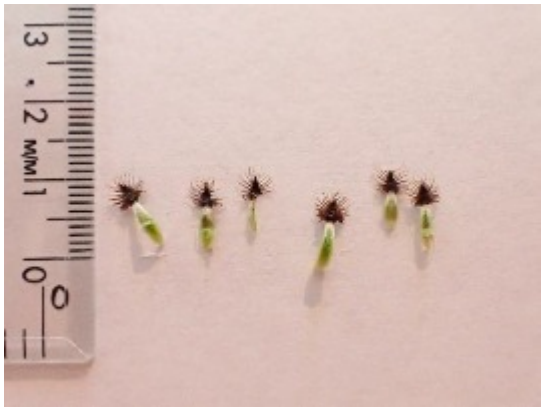
Leaves greyish-green, slightly rough, mucronate, narrow, linear-lanceolate, sinuate-toothed or sinuate-pinnatifid; the upper ones linear, entire.

Stem slender and firm, erect, angular, much branched in upper half; branches spreading-erect.

Plant of 40 cm; flowers purple.

By the long cilia of the appendages of the pericline, and by the achenes with a pappus, this plant is close to *C. nigra*; but it deviates greatly from it by its calathides being six times smaller; by the proportionately narrower pericline appendages; by the smallness and the shape of its achenes; by its umbilicus; and finally, by its habit which would bring it closer to *C. microptilon*. It is distinguished from the latter by its still smaller calathides; by the appendages of the pericline less obviously arched outwards, bordered with longer eyelashes; by its much less attenuated achenes at the base and surmounted by a pappus.

Appendix 2. Some examples of Centaurea capitula and their phyllaries.

East Grimstead SU2325 VC8 18.2.22		
The Green ST8630 VC8 3.7.22		
Calshot SU4701 VC11 22.6.22		
Slindon SU9609 VC13 21.7.22		

Phyllaries from lower third of the capitula except the top row of the Slindon plant which are from the top third of the capitula.

the species recovery trust

Conservation Organisations linked to vascular plants

This is the start of a short series of articles on organisations whose sole or included purpose is to study, save and manage plants not only in the UK and Ireland but the world at large.

I'm sure we are all aware of the work of the Botanical Society of Britain and Ireland, Plantlife and the Wildlife Trusts but what charity takes specific account of some of the most scarce plants (and insects) through management, reintroductions, and monitoring to a point where they can be self-sustaining?

Welcome to **the species recovery trust** a charity devoted to saving some of Britain's most endangered species. Starting life in 2012, their aim is to remove 50 species of plants and insects from the edge of extinction by 2050 by targeting both the species and the habitats they live in.

They do this by shortlisting species which are currently demonstrating catastrophic levels of decline in the UK, those which already exist at such low numbers that their long-term survival remains uncertain or those which may be at risk in the near future from emerging threats.

srt then analyse current data to determine which species to target, to understand where they occur, and to identify which populations are at critical risk.

They will intervene at critical sites and conduct emergency habitat restoration to prevent extinction and build populations up to genetically viable levels. For those populations which have reached sub-critical levels, captive bred specimens (under licence) will be reintroduced to create viable breeding populations.

Where disjunct habitats do not allow natural migration, **srt** look to create new populations - ultimately with the aim of linking vulnerable and isolated communities, and establishing networks of healthy functioning meta-populations.

They liaise with landowners to improve their understanding of the species and encourage sustained management methods over the longer term - wherever possible embedding it within other ongoing management work (e.g. woodland coppicing, hay meadow management).

srt also campaign to raise the status of rare species in the hearts and minds of the public, the media, and politicians and further, encourage community ownership of projects and galvanise local groups to adopt their sites.

srt is able to achieve this by employing a team of highly skilled conservationists and passionate volunteers to carry out or aid in the management and monitoring of plants and insects. They also train a whole new generation of wildlife enthusiasts to ensure that we never lose touch with the natural world around us and help to secure a better future.

What plants?

Field Cow-wheat *Melampyrum arvense*

There are now only a few sites remaining in England where Field Cow-wheat grows and some of those are in a precarious state. One of the better sites and considered as the only one with a native population is at St. Lawrence Bank on the Isle of Wight. One or two of the other sites were unofficially introduced but **srt** under license has recently introduced this plant to Wiltshire Wildlife Trust's Coombe Bissett Down reserve (2019). They also manage and maintain a population at Portdown in Hampshire.

Field Gentian *Gentianella campestris*

A detailed census by **srt** has been conducted within the New Forest counting every single plant in order to study the population dynamics. A partnership project has also been set in Yorkshire to engage landowners and volunteers plus work is being done in other counties and within Wales.

S*piked Rampion *Phyteuma spicatum

In Sussex, this plant only grows at nine sites. Many populations were low in numbers and needed urgent attention. **srt** has enabled this Rampion to increase dramatically at four of those sites since reintroducing woodland coppicing.

Starved Wood-sedge *Carex depauperata*
This sedge was feared to be extinct in the 1980's however coppice woodland management at two of its original native sites in Somerset has saved this plant from anonymity. srt has also enabled introductions to other sites, also in Somerset.

Heath Lobelia *Lobelia urens*
srt have been busy protecting surviving populations of this specialty in Cornwall, Devon, Dorset, Hampshire and Sussex by monitoring and management working alongside local wildlife trusts and landowners.

Dwarf Milkwort *Polygala amarella*
This plant occurs in four distinct areas, the North Downs, Kent; Craven, Yorkshire; Orton, Cumbria and Upper Tees, County Durham. At present surveys have taken place in Kent of known and also of historic sites to find a suitable area for possible re-introduction.

Marsh Clubmoss Lycopodiella inundata
In the five year period 2017 to 2022, 98% of the known sites in England and Wales were surveyed for population size and site condition assessment. The species is known to be in decline and srt is trialling different techniques and long term monitoring and observation of the sites to inform best management.

Forked Spleenwort *Asplenium septrionale*
This fern is only known at two sites, in the south of England, and so there is great concern for its future not least because it now finds itself in an area of increased summer drought. Work then, is focussed here by collecting data to learn as much as possible about its ecology. Studies are also taking place at historic sites in Scotland and Wales.

Deptford Pink *Dianthus armeria*
Just twenty-four sites now exist across England and Wales, including a population on Salisbury Plain. However, there have been recent losses in Dorset, Somerset, and Surrey.

A lack of management is a major cause of decline as it requires open conditions created by grazing animals for its seeds to germinate in. srt monitors all extant sites and manages failing populations.

Darnel *Lolium temulentum* and Upright Goosefoot *Chenopodium urbicum*
These are two extinct species that srt aims to reintroduce to a range of sites across England. This includes trials under license at Butser Ancient Farm in the South Downs National Park, at Cholderton Farm on the Hampshire / Wiltshire border and also at Pertwood Organics in Wiltshire.

How can you help?

The key thing srt do is not only to concentrate their work on species conservation but also to run extremely long (50 years) projects. This means that they can slowly deliver for species over many years rather than pouring large amounts of resources into them for a short period, as so many other projects seem to do.

Many, many species of wild life have been lost over the last 200 years. Why not support srt in their fight to stop the list getting any longer?

The most laudable way of course is through membership or species supporter as they term it – presently only £40 a year and that I believe represents excellent value for your money. In addition as a supporter your membership entitles you to a discount off their training courses.

You can, if you want to, just make a single one-off donation via credit card or PayPal, or you may wish to volunteer as a monitor of a species and help look after the sites where some of the rarest species are found.

There is a shop where they sell notecards and a couple of excellent books; 'Field Guide to Grasses, Sedges and Rushes' by Dominic Price (SRT Director) and a necessary inclusion in your carry bag and, 'Winter Trees: a photographic guide to common trees and shrubs' by Dominic Price and Leif Bersweden.

Finally, they conduct many online and in-person training courses on a wide variety of topics including grasses, sedges, ferns, aquatics, arable plants, vegetation survey assessments, UK habitat classification and more.

All the above and more information can be viewed at www.speciesrecoverytrust.org.uk

The Wiltshire Botanical Society is not affiliated to the species recovery trust. The comments above are those of the author and not those of the WBS committee.

Martin Buckland

Plant records 2021

Explanatory notes

The following list contains all species that are new to the County or Vice-counties. 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.

Recording in 2021 was very similar to that of 2020 where recording overall was very much reduced due to Covid. The following accounts represents the full list for 2021.

The information contains both scientific and common names based on the New Flora of the British Isles 3rd edition. (Stace); together with site, 10k square, brief information where supplied and the initials of the recorder. First County or

Recorder's initials

AA – Anne Appleyard
ABed – A. Beswick-Edwards
ARo – Amber Rosenthal
CFr – Colin French
CW – Charles Whitworth
DG – Dave Green
DP – David Pickering
DWn – David Withington
DWr – Dan Wrench
FG – Fred Gillam
HCr – Helena Crouch
JBe – Jenny Bennett
JBr – Jane Brown
JPa – J.M.Parmenter
JRM – John Moon
KAT – Katherine Newbert
MBu – Martin Buckland
MGu – Mark Gurney
MHW – Mariko Whyte
NJS – Nicholas Self
PBu – Philip Budd
PD – Paul Darby
PHc – Peter Hacker
PMN – Peter Marren
PMW – Pat Woodruffe
RAi – Richard Aisbitt
SFi – Sue Fitzpatrick
SJJ – Steve Jackson
SPi – Sharon Pilkington

VC7

Alcea rosea (Hollyhock); Ashton Keynes (SU09), ten plants, self-sown at pavement edge, MBu.

Allium triquetrum (Three-cornered Garlic); Aldbourne (SU27), village road verge, RAi.

Amaranthus retroflexus (Common Amaranth); Coate Water, north (SU18), in concrete lake edge, RAi.

Ambrosia artemisiifolia (Ragweed); Temple Farm (SU17), in set-aside land; Ashton Keynes (SU09), at wall to pavement angle; Upper Seagry (ST98), at base of hedge, all MBu.

Anisantha diandra (Great Brome); Somerford Keynes (SU09), large population on recently created soil bund, MBu & DG.

Anthemis arvensis (Corn Chamomile); Slaughterford (ST87), several hundred plants growing within the tractor wheel ruts made the previous year, DG.

Anthemis cotula (Stinking Chamomile); Tadpole Farm Nature Park (SU18), RAi.

Anthriscus caucalis (Bur Chervil); Chittoe (ST96), two populations very close to each other on a road verge. This is the first record for this 10k square since 1957, DG.

Arum italicum (Italian Lords-and-Ladies); Chelworth (ST99), 3 m^2. well established patch from dumped garden waste, MBu.

Aubrieta deltoides (Aubrietia); Ashton Keynes (SU09), self-sown within many garden walls throughout village, MBu.

Avena sterilis ssp. ludoviciana (Winter Wild-oat); Swindon, Voyager Drive (SU18), MGu.

Bromus racemosus (Smooth Brome); Eastridge grassland (SU37), RAi.

Bromus secalinus (Rye Brome); Long Newnton (ST99), MBu.

Brunnera macrophylla (Great Forget-me-not); Chelworth (ST99), two plants that appear well established, MBu.

Campanula poscharskyana Trailing Bellflower; Ashton Keynes (SU09), within many garden walls throughout village, MBu; Tytherington Lucas (ST97), DG.

Carex pseudocyperus (Cyperus Sedge); Swindon, Tadpole Village (SU19), at edge of pond, RAi.

Catapodium marinum (Sea Fern-grass); Bradford-on-Avon (ST86), a single plant growing on the splitter island in Winsley Road, DG.

Cerastium diffusum (Sea Mouse-ear); Swindon Station (SU18), under trees on the station forecourt, MGu. This represents only the fifth recent record in VC7.

Cerastium semidecandrum (Little Mouse-ear); Chippenham (ST87), a large number of plants flowering on trampled ground in front of Brunel Microscopes, SPi. This represents only the fifth recent record for VC7.

Chenopodium ficifolium (Fig-leaved Goosefoot); Long Newnton (ST99), MBu.

Cochlearia danica (Danish Scurvygrass); Dauntsey, Union Farm (ST98), along the central reservation of the M4, in both directions as far as could be seen, DG; Malmesbury (ST98), in accumulated soil at the edge of the road-bridge over the river, MBu.

Conyza floribunda (Bilbao's Fleabane); Swindon, Studley Grange (SU15), RAi.

Conyza sumatrensis (Guernsey Fleabane); Ashton Keynes (SU09), a single plant growing in road kerb, MBu.

Crepis biennis (Rough Hawk's-beard); Ashley (ST99), Newnton, Newnton Hill (ST99), Long Newnton (ST99), Ashley, north (ST99), all MBu.

Crocosmia x crocosmiiflora (Montbretia); Stanley (ST99), in base of derelict canal, DG.

Daucus carota ssp. carota (Wild Carrot); Ashley, north (ST99), Long Newnton (ST99), Newnton Hill, Long Newnton (ST99) and Ashley (ST99), all MBu.

Echinochloa crus-galli (Cockspur); Swindon, Upper Stratton (SU18) in a graveyard, Ogbourne St.Andrew (SU27), corner of maize field, both RAi.

Echium vulgare (Viper's-bugloss); Aldbourne (SU27), a single plant, trackside, RAi.

Epipactis helleborine (Broad-leaved Helleborine); Oare (SU16), twelve plants path-side in a poplar plantation, JBr; Eysey (SU19), MGu.

Erodium cicutarium (Common Stork's-bill); Blunsdon (SU18), with a mown roadside verge, RAi.

Erophila verna (Common Whitlow-grass); Eastridge grassland (SU37), RAi.

Euphorbia characias (Mediterranean Spurge); Swindon (SU18), a single plant self-sown at base of wall, MBu.

Fagopyrum esculentum (Buckwheat); Tadpole Village, Swindon (SU19), on a new uncultivated road verge, RAi.

Galium palustre ssp. palustre (Common Marsh-bedstraw); Upper Seagry (ST98), MBu.

Geranium x oxonianum (Druce's Crane's-bill); Somerford Keynes (SU09), at edge of gravel pit, MBu & DG.

Gymnadenia conopsea (Chalk Fragrant-orchid); Eastridge Grassland (SU37), RAi.

Hedera hibernica (Atlantic Ivy); Calne (SU07); MBu.

Helleborus foetidus (Stinking Helleborine); Dauntsey, Union Farm (ST98), six plants on motorway embankment, DG; Aldbourne (SU27), on village footpath, RAi.

Helleborus orientalis (Lenten-rose); Atworth (ST86), a single plant on footpath, DG.

Heracleum mantegazzianum (Giant Hogweed); Ex-RAF Yatesbury (SU07), PHc.

Hirschfeldia incana (Hoary Mustard); Dauntsey, Union Farm (ST98), six plants on approach to motorway bridge, DG.

Hordeum distichon s.l. (Barley); Calne, Black Dog Hill (ST97), along the A4, many plants at kerb edge and verge, MBu.

Hypericum androsaemum (Tutsan); Ashley (ST99), self-sown plants in churchyard, MBu.

Kickxia spuria (Round-leaved Fluellin); Ogbourne St. Andrew (SU27), corner of maize field, RAi.

Lactuca serriola (Prickly Lettuce); Aldbourne, north (SU27), RAi. Interestingly, DG recorded the form *L.s.form serriola* which is a first for the County.

Lactuca virosa (Great Lettuce); Dauntsey, Union Farm (ST98), five plants on motorway approach, DG.

Lamium maculatum (Spotted Dead-nettle); Chelworth (ST99), a small clump from garden waste but appears well established, MBu.

Lavandula angustifolia (Garden Lavender); Ashton Keynes (SU09), several seedlings self-sown into pavement cracks, MBu.

Lemna minuta (Least Duckweed); Chelworth west (ST99), with *L.minor* in cattle trough, MBu.

Leucanthemum x superbum (Shasta Daisy); Ashton Keynes (ST99), twenty-five plants, well established at wall to road angle, MBu.

Leycesteria formosa (Himalayan Honeysuckle); Garsdon (ST98), single plant in churchyard, DG.

Lycium barbarum (Duke of Argyll's Teaplant); Eastbrook Farm (SU28), found rambling through a mature hedge, FG.

Lysimachia punctata (Dotted Loosestrife); Blunsdon Station (SU18), at road verge, RAi.

Malva arborea (Tree-mallow); Bradford-on-Avon (ST86), self sown individuals at edge of concrete apron into allotments. Parent plants nearby, MBu, DG & KAT; Bradford-on-Avon (ST86), seven plants as kerbside weed in Ashley Road; garden plants nearby, DG.

Melissa officinalis (Balm); Ashton Keynes (SU09), at edge of new wood, MBu.

Mentha suaveolens (Round-leaved Mint), Somerford Keynes (SU09), MBu & DG.

Mentha x villosa (Apple Mint); Hayes Knoll (SU19), MGu.

Milium effusum (Wood Millet); Warneage Wood, Wanborough (SU28), several clumps by stream, RAi.

Mimulus luteus (Blood-drop-emlets); Broughton Gifford (SU86), one plant in stream, DG.

Myosotis discolor (Changing Forget-me-not); Warneage Wood, Wanborough (SU28), two sites, RAi.

Nasturtium microphyllum (Narrow-fruited Water-cress); Blakehill Farm (SU09), a 2m wide clump growing at the muddy margins of a pond, MBu & DG.

Nectaroscordum siculum (Honey-Garlic); White Wood, Box (ST86), four sites. Origin unknown but proliferating, DG; Aldbourne (SU27), a roadside patch, dry with seed capsules, RAi.

Nigella damascena (Love-in-a-mist); Ashton Keynes (SU09), at The Leaze, approximately 100 plants at wall to footpath angle and within pavement cracks, MBu.

Nymphoides peltata (Fringed Water-lily); Aldbourne (SU27), in village pond, RAi.

Onopordum acanthium (Cotton Thistle), Ashley, north (ST99), a single plant in a soil disturbed, grass verge, MBu.

Orobanche minor ssp. minor; Swindon (SU18), several plants, MGu.

Oxalis exilis (Least Yellow-sorrel); Ashley (ST99), within churchyard lawns and neighbouring village verges, MBu.

Oxalis stricta (Upright Yellow-sorrel); Bradford-on-Avon (ST86), many plants at wall to pavement angle of Health Centre, MBu, DG, KAT.

Persicaria capitata (Pink-headed Persicaria); Bradford-on-Avon (ST86), seeded into pavement cracks from population in adjacent garden, DG. This represents only the 4th Wiltshire record and the first since 1999.

Petasites fragrans (Winter Heliotrope); Garsdon (ST98), DG.

Petroselinum segetum (Corn Parsley); Dauntsey, Union Farm (ST98), in excess of 150 plants along a 100m edge of arable field, DG.

Phalaris aquatica (Bulbous Canary-grass); Chittoe (ST96), three plants as weed in arable crop, DG.

Plantago coronopus (Buck's-horn Plantain); Knighton (SU27), in close mown roadside verge, RAi.

Poa infirma (Early Meadow-grass); Swindon (SU18), Cross Street, a few plants at wall to pavement angle, RAi.

Polycarpon tetraphyllum (Four-leaved Allseed); Bradford-on-Avon (ST86), in Silver Street, two close populations. One consisting of a few plants only and the other of plants growing in profusion over 4m wide in pavement cracks and base of walls, DG.
1st VC7 record.
This is only the third population recorded in Wiltshire.

Polystichum tsus-simense (Korean Rock-fern); Garsdon (ST98), a single plant in churchyard, DG. This plant represents only the third record for Wiltshire.

Potamogeton trichoides (Hairlike Pondweed); Tadpole Village, Swindon (SU19), floating rafts in a new pond, RAi.

Potentilla x mixta; Chiseldon (SU19), on mown roadside bank, RAi.

Prunella laciniata (Cut-leaved Selfheal); Cricklade (SU09), in open grass land. Origin unknown, ABed.
1st Wiltshire record.

Prunus x fruticans; Upper Upham (SU27), roadsides and tracksides, RAi.

Pterocarya fraxinifolia (Caucasian Wingnut); Stratton-St-Margaret (SU18), a mature tree suckering around pond, RAi.

Puccinellia distans (Reflexed Saltmarsh-grass); Atworth (ST86), at field gateway, edge of road, Cumberwell, Bradford-on-Avon (ST86), both DG.

Puccinellia distans ssp. distans (Reflexed Saltmarsh-grass); Eysey (SU19), MGu. ***1st Wiltshire record.***

Pyracantha coccinea (Firethorn); Swindon, Stratton (SU18), self sown into railway ballast, RAi.

Quercus ilex (Evergreen Oak); Oare (SU16), JBr & PD.

Ranunculus aquatilis (Common Water-crowfoot); Cloatley End (ST99), MBu.

Ribes sanguineum (Flowering Currant); South Cerney (SU09), near gravel pit and probably originated from imported infill. MBu, DG & KAT; Dauntsey, Union Farm (ST98), on motorway bridge embankment from garden waste or possibly planted, DG.

Rosa rugosa (Japanese Rose); Stanley (ST97), originally planted at edge of disused rail track but now beginning to spread, DG.

Rumex pulcher (Fiddle Dock); Plucking Grove, Notton (ST97), fifteen plants and more within a damp hollow of flood plain meadow, MBu & DG.

Sagina filicaulis (Upright Pearlwort); Aldbourne (SU27); at kerb to road angle, RAi.

Salix x holosericea; South Wraxhall (ST86), a single bush in a hedge, DG.

Sambucus racemosus (Red-berried Elder); Baltic Farm (SU06), farm track, presumably bird-sown, ARo.

1st VC7 record.

Sempervivum tectorum (House-leek); Atworth (ST86), from planted stock, this plant has proliferated and spread along a stone boundary wall, DG, 1st VC7 record; Ashley (ST99), a single plant low down on a stone boundary wall believed to be a natural establishment, MBu.

2nd VC7 record.

Setaria pumila (Yellow Bristle-grass); Tytherton Lucas (ST97), in arable field, DG.

Silene coronaria (Rose Campion); Ashley, north (ST99), a single plant self-sown into disturbed grass verge, MBu.

Soleirolia soleirolii (Mind-your-own-business); Ashley (ST99), MBu.

Sparganium emersum (Unbranched Bur-reed); Crudwell (ST99), MBu.

Stachys byzantina (Lamb's-ear); Somerford Keynes (SU09), at side of gravel pit, MBu & DG.

Stellaria neglecta (Greater Chickweed); Lower Moor Farm WWT reserve (SU09), MGu; Cotswold Community, Ashton Keynes (SU09), MBu, DG & KAT.

Tilia cordata (Small-leaved Lime); Aldbourne, north (SU27), a single tree beside a footpath with a trunk diameter of about 1m, RAi.

Torilis arvensis (Spreading Hedge-parsley); Swindon, Upper Stratton (SU18), two dried plants with fruits at wall to pavement angle, RAi.

Torilis nodosa (Knotted Hedge-parsley); Swindon (SU18), at Pipers Way, quite frequent at roadside; Stratton St. Margaret (SU18), on a mown grass embankment, both RAi.

Trifolium medium (Zigzag Clover); Parsonage Farm, Winsley (ST76), DG.

Triticum aestivum (Bread Wheat), Calne, Black Dog Hill (ST97), many plants along the A4, at kerb edge and verge, MBu.

Ulex europaeus (Gorse); Tadpole Farm, Nature Park (SU19), in several fields of this WWT grassland nature reserve, RAi.

Ulmus minor (Small-leaved Elm); Melksham Without CP (ST96), JPa.

Ulmus x vegeta (Huntingdon Elm); Blakehill Farm WWT reserve (SU09), a single, scrubby bush in hedgerow, MBu & DG.

Valerianella carinata (Keeled-fruited Cornsalad); Upper Seagry (ST98), MBu.

Vicia sativa ssp. segetalis (Common Vetch); Melksham Without CP (ST96), JPa.

Viola canina (Heath Dog-violet); Fosseway (ST88), on byway, north-east from Fosse Gate, MBu & DG.

Viola x wittrockiana (Garden Pansy); Upper Seagry (ST98), several plants self-sown into pavement cracks; Ashton Keynes (SU09), a single plant self-sown into grass verge, both MBu.

VC8

Agrostemma githago (Corncockle); Martin Down (SU01), flowering and seeding in the corner of a barley field. Presumably introduced but no other 'interesting' plants present, PMN.

Agrostis canina s.l. (Velvet Bent); Wildflower Corridor, Plumer Estate and Henge Green, Plumer Estate, Bulford (SU14), both JRM.

Agrostis vinealis (Brown Bent); Oddways Hanging (ST93), JBe.

Allium triquetrum (Three-cornered Garlic); East Knoyle (ST83), DP.

Arum italicum ssp.italicum (Italian Lords-and-Ladies); Southwick (ST85), along base of hedge, DG.

Asparagus officinalis (Garden Asparagus); All Cannings (SU06), a single plant, trackside, JBr.

Asplenium trichomonas (Maidenhair Spleenwort); Shalbourne House (SU36), DWn.

Avena sativa (Oat); Brickworth Down and Dean Hill SSSI (SU22), a few plants growing within a species rich, chalk cutting, CFr.

Borago officinalis (Borage); Larkhill (SU14), naturalised, RAi & SPi.

Borago pygmaea (Slender Borage), Underhill, East Knoyle (ST83), near a garden but not considered an escape, DP.

Cardamine bulbifera (Coralroot); Hensford Marsh (ST84), a few plants on stream bank, SPi.

1st VC8 record.

Carex divulsa ssp. divulsa (Grey Sedge); Bradley Wood (ST74), CW.

Carex pendula (Pendulous Sedge); Cholderton Estate (SU24), JRM.

Centaurea nigra ssp. nigra (Common Knapweed); Castle Hill Country Park (SU13), NJS.

Cirsium x grandiflorum (*C.eriophrum x C. vulgare*)**;** Ablington Down, south (SU14), a single plant growing on a grassy track, JRM. Determined by Tim Rayner.

1st VC8 record and only the 2nd county record. [1st recorded by J.D.Grose at Winsley ST86 in 1944].

Cochlearia danica (Danish Scurvygrass); Potterne Wick (ST95), Freith (ST95), both MBu.

Crataegus laevigata (Midland Hawthorn); Woodbridge (ST95), road-side hedge, MBu.

Crepis vesicaria (Beaked Hawk's-beard); Great Bradley Wood (ST74), HCr & DG.

Crocosmia x crocosmiiflora (Montbretia); Crockerton (ST84), DG; Crockerton (ST84), MBu & DG.

Cynoglossum officinale (Hound's-tongue); Brickworth Down and Dean Hill SSSI (SU22), five sites and generally associated with disturbed ground, all AA, SFi & PMW.

Cystopteris fragilis (Brittle Bladder-fern); Stourhead (ST73), growing out the side of an aged temple, DGd.

Dactylorhiza x grandis (D.fuchsii x D.praetermissa); Beacon Hill (SU24), several plants, JRM.

Danthonia decumbens (Heath-grass); Stowford (ST85), extensive population in meadow, DG.

Dryopteris borreri (Scaly Male-fern); Great Bradley Wood (ST74), a single plant on bank, HCr & DG.

Echinochloa crus-galli (Cockspur); Great Bradley Wood (ST74), in arable field, HCr & DG.

Echinochloa esculenta (White Millet), Devizes (SU06), growing in rough, stony ground at edge of car park, MBu.

1st VC8 record and only the 2nd county record.

Eranthis hyemalis (Winter Aconite); Stowford Farm, Farleigh Hungerford (ST85), over 200 flowering spikes in an unnamed, wooded quarry opposite Stowford Farm, DG. Clearly well established as noted by the same recorder in 1985.

Erigeron glaucus (Seaside Daisy); Devizes (SU96), self-sown at wall to pavement angle, MBu.

Erodium moschatum (Musk Stork's-bill); Devizes (SU06), many plants at corner of road verge, MBu.

Euphorbia stricta (Upright Spurge); Crockerton (ST84), on roadside verge, MBu & DG.

Gladiolus communis (Eastern Gladiolus); Bentley Wood (SU22), relics of former cultivation, PMW.

Glyceria notata (Plicate Sweet-grass); Great Bradley Wood (ST74), HCr & DG.

Helleborus orientalis (Lenten-rose); Limpley Stoke (ST76), a single plant originating from garden throw-out, DG.

Hordeum distichon (Two-rowed Barley); Brickworth Down and Dean Hill SSSI (SU22), a few plants growing within a species rich, chalk cutting, CFr.

Hypericum x desetangsii (H.maculatum x H.perforatum); Brimsdown Hill (ST83), small clump at woodland edge, DG.

Hypopitys monotropa ssp. hypophegea (Yellow Bird's-nest); SPTA, beech woods north of CCDA (SU24), twenty-five plants near edge of the plantation; Sidbury Hill Plantation (SU24), two populations, ten scattered plants, and over two hundred plants, both in Beech woodland; all JRM. These accounts are the first since 1969 and represent only the 4th, 5th, and 6th Wiltshire records.

Iris germanica (Bearded Iris); SPTA Central Impact Area (SU05), naturalised next to track, JBe.

Iris pseudacorus (Yellow Iris); Great Bradley Wood (ST74), HCr & DG.

Juglans regia (Walnut); Great Bradley Wood (ST74), self sown sapling, HCr & DG.

Kickxia spuria (Round-leaved Fluellin); Keevil (ST95), DG.

Lactuca virosa (Great Lettuce); Keevil (ST95), at roadside, DG.

Leucojum aestivum (Summer Snowflake); Bentley Wood, Pimlico (SU23), single plant at roadside, PMW.

Leycesteria formosa (Himalayan Honeysuckle); Whiteparish (SU22), common road in old meadow, PMW.

Lobularia maritima (Sweet Alison); Devizes (SU06), self-sown and well established strip in footpath where substrate is very worn, MBu.

Malva neglecta (Dwarf Mallow); Devizes (SU06), MBu.

Muscari armeniacum (Garden Grape-hyacinth); Freith (ST95), about 20 spikes and presumed to have originated from dumped material, MBu.

Narcissus pseudonarcissus ssp. pseudonarcissus (Daffodil); East Knoyle (ST83), two reports, from JBe and MHW.

Ornithogalum umbellatum s.l. (Star-of-Bethlehem); Limpley Stoke (ST76) at roadside, DG.

Oxalis articulata (Pink-sorrel); Devizes (SU06), within a lawn of a public house but where the land is open to the pavement, MBu.

Panicum capillare (Witch-grass); Greenhill, Landford (SU21), PBu.

Papaver lecoqii (Yellow-juiced Poppy); SPTA Ablington Down (SU14), JRM.

Pastinaca sativa s.l. (Parsnip); Stowford Farm, Farleigh Hungerford (ST85), DG.

Persicaria maculosa (Redshank); Great Bradley Wood (ST74), HCr & DG.

Phalaris canariensis (Canary-grass); Hilcott, west (SU15), one clump at edge of arable, JBr & PD.

Polypogon viridis (Water Bent); Keevil (ST95), SJJ.

Potamogeton crispus (Curled Pondweed); Great Bradley Wood (ST74); Horningsham (ST74), both HCr & DG.

Potentilla anglica (Trailing Tormentil); Great Bradley Wood (ST74), three sites with plants on ditch banks or at edge of wood by tracks, all HCr & DG.

Pterocarya fraxinifolia (Caucasian Wingnut); Crockerton (ST84), profuse suckering along a stream bank from a single multi-stemmed tree, MBu & DG.

Quercus ilex (Evergreen Oak); Fine Wood, West Dean (SU22), AA & PMW.

Ranunculus bulbosus (Bulbous Buttercup); Great Bradley Wood (ST74), HCr & DG.

Rosa agrestis (Small-leaved Sweet-briar); Milton Lilbourne, north (SU16), JBe & PD.

Rosa canina (Dog-rose); Great Bradley Wood (ST74), HCr & DG.

Rosa micrantha x canina (Rosa x toddiae [f x m]); Earlswood, east (SU13), AA & PMW.
1st Wiltshire record

Sagina filicaulis (Upright Pearlwort); Whiteparish (SU22), PMW.

Salix x smithiana (S.viminalis x S.caprea); Horningsham, west (ST74), HCr & DG.

Salvia verbenaca ssp. horminoides (Wild Clary); Avoncliff, Westwood (ST85), single plant at edge of road, DG. ***1st Wiltshire record.***

Sambucus racemosus (Red-berried Elder); Bentley Wood (SU23), presumed bird-sown, AA & PMW. This represents only the second vice-county record.

Saxifraga tridactylites (Rue-leaved Saxifrage); Pewsey (SU16) many plants growing in cracks on a roundabout, JBr & PD; Mere (ST83), Castle Street, JBe.

Sedum telephium (Orpine); Near Kinghay and Beacon Hill (ST92), assumed to be a natural population as growing in a hedge bank with other ancient indicator species and remote from urban areas, JBe.

Senecio cinerea (Silver Ragwort); Crockerton (ST84), two plants on a rough bank that appear to be self-sown, MBu & DG. ***1st VC8 record.***

Setaria verticilliata (Rough Bristle-grass); Greenhill, Landford (SU21), over thirty plants in a semi-bare corner of a field with *Panicum capillare*, PBu.

Silene coronaria (Rose Campion); Crewkerne Farm (SU23), roadside hedge, probably self-sown, AA & PMW. ***1st VC8 record.***

Solidago virgaurea (Goldenrod); Oddways Hanging (ST93), JBe.

Sparganium emersum (Unbranched Bur-reed); Market Lavington (SU05), MBu & DG.

Sparganium erectum ssp. erectum (Branched Bur-reed); Haxton (SU14), River Avon banks, JRM.
1st Wiltshire record.

Sparganium erectum ssp. neglectum (Branched Bur-reed); Salisbury (SU13), DWr. This represent only the 3rd Wiltshire record and the first since 1999.

Spergularia marina (Lesser Sea Spurrey); Plaitford (SU21), side of the A36, DG.

Symphytum x uplandicum (Russian Comfrey); Great Bradley Wood (ST74), HCr & DG.

Thuja plicata (Western Red-cedar); Great Bradley Wood (ST74), self-sown and frequent, HCr & DG.

Torilis nodosa (Knotted Hedge-parsley); Scratchbury and Cotley Hills SSSI (ST94), CFr.

Triticum aestivum (Bread Wheat); Brickworth Down and Dean Hill SSSI (SU22), within a rank chalk grassland strip, CFr.

Tsuga heterophylla (Western Hemlock); Great Bradley Wood (ST74), self-sown and frequent, HCr & DG.

Ulmus x hollandica (Dutch Elm); Brickworth Down and Dean Hill SSSI (SU22), CFr.

Urtica dioica ssp. galeopsifolia (Stingless Nettle); Warminster (ST84), growing in fen conditions, DG.

Vulpia bromoides (Squirreltail Fescue); Norton Bavant (ST94) A36, CFr.

Vulpia myuros (Rat's-tail Fescue); Upton Scudamore (ST84), A36, roadside services; Steeple Ashton (ST95) in cobbles, both DG.

Botany beyond Wiltshire

A series of easy-to-read articles on botany and related topics to while away the long winter evenings

Click (or double click) on the article title to go to the relevant webpage

Steve Jackson

Ancient woodland restoration

Are Botanists Threatened with Extinction?

Dog feces and urine could be harming nature reserves, according to new study

Evaluating the success of upland hay meadow restoration using green hay transfer

Forest plants now flower a week earlier than a century ago

How tree species adapt to climate change

Meet the world's largest plant: A single seagrass clone stretches 180 km in Western Australia's Shark Bay

Mycorrhizal type of woody plants influences understory species richness in British broadleaved woodlands

Seven to nine percent of all European vascular plants are globally threatened

Study shows two million ancient and veteran trees in England, ten times more than previously recorded

The secret world beneath our feet is mind-blowing – and the key to our planet's future

Plant recording 2022

With plant recording coming to a close, please send any outstanding records to Richard Aisbitt.

We have already taken in over 24,000 records made this year. Most of these come from WBS members, either from systematic surveys of under-recorded areas, or of individual interesting plants. We have also gained records from web or phone-based apps like iRecord, iNaturalist and Living Record, and from our data sharing with the Wiltshire and Swindon Biological Record Centre (WSBRC). Coverage of Wiltshire is now approaching what we need to publish a new Flora of Wiltshire.

See https://www.dropbox.com/sh/pfe8cn4ugjpdaye/AACwbHF8yWvfkLCGk9m2jIIOa?dl=0 for progress.

Photo credits

- Photos in Steve Jackson's articles are his own
- Photos without credit are by the newsletter editor, Richard Aisbitt.
- Other photos are credited in the captions.

Apologies for any errors or omissions, which I would correct in the next issue.

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