Botany Section News

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Newsletter of the Devonshire Association Botany Section

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Editorial

It has, of course, been a remarkably dry summer this year, and the countryside is showing the impact all too obviously. Nevertheless, the Section meetings have been very successful, and well attended too, with a number of new (and young) faces at many of them. If you've not been able to make all of the meetings, I have, as normal, included below accounts of what went on. Thanks go, as always, to the contributors to this newsletter.

Debating the finer points of Chenopodium identification at Shillingford Organics in June

Tim (tim.purches@gmail.com)

Botanical News & Notes

Wood Bitter-vetch and other plants near Hexworthy

From Roger Smith

In Britain populations of Wood Bitter-vetch (*Vicia orobus*) are confined to the west from Cornwall to Sutherland with a concentration of records in Wales and the Scottish lowlands and are significant at an international level. It is usually found on field boundaries and in rough pastures, often with some base-enrichment, but overgrazing, undergrazing and agricultural improvement have resulted in the loss of many populations.

It has always been elusive in Devon and there has never been sufficient detail recorded to enable its relocation. In 2006 I made contact with the Roy Williams who had found it near Hexworthy in 1981 and he was kind enough to take me to his site where we rediscovered a single plant on a field boundary adjacent to agriculturally improved grassland.

In mid-July this year I visited this location again with Andy Byfield and Sue Goodfellow where we saw it again. At Sue's suggestion we called on the couple who farm the land, showed them the plant and discussed its importance both in Devon and nationally. Roy had told me that back in 1981 there were other plants in rough

pastures nearby and we obtained permission to explore the area. It proved to be astonishingly rich with big populations of Saw-wort (*Serratula tinctorial*), Great Burnet (*Sanguisorba officinalis*), Betony (*Betonica officinalis*), Zig-zag Clover (*Trifolium medium*), Bitter-vetch (*Lathyrus linifolius*), Tawney Sedge (*Carex hostiana*), Flea Sedge (*C. pulicaris*), and, more surprisingly, Long-stalked Yellow-sedge (*C. lepidocarpa*). Since the site is on granite the last is unexpected since it demands a degree of base-richness not usually associated with this substrate. It is possible that ground water leaching following applications of calcified seaweed and basic slag upslope in the past may have sufficiently raised the necessary levels in the rooting zone. Mike Porter, the BSBI Carex referee who has confirmed it identity, writes:

> "Very interesting! The jizz, especially leaf/stem ratio, suggests *C. lepidocarpa* but some of the other details - utricle size and shape, beak length are very variable, some fitting in reasonably well with *C. lepidocarpa* others seeming much closer to *C. demissa*. On the face of it the habitat sounds unsuitable but some of the associated species, especially the *C. hostiana*, do suggest the base content which is essential for *C. lepidocarpa*. I think, taking all the evidence into consideration, that this is indeed *C. lepidocarpa* - but it does have its puzzling aspects!"

While Andy and I were discussing yet another sedge, sharp-eyed Sue found *Vicia orobus* and immediately doubled the known population in this area. It was a large plant nestled amongst the Purple Moor Grass (*Molinia caerulea*) and had produced seed this year. Although the site is grazed much of it is dominated by gorse and especially bracken and would clearly benefit from a heavier grazing regime. We continued our exploration without finding any more but this would have been much easier if the plants were flowering.

The easiest place to find the plant in Devon is near Prewley where there is public access beside the Granite Way from SX5442.9130 to SX5451.9141 where it is locally frequent. Mid-June should be a good time to see it. (Image below – *Vicia orobus* from Roger Smith)

Dartmoor Pennyroyal Mentha pulegium lives on – just

From Lesley Austin

In July 2014 Peter Reay and I stumbled across an unfamiliar plant nestling among Chamomile *Chamaemelum nobile* on the edge of the metalled road from Shipley Bridge to the Avon Dam in SX 6864. Tentatively identified as Pennyroyal *Mentha pulegium*, this was confirmed by Roger Smith who visited the site a few days later. We searched for more in the area, but in vain. In *A New Flora of Devon* recent Pennyroyal records are from only four tetrads, and this was the only one for Dartmoor. Not surprisingly, it was a new species for our survey of South Brent parish which had been going since 2009.

Questions on how long it had been there and how it got there are probably unanswerable. The road is a popular amongst walkers, presumably including the occasional botanist, and the plant when flowering is quite conspicuous, but the colony is small and of course could easily be missed and was presumably present before 2014. The road is regularly used by vehicles in connection with the Avon Dam, and this could perhaps have been the source of original seed. However, road construction and repair has probably involved importing material from elsewhere, and perhaps this is a more likely source. In support, within 100 m of the Pennyroyal colony, individuals of two other species that would not be expected on Dartmoor have occurred alongside the road: Musk Thistle *Carduus nutans* in 2011 and Balm-leaved Figwort *Scrophularia scorodia* in 2013. To these could perhaps be added Hard Rush *Juncus inflexus*, first noted in 2012, though this is not unknown from Dartmoor, and of the three it is the only one that has survived to the present day.

Four years on from its discovery, the little patch of Pennyroyal is also still there at the edge of the tarmac in spite of its apparent vulnerability to grazing ponies, cattle and sheep, and to people, dogs and vehicles. However, the patch now appears smaller and the number of flowering spikes fewer (four compared to around 20 in 2014) than when first found. It is probably on the way out, but hopefully it will continue to delight and puzzle those who seek or come across it for a few more years.

July 2014 with tarmac and lots of spikes (Image: Lesley Austin)

July 2018 with few spikes and lots of chamomile (Image: Peter Reay)

New Devon site for Ophioglossum azoricum discovered.

From the editor

Our first vascular plant meeting of the year was led by Roger Smith, starting at Plaster Down, near Tavistock. Full details are given below, but one of the day's finds deserves special mention. While visiting a site for Heath Violet (*Viola canina*) in a depression on Plaster Down, Hilary Marshall's sharp eyes spotted an Adder's-tongue fern. Further searching revealed around 300 fronds scattered around the location, but there was some debate as to the species. It appeared to key out as Small Adder's-tongue-fern, however there was some caution in accepting the identification as it would be only the third site in Devon, and away from the coastal setting it is more usually found in. Roger sent a small sample away to Dr Fred Rumsey, the BSBI's referee for ferns, who confirmed that it was indeed *Ophioglossum azoricum* – a very significant find for the county. A couple of Roger's images are below.

Bryology Highlights

From Mark Pool

The year has been successful so far on a bryological level. Tim Purches found a new South Devon record in the shape of *Calliergon giganteum*, growing in a flush near White Tor; although the specimen was rather small, the distinctive Christmas-tree like shape showed up well. That part of Dartmoor produced even more surprises during the Cox Tor meeting in June. The first was Sharon Pilkington's find of the liverwort *Barbilophozia barbata*, a rare plant in the South-west, growing in small quantity among clitter on the south side of the tor. An even better find appeared in the afternoon; this was the distinctive greyish liverwort *Anthelia julacea*. It was growing in its usual habitat of stones in a flush, but there have been no previous records from southern or south-western England and the nearest known colony is in mid-Wales! The habitat is by no means uncommon in this part of Dartmoor; it will be interesting to see if the plant turns up again.

Crambe maritima in North Devon

From Bob Kirby

In the 19th C. *Crambe maritima* L. is likely to have been cultivated in the Bideford area, for at least one local pottery were offering the pots for forcing it. In the wild, however, *C. maritima* is a very rare plant in North Devon. Around Braunton, the BSBI maps show one pre-1930 record, three records for the period 1930 – 1969, and a further three for the period 1987 – 1999. The New Flora of Devon (Smith, Hodgson, & Ison) provides only two records, both from Airey Point, Braunton, where the plant was reported by John Breeds in 1987 and 1988. Further east, in the next hectad, the BSBI maps show a single pre-1930 record, whilst Roger Smith informs me that the first record from the Barnstaple area was in 1792 (cited by the DA in 1915) and that it is unclear whether it had been seen again in that area. Recently, however, another plant has turned up in that hectad, where it was assisting the vegetative colonization of a belt of ornamental chippings that runs along behind a new sea wall, on Anchorwood Bank, Barnstaple (SS 5527 3307). The plant's habitat, though entirely artificial, mimics the sort of shingle shore which is this species preferred habitat in the south of England. When first discovered, in the fall of 2017, it was little more than a couple of badly eaten and collapsed leaves, but even in that state the large, glaucous, and somewhat-succulent leaves of *C. maritima* are fairly recognisable. A return visit, before the onset of this summer's drought, saw the plant in a much more easily recognisable state. (Two images of the plant follow)

Meetings Reports

From Mark Pool, Mary Breeds, Bob Hodgson, John Day and the editor

Grenofen was the venue for the annual joint meeting of the Botany Section with the Devon Bryophyte Group, which was held on 14th April. Approximately ten members attended, including one (Sharon Pilkington) who had come all the way from Wiltshire; obviously Grenofen's bryological reputation must be spreading!

Recording started in the car park at Bedford Bridge, where habitats included flushes, river bank and mine spoil. The spoil had members hoping for rare copper-tolerant species such as *Cephaloziella massalongoi* and *Scopelophila cataractae*, but in the event they had to be content with *Pohlia annotina*, *Racomitrium ericoides* and an abundance of *Nardia scalaris*. The nearby riverbank was more productive, however; Sharon soon found *Hygrohypnum luridum* (an unusual plant by these normally acidic rivers), while a *Dichodontium* growing abundantly nearby created hopes of *D. flavovirens* before keying out, after microscope checking, as the commoner *D. pellucidum*.

Moving westwards into Sticklepath Wood, we were soon greeted by the local *Loeskeobryum brevirostre* and several good colonies of the distinctive *Nowellia curvifolia*, accompanied at one spot by *Tetraphis pellucida*. Considering that *Nowellia* had its first Devon record *circa* 1950, its rate of spread since then has been remarkable.

After lunch the group continued westwards through Sticklepath Wood; as this grew rockier and more deeply shaded, a different variety of species began to appear. Examples were the western liverwort *Saccogyna viticulosa, Leucobryum juniperoideum*, and the "Nut-moss" *Diphyscium foliosum*. A thorough search of the riverbank at the former viaduct produced a lot of interest: *Isothecium holtii* on rocks in the river, *Calliergonella lindbergii* in small quantity by the track, and the normally basicole *Jungermannia atrovirens* on shaded riverside rocks. Some more good populations of *Nowellia* were found hereabouts, together with more *Tetraphis* and also *Cephalozia lunulifolia*. Between there and Grenofen the group found some impressive colonies of the liverwort *Bazzania trilobata*; this distinctive, western species is local in Devon, but is usually conspicuous where it occurs.

The vicinity of Grenofen Bridge added a useful haul of species not seen elsewhere, particularly on roadside walls. As well as the more usual species of such habitats (examples being *Bryum radiculosum*, *Cirriphyllum crassinervium* and *Neckera complanata*), members also recorded *Cryphaea heteromalla* and *Orthotrichum striatum*, both species which normally grow on bark.

All in all, a most interesting day. The species totals for the two tetrads visited (SX 57A and SX 47V) now stand at 129 and 148 respectively; this illustrates just how rich in bryophytes these localities at the edge of the Moor can be.

The first vascular plants meeting of the year was on Saturday 26th May. It was good to see 14 people at the start point on Plaster Down, near Tavistock. Roger Smith was leading the walk, and the first task was to visit a site he had found the previous year for Heath Dog-violet (*Viola canina*). He did not have the exact grid reference with him, but another other botanist present was able to use his smart phone to log onto the Botanical Society of Britain and Ireland's database and get the details, and

with it loaded into a GPS the group set off. Modern technology can make botany much easier. The *Viola* was widespread in a depression not far from the road across the Down, although only a few flowers were present. While most of the botanist were admiring the plants, Hillary Marshall spotted the emerging fronds of the tiny Small Adder's-tongue Fern (*Ophioglossum azoricum*) (see further details above). Other more mundane, but still appreciated, species seen were Common Spike-rush (*Eleocharis palustris*), Common Sedge (*Carex nigra*) and Common Yellow-sedge (*Carex dimissa*). After some searching Roy Jeffrey found the uncommon but spreading liverwort *Colura calyptrifolia* on some mature gorse.

By this point it was time for lunch and the group return to the car park to eat. The afternoon was spent a short drive south on Roborough Down. The first species to be visited here was another violet – Pale Dog-violet (*Viola lactea*), which was soon found in flower. The group then swiftly moved on across the main Plymouth to Tavistock Road to look for Soft-leaved Sedge (*Carex montana*). On the way Narrow Buckler-fern (*Dryopteris carthusiana*) was seen in a rather unusual spot for the species, on the side of a low roadside bank. The Down was richly sprinkled with many typical species for the habitat. There was much Heath Milkwort (*Polygala serpyllifolia*), Heath Bedstraw (Galium saxatile) as well as a good show of Heath Spotted-orchid (*Dactylorhiza maculata*). The *Carex montana* proved much more elusive, with the similar Pill Sedge (*Carex pilulifera*) doing its best to mislead. Eventually some precise grid references from visits made in previous years led to a few clumps of the sedge. It's was only just starting to flower, but the distinctively hairy upper surfaces of its leaves confirmed that the right species had been found. By now the afternoon was well advanced, and the forecast rain looked to be on the way, so it was time to return to the cars and head home.

The Botany and Entomology Sections held a joint meeting at Lock's Farm on Sunday 17th June. Eight people attended, with John Day providing the Botany Section expertise, and, despite the weather forecast, the day turned out relatively mild with very little rain. About 200 species of vascular plants were noted during the day. Most of the time was spent examining the farm's grasslands. These included a species rich hay meadow with a proliferation of Southern Marsh Orchids (*Dactylorhiza praetermissa*) and a fine example of culm grassland. The latter supported a range of wetland communities and held large colonies of Heath Spotted Orchid (*Dactylorhiza maculata* subsp. *ericetorum*) and Meadow Thistle (*Cirsium dissectum*) plus at least four patches of Wavy St John's-wort (*Hypericum undulatum*). The farm proved rich in members of the sedge family with a total of 13 species found during the day. The culm grassland held the majority of these including Tawny Sedge (*Carex hostiana*) and its hybrid *Carex* x *fulva* (with Common Yellow-sedge, *Carex demissa*), which were both new for the site. In and around a recent plantation, several interesting gall causing micro-fungi were found including European Pear Rust, *Gymnosporangium sabinae* on Pear; a *Gymnosporangium* rust on Hawthorn (some distance from any site for its alternate host Juniper) and *Microbotryum stellariae* on the anthers of Lesser Stitchwort (*Stellaria gramineum*).

For June's second meeting the Section met at Shillingford Organics on Saturday 23rd to look at plants of arable farmland. The group of ten was led by Sharon Bickley and included Hannah Gibbons from the "Colour in the Margins" project, which aims to protect this threatened group of species. Moving away from the farmyard some of the common species of path and gateways were soon encountered, such as Greater Plantain (*Plantago major*), Knotgrass (*Polygonum aviculare*) and Pineappleweed (*Matricaria discoidea*). Once the group reached the cultivated land, more specialist

species were encountered. Hannah soon identified three species of Mayweed – Scented (*Matricaria chamomilla*), Unscented (*Tripleurospermum inodorum*) and Stinking (*Anthemis cotula*). Some fine Musk Thistle plants (*Carduus nutans*) were admired, although these hardly count as arable plants! Other species were soon added to the list, such as Field Madder *(Sherardia arvensis*), Field Forget-me-not (*Myosotis arvensis*), Common Field Speedwell (*Veronica persica*), Many-seeded Goosefoot (*Chenopodium polyspermum*) and Field Penny-cress (*Thlaspi arvense*). Lunch was enjoyed in the shade of a hedge, and here Common Ramping-fumitory (*Fumaria muralis*) was seen. Immediately after lunch a manure pile was encountered on which Fig-leaved Goosefoot (*Chenopodium ficifolium*) and Common Fumitory (*Fumaria officinalis*) grew in good numbers. The afternoon was spent exploring a second field where some new species were seen, such as Corn Spurrey (*Spergula arvensis*) and Bugloss (*Anchusa arvensis*). Small Nettle (*Urtica urens*) also grew here, and day was rounded off with the unexpected find of Slender Thistle (*Carduus tenuiflorus*), mostly a species of the coast.

White flowered Great Willowherb (Epilobium hirsutum) (Image: David Cann)

A group of 10 Section members spent a very enjoyable, hot summers' day at Johnstone Moor, near South Molton on Sunday 8th July, where they were guided around by the owners, Jo and Steven Bedford. The range of habitats on the site make it a true wildlife haven with its two large lakes, fields of unimproved culm grassland and mature wet and dry broadleaved woodland. First to be looked at was the marginal vegetation on the edge of the lakes where clumps of Water Plantain (*Alisma plantago-aquatica*), Branched Bur-reed (*Sparganium erectum*) and Gypsywort (*Lycopus europaeus*) were home to several species of foraging damselflies. Further back from the waters' edge, the damp loving species seen included Bog Pimpernel (*Anagallis tenella*), Carnation Sedge (*Carex panicea*), Marsh Bedstraw (Galium palustre), Marsh Speedwell (*Veronica scutellate*) and Meadow Thistle (*Cirsium dissectum*). The group were then guided through to fields full of excellent species-rich culm communities with a most impressive populations of Meadow Thistle – a really good indicator species of well-managed, unimproved culm. It's hybrid with Marsh Thistle (*Cirsium* x *forsteri*), was also present. Among the extensive patches of Meadow Thistle, other species included Sneezewort (*Achillea ptarmica*), Devil's-bit Scabious (*Succisa pratensis*), Ragged-Robin (*Silene flos-cuculi*), Tawny Sedge (*Carex hostiana*), Star Sedge (*Carex echinate*) and Lesser Skullcap (*Scutellaria minor*). A wonderfully comfortable, wooden woodland lodge provided an escape from the sun for lunch, after which more species were added in what is usually wet woodland where Marsh Violets (*Viola palustris*), Smooth-stalked Sedge (*Carex laevigata*) were recorded among the plentiful clumps of Remote Sedge (*Carex remota*). David Cann was pleased to find some young Devon Whitebeams (*Sorbus devoniensis*) alongside an old dead specimen on the edge of the old Taunton to Barnstaple railway line which bisects the site. During the day the botanists were also treated to the sight of many beautiful Silver-washed Fritillary

butterflies (*Argynnis paphia*) and a male Four-spotted Footman (*Lithosia quadra*) - a rather unusual migrant moth. The Section is very grateful to Jo and Steven for their excellent hospitality throughout the day.

On Saturday 14th July, Section members were invited to an Exmoor Natural History Society meeting at County Gate, led by Bob Hodgson. 12 members from ENHS attended with 3 from the Section, on a hot day. After looking at Wall-rue (*Asplenium ruta-muraria*) and Black Spleenwort (*Asplenium adiantum-nigrum*) on the toilet block wall, a large clump of Coltsfoot (*Tussilago farfarea*) was examined by the road. The group then walked west from the carpark, admiring several clumps of Dodder (*Cuscuta epithymum*) in full flower, growing on Western Gorse (*Ulex gallii*). The gorse was just coming into flower and with Bell Heather (*Erica cinerea*) provided nice patches of colour. The differences between three yellow flowered composites, Common Catsear (*Hypochaeris radicata*), Smooth Hawksbeard (*Crepis capillaris*) and Mouse-ear Hawkweed (*Pilosella officinarum*) was shown by Bob. Abundant Burnet Saxifrage (*Pimpinella saxifraga*), an uncommon plant on Exmoor, was found in a field along with a rather drought stressed plant of Prickly sedge (*Carex muricata*), again uncommon on Exmoor. Walking down through some shaded woodland, lots of bright yellow Cow-wheat (*Melampyrum pratense* var *hians*) was seen. Marsh ragwort (*Senecio aquaticus*) and Remote and Common sedges (*Carex remota* and *nigra*) were seen on a damp rock by the East Lyn river where lunch was eaten. Soon afterwards the group entered Somerset, where Marsh Cudweed (*Gnaphalium uliginosum*) and Sand Spurrey (*Spergularia rubra*) were noted. Many butterflies were seen during the day, especially splendid Silver-washed Fritillaries (*Argynnis paphia*).

Setting off at the start of the County Gate meeting (Image: David Cann)

Sneezewort (Achillea ptarmica) (Image: David Cann)

The next day, Sunday 15th July, there was another North Devon meeting, this time at a 32 acre private nature reserve near Quoditch. Thirteen members attended, let by Bob Hodgson. The site was Culm grassland and as species rich as would be expected. There had been no recent grazing on the reserve, so parts of it were very tussocky, but not enough to seriously hinder progress, and the exceptionally dry weather meant the ground was far firmer underfoot than would be expected of such a normally wet habitat. Marsh Ragwort (*Senecio aquaticus*), Ragged-Robin (*Silene flos-cuculi*), Marsh Willowherb (*Epilobium palustre*), Sneezewort (*Achillea ptarmica*) and Meadow Thistle (*Cirsium dissectum*) were soon found in the first field explored. Further into the reserve, Narrow Buckler-fern (*Dryopteris carthusiana*), Common Valerian (*Valeriana officinalis*), and a fine display of Marsh Woundwort (*Stachys palustris*) were encountered. A second population of Marsh Thistles included several hybrids (*Cirsium x forsteri*) with Marsh Thistle *(Cirsium palustre*). As would be expected from such a site, a good number of Sedge and Rush species were found, including Glaucous Sedge (*Carex flacca*), Star Sedge (*Carex echinata*), Soft Rush (*Juncus effusus*), Sharp-flowered Rush (*Juncus acutiflorus*) and Bulbous Rush (*Juncus bulbosus*). Animals were not totally neglected during the day – large numbers of Silver-washed Fritillaries (*Argynnis paphia*) were seen, as well as a colourful caterpillar of the Alder Moth (*Acronicta alni*) and, towards the end of the day, a large Red Deer (*Cervus elaphus*) hind.