Glamorgan Botany Group

2019 Excursion Report

In 2019, we visited six places in the less-frequented parts of v.c. 41, selected to cover habitats ranging from riverside woodland to coastal grassland and rhôs pasture. Along the way, we shared tips on identifying the species we found, and had a number of pleasant lunches too!

At the time of writing (June 2020), last year's excursions all seem like a distant memory, as we continue to content ourselves with botanising close to home during the Covid-19 lockdown. We look forward to seeing you again as soon as the restrictions end, and in the meantime, we hope you enjoy reading this summary, to remind us all of happier times!

David Barden, Karen Wilkinson and Julian Woodman

Bettws - Saturday 27 April

On a very windy but largely bright day, nine of us gathered in a housing estate in Bettws for a day amongst springtime flowers. After an inauspicious start down a bridleway that proved to be little more than a rubbish tip, we circled back through the houses and in the end the route proved to be a very pleasant 'green lane', with a good selection of spring flowers.

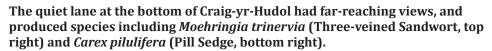
In a valley to the north, *Viola palustris* (Marsh Violet) was locally frequent near the old mine workings in damp streamside woodland, while *Betonica officinalis* (Betony) and *Carex laevigata* (Smooth-stalked Sedge) were found further up. On a bridge across the old railway, *Humulus lupulus* (Hop) was a surprise find.





A fine colony of naturalised *Myosotis sylvatica* (Wood Forget-me-not, left) was seen in the housing estate, before we headed along the green lane (right).









On the lane below the recently-burnt brackeny slopes of Craig-yr-Hudol, some *Scrophularia nodosa* (Common Figwort) caused us some confusion. while following lunch we were pleased to see some *Lathyrus* linifolius (Bitter-vetch) on the roadside bank.

Descending to Cwm Cedfyw, we spotted Equisetum sylvaticum (Wood Horsetail) close to the stream, along with a small quantity of *Carex* paniculata (Tussock Sedge). We then had an enjoyable stroll down this partly wooded valley, although good-quality habitat was limited in extent, and the general impression was that the flora of some of the fields had deteriorated since they were surveyed by CCW in the 1990s. However, we spotted *Oreopteris* limbosperma (Lemon-scented Fern) and Valeriana officinalis (Valerian).







Left: After some discussion, we decided that this strongly-winged, rather rugose-leaved form of Scrophularia nodosa simply hadn't read the books! Top right: Lathyrus linifolius shows the remarkable blue colour that the flowers turn upon fading. Bottom right: A rather sad-loooking Carex paniculata, with flowering spikes hanging down towards the iron-stained water of the stream.



The group examine the flora of a damp field in Cwm Cedfyw, amongst a scattering of Cardamine pratensis (Lady's Smock).



It's not a character you'll find in 'Stace', but Pixies generally prefer road-edge in Bettws - a likely



Cerastium diffusum lurks at a to live in *Fraxinus excelsior* (Ash). beneficiary of winter road-salting.

Heading up the steep lane back to Bettws, we noted Solidago virgaurea (Golden-rod) and Carex demissa (Common Yellow Sedge) on the banks, and (after a little discussion) plumped for Cerastium diffusum (Sea Mouse-ear) in front of the garage in the village itself.

Llantwit Major - Sunday 19 May

This year's excursion to the coast had a turnout of 16, and weather-wise enjoyed a sunny morning, albeit followed by a general infilling of cloud during the afternoon. We met in the railway station car-park, and in accordance with long-established tradition, spent the first 45 minutes going no further, with a flowery bank and pavement cracks proving a rich hunting ground for species of dry habitats, including *Papaver lecogii* (Yellow-juiced Poppy) and *Tragopogon pratensis* (Goat's-beard), but also (more surprisingly) *Alopecurus geniculatus* (Marsh Foxtail).



The bank in the railway-station car-park had a fine show of *Leucanthemum vulgare* (Ox-eye Daisy), plus a good selection of other species.

Heading west through the town, we spotted a clearly alien *Oxalis* on a wall that we initially thought might be *O. dillenii* (Sussex Yellow-sorrel) because of its strongly recurved pods, but which turned out on closer examination to be the less unusual *O. corniculata* (Procumbent Yellow-sorrel). Another member of the poppy family – *Papaver dubium* (Longheaded Poppy) – was seen a little later, and distinguished from the earlier species by its white rather than yellow sap.

Beyond a pleasant set of lanes and alleys near the church, we passed into a field containing an old dovecote, and from there along a pleasant 'green lane', where we accrued a good number of typical wayside species. The last section to the coast was along an arable edge, which did not turn up anything remarkable, but by way of compensation, a small valley at the coast yielded *Lithospermum officinale* (Common Gromwell) and a small quantity of *Orchis mascula* (Early Purple Orchid).









Wall-tops in the town yielded a clutch of non-natives and archaeophytes. Left to right: *Oxalis corniculata, Erinus alpinus* (Fairy Foxglove), *Geranium rotundifolium* (Round-leaved Cranesbill), and *Malva neglecta* (Dwarf Mallow).



Nothing exciting really – just a very lush patch of *Ranunculus repens* (Creeping Buttercup)! The dovecote in the distance was examined, but did not harbour anything of note.



A lunch-stop in dramatic scenery by the coast east of Tresilian.



Lithospermum officinale was one of the species of interest on the clifftop.

We had time left in the day to head along to Tresilian, but did not venture further than the clifftop just to the east of the cove, as we could see the footpath ran across the stony foreshore, and would not be worthwhile. However, a small area of rough grassland being invaded by scrub had a couple of typical calcicoles including *Polygala vulgaris* (Common Milkwort), along with a few spikes of an orchid that *may* have been *Dactylorhiza praetermissa* (Southern Marsh Orchid).

Retracing our steps in the direction of Cwm Col-huw, we saw a fair quantity of *Cirsium eriophorum* (Woolly Thistle) by the cliff-path. After an ice-cream, the well-known flora of the nature reserve was examined, with *Euphrasia arctica* (Arctic Eyebright) and *Conopodium majus* (Pignut) found in quantity within the castle ditches. Walking back along the lane then brought us back to our starting point in the town, with more *Oxalis corniculata* seen en route.





Left: Armeria maritima (Thrift) adds a splash of colour to the clifftop turf near Tresilian. Right: A leaf. Well, actually three if you look carefully. Probably an orchid. (Who says you don't learn anything from these write-ups?)







Left: The lemon-yellow flowers of *Anthyllis vulneraria* (Kidney Vetch) stud the thin strip of clifftop turf at Cwm Col-huw. Middle and right: Within the castle banks, *Rhinanthus minor* (Yellow Rattle) and *Euphrasia arctica* were spotted.







More aliens were added to the day's list on our walk back through the streets of Llantwit Major. Left to right: Centranthus ruber (Red Valerian), Briza maxima (Greater Quaking Grass), and Poterium sanguisorba subsp. balearicum (Fodder Burnet).

Cwm Bargod, Bedlinog - Saturday 22 June

The valley of the Bargod Taf above Bedlinog is one of the more remote sites in East Glamorgan, and attracted 16 botanists, with the weather generously providing plentiful sunshine. *Vulpia bromoides* (Squirrel-tail Fescue) and *Myosotis discolor* (Early Forget-me-not) were early finds in waste ground by a gravelly track at the end of Coly Row, while in a ditch *Isolepis setacea* (Bristle Clubrush) and *Alopecurus geniculatus* (Marsh Foxtail) were soon found. Here, we were able to compare *Myosotis laxa* (Tufted Forget-me-not) and *M. secunda* (Creeping Forget-me-not), and attempt to commit David's mnemonic to memory!





Left: Menyanthes trifoliata (front left) and Stratiotes aloides (below the water) were seen in the lake. Right: Dactylorhiza maculata puts on a fine display nearby.



Myosotis laxa (left) and M. secunda (right) growing side-by-side. Both have narrowly triangular sepals, but the entire stem of laxa has appressed ('relaxed') hairs, while secunda has patent hairs lower down, and is the ... er ... second one you need to know.

We then spent the rest of the morning ambling around the well-vegetated margins of a fishing lake, with Menyanthes trifoliata (Bogbean), Stratiotes aloides (Water-Soldier) and Ranunculus lingua (Greater Spearwort) being obviously planted, but with plenty of non-introduced species on the grassy banks and lake margins, including good habitat indicators such as Viola palustris (Marsh Violet), Wahlenbergia hederacea (Ivy-leaved Bellflower), and Dactylorhiza maculata (Heath Spotted Orchid).

After an enjoyable lunch break looking out over the lake, we headed north through rocky streamside woodland and brackeny grassland, encountering some obstacles along the way! Species of note found here were *Rubus idaeus* (Raspberry) and what appeared to be *Nasturtium* × *sterile* (a hybrid watercress), as indicated by its empty, sterile pods. Surprisingly (given the rural location), we found *Tellima grandiflora* (Fringecups) in one place.

After this, we found ourselves on somewhat higher ground on the eastern side of the valley, dominated by heathy *Molinia* grassland, but with numerous nice species including *Serratula tinctoria* (Saw-wort), *Narthecium ossifragum* (Bog Asphodel) and *Achillea ptarmica* (Sneezewort) – albeit mostly in limited quantity. Also here were small amounts of *Carex pulicaris* (Flea Sedge) and the hybrid sedge *C. demissa* × *hostiana*. In *Sphagnum*-rich ground further downslope, we were delighted to encounter *Vaccinium oxycoccos* (Wild Cranberry).



An impromptu team-building exercise – David, Julian and the rest of the group help put in place a couple of stepping-stones over the Bargod Taf, for those in the group not wishing to risk the slippery underwater rocks. Post-training feedback suggested that this helped us to build trust and openness within the group, and 86.7% of respondents 'agreed strongly' with the proposal that, going forward, such exercises should be a regular feature of our excursions.



Highlights of the fields higher up the valley (top left) included (clockwise from top centre): Carex hostiana, C. pulicaris, C. montana, Lathyrus linifolius, Serratula tinctoria, Vaccinium oxycoccos, Scutellaria minor and Polygala serpyllifolia.

The flora improved further after crossing the stream, as we entered some fields known to be species-rich. Here were typical plants of moderately acidic heathy ground – including *Genista anglica* (Petty Whin), *Scutellaria minor* (Lesser Skullcap), *Dryopteris carthusiana* (Narrow Buckler Fern), *Polygala serpyllifolia* (Heath Milkwort) and fairly frequent *Dactylorhiza maculata*. This was nice enough, but

more interesting were two uncommon *Carex* species typical of places with slight base-enrichment – *C. hostiana* (Tawny Sedge) and *C. montana* (Soft-leaved Sedge) – with the latter being locally frequent, and new to many in the group. Also here was *Lathyrus linifolius* (Bitter Vetch), in habitat feeling quite different to the laneside bank in which we found it in April.

By now, the day was drawing to a close and our dwindling group of hardcore enthusiasts were ready to call it a day, so we started on the long walk back to the cars, encountering back by the lake *Myosotis scorpioides* (Water Forget-me-not) to complete the set of three common aquatic species in this genus. At the end of this tough but rewarding excursion, we paused to consider one thing we had not seen all day – *Impatiens glandulifera* (Himalayan Balsalm). Long may it continue that way in this corner of v.c. 41!



It was *this* big! Julian (centre), flanked by David and Faith, examines a venerable anthill on the way back to Bedlinog.

Welsh St Donats - Sunday 21 July

On a fine, dry day, 13 of us gathered in the car park at Hensol Forest, and swiftly headed down the road to record in 1km square ST0276 – in which we ended up staying for nearly the entire day! First stop was a set of fields with a ruined stone barn, and some disturbed ground nearby that occupied us for half an hour or so, with *Epilobium* (Willowherbs), *Agrostis* (Bents) and *Ranunculus* (Buttercups) being three more tricky groups attracting our attention, plus the rather infrequently encountered *Aethusa cynapium* (Fool's Parsley).

Damp ditches in the fields to the west held some interest in the shape of *Hypericum pulchrum* (Upright St John's-wort) and *Primula vulgaris* (Primula vulgaris), but the fields themselves had been improved, with a thin scattering of species of disturbed wet pasture, including *Myosotis laxa* (Tufted Forget-me-not), *Isolepis setacea* (Bristle Clubrush), *Juncus bufonius* (Toad Rush), *Glyceria declinata* (Small Sweet Grass) and *G. fluitans* (Floating Sweet Grass).

Similarly, a drier field on the same footpath had a couple of vestiges of a more interesting flora – one patch of *Alchemilla filicaulis* subsp. *vestita* (Common Lady's Mantle) was seen here. *Valeriana dioica* (Marsh Valerian) was present in a damp patch nearby, but sadly, land-drains had recently been installed, so it may not be here for much longer.



The ruined barn by the lane was clad in *Asplenium trichomanes* (Maidenhair Spleenwort) and some *A. ceterach* (Rustyback).







A solitary plant of *Alchemilla filicaulis* (left) hints at the lost diversity of a fertilised pasture. In the lane, we spotted a forked-frond variant of *Asplenium scolopendrium* (Hart's-tongue, centre) and a large naturalised stand of the garden plant *Rosa virginiana* (Virginia Rose, right).

An unmown, ungrazed field on the way to Ty'r-mynydd gave us a chance to brush-up on our grasses, with the subsequent lane yielding a good selection of wayside species. At this point, we took a detour into a set of fields previously known to have a good flora, and happily they did not disappoint, with Persicaria bistorta (Bistort) in a shaded spot, and a 15m × 3m damp hollow nearby producing plenty of *Comarum palustre* (Marsh Cinquefoil). Also here was Veronica scutellata (Marsh Speedwell), Agrostis canina (Velvet Bent), Stellaria graminea (Lesser Stitchwort), and more *Valeriana dioica*. During our pleasant lunch-break amongst the grazed turf, we also saw Betonica officinalis (Betony), and mused over a *Potentilla* (Cinquefoil).

Plants of the damp pastures near Ty'r-mynydd, clockwise from top left: Comarum palustre, mostly non-flowering; Betonica officinalis; the delicate flowers of Veronica scutellata; and Potentilla anglica (Trailing Tormentil) or one of its hybrids – fruiting heads are needed to get any further with this group.











The group meander along the lane near Caercady.





Left: John, Baz and Karen inspect a sprawling *Agrostis* in the arable field. Right: Further on, *Spergula arvensis* flowers in disturbed soil.

The grounds of the church, although mown, were moderately interesting, with *Umbilicus rupestris* (Wall Pennywort) abundant on the graves, *Leontodon hispidus* (Rough Hawkbit) in the grassland, and *Sonchus asper* (Prickly Sowthistle) and *S. oleraceus* (Smooth Sowthistle) close at hand in the disturbed soil for easy comparison.

Moving through Welsh St Donat's, we found abundant *Potamogeton polygonifolius* (Bog Pondweed) in a largely dried-up pond, along with planted *Acorus calamus* (Sweet Flag), with its characteristic transversely-wrinkled, fragrant leaves.

Geranium lucidum (Shining Cranesbill) was abundant on a bank close by, while further down the lane towards our starting point, we found a large patch of Symphytum × uplandicum (Russian Comfrey) by a stream. Finally moving into a different 1km square, we recorded over 70 species in a few hundred metres of laneside banks and hedges, amongst which Quercus cerris (Turkey Oak), Teucrium scorodonia (Wood Sage) and Betonica officinalis were notable.

Most of the group headed home at this point, leaving four of us to perform a quick circuit in the conifer

Back in the lane, we clocked up more species, and it was pleasing to see plenty of *Melica uniflora* (Wood Melick) and the shiny leaves of *Schedonorus giganteus* (Giant Fescue). At Caercady, we encountered a hitherto-unknown habitat on our excursions – an arable field! *Lolium italicum* (Italian Rye Grass), *Avena fatua* (Wild Oat), *Tricitium aestivum* (Bread Wheat) and *Zea mays* (Maize) were all encountered here. We also saw what we thought was *Agrostis gigantea* (Black Bent), but it turned out on closer inspection to be a large specimen of *A. stolonifera* (Creeping Bent).

Reseeded grass leys further on yielded little except a small quantity of *Spergula arvensis* (Corn Spurrey), but a pond in the grounds of Church Farm was more interesting. Although the abundant *Nymphoides peltatus* (Fringed Waterlily) and *Nymphaea alba* (White Waterlily) were clearly planted, it was nice to see the native plants *Ranunculus aquatilis* (Common Water Crowfoot) and *Sparganium erectum* (Branched Bur-reed).



Inquisitive llamas in the grounds of Church Farm rather curtailed our visit (they were bigger than they look here, honestly!).





Left: The heavily-vegetated pond in Welsh St Donat's produced *Acorus calamus* (the bright green leaves in the centre). Right: The pale blue flowers of *Symphytum* × *uplandicum*.

woodland. The lightly-maintained 'BBQ area' had a strong heathy influence, with *Galium saxatile* (Heath Bedstraw), *Agrostis curtisii* (Bristle Bent) and *Carex binervis* (Green-ribbed Sedge), and a pink-flowered variant of *Veronica officinalis* (Heath Speedwell). On the woodland track, we encountered an unusually small-flowered *Epilobium* (Willowherb) that defied categorisation and may have been a hybrid, good quantities of *Euphrasia arctica* (Arctic Eyebright) and *Melilotus altissimus* (Tall Melilot), and *Salix aurita* (Eared Willow) with its small, wrinkled leaves. *Mentha* × *verticillata* (Whorled Mint) was found in a nearby ditch, while an old bank surmounted by beech trees was home to *Carex pilulifera* (Pill Sedge) and an unexpected colony of *Asplenium adiantum-nigrum* (Black Spleenwort), to complete an interesting excursion.

Llangynwyd - Saturday 17 August

On a fine, bright day with just a couple of showers, six botany group 'regulars' gathered at Cwmfelin, and started up the busy lane to Cross Inn. A list of the usual roadside suspects was soon drawn up, including the garden outcast *Lysimachia punctata* (Spotted Loosestrife). Moving into the woodland, a patch of *Galium odoratum* (Woodruff) was found that could have been native – but its absence elsewhere in the woodland led us to suspect that it too was of garden origin.

However, plenty of native flora was encountered under the deep shade in this stretch of the Nant Sychbant, which had only just subsided after the recent rains. Ferns were plentiful, while Luzula pilosa (Hairy Woodrush) and Sanicula europaea (Sanicle) were also spotted in small quantity. A rather etiolated, only partly fertile clump of Carex demissa (Common Yellow Sedge) growing in shaded ground gave us five minutes' worth of head-scratching, while nearby were several plants of Lysimachia vulgaris (Yellow Loosestrife) – rarely encountered on our excursions, and new for the hectad.





An odd-looking *Carex demissa* (left) and *Lysimachia vulgaris* (right) suggest this now wooded site was formerly more open.



Rorippa islandica is increasingly turning up on our excursions, although it is rather easily overlooked for other species of the genus.

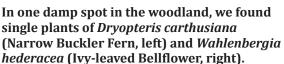
We emerged from the path onto a long-disused lane, which although very shaded, was pleasant to walk up. *Valeriana officinalis* (Common Valerian) and *Polystichum setiferum* (Soft Shield Fern) were spotted here, while a nearby partly-improved field yielded *Euphrasia arctica* (Arctic Eyebright) and *Centaurea nigra* (Common Knapweed), with *Rorippa islandica* (Northern Yellow Cress) in the gateway.

Moving into 'The Brynna' Woodland Trust nature reserve was at first disappointing, with the first 100 metres dominated by the invasive non-native *Lamiastrum galeobdolon* subsp. *argentatum* (Yellow Archangel). However, things improved, and after spotting a rather slug-eaten Cep, Rob and Linda pointed out two patches of *Equisetum sylvaticum* (Wood Horsetail) close to the stream.

Most of the rest of the nature reserve was woodland, with a few heathland species by the path, including *Calluna vulgaris* (Heather), *Solidago virgaurea* (Goldenrod), and *Vaccinium myrtillus* (Bilberry). A couple of more open patches held a relict rhôs pasture, including *Molinia caerulea* (Purple Moor Grass), *Lotus pedunculatus* (Greater Bird's-foot Trefoil) and *Viola palustris* (Marsh Violet).

After a very pleasant lunch stop, *Melampyrum pratense* (Common Cow-wheat) was seen, along with abundant *Carex flacca* (Glaucous Sedge). The latter was also present in the nearby horse-pasture, which held a reasonably good flora. More *Rorippa islandica* was seen in a trampled area, while the lightly-grazed verges of the track beyond produced *Potentilla* × *mixta* s.l. (a hybrid Cinquefoil) and *Trifolium medium* (Zigzag Clover).







At the northern end of the wood, a small amount of *Melampyrum* pratense was found.



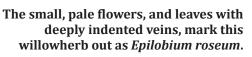
Arriving at the lane, further good botanising was had, with the bank on one side being notably diverse, with nearly 70 species noted. Of these, a fair number were 'heathy' in character, including *Calluna vulgaris*, *Solidago virgaurea*, *Erica cinerea* (Bell Heather), *Teucrium scorodonia* (Wood Sage) and *Deschampsia flexuosa* (Wavy Hair Grass), but also (more surprisingly) *Leontodon hispidus* (Rough Hawkbit).

A quick diversion into an adjacent ungrazed field gave us *Agrostis gigantea* (Black Bent) and a single plant of *Dryopteris* × *deweveri* (a hybrid Buckler Fern), while back on the lane, *Mentha* × *villosa* (Apple Mint) and *Tanacetum vulgare* (Tansy) were additions to our list.

From the tightly-grazed but reasonably diverse horse-grazed pasture, Rob, Linda and John admire the views north towards Mynydd Pwll-yr-lwrch.

With still a fair way to go to return to our starting point, we did not dwell long in Llangynwyd village, but it was nice to see *Epilobium roseum* (Pale Willowherb) – one of the less common species of the genus – in a few places. The lanes to the east were pleasantly species-rich, with *Hypericum maculatum* (Imperforate St John's-wort), *Cytisus scoparius* (Broom), and more *Leontodon hispidus* and *Potentilla* × *mixta*. Descending across a set of sown fields, the most interest was in the margins and muddy gateways, where *Spergula arvensis* (Corn Spurrey) was spotted.

Now back in the town, four of the group headed back to the cars, but two of us took a more circuitous route, generating a short list of kerbside weeds and wall ferns.





Cefn Hirgoed, Pencoed - Saturday 21 September

A near-record group of 18 botanists met for this excursion on a fine and dry day. While waiting for everyone to arrive, we spotted *Rorippa islandica* (Northern Yellow Cress) – once again! After looking at an area of semi-improved amenity grassland nearby (which yielded a few sedges and other species of dampish ground), we headed up past the allotments, where *Veronica polita* (Grey Field Speedwell) and *Epilobium tetragonum* (Square-stalked Willowherb) were nice surprises on the roadside.

Moving into the area of common land known as Greenmeadow, good botanising was had in the ditches, while Tim Rich spotted a bush of *Ulex* × *breoganii* (a hybrid Gorse) – the first record for the vice-county. The differences in bract size were the most compelling sign of hybridity, but differences in flower colour failed to convince some in the group! Nearby, a small heathy area held nice plants in the shape of *Briza media* (Quaking Grass), *Scutellaria minor* (Lesser Skullcap), and frequent *Anagallis tenella* (Bog Pimpernel).



The group enjoy a day of perfectly clear skies as we wander across the access land near Pencoed.





Left: As the old saying goes, "a gorse flower in the hand is worth two thousand in the bush ... when trying to distinguish *Ulex gallii* (Western Gorse) and *U. europaeus* (Common Gorse) from their hybrid *U.* × *breoganii* on the basis of bract size". Right: The bush of the hybrid stands out by being in flower when adjacent *U. europaeus* is not.

A lunch stop on a log with some rather over-curious sheep was followed by a continuation into less intensely-grazed ground, with many typical species of rhôs pasture, including *Viola palustris* (Marsh Violet), *Veronica scutellata* (Marsh Speedwell), *Serratula tinctoria* (Saw-wort) in small quantity, plus *Agrostis curtisii* (Bristle Bent) in drier ground.



Above: Tim compares (from left to right) Salix cinerea (Grey Willow), the hybrid S. × reichardtii, and S. caprea (Goat Willow). Right: The distinctive fruiting spikes of Narthecium ossifragum (Bog Asphodel).



Heading through more wooded ground produced the usual selection of species, including one plant each of *Dryopteris* carthusiana (Narrow Buckler Fern) and its hybrid *D.* × deweveri. However, lack of grazing was clearly an issue here, with the vegetation being distinctly more overgrown than when visited in the past.

The top of the ridge was generally rather species-poor, although a few damp spots produced a few interesting species, and *Erica cinerea* (Bell Heather) – a curiously local plant in east Glamorgan – was seen at one point. Dropping back down to the common via a pleasant sunken track, David spotted two trees of *Sorbus aucuparia* (Rowan) with different-colour fruits, to complete the year's botanising.



Members of the group examine plants in a boggy path on the ridge top, with abundant *Potamogeton polygonifolius* (Bog Pondweed) in the foreground.

Text by David Barden. Photos by David Barden, except where by Caroline O'Rourke (CO'R).