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Botanical Society of Britain & Ireland

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Back cover: a selection of entries for the BSBI 2020 Photographic Competition (details on inside back cover)

Contributions for the next issue of BSBI News (no. 147) should be sent to the Editor, John Norton (*john.norton@bsbi.org*) by 25 February 2021.

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Botanical Society of Britain & Ireland

FROM THE PRESIDENT

The welcome news is that there is now at least one vaccine available, and today, as I write, the very first person aged 90 has received it. By the time you read this issue of *BSBI News* then many more people will have benefited from the amazing work that has been undertaken around the world helping us to conquer a very difficult situation. We should all give thanks for now being able to 'see the light at the end of the tunnel' and trust that we will not be returning to dark times. It may be spring before BSBI can consider actual future meetings though.

By that time there will also have been some significant changes in the way the organisation is run and how the Strategy is taken forward. Members voted at the main AGM in November in favour of the new structure with the three main aims, and also for the abolition of Council, which held its last meeting in September. Previous Council members are already being involved in helping the Society in other ways and roles, and that is very much appreciated.

Holding AGMs and AEMs by Zoom involved innovation, considerable effort and hard work behind the scenes from our staff and volunteer members, who deserve our grateful thanks. We have received much positive feedback, particularly from people who would not normally have travelled to Dublin, Edinburgh or London for the actual events and were able to 'attend' and take part through the links provided. We are already looking at how we organise and run these events in future.

However, there are some changes which will come into effect very soon in the New Year, one of which is the departure of our present Head of Operations, Jane Houldsworth, who has been with us for seven years, during which time she has certainly taken the BSBI forward and given it a much firmer standing and better way of operating. Jane is taking up a new HoO role with an international charity, and I am sure she will rise to that challenge. She will continue to be a BSBI member, so we look forward to seeing her at some future event. We will be advertising for a Chief Executive Officer, to replace Jane, by the time you read this.

We will also welcome a new member of staff, Sarah Woods, who will be our Fundraising Manager, starting on 1 March 2021. BSBI has fared remarkably well during lockdown, absorbing the financial pressures that organisations have endured as a result of this unusual year. But we need to look to the future and ensure we have a strong and reliable foundation to build on and implement our aims, so we need more resources in order to do just that.

Lynne Farrell
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EDITORIAL

In this issue there is a predominant theme of botanical discovery. The feature article concerns the finding of the second extant UK population of Creeping Marshwort, for many years known only from a single meadow in Oxfordshire. I remember being somewhat underwhelmed when I went to see it in the late 1980s! It is arguably not as spectacular as the Long-lipped Tongue-orchid described in our second article but just as exciting to find. The third article concerns the important re-discovery of Grass-poly in Norfolk. Both this and the Marshwort are species of poached wet grassland, a now rare, declining and under-appreciated habitat in both Britain and Ireland. Both appeared following disturbance as a result of recent conservation management. Hopefully, both populations will survive and prosper, and the management principles learnt can be applied to other sites and species.

The fourth and fifth articles describe further discoveries of native species, including a rare type of Rowan on Arran and Early Sand-grass in Ireland. Also read about George Hounsome's find of a naturalised species of Sweet-grass in Surrey (p. 48). Many of us are interested in aliens, and it is important to document the arrival of species on our shores or their escape from horticulture. Matthew Berry's Adventives and Aliens News is going from strength to strength and in this issue covers eight pages. I am also grateful to Pete Stroh who has taken on the job as compiler of the Country Roundups, but thanks are also due to the network of Vice-county Recorders and the Country Officers who sift through all the records and provide us with a cherry-picked summary.

If you want to keep abreast of botanical news and events don't forget to look at the BSBI website from time to time, and please subscribe to our new monthly eNewsletter – details are on p. 58.

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A 'natural regeneration' approach to wild flower meadow creation results in the appearance of *Helosciadium repens* (Creeping Marshwort) in West Suffolk

IAN WOODWARD & MARK WEBSTER

In mid-June 2020, MW contacted IW about an umbellifer which had been found by a member of his conservation volunteer group in a newly created wild flower meadow area at Nuns Bridges, Thetford (West Suffolk, v.c. 26). Following an initial assumption that the plant was most likely to be a hybrid, IW returned later in the summer to look at the plants again when they were more fully developed. Remarkably, they appeared to be Creeping Marshwort *Helosciadium [Apium] repens* (Jacq.) W.D.J. Kock. The identification was subsequently confirmed in the field by Fred Rumsey and Pete Stroh (see BSBI News & Views blog, 31/10/2020, for further details of the initial find and identification).

Identification characters

The creeping habit of *H. repens* is distinctive but the species can be confused with the heavily-grazed, prostrate form of *H. nodiflorum* (Fool's-watercress). Key identification characters for *H. repens* vs *H. nodiflorum* are summarised by Stroh et al. (2019), with the main differences (and with *H. repens* given first) relating to the number of bracts (2–6[–8] vs 0–2[3]; the petiole base (scarcely sheathing stem with narrow hyaline margin vs strongly sheathing and broad hyaline margin); peduncles and rays (rounded or more-or-less triangular in cross-section vs four-sided in cross-section) and leaflet apices (asymmetrically divided into two vs acute). In addition, fruits are wider than long in *H. repens*, and longer than wide in *H. nodiflorum*. The hybrid between *H. repens* and *H. nodiflorum* (*H.* × *longipedunculatum*) is distinguished by having the petiole characters of *H. nodiflorum* and the bract and peduncle characters of *H. repens* (Stace et al., 2015). Hybridisation has recently been confirmed through DNA analysis of putative hybrids from Oxfordshire (Desjardins et

Helosciadium repens (Creeping Marshwort) at Thetford, Norfolk. *Pete Stroh*

al., 2020). An intergeneric hybrid between *Berula erecta* (Lesser Water-parsnip) and *H. nodiflorum* (× *Beruladium*) has also been described (Desjardins et al., 2015). The characters of this hybrid include the peduncles varying from shorter to longer than the rays and the absence of ripe fruits. Measurements of the peduncles were inconclusive for *H. repens* during the early site visit when the inflorescences were not fully mature, leading to the initial tentative identification as a possible hybrid, but the presence of fruits and longer peduncles were evident in the late summer.

Habitat

The site at Nuns Bridges had been re-landscaped in September 2019, when a digger dug to a depth of around 30 cm. The excess earth was used to create a bund surrounding a (roughly) triangular patch of 755 square metres. The area had been previously dominated by perennials including *Urtica dioica* (Common Nettle) and *Conium maculatum* (Hemlock), with a small patch of *Turritis glabra* (Tower Mustard) in one corner (as a result of which this corner was consequently left untouched and outside the bund). The new meadow area was deliberately left unsown to see what came up naturally and around half to two-thirds of the area was under water for extended periods during the very wet winter that followed. The history of the site is uncertain, but the large number of oyster shells, bricks and other artefacts including bits of metal suggest that the site may have been used by locals for dumping rubbish at some point, and it is also believed that dredged material from the adjacent River Little Ouse may have been dumped here.

Population survey

A quadrat survey was carried out by IW in early September, with the number of plants and an estimate of coverage being made in 140 0.5 × 0.5 m quadrats across the whole site. Survey squares were chosen by throwing the quadrat frame approximately 2–3 m from the previous square and surveying where it landed (to ensure the survey

Habitat of the newly discovered colony of *Helosciadium repens* (Creeping Marshwort) at Thetford, Norfolk, with Fred Rumsey and the author examining the plants. *Pete Stroh*

Close-up views of the bracteoles and fruits. *Ian Woodward* (left), *Pete Stroh* (right).

was not biased by subconscious positioning of the quadrat). *Helosciadium repens* was found in 131 of the 140 quadrats, confirming its ubiquity across the site, and covered an average of 2.98% of each quadrat (range 0%–30%), with a total of 842 plants counted. If this sample is representative, this would equate to an incredible total of as many as 18,000 plants across the site. The majority of these plants were seedlings; however, there were good numbers of plants in flower and in fruit (the numbers at each stage were not counted). A further 50–100 plants were found outside the bund – these were in an area where the digger had been operating and are believed to have originated from soil dug out from the site by the digger. Amongst the other plants which were growing within the bund, the more numerous species included *Juncus articulatus* (Jointed Rush), *Ranunculus repens* (Creeping Buttercup), *Urtica dioica*, *Cirsium arvense* (Creeping Thistle), *Conium maculatum* and *Jacobaea vulgaris* (Ragwort).

Discussion

The origin of the plants is uncertain given that there are no previous records from the local area and none from anywhere in the vice-county. The digger that worked on the site was operated by a local firm that rarely works outside the local area and had earlier that day been operating nearby on land belonging to the BTO, which would seem to make an accidental introduction by the digger highly unlikely, and the sheer number of plants and the fact that they are spread across the entire site also makes a deliberate introduction improbable. An earlier introduction via dumped material is arguably more plausible so cannot be ruled out, although it seems unlikely that anyone would have travelled more than a short distance to dump rubbish at this site. Therefore, by far the most logical explanation appears to be that the seeds have survived in the soil seed bank and either originated from dredged material taken from the river or from past flooding.

Historically, *H. repens* has always been rare in Britain and Ireland, with confirmed historical records from south-east Yorkshire and Oxfordshire. The sole extant native site for some decades was Port Meadow SSSI in Oxfordshire, but in 2002 the species appeared at Walthamstow Marshes in South Essex, following ditch clearance works. It had not been seen here since 2009 until its rediscovery in 2020 (Essex Botany & Mycology Group website). The Species Recovery Programme, funded by English Nature (now Natural England), led to introductions in the late 1990s to a couple of other sites near to Port Meadow (Stroh et al., 2019).

H. repens remains categorised as Endangered in England (Stroh et al., 2014): although its future

prospects appear to have improved very slightly as a result of the discovery at Thetford and rediscovery at Walthamstow Marshes. It has declined at Port Meadow in recent years (JNCC 2020).

Future prospects

Management of the Thetford site will now be focused towards the marshwort. Given that the perfect conditions of 2020 are unlikely to be replicated, it remains to be seen what size of population can be sustained in the future. This new population may be vulnerable to drying out of the new meadow area and to pressure from other plants including the perennials which dominated the site previously and which have started to appear as seedlings. The ground levels of the site are above the summer river level but most are below the winter river level; however, it is unclear whether underground water will reach the meadow area, and hence flooding of the site in the future may depend on sufficient rain water being retained within the bund, as occurred during the 2019/20 winter. It is likely that active management of the site vegetation will also be required in order to preserve suitable conditions for *H. repens*.

Whatever the future holds for the species at this site, this completely unexpected find demonstrates the merits of following a wait-and-see (or natural regeneration) approach when creating wild flower areas, rather than sowing wild flower mixes immediately.

Following this discovery, further fieldwork will be undertaken in 2021 to look for the species at nearby sites, including the adjacent Nunnery Lakes reserve (where several new pools were dug in 2020), and it would perhaps be worth other observers looking for the species at suitable sites elsewhere along the Little Ouse corridor. Given that a range of characters, including fruits, are necessary to confirm identification, it is best searched for in late summer. Any putative plants that are discovered should be sent to the appropriate BSBI referee for determination.

Acknowledgements

Thank you to Norman Sills & Linda Gascoigne for carrying out depth and area measurements at the site, to various Twitter users for their comments, to Fred Rumsey and Pete Stroh for confirming the identity in the field and to Pete Stroh, Louise Marsh and Norman Sills for their helpful comments on an earlier draft.

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Serapias vomeracea Burm. f. (Briq.) (Long-lipped Tongue-orchid): first wild record for Britain and Ireland

GEOFFREY KITCHENER, DAPHNE MILLS, SUE BUCKINGHAM, DAVID JOHNSON & STEPHEN LEMON

Close-up of a floret of the single plant of *Serapias vomeracea* in East Kent (v.c. 15), 27 May 2020. *Photographs by Daphne Mills.*

On 23 May 2020, sharp-eyed Kent Botanical Recording Group member Daphne Mills spotted a single plant of what she recognised as a Tongue-orchid, but an unfamiliar species. Consulting others brought a view that this was likely to be *Serapias vomeracea* Burm. f. (Briq.) (Long-tipped Tongue-orchid), as yet unrecorded in the British Isles other than as a deliberate introduction. A visit by Ian Denholm to its East Kent (v.c. 15) location gave confirmation.

The robust and very handsome orchid stood 40cm tall with nine florets, each one subtended by a 5–6cm long bract. The violet-red epichile was long and blade-like (*vomeracea* means 'like a ploughshare'). It measured 25 mm long and 8 mm wide at the widest point. The bracts are upwards-thrusting, significantly longer than the hood and have been aptly likened in younger plants to church spires rising over a city skyline (Peacock & Trask, undated).

Serapias species in Britain

Taxonomic treatment of the *S. vomeracea* complex varies. At the splitters' end of the spectrum, Delforge (2006) recognises about 18 segregates as full species, although some of these are extremely localised within the wider Mediterranean-Atlantic range of the complex. Amongst these species, the two feasible candidates for the Kent plant are *S. vomeracea* sensu stricto (Iberia through to the Aegean) and *S. bergonii* (southern Italy through the Aegean to Turkey). The only consistently agreed qualitative distinction seems to be the hairiness of the proximal half of the epichile: distinctly hairy in *S. vomeracea* and subglabrous in *S. bergonii*. As clearly seen in the photographs, the Kent plant's epichile is hairy in its proximal half, so pointing to *S. vomeracea*. The main quantitative distinction is supposed to be the maximum width of the epichile: 5–7.5 mm in *S. bergonii* and > 8 mm in *S. vomeracea*. ID measured four of the flowers and their width was very consistent at 7.5–8 mm, so this did not cast any further light. Indeed, moving away from the Delforge treatment, there seems to be general agreement (which Richard Bateman from first-hand experience supports) that in the area of geographical overlap around the Aegean there is a complete continuum between *S. vomeracea* and *S. bergonii*, suggesting introgression and interfertility. This adds support to the view of Kühn et al. (2019) that *S. bergonii* should be subsumed within *S. vomeracea* at species level, viz. as *S. vomeracea* subsp. *laxiflora*. On this lumping taxonomic approach, as well as that of Delforge, the Kent plant remains appropriately named as *S. vomeracea*.

Three species of *Serapias* have been recorded in the British Isles in recent years: *S. parviflora* (Small-flowered Tongue-orchid) in v.c. 2 (East Cornwall); *S. lingua* (Tongue-orchid) in v.c. 19 (North Essex), previously in Guernsey and in v.c. 3 (South Devon); and *S cordigera* (Heart-flowered Tongue-orchid), which occurred in v.c. 15 (East Kent) in 1996 and

The 40cm tall single plant of *Serapias vomeracea*, 27 May 2020.

1997. Stace (2019) credits at least some of the *S. parviflora* and *S. lingua* occurrences as possibly native, although one cannot know for certain whether wind-blown seed from the Continent was involved. The *S. cordigera* occurrence is likely to be from seed deriving from nearby cultivated plants (Johnson, 2019). However, in view of its normal distribution, there was enough possibility of *S vomeracea* arriving as well that David Lang included it in his key to *Serapias* in the Plant Crib 1998 (Rich & Jermy 1998). Its ability to grow here is demonstrated by its presence on a Somerset road verge where it flowers annually, brought from France by a nearby house owner in c. 2011 (Cole & Waller, 2020).

Possible origin of the Kent plant

The means of arrival of this plant in Kent cannot be known for certain, but its location is such that planting is highly unlikely. The species is cultivated, and can be acquired commercially in the British Isles, but cultivation in the general area of the discovery is not known. There is potential for wind-blown seed to have arrived from the Continent, and Kent is favourably placed for this. However, there is another strong possibility as regards the relevant vector, that is vehicle-assisted dispersal.

Most traffic from the Continent comes through Kent. In 2019, 2 million cars, over 73,000 coaches and nearly 2.4 million road haulage vehicles passed through the port of Dover – presumably half of these were incoming (similarly as regards Eurotunnel, whose 2019 figures are for more than 2.6 million passenger vehicles and almost 1.6 million road haulage vehicles). The *Serapias* site is on motorway-related land and receives carriageway water run-off;

it was effectively created as part of the construction of the motorway and its associated road network.

Details of its whereabouts are being withheld in order that the prospects of a colony developing here may not be prejudiced by general access and trampling of the habitat (but the authors would emphasise that random searches of this type of habitat could be dangerous to both searchers and motorists).

Potential for seed dispersal via Continental road traffic is evidenced by recent records for various other taxa. *Atriplex micrantha* (Twoscale Saltbush) was first found in Kent in 2017 beneath a motorway bridge and has since been recorded in both East and West Kent in six further monads, generally on the M20 centre reservation, but also motorway-served roads. *Dittrichia graveolens* (Stinking Fleabane), first found in Kent by the A299 in 2012, has since been recorded in numerous locations along the M20 and its junctions from near Folkestone as far west as Addington. *Pastinaca sativa* subsp. *urens* (Eastern Parsnip) was first seen in East Kent in 2017/18 by the A20 leading westwards from Dover and has since been found extensively along the M20, by the road leading to the Ashford international truck stop and at the M2/A249 junction.

The plant with capsules, 13 June 2020.

Habitat and pollination

The site is in full sun, albeit with some shelter. Associated species within a couple of metres or so include *Anacamptis pyramidalis* (Pyramidal Orchid), *Carex flacca* (Glaucous Sedge), *Galium album* (Hedge Bedstraw), *Leucanthemum vulgare* (Oxeye Daisy) and *Pulicaria dysenterica* (Common Fleabane). Observations on 1 June showed that the pollinia in at least the lower four flowers had been removed from their column and stuck to the stigmatic cavity, with the ovaries beginning to swell in the lower three. By 13 June at least seven ovaries were swollen, so spontaneous seed-set appeared to have occurred. This was a surprise. *S. vomeracea* is highly self-compatible (as artificial pollination demonstrates); but its morphological structure generally (i.e. in some 97% of cases) prevents self-fertilisation without some form of intervention; natural fruit-set in open-pollinated populations has been recorded at 13.4% to 20.9% (Pellegrino et al., 2006).

The pollination strategy of this species is based on the sepals, petals and lateral lobes of the hypochile forming a small tube in which insects may rest or shelter, removing and transferring the pollinia in the process. This insect behaviour is described by Dafni et al. (1981) from observations in Israel of male solitary bees. Female solitary bees usually sleep in their own nest-holes, but males apparently may seek holes more widely for rest after their morning activity and *Serapias* flowers, through mimicry, offer what appear to be appropriate bee-refuges, with their dark colour. Such light as may penetrate through the reddish flowers is in the part of the spectrum invisible to bees and so will appear even darker to them. Given that the male bees moved from flower to flower after investigating them (and in the process, pushing the column and dislodging the pollinia),

Dafni et al. (1981) considered that the shortness of the tube may discourage a stay; although for those bees which settle overnight, the morning flower temperature exceeds the ambient temperature by up to 3° C, enabling the bees to become active earlier at less expense of energy.

The sleeping behaviour was observed mostly in Israeli species of *Eucera*, but also *Andrena*, *Osmia* and *Tetralonia*. Pellegrino et al. (2005), have observed Italian *Eucera* and *Osmia* pollinating, as well as *Ceratina*. All these genera except *Tetralonia* are represented in the British Isles, and Kent has, for example, 56 species of *Andrena* and nine of *Osmia*, of which several in both genera are common (Allen, 2009). Pollination of the Kent plant suggests that similar solitary bee behaviour may occur here, and the warm sunny weather at the time of flowering will have been conducive to bringing out bees. It is possible, however, that more generalist pollinators were also involved, Pellegrino et al. (2005) having found the main pollinators in the populations they examined to be *Oedemeridae* spp. (False Blister Beetles or Pollen-feeding Beetles) and *Lymexylidae* spp. (Timberworm Beetles), which also have British representatives. The former are more likely to be relevant as frequenters of flowers, with *Oedemera lurida* and *O. nobilis* commonly recorded in Kent (Laurence Clemons, pers. comm.).

We hope that our plant manages to continue with its remarkable determination to survive and that it succeeds in producing offspring.

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Resurrection of a Norfolk pond gem: Grass-poly *Lythrum hyssopifolia*

CARL SAYER & JO PARMENTER

The neat five-petalled flowers of *Lythrum hyssopifolia* (Grass-poly) that are borne singly in the plant's leaf axils. *Rob Peacock*

On a wet winter's day in February 2020, an aged and contorted willow is heaved from the muddy ground, exposing long-buried layers of earth once punctured by cloven hooves and churned by horse and tumbler. As the Norfolk Ponds Project team finishes one of its final farmland pond restorations of the season in the village of Heydon, the digger leaves behind a newly opened-up and gently-shelving pond at the side of an arable field near a 'retired' farmyard.

The Norfolk Ponds Project

The Norfolk Ponds Project (NPP) aims to restore and conserve ponds in the county of Norfolk for the benefit of aquatic and terrestrial wildlife (Sayer & Greaves, 2020). Since 2015, the NPP has undertaken restoration work, involving major scrub and sediment removal, at some 15 highly terrestrialised farmland ponds in and around the village of Heydon, East Norfolk (v.c. 27). Following these restorations, the ponds have rapidly filled with wetland vegetation and a number of locally and/or nationally rare wetland plants have been recorded, including the Schedule 8 *Najas marina* (Holly-leaved Naiad) (1 pond), *Hottonia palustris* (Water-violet) (2 ponds), *Typha angustifolia* (Lesser Bulrush) (1 pond), *Oenanthe aquatica* (Fine-leaved Water-dropwort) (7 ponds) and the uncommon charophytes *Tolypella glomerata* (Clustered Stonewort) (4 ponds) and *Nitella opaca* (Dark Stonewort) (1 pond) in particular. With the exception, of *Najas marina*, which likely arrived due to dispersal by wildfowl from a local shallow lake (Lansdown et al., 2016), all the other aforementioned species were undoubtedly derived from long-lived seedbanks disturbed during the restorations.

In early July 2020, The NPP team were surveying along the high water mark of the recently restored pond as funded by the Natural England Great Crested Newt District Level Licensing Scheme. In amongst a new 'meadow' of *Agrostis stolonifera* (Creeping Bent), *Rorippa palustris* (Marsh Yellow-cress) and *Epilobium ciliatum* (American Willowherb), they encountered a plant that was not immediately recognised, and so CS sent a photograph to JP. Six plants of Grass-poly *Lythrum hyssopifolia* L., the first confirmed record for the county in over a century, were thus discovered.

L. hyssopifolia is a highly specialised annual flowering plant in the loosestrife family. It occurs at the northern limit of its European range in Britain (Webb, 1968) and is considered to be an archaeophyte, i.e. it arrived in the UK in 'ancient'

times, although some authorities regard it as a native. In Britain, archaeophytes are defined as those species first introduced prior to 1492. It was first recorded in the UK in 1633 (Preston et al., 2004).

The plant is typically low-growing, reaching perhaps 25 cm in height (Stace, 2019) with a branched stem and sessile linear or linear-oblong leaves (see photographs). The pale pink flowers are borne singly in the leaf axils. It may creep along the ground and form dense masses of plants under ideal conditions.

Current status in the UK and Norfolk

L. hyssopifolia is a very rare plant in the UK, having been recorded from fewer than 16 hectads (10 km × 10 km squares) since 2000 (Figure 1). The BSBI's Red List for England (Stroh et al., 2014) lists it as Endangered, based on a historical decline since 1930.

Grass-poly plants at the Heydon pond's high water mark, July 2020. *Tim Pankhurst*

Nationally, its status has recently been elevated from Vulnerable to Endangered (Leach, 2019). It is listed on Schedule 8 of the Wildlife and Countryside Act, on Section 41 (England) of the Natural Environment and Rural Communities Act 2006 UK and on the 2007 List of Priority Species and Habitats.

The BSBI Distribution Database (DDb) shows that there have only ever been 4–5 records made of the plant in Norfolk. The most recent, from Cantley/Limpenhoe Marshes in 1981, is likely to be erroneous; this record was not included in The *Flora of Norfolk* (Beckett et al., 1999), and those involved in surveying and researching Broads ditch systems both during this period and since are unaware of it (Margaret Palmer and Rob Driscoll, pers. comm.).

Earlier DDb records for the species, which are considered to be correct, are from Brumstead, in north-east Norfolk in 1906 (Bird, M.C.H. record sourced from Nicholson, 1914), Watton, in central Norfolk in 1913 (finder unknown, sourced from herbarium sheet in Natural History Museum) and from Heigham near Norwich prior to 1911 (record by A.M. Barnard, cited in Nicholson [1914], with 1911 being the date of Miss Barnard's death). Miss Barnard's record may well be the same as that cited by Geldart (1901) as 'formerly to be found in one locality near Norwich which is now converted into building land' and thus the first for the county.

A comprehensive data search of previous county floras and other source information for Grass-poly was undertaken. There are no Norfolk herbarium specimens of the species and no mention of the species in any other of the county or local floras other than Salisbury (1932) who maps the species as extinct in East Norfolk; Swann (1955), where it is listed as 'Casual', and Petch & Swann (1968) who describe it as 'Extinct' in the county.

Ecology

In the British Isles, *L. hyssopifolia* has been recorded most frequently on calcareous and clay soils, and less frequently on peaty and saltmarsh soils (Callaghan 1998). *L. hyssopifolia* is a species of bare mud and disturbed wet ground that is flooded in winter, but which dries out during spring and early summer

(Callaghan, 1996; 1998). Its presence in other habitats, such as wet arable fields, requires disturbance or cultivation during the late winter or early spring period for germination to occur and to prevent *L. hyssopifolia* plants from becoming overgrown by perennial species (Preston, 1999).

Germination of *L. hyssopifolia* is in spring, as soon as the ground has dried out sufficiently, and the plant flowers in June and July. The fruit is an oval capsule borne almost adpressed to the fruiting axes and seeds are possibly retained within these capsules until they disintegrate in late winter (Salisbury, 1968). An average of c. 3,000 tiny seeds are produced by each plant. The high number of seeds in relation to the size of the plants characterises species of intermittently available habitats (Salisbury, 1968). The seeds are thought to remain viable for many years (Preston, 1999), although, as for many wetland plants, the extent of longevity of viability is not known.

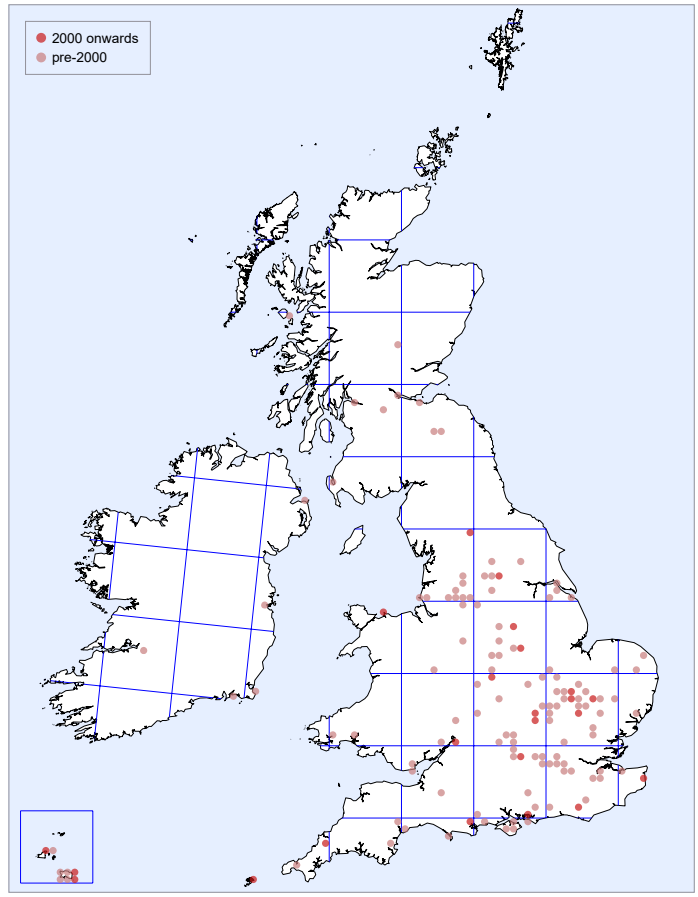

Figure 1. UK hectad distribution map of *Lythrum hyssopifolia* (Grass-poly). *BSBI Distribution Maps*

L. hyssopifolia habitats include ponds, damp pasture, wet arable land and shallow lake margins. The disturbance necessary for germination can come from livestock, farm machinery (with wheel ruts also a favoured habitat) and in one case, wildfowl (Preston, 1999) (a key population is located at WWT Slimbridge, Gloucestershire). These special habitat requirements undoubtedly explain the rarity of *L. hyssopifolia*, as the combination of appropriate wetland soil disturbance and sufficient water level fluctuation are rare in modern-day agricultural landscapes. In East Anglia the major post-1950s–1960s removal of horse power from farms, widespread declines in cattle numbers and probably the cessation of using ponds for farming activities, rendering them increasingly shrouded in scrub and shaded at their edges (Sayer et al., 2013) are likely causes of *L. hyssopifolia* decline. Indeed, it is possible, given the general neglect of conservation and biological recording at farmland ponds, that many previous Norfolk pond populations of *L. hyssopifolia* were lost before they were ever close to being found.

Future of the plant?

The location of the six *L. hyssopifolia* plants, where willow roots were removed and the digger was tracking, effectively creating disturbed, muddy ground, so the exposure of buried, still viable seed is without doubt the reason for its reappearance.

As regular disturbance is needed for the survival of *L. hyssopifolia* the question arises – how can we maintain our new population? A winter raking, putting some cows in, or a NPP Christmas event featuring a pantomime horse?

A further key question is whether there are any other extant populations of the plant in Norfolk that have been overlooked and whether further pond restorations in the Heydon area will bring back more plants? Either way, finding this elegant little plant may provide an important new focus for the Norfolk Ponds Project.

Acknowledgements

The authors wish to thank Ashley Arbon for formal confirmation of our Norfolk Grass-poly identification and Margaret Palmer, Rob Driscoll and Peter Lambley for their views on the 1981 Grass-poly record. We also thank Dominic Arnold and Andy Hind for expertly restoring the pond, Helen Greaves for organising the restoration work and Natural England for funding it. Finally, thanks are due to Rob Peacock and Tim Pankhurst for photographs of the plant and to the Heydon Estate for supporting Norfolk Ponds Project restoration work.

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Discovery of a second extant plant of Arran's False Rowan (*Sorbus pseudomeinichii* Ashley Robertson)

ROBERT BLACKHALL-MILES

A recent work visit to Scotland took my partner (Ben Ram) and I to the Isle of Arran (v.c 100) to visit the collection held at National Trust for Scotland's Brodick Castle and Goatfell Nature reserve. Two aims of our visit were to see revegetation work being done by the ranger team in Glen Rosa and to see all three of Arran's endemic *Sorbus* L. microspecies in Glen Catacol, in the north-west of the island.

On 15 September 2020 we visited Glen Catacol with the sole intention of observing the whitebeams and rowans growing in the valley. At the Glen Catacol trail head there is a small enclosure planted with the five taxa involved in the complex sequence of hybridisation in the evolution of the three endemic Arran *Sorbus*. This enclosure presented a perfect opportunity to familiarise ourselves with the taxa found in Glen Catacol: *S. aucuparia* L. (Rowan), *S. arranensis* Hedl. (Arran Whitebeam), *S. pseudofennica* E.F. Warb. (Arran Service-tree) and *S. pseudomeinichii* Ashley Robertson (the Catacol Whitebeam or False Rowan) in their pristine state.

The three unique Arran *Sorbus* are the result of crosses between *S. aucuparia* and *S. rupicola* (Rock Whitebeam), with *S. arranensis* being an apomictic hybrid between *S. aucuparia* and *S. rupicola*; *S. pseudofennica* being a backcross (also apomictic) between *S. arranensis* and *S. aucuparia*, and *S. pseudomeinichii* being a further backcross (also proven to reproduce apomictically) between *S. pseudofennica* and *S. aucuparia* (Coleman, 2014).

Sorbus pseudomeinichii was published as a new endemic tree from Arran in 2006 and has leaf morphology intermediate between *S. pseudofennica* and *S. aucuparia* (Robertson & Sydes, 2006). Originally three trees were found, two mature and one sapling, however subsequently flooding has destroyed one tree and the sapling is presumed to have been killed by deer grazing. This has left a single mature individual on the streamside of the Catacol Burn, making it arguably one of the rarest trees in the world (Coleman, 2014; Rich et al., 2010).

A leaf of the newly discovered specimen of *Sorbus pseudomeinichii*. Photographs by the author.

The Catacol Burn has a number of tributaries, the banks of one of these, the Diomhan Burn in Gleann Diomhan, holds the majority of plants of *S. arranensis* and *S. pseudofennica*, whilst the upper reaches of the main Catacol Burn, and a tributary of it, holds further plants of *S. arranensis* and *S. pseudofennica* as well as the surviving plant of *S. pseudomeinichii*.

On our visit to Glen Catacol we chose to follow the Diomhan Burn to its head to view trees along the entire length of the gorge and then walk over the nearby 527 m hill of Bienn Tarsuinn to Loch Tanna in order to follow the Catacol Burn from its headwaters down so as we could take in all of the trees that Glen holds.

To protect the trees from grazing the majority in Glen Catacol and Gleann Diomhan are now growing within deer-proof enclosures with only

those trees in the steepest, and as such unreachable, sections of each gorge left unprotected (as is the case for the single tree of *S. pseudomeinichii*).

A significant way before reaching the majority of the trees on the Catacol Burn we observed two lone, unprotected and heavily grazed *Sorbus* on the side of the path just below the first of two waterfalls on the stream. We noticed that whilst one of the trees was clearly a Rowan; the other had larger terminal leaflets, some of which had lobes, resembling fused leaflets and just 4–5 (sometimes 6) pairs of lateral leaflets across the majority of its remaining autumnal foliage. With the plant having piqued our interest and having taken a number of photographs, an accurate 10-digit grid reference and collecting both the largest terminal lobed leaf and the smallest terminal lobed leaf, we moved on to visit the lone plant of *S. pseudomeinichii* in its gorge.

On seeing the large tree of *S. pseudomeinichii*, with its multiple vertical trunks, and observing its leaves and individual leaflets in their weather battered state, we realised that the tree we had seen higher up the valley may very well also be a plant of *S. pseudomeinichii*. We continued out of the valley with many questions about the trees we had seen and our discovery higher up.

The *Sorbus pseudomeinichii* tree by the Catacol Burn, 15 September 2020.

The following day we discussed our find with Goatfell and Glen Rosa lead ranger, Kate Sampson, who took the leaves we had collected and showed them to local *Sorbus* grower, Henry Murdo. Mr Murdo thought the samples interesting but was unable to be conclusive in his identification. Later that day, however, photographs were shared with Dr Tim Rich and Dr Ashley Robertson both of whom were happy to give a positive identification of the plant as *S. pseudomeinichii*. Dr Robertson was also able to confirm this as a new location for the taxa rather than the rediscovery of one of the two previously known plants that had been lost.

All three *Sorbus* taxa endemic to Arran are considered endangered (Rivers et al., 2019), for the Critically Endangered *Sorbus pseudomeinichii* this discovery of a further plant is of great conservation significance. All of this evolutionary complex should be conserved and as such it is important that this second plant is investigated and protected from further grazing. The collected leaves from the plant have now been sent for analysis, and further investigation of the plant will be undertaken during spring 2021.

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Mibora minima (Early Sand-grass) on North Bull Island, Dublin – second record for Ireland

MELINDA LYONS

In the course of ecological fieldwork on behalf of Dublin City Council, I found *Mibora minima* (Early Sand-grass), a tiny annual grass of sandy coastal habitats, growing on sand dunes on North Bull Island, Dublin Bay (v.c. H21), on 3 April 2019. Prior to this find, it was known from only one location in Ireland, the Cannawee dune system at Barley Cove, West Cork (O'Mahony, 2006). Species nomenclature throughout this account is in accordance with Stace (2019) for vascular plants and Hill et al. (2008) for bryophytes.

Despite its small stature, flowering plants of *M. minima* are distinctive in appearance, with racemes of reddish spikelets set against narrow, bright green leaves (Plate 1). On North Bull Island, they occur in sparse, low-growing vegetation along the edges of sandy tracks through the dunes, often amongst mats of the moss *Syntrichia ruralis* var. *ruraliformis* (Plate 2), and sometimes extending beyond the moss mat onto otherwise bare sand (Plate 1). The most frequent accompanying species are *Valerianella locusta* var. *dunensis* (Cornsalad), *Arenaria serpyllifolia* (Thyme-leaved Sandwort), *Erophila verna* (Whitlowgrass),

Plate 1. Tiny flowering plants of *Mibora minima*, just a few centimetres tall, in partially stabilised sand on North Bull Island, Dublin Bay, February 2020. *Photographs by the author.*

Festuca rubra (Red Fescue), *Brachythecium albicans* and *Bryum capillare,* along with occasional *Aira praecox* (Early Hair-grass), *Anthyllis vulneraria* (Kidney Vetch), *Cerastium diffusum* (Sea Mouse-ear), *C. semidecandrum* (Little Mouse-ear), *Galium verum* (Lady's Bedstraw), *Hypochaeris radicata* (Cat's-ear), *Leontodon saxatilis* (Lesser Hawkbit), *Myosotis ramosissima* (Early Forget-me-not), *Taraxacum officinale* agg. (Dandelion), *Trifolium arvense* (Hare's-foot Clover), *Veronica arvensis* (Wall Speedwell), *Viola tricolor* (Wild Pansy), *Ceratodon purpureus, Didymodon fallax, Homalothecium lutescens* and *Peltigera didactyla*. *Vicia lathyroides* (Spring Vetch), *Viola canina* (Heath Dog-violet) and *Phleum arenarium* (Sand Cat's-tail) are present in small amounts. This assemblage belongs to the *Tortulo-Phleetum* ephemeral sand dune community (Moore, 1977).

This low-growing vegetation forms a narrow band between the exposed sand on tracks and the taller, Marram-dominated vegetation of the dunes (Plate 3).

Plate 2. *Mibora minima* amongst a mat of the moss *Syntrichia ruralis* var. *ruraliformis*, along with leaf rosettes of *Valerianella locusta* var. *dunensis*. North Bull Island, February 2020.

Plate 3. Sandy track through the dunes with a narrow band of low-growing vegetation containing *M. minima* abutting the taller Marram-dominated vegetation, February 2020.

Occasionally, it occurs as wider expanses spreading patchily over several square metres, especially where there has been some grazing by rabbits. More robust species, such as *Jacobaea vulgaris* (Ragwort) and *Carex arenaria* (Sand Sedge), are occasionally interspersed amongst the low-growing community.

The main colony of *Mibora minima* discovered on North Bull Island in 2019 was scattered throughout an area of approximately 120 m by 30 m, lying SSW of the Interpretive Centre and roundabout, approximately 100 m inland from the beach. Additional groups of plants were found more sparingly nearby, on a younger dune ridge approximately 40 m from the beach, in March 2020.

The winter of 2018/19 was unusually mild and small dune spring annuals such as *Valerianella locusta* var. *dunensis*, *Arenaria serpyllifolia*, *Erophila verna*, *Cerastium diffusum*, *C. semidecandrum* and *Myosotis ramosissima* fared especially well as a result. There had been an exceptionally cold spring in 2018, followed by a prolonged drought in summer which may have set back many of the more common, robust species and allowed an expansion of colonies of some smaller species during the mild winter that followed (cf. Pemadasa & Lovell, 1976; Rodwell, 2000).

In the following winter, germination was well under way and fresh, green leaves were clearly visible by early December (2019). The first flowers appeared in late January (2020). The main flowering season continued through February and March. By April, the spikelets were beginning to disintegrate.

Comparison of plant communities

In common with North Bull Island, accompanying species at the Barley Cove site (reported by O'Mahony, 2006) included *Aira praecox*, *Arenaria serpyllifolia*, *Valerianella locusta* subsp. *dunensis*, *Veronica arvensis* and *Jacobaea vulgaris*. However, *M. minima* was notably absent from moss carpets at Barley Cove, occurring instead on sloping sand dune blowouts (O'Mahony, 2007). In contrast, the most frequent and abundant associate on North Bull Island is the moss *Syntrichia ruralis* var. *ruraliformis*. Other species reported in the Barley Cove list were not found to accompany *M. minima* on North Bull Island, though some, such as *Thymus drucei* (Wild Thyme) and *Plantago coronopus* (Buck's-horn Plantain), are present at other locations – and in somewhat different plant communities – on the island.

In mainland Britain, *M. minima* is known from a small number of locations on the west and south coasts. It is considered native at two locations in Wales: Anglesey and Whiteford. It grows on cliff tops on the Channel Islands, where it is also thought to be native (Cope & Gray, 2009). In 1996, it was discovered on relict sand-dunes at Sefton, Lancashire (Smith et al., 2011) and in 2015, it was found on North Uist, Outer Hebrides in open, stable dune vegetation (Smith et al., 2015). It seems likely to be native at both locations (Stroh et al., 2014; Smith et al., 2015). *M. minima* is known from a small number of sites elsewhere in Britain where its status is unknown, or it is regarded as a deliberate introduction, or a naturalised weed (John, 1999; Leach, 2002; Cope & Gray, 2009; Pearman, 2011).

The vegetation type within which *Mibora minima* occurs in Britain – SD19 *Phleum arenarium-Arenaria serpyllifolia* dune annual community (Rodwell, 2000) – closely matches that on North Bull Island. Both comprise open assemblages of ephemerals on stable sand, appearing early in the year in gaps amongst taller dune vegetation, where the sward is opened up by local disturbance such as trampling or grazing. There are striking similarities between the North Bull Island and SD19 communities: *Arenaria serpyllifolia*, *Cerastium diffusum*, *C. semidecandrum*, *Erophila verna*, *Viola tricolor*, *Trifolium arvense*, *Phleum arenarium*, *Aira praecox*, *Syntrichia ruralis* var. *ruraliformis*, *Brachythecium albicans* and *Homalothecium lutescens* are present in both along with characteristic dune perennials such as *Anthyllis vulneraria*, *Galium verum*, *Festuca rubra* and *Carex arenaria*. Of note in the SD19 community is *Vulpia fasciculata* (Dune Fescue); this rare species grows close to the *M. minima* colony on North Bull Island, on less stable sand closer to the sea, but its range was not found to overlap with that of *M. minima*.

Vicia lathyroides, a rare species in Ireland (confined to the east and north coast) and found sparingly with *M. minima* on North Bull Island, is not listed for the SD19 community. It is, however, locally frequent with *M. minima* at Sefton (Smith et al., 2011). Similarly, *Myosotis ramosissima*, which is largely coastal in Ireland, is absent from the SD19 account, but grows with *M. minima* at Sefton. It is also reported from *M. minima* colonies in the north of France (Basso & Hendoux, 2003).

Status

O'Mahony (2006) regards it likely that *Mibora minima* is native in Ireland. He suggests that its small stature, very early flowering season and the uninviting nature of its exposed habitat at flowering time account for its belated addition to the Irish flora and, indeed, he predicted that it would be found in other Irish coastal habitats. On North Bull Island, leafy shoots were only 2–3 cm tall and flowering stems were mostly 4–7 cm in height. Most plants had shed their seeds and withered by the end of April in 2019 and at that stage, could easily have been overlooked or mistakenly taken to be senescent *Aira praecox*.

In keeping with O'Mahony's view, *M. minima* is treated as a native species by Parnell & Curtis (2012) and Jebb (2019). It is assessed as 'Vulnerable' in Ireland in accordance with IUCN criteria, following the precautionary approach for taxa of uncertain status (Wyse Jackson et al., 2016).

Strong affinities of habitat type and species composition between the British and Irish communities confer on the Bull Island population of *Mibora minima* the appearance of being native. The dune system on North Bull Island is relatively young, having formed within the past two hundred

years, since tidal patterns in Dublin Bay were altered by the construction of the North Bull Wall (Flood, 1977). The route by which this species might have reached the island and whether human activity – unwittingly or otherwise – played a part in its arrival is unknown.

Future prospects

The colony on North Bull Island is well established and its survival shows no signs of being under threat. It is, however, dependent on gaps persisting amidst the taller vegetation on stable sand. At present this is achieved by moderate levels of trampling – sufficient to set back perennial species, without causing excessive erosion – supplemented by rabbit grazing. (In the north of France, rabbit-grazing has been proposed as the best means for conserving this habitat structure at *M. minima* sites; Basso & Hendoux, 2003.) Trampling levels and rabbit populations are prone to fluctuate and can be difficult to control in an area so heavily used by walkers. It may prove revealing to monitor the extent of the population in coming years to see to whether it is stable, increasing (or decreasing) in its range and size.

A specimen from the site has been lodged in the herbarium, National Botanic Gardens, Dublin.

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The mystery of Adder's-tongue (*Ophioglossum vulgatum*) in Bishop Auckland

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Ophioglossum vulgatum (Adder's-tongue) in a garden lawn in Bishop Auckland, 26 June 2020. *Photographs by Sidonie Cumberland.*

Introduction

There are a number of written assessments of the national and local distribution patterns of the seemingly uncommon fern, Adder's-tongue (*Ophioglossum vulgatum* L.). The Online Atlas of the British and Irish Flora (BSBI/BRC 2020) considers it to be 'an inconspicuous species which is very much better recorded than in the 1962 Atlas;' and notes that 'it has been lost from many lowland sites where the intensification of agriculture, grazing and drainage have contributed to its decline.' The Wildlife Trusts website (2019) describe it thus: 'an indicator of ancient meadows, it can be found mainly in southern England' with a 'localised distribution, and not very common.' For northern England the opinions of two eminent botanists provide a sound overall view. In *The Flora & Vegetation of County Durham*, Graham (1988) wrote that it was 'rarer than it used to be and now very thinly distributed, though easily overlooked and probably under-recorded.' In the *Flora of Cumbria*, Halliday (1997) noted 'an uncommon fern of short, damp, 'unimproved' grassland and woodland rides… easily overlooked and is capricious in its occurrence.'

This apparent caprice has made surveys of its changing distribution patterns a difficult task and the results may be dismissed as being 'data deficient.' For example, in the national survey, *Change in the British Flora 1987–2004* (Braithwaite et al., 2006) it was recorded in only 15 tetrads which generated 42 observations (19 gains, 17 losses and 6 re-finds).

In the spring of 2017, we were given the opportunity to observe this caprice when a small population of *Ophioglossum vulgatum* was recorded on a lawn of a house in a low-lying neighbourhood of Bishop Auckland (v.c. 66), at an altitude of 94 m, some 30 m distant from the River Gaunless. This was its first sighting in this locality, in monad NZ2129, in a period of observation dating back to 1980. Personal observations suggested that from 1989 to spring 2017, the lawn had always been mown regularly and managed by the application of a proprietary brand of combined lawn feed, weed and moss-killer. Thereafter, the mowing regime and chemical applications became less frequent and the Adder's-tongue was first noticed in 2017 when twenty plants – three fertile spikes – were counted. It has appeared each year since, the precise area of the lawn where it had occurred was left unmown in 2018– 2020 (see photograph on next page) and has witnessed an increase in area with thirty plants and four fruiting sporophytes early in 2020. Some ten vegetative fronds beyond the shade of a tree canopy desiccated and shrivelled in the dry spell of weather in May 2020 and could not be found by mid-summer.

The plant community

The lawn sward is dominated by eight relatively fine-leaved grasses: *Anthoxanthum odoratum* (Sweet Vernal-grass), *Cynosurus cristatus* (Crested Dog's-tail), *Festuca rubra* (Red Fescue), *Holcus lanatus* (Yorkshire-

Habitat of *Ophioglossum vulgatum* (Adder's-tongue) in a garden lawn in Bishop Auckland, 26 June 2020.

fog), *Lolium perenne* (Perennial Rye-grass), *Poa annua* (Annual Meadow-grass), *P. trivialis* (Rough Meadow-grass), *Trisetum flavescens* (Yellow Oat-grass) – and the woodrush *Luzula campestris* (Field Woodrush). Also to be seen in the two square metres of the exclosure are the native flowering plants *Alchemilla xanthochlora* (Pale Lady's-mantle), *Geum urbanum* (Wood Avens), *Hypochaeris radicata* (Cat's-ear), *Prunella vulgaris* (Selfheal), *Ranunculus repens* (Creeping Buttercup), *Jacobaea vulgaris* (Ragwort), *Trifolium repens* (White Clover), *Veronica chamaedrys* (Germander Speedwell), *V. serpyllifolia* (Thyme-leaved Speedwell); young invasive plants from a neighbouring garden border – *Alchemilla mollis* (Soft Lady's-mantle) and *Geranium* × *oxonianum* (Druce's Crane's-bill); the mosses *Calliergonella cuspidata*, *Kindbergia praelonga*, *Rhytidiadelphus squarrosus*; the foliose lichen *Peltigera rufescens*; and in autumn, the club-fungus *Clavulinopsis fusiformis*. This mesotrophic grassland type may be classified as being representative of MG5 *Cynosurus cristatus-Centaurea nigra* grassland, according to the general characteristics described by Rodwell (1992).

Origins and status of the population

We propose four theories for its occurrence in this rather unusual habitat and location: (1) that it is relic from Gaunless floodplain water-meadows; (2) that it is here through turf transplantation; (3) that some form of anthropochory, such as the 'botanist's boot mechanism', might be responsible and (4) that it has arrived by natural, regional dissemination/population expansion processes; or indeed, a combination of one or more of the these methods.

Relic from Gaunless floodplain meadows

The population may be a relic from the natural habitat of the former water meadows on the floodplain of the River Gaunless, and this may be the locality listed in *The Flora & Vegetation of County Durham* (Graham 1988) as 'near Bishop Auckland.' The record is based on a specimen in the Herbarium of Darlington & Teesdale Naturalists Field Club (DTN), dated 1890. It is mapped in the online Flora of North-east England (Flora North-East website) as 'before 1930' – in tetrad NZ2028, the only tetrad in which it has been recorded in NZ22. Durkin's *Durham Checklist* (2012) has 139 records from 1832–2011; *Flora of North-East England* records it in c. 50 post 1970 tetrads in v.c. 66; 21 in the period 1930–1969; and five before 1930.

Turf transplantation

In spite of the fact that the origin for the name of the River Gaunless is considered to be derived from the Norse language, meaning 'useless,' the river has been harnessed for milling corn for several centuries (Hutchinson, 2010). Gaunless Mills were purchased in 1878 by the Ferens Brothers who were responsible for their development and for the shaping of the landscape in this part of the valley until production of flour and other corn products ceased in 1970 after a disastrous fire. The main period of structural development was 1920–1930 after Michael Ferens had built a family home in Durham Road above the mill complex and had created ornamental gardens in the valley below. Included in this project was the construction of a tennis court for his sons, Henry and Angus, probably using the renowned Cumbrian turf from west of the Pennines. It is quite conceivable that the Adder's-tongue was brought in with this turf. An alternative suggestion for its more recent origin by this method comes from anecdotal evidence for the transplantation of the laid lawns in

the properties of The Willows housing development of the 1970s – built on the site of the Ferens millyard, gardens and tennis court – with turf from suppliers at Long Marton, Appleby-in-Westmorland in the Eden Valley.

That the survival of *O. vulgatum* in turf transplants is possible is evidenced by Leonard (2017), writing on the website of the British Pteridological Society. He reports the continuing health and reproduction of the fern over a long growing period from April to November, in an unheated polythene tunnel on his Portsmouth allotment after the transplant of a 9 × 4 inch clod from Wales some twenty years previously.

Botanist's boot mechanism of dispersal – anthropochory (humans as vectors)

After the publication of *The Flora & Vegetation of County Durham* and retirement from his ministry in the Church of England, Gordon Graham and his wife, Patricia, undertook a variety of botanical and plant sociological consultancies for various organisations in the north-east of England. The nature and range of habitats surveyed was such that a great percentage of plant species in the regional flora was encountered, often on several occasions during the growth and development of a particular species, often at times of fruiting and seed production. It is well known that passive dissemination of certain species by humans as vectors – the phenomenon of anthropochory – may be responsible for their geographical spread, either on muddy boot scrapings, or from a rucksack bottom residue.

Adder's-tongue, for example, was encountered in three species rich pastures and meadows in Hamsterley Forest, in County Durham, in a survey of twenty enclosures by Graham & Graham (1994). These grasslands had been traditionally managed by the Forestry Commission since purchase in 1927 and the objective of the survey was to provide baseline data for conservation and management decisions (Forestry Commission, 1992). The intimate contacts made with plants and vegetation during field survey inevitably results in the accidental lodging of seeds and spores on muddy boots or in folds of clothing, and thus results in their potential transfer to the next site, or to the home of the surveyors. A surrogate estimate of the intimacy of contact may perhaps be derived from the fact that one of the meadows in Hamsterley Forest in which a population of Adder's-tongue was recorded, supported 85 species of herbaceous flowering plant, 17 grasses and 22 bryophytes – in total a potential propagule bank of 124 species.

Natural regional dissemination/ population expansion processes

'Mycoheterotrophy' is a term coined by Leake (1994) to describe a plant's ability to obtain carbon from fungi; it is an umbrella word to encompass plant relationships formerly described by such words as 'mycorrhizal' and 'saprophytic'. A variant of mycoheterotrophy was shown to occur in 'lower' land plants that initiate their development as mycoheterotrophic seedlings before turning green in adulthood (Read et al, 2000), a situation known to occur in *Ophioglossum*, true ferns and clubmosses (Merckx, 2013), in which spores require a fungal carbon source in order to germinate. Whereas the simple saprophytic connection of the plant to the root systems of various grass species was originally believed to be the key factor for growth (Edwards, 1982), international research, from McMaster (1994) in eastern North America to Chung et al. (2013) in South Korea has demonstrated the complicated nature of the reproductive biology, population genetics and history and ecology of this fascinating species. Most recently, Field et al. (2015) have demonstrated the mycorrhizal specificity and functioning of the sporophytes in a mutualistic relationship between Adder's-tongue and fungus. The development of such an intimacy would seem to be one explanation for the apparent capricious distribution of *Ophioglossum vulgatum*.

Conclusions

As a follow-on area of recording and research following the publication of a major local flora (*vide* Graham 1988), it would seem a fertile exercise to continue the recording of new localities for the less common species in the original dataset and to

concentrate on selected individual species which may prove to have value as *indicators* of present and future climatic changes. Whilst many of these so-called indicator species are often chosen on a rather arbitrary, informed 'gut-feeling' basis, it would seem important to conduct a regional autecological study of each chosen species to pay attention to the identification of reasons for their ecesis (establishment in a new environment) and continued existence in a particular locality. This approach would seem to be of greater importance in cases of new records in somewhat unusual habitats which suggest the modification of the plant's natural ecology in response to various kinds of human interference.

We were afforded the opportunity to follow such a research topic after the appearance of Adder's-tongue (*Ophioglossum vulgatum*) in a suburban lawn habitat in 2017 and to study its existence over a four-year period from 2017 to 2020. Four postulations for its origin in this locality were considered and described in a previous section of this article. In addition, its continued existence as being not merely a casual adventive was monitored by regular seasonal and annual observations. We therefore propose a similar standard process of *'status verification'* for all selected indicator species of presumed climatic change. Continuing monitoring of the population should highlight the suitability of the species as an indicator and/or whether its existence is, in fact, too capricious to be of value.

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Sagina maritima (Sea Pearlwort) as an inland roadside halophyte

ANDY AMPHLETT

Introduction

Sagina maritima Don (Sea Pearlwort) is found all around the coasts of Great Britain and Ireland. Here, its habitats are described as 'maritime rock crevices, cliff-tops, stabilised shingle, dune-slacks and disturbed areas in upper saltmarsh on sandy substrates; also on walls and tracks, in pavements and on sandy roadsides near the sea' (Preston et al., 2002). Older Floras (up to and including Stace [1997]) refer to its occurrence on Scottish mountains. However, Corner (2002), after a thorough review, dismissed such claims. He showed that all the references to *S. maritima* occurring as a montane species appear to be based on George Don's reputed collections from Ben Nevis in 1794 and 1803, and that these collections had most probably come from coastal sites.

Prior to 1970, records on the BSBI Distribution Database (DDb) indicate that *S. maritima* had scarcely begun to spread beyond the confines of near coastal sites. The most convincing early record is that by P. Bowman in 1966 from 'Fields Heath, Fawley' (v.c. 11) where he recorded *S. maritima* from 'Bare soil in disused area of gravel pit' c. 1.5 km inland from mean high water. The first record from a hectad with no part intersecting the coast, is an unlocalised 1970 record in SJ66 (v.c. 58) by K. Davidson and A. Garnett. Other, more recent records from this hectad are from the banks of the River Weaver opposite an intensive salt-mining area, where it grows with several other halophytes (Graeme Kay, pers. comm.).

In 1972, J. Hodgson recorded *S. maritima* from a roadside verge at Apleyhead near to the entrance to Clumber Park (v.c. 56), presumably on the verge of the A614 trunk road (Wood & Woods, 2017). This appears to be the first record of this species as a roadside halophyte. Interestingly, it was not recorded again in the vice-county until 2019 (also as a roadside halophyte).

Braithwaite (1997) wrote the first published account of *S. maritima* occurring as a roadside halophyte. He reported it from v.cc. 81 and 82, in south-east Scotland. He described its habitat there as 'gravel, with fine material amongst it, often a metre or so back from the tarmac, further back than the *Spergularia marina* [Lesser Sea-spurrey] and *Puccinellia distans* [Reflexed Saltmarsh-grass] zone'. He went on to suggest it would either be found to be already widespread on Britain's roads or would soon be.

Ian Green recorded *S. maritima* in nine hectads in v.cc. 88, 89, 95 and 96 (in northern Scotland) between 1996 and 1999. In September 2001, Corner collected a group of *Sagina* seedlings from a roadside at 300 m altitude on Shap Fell, Cumbria near plants of *Sagina nodosa* (Knotted Pearlwort). On cultivation he was surprised to find that they produced plants of *S. maritima* (Corner, 2002).

I first encountered *S. maritima* inland at Bridge of Brown (v.c. 94) in 2013. I subsequently found it, usually in small quantity beside a number of roadsides in v.cc. 94, 95 and 96, always in similar habitat to that described by Braithwaite. In 2019, there seemed to have been a population explosion, and I found dense and extensive populations beside the A86 between Kingussie and Newtonmore (v.c. 96) and beside the A95 at Auchendean (v.c. 95). At the latter site, a dense carpet of *S. maritima* extended for c. 200 m along the road verge. While perhaps not qualifying as a '70 mph plant', I can vouch that these extensive, dense stands were noticeable at 40–50 mph, such that I stopped my car and walked back along the roadside to investigate: they had a quite distinctive jizz (texture and colour).

Methods

All records of *S. maritima* held on the DDb were downloaded on 28 March 2020. Inland occurrences

of *S. maritima* are defined as records where no part of the location grid reference square was within 500 m of the mean high water line (MHW).

In principle, identifying such records should be straightforward using GIS, however I did not have access to a suitable GIS boundary for MHW around Ireland. I therefore had to adopt an iterative approach. The DDb holds digitised polygons of the mean low water line (MLW) around the British and Irish coasts, so using a tool within the DDb, I calculated the sea area within all hectads, tetrads and monads, in Britain and Ireland. Each record of *S. maritima* was assigned a sea area based on its grid reference (up to a maximum monad precision). Hence records that intersected MLW could be distinguished from records that were above MLW. This analysis produced numerous 'false positive' inland records, i.e. it detected records where the grid reference square intersected MHW, but which did not intersect MLW.

To address this issue, records from GB were imported into GIS and coastal and near coastal records checked against the MHW boundary buffered by 500 m. All coastal or near coastal records from Great Britain, Ireland and the Channel Islands were then examined against Google Maps and aerial photographs (both via the DDb). In a few instances, other online mapping, e.g. Ordnance Survey, was checked, to clarify the upper tidal limit in some rivers.

Putative inland occurrences, particularly in Ireland, were discussed with Vice-county Recorders and, where traceable, the original recorder. A number of incorrect records were detected and removed. However, it is likely that some errors remain. Amongst the inland records there will be false positive and false negative records. Minor grid reference errors, e.g. a coastal population assigned a grid reference slightly inland may have inflated the number of inland records within coastal hectads. However, inland populations may have been recorded at low precision, e.g. tetrad, and if that tetrad intersected MHW, the record could not be detected as an inland occurrence.

Results

Since the early finds on roadsides in the 1990s, *S. maritima* has rapidly spread inland in Great

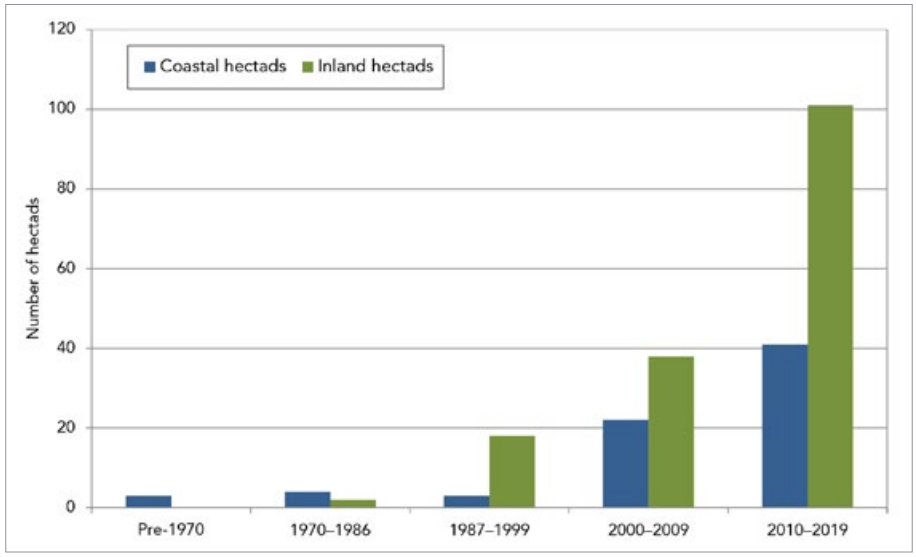

Figure 1. Inland populations of *Sagina maritima* within coastal and inland hectads. Number of hectads first recorded per date class.

	Inland records	
First recorded	Coastal hectads	Inland hectads
Pre-1970	3	0
1970–1986	4	2
1987–1999	3	18
2000–2009	22	38
2010–2019	41	101
Total	73	159

Table 1. Number of hectads, first recorded per date class, with inland populations of *Sagina maritima*.

Britain (Table 1, Figures 1 and 2). Post 1999, inland populations have been first recorded in 63 coastal and 139 inland hectads.

In contrast to Great Britain, *S. maritima* is, on current knowledge, completely absent from inland roadsides in Ireland. Only a single record is more than 500 m from MHW, on a pier in Lough Gill (v.c. H1), c. 900 m from the coast, found by O'Connor et al. in 2018. There are no inland records of *S. maritima* from the Channel Islands (not mapped in Figure 2).

The mean altitude of unique locations of *S. maritima*, at tetrad or better precision, in inland hectads are plotted in Figure 3.

The majority of populations of *S. maritima* are at low altitude. For example, within inland hectads, 75% of unique recorded locations are below 250 m altitude. The maximum recorded altitude is c. 550 m, at two locations beside the A939: north of The Lecht (v.c. 94) found by Ian Green, and at Hill of Allargue (v.c. 92) found by the author, both in 2016.

Overall, the developing inland distribution of *S. maritima* is reminiscent of that of *Puccinellia distans* (Reflexed Saltmarsh-grass) and *Spergularia marina* (Lesser Sea-spurrey), being commoner to the east, but rarer or absent in the west, especially in Ireland. It is reasonable to expect further, rapid colonisation of the road network, where salt is liberally applied in the winter.

John Crossley (pers. comm.) reported that there are no records of *S. maritima* as a roadside halophyte in Orkney (v.c. 111). Here it is not common on natural, undisturbed coastlines, but is frequent on piers, sea walls and car parks, and in coastal towns and villages for instance, all over the old

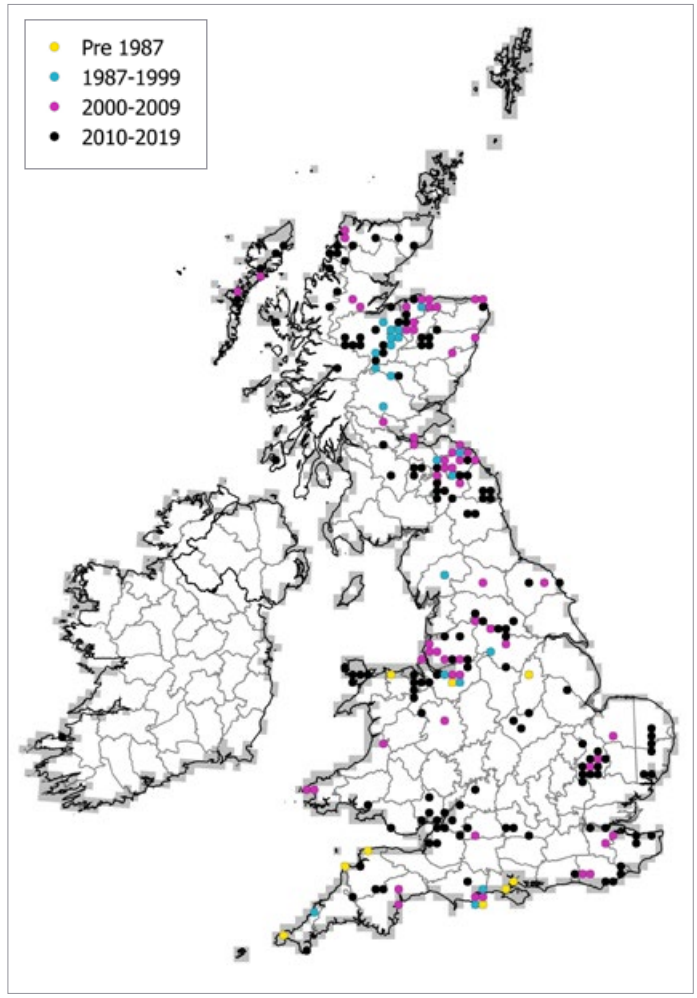

Figure 2. Distribution of inland populations of *Sagina maritima* (>500m from MHW) by date class first recorded (hectads). Grey shading indicates coastal populations.

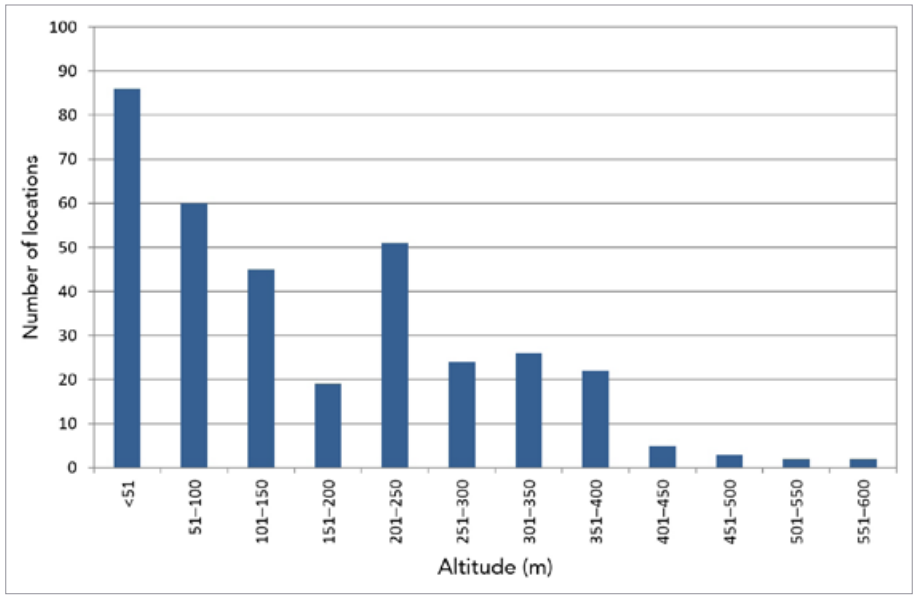

Figure 3. Mean altitude of unique locations of *Sagina maritima* within inland hectads.

part of Kirkwall up to 200 m from the sea. Despite its presence in anthropogenic habitats here, it has not (yet) spread inland along roadsides. A similar situation may apply down most of the west coast of Britain and around the coast of Ireland. Such areas, with a more temperate climate, presumably have less salt application to the local road network.

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Calcareous concretion associated with *Limonium procerum* (Large Sea-lavender) and storm damage resilience

IVOR REES

Colonies of *Limonium binervosum* agg. (Rock Sea-lavender) have been known for many years on the rocky coast of Anglesey (v.c. 52) near Aberffraw (Roberts, 1986). From descriptions by Sell & Murrell (2018) they have been determined as *L. procerum* (C.E. Salmon) Ingr. (Large Sea-lavender). In early March 2014, shortly after the particularly stormy winter of 2013/14, several of the sites for this species were revisited. Storm surges that winter had resulted in some extremely high tides on Irish Sea coasts; the highest tide for 21 years being recorded at Liverpool on 5 December 2013, followed by another major storm surge on 3–6 January 2014 (Duigan et al, 2014). Wave swash during these events caused considerable erosion to foredunes on the south-west coast of Anglesey and damage to infrastructure. Plants in the supra-littoral zone on nearby rocky shores would also have been subject to the same abnormal wave conditions.

Rock Sea-lavender (*Limonium binervosum* agg.), Penmon Point, Anglesey. *Photographs by the author.*

Observations

At Porth Lleidiog (SH 3483 6783) it was apparent that large parts of some *L. procerum* colonies had been torn away. Less expected, was the exposure of patches of cemented sand overlying the bedrock where *L. procerum* rosettes had been. Discrete pits in the concretions also indicated where the tap roots had been pulled out. The concretions also seemed to be associated specifically with Sea-lavender colonies and not with clumps of other vascular plants which had also suffered storm damage.

In case the observation might be of wider ecological or geological interest, several photographs were taken (Plates 1–6). Subsequently, one of the more easily relocated concretion patches was photographed from above at intervals over six years. The images were taken on an opportunistic basis so not all originally had the same alignment. Rotating them using identifiable rock cracks as markers has allowed both the regrowth of the plant and the persistence of the concretion to be compared. A photograph of the same colony also happened to be available from six years before the storms.

The colony is located on an outcrop of Pre-Cambrian rock at a level only reached by wave run-up when storms coincide with the biggest tides. It is towards the rear of a small south-facing beach backed by a low cliff of glacial till. Adjoining the rock most of the beach has poorly sorted medium–coarse sand in the zone from high water springs down to high water neaps with extensive intertidal rock

Plates 1–6. Porth Lleidiog *L. procerum* colony showing concretion and stages in regrowth following storm damage (bottom edge of images is orientated towards the sea). **1 & 2 (top):** 20 June 2007 (left); 3 March 2014 (right), two months after storm damage. **3 & 4 (middle):** 16 August 2014 (left), in first summer after storm damage; 8 August 2019 (right). **5 & 6 (bottom):** 13 March 2020 (left); 1 August 2020 (right).

platforms to seaward. The beach material includes much shell hash derived from limpets (*Patella* spp.) and other marine organisms.

Plate 1 shows the *L. procerum* colony in summer 2007. It may have been derived from a single very long-established plant. That summer it had many closely spaced rosettes and many flowering stems. It is not known whether it expanded significantly or not during the six years before the storm damage occurred. The image in Plate 2 shows the situation in early March 2014, two months after the second storm surge. The sand seen on the photo was solidly cemented. Some remains of apparently dead sections of the plant with bleached and decaying leaves were still present. A few surviving rosettes still with partly green leaves, can also be seen on the left edge of the concretion. In most *L. binervosum* agg. taxa the leaves from a previous year normally remain through the winter, even if not in pristine condition. Later in the summer old leaves may be found decaying but still attached under the subsequent ones on the rosette. In this trait, they differ from *L. vulgare* and *L. humile* Mill (Lax-flowered Sea-lavender), where the leaves wither and are lost during the winter.

Plate 3 shows the situation in August 2014, the first summer after the storm damage. The concretion had apparently lost little and the tap root pits were still sharply defined. Rosettes that had survived the storms of the winter did not all put up flowering stems that summer. Plate 4 shows that five years later in August 2019 the plant had spread so that the rosettes now covered about half the extent of the concretion as seen in March 2014. An apparently normal proportion of the rosettes put up flowering stalks. Some reduction of the extent of the concretion around the edges

was apparent, but the remains of old tap root pits confirmed that much of the cement bonding was still strong.

Plate 5 shows the colony in mid-March 2020. It shows signs of leaf damage, probably having been washed over again during winter storms, but without enough force from wave run-up to tear rosettes away. In August 2020 (Plate 6) there were again multiple well grown rosettes and many flowering stems. It was noticed in 2020 that the flowering stems had a length distribution that was bimodal, with short ones as well as the normal tall ones. Some of the original concretion could still be seen but more of it appeared to have been lost from the edges and it was breaking down where there had been a concentration of tap root pits.

Discussion

Carbonate cementation around plant roots, sometimes termed 'rhizocretion' (Tucker & Wright, 1990), has more commonly been found in semi-arid climates. In the geological context, concretion by calcite or dolomite was considered indicative of fluctuating pore water chemistry. Experimental studies and electron-microscopy have also demonstrated the importance of microbially induced calcite precipitation (MICP). Fungi and bacteria have been shown to interact in this process (Martin, et al, 2012). At the Porth Lleidiog site there would have been a ready source of calcium carbonate from the shell hash fragments washed or blown over the rock. A proportion of these could become trapped in depressions in the rock surface and under *L. procerum* rosettes. Large temporal fluctuations in pore water salinity would occur in this type of situation due to salt deposition from spray and aerosols, evaporation due to solar heating of the rock and transpiration of the plant versus dilution by rain. The concretion was slightly darker in colour than loose sand nearby, implying some incorporation of organic matter. Possible sources of this would be fragments of stranded marine algae, decaying rosette leaves and exudates from the salt glands of the plant. Salt glands feature in descriptions by Sell & Murrell (2018) of many *Limonium* taxa.

Taken together, the above indirect evidence suggests that the concretion described here was partly due to MICP. Concreted shell hash has also been seen in the crevices occupied by the rhizomes of the atypical rock living *L. vulgare* (Common Sea-lavender) on this part of the Anglesey coast (Rees, 2016). Where an abundance of shell is available, concretion may provide additional anchorage for *Limonium* plants in locations subject to intermittent splash or swash from storm waves. Such concretions have not been noticed at other rocky places where there is less shell available and where *L. binervosum* agg occurs in the ecotone fringe between sandy saltmarshes and low dunes. The observation of slow regrowth in a harsh environment supports the contention that individual plants in some *L. binervosum* agg. colonies may have maintained themselves by vegetative means for very many years.

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Using dash cams for recording plants on road verges

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If you are like me, then you can recall many occasions when you thought 'I wish I could record the location of this plant on the road verge'. After unsuccessful struggles to retrieve those locations, I explored the option of getting a dash cam at the beginning of 2018.

There is a big choice of dash cams on the market. First, I tried a cheap one which just recorded the video. Very quickly I realised that it required too much time to fit the recorded images to road maps and turned my attention to the cameras with embedded GPS. I chose the NextBase 412GW. It records the video and imprints date, time, speed and location on the images (Plate 1). I am very happy with this model. The holder needed a replacement a few months ago, but this is a minor fault compared to the benefits. Not very conveniently, the only available location format is in degrees and decimal minutes. After trying a few online converters, I prefer the Ordnance Survey (*www.ordnancesurvey.co.uk/gps/transformation*) which provides options for transforming single and batch data.

To give an example, I used my camera to record *Cochlearia danica* (Danish Scurvygrass) (Plate 1, Figure 1a) on my routine road trips. I recorded *Brassica napus* (Oil-seed rape) during the same period as a control. The map (Figure 1b) shows clear differences in distribution. *C. danica* only follows large roads (A414) which are regularly salted, while *B. napus* occurred pretty much everywhere I went. I also find that the dash cam is helpful to record *Viscum album* (Mistletoe) (Plate 2) and occasional odd things in the middle of a dual carriageway.

Images are not always clear enough to identify plants, but it is a great help in retrieving the location after noticing the species on the spot or being alerted by a fellow botanist.

As a secondary use – dash cams are advertised as useful gadgets safeguarding one in case of a motoring accident. Indeed, my insurance company was very happy to learn that I had a video record of what happened when my car was hit from behind.

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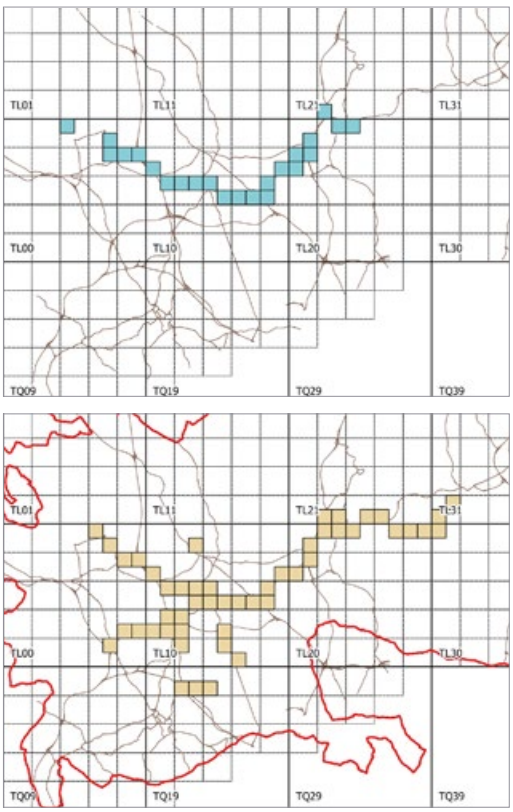

Figure 1. Maps produced using records from NextBase 412GW on my routine trips during 2018–2019. **(a)** (top): *Cochlearia danica* (Danish scurvygrass); **(b)** (bottom): *Brassica napus* (Oil-seed Rape).

Plate 1. A shot recorded with NextBase 412GW showing the imprinted data and *Cochlearia danica* (Danish scurvygrass) on the left-hand verge (in good weather).

Plate 2. A shot recorded with NextBase 412GW showing the imprinted data and *Viscum album* (Mistletoe) (in bad weather).

INTRODUCING MY VICE-COUNTY

Outer Hebrides (v.c. 110)

PAUL A. SMITH

Watery view of the south of North Uist. *Photographs by the author.*

The Outer Hebrides is the 15th largest vice-county by land area, but it represents some unique challenges. The islands are in three main inhabited groups (Lewis and Harris, which are a single land mass; the Uists; Barra and Vatersay), which therefore have transport links (ferries and planes) to the mainland. But there are so many outlying islands, island groups and fragments of the main islands that it has the most hectads of any vice-county: 89; and 20 of these are not accessible from the inhabited islands without a further boat trip. So spare a thought for the recorders trying to get some records from all the hectads during a 10-year date class – that's not likely to be feasible.

However, it is undeniable that islands have a particular draw and that people want to remember and record their experiences when they do reach them. So there are many articles describing trips to such places and giving species lists (often very short for small islands well offshore, so that a day trip costs many £ per species!). Indeed St Kilda is so much an attraction that it must have more pages written about it than any comparably-sized area of Britain and Ireland, but with a rather short species list (see Crawley, 2017). So the least well-known parts of v.c. 110 are in fact the parts of the main, inhabited islands which are a long walk from the nearest access – particularly the central Lewis peatlands which do not even have the attraction of a hill to walk up or a coastline to visit.

I got hooked by the Outer Hebrides (as other people have before me – there are lots of examples of repeat visitors) following a BSBI field meeting in 1994, and after several years of regular holiday visits generating records I was invited to become joint Vice-county Recorder with Richard Pankhurst, later becoming sole recorder when he passed away in 2013. So for many years I have made solo trips and family holidays. It's a *long* way from Southampton – usually overnight with two drivers, though it takes two days to drive on your own. But I find the arrangement works well for me – I focus on recording full-time when I am there, and deal with specimens and records in my spare time when I'm

not. There is not the same pressure to go out each weekend, as it's not possible to visit for the weekend (even flying in and out, because the flights don't line up). It does make some things challenging – checking up on a strange record relies on being in the right island group at the right time of year, and it may take several years for that to be worked out. Not great for casual records! And I was horrified when the first target site in the Threatened Plants Project was Gaskeir, an uninhabited island 5 miles off the coast – though I did eventually get there. But I have been ably assisted by botanists who have joined house-parties to do recording, a network of helpful residents who will look at things, and many visitors who send me records. Please make sure you do too if you visit my vice-county!

The Outer Hebrides are very varied, but in specific ways – there is almost no semi-natural woodland (only fragments in places inaccessible to grazing animals); cultivation is largely restricted to the machair (sandy areas) and reducing even there. There are almost no real soils – everything is either sand or peat, or a mixture, which can be

Dactylorhiza incarnata subsp. *coccinea* (Early Marsh-orchid), Beirigh machair.

Floriferous machair, Eriskay.

very interesting. Here are some suggestions for what to see.

The habitat for which the Outer Hebrides are most known is *machair* – places near the sea where there is calcareous sand on the shore. The machair is regularly used for cultivation, traditionally after fertilising with seaweed, and on a rotation so that areas are fallow for two years between crops. This means that there are many interesting arable weeds in the fallow areas, and often also in the crops, since the land is marginal and not worth the use of chemicals. Most of the western coast of the Uists is machair, but Loch Hallan SSSI (NF 7321) is a good area, where you could expect to encounter *Glebionis segetum* (Corn Marigold), *Sherardia arvensis* (Field Madder), *Avena strigosa* (Bristle Oat), *Viola tricolor* subsp. *curtisii* (Wild Pansy) and other nice weeds in the cultivated areas, and *Ranunculus trichophyllus* (Thread-leaved Water-crowfoot), *Juncus balticus* (Baltic Rush), *Cerastium semidecandrum* (Little Mouse-ear) and a range of *Dactylorhiza* (Marsh-orchid) species in the uncultivated parts. Loch Hallan is the only extant site in the vice-county for *Cicuta virosa* (Cowbane). *Carex diandra* (Lesser Tussock-sedge) is also here in the marshy areas.

Baleshare, an island connected to North Uist by a causeway is another interesting, and extensive area of machair. There is a car park by the sea at NF 779613, and walking to the south will take you past some flowery machair. Some of the bare sandy areas towards the south have *Mibora minima* (Early Sand-grass), discovered in 2015. The damp machair at the south end of the island has *Equisetum variegatum* (Variegated Horsetail), but you have to bend down to see it – it is essentially invisible from a standing height!

The Outer Hebrides are also well known for their range and quantity of lochs. It often seems that half of the land surface is blue on maps (only a small exaggeration in the case of North Uist!), and there are places where it's necessary to wind a route between lochs to record a defined area. The hydrology is also very varied, with lochs situated on the machair or affected by blown sand having a high pH (sometimes only locally or varying within a loch). Many lochs are affected by salt spray too, and the Outer Hebrides is a hotspot for lagoon habitats with brackish waters affected by tidal inflows. This means that there are many interesting aquatics, including *Najas flexilis* (Slender Naiad) (particularly widespread at the south end of South Uist), and *Lamprothamnium papulosum* (Foxtail Stonewort) (can

Hierochloe odorata (Holy-grass), Loch Torcusay, Benbecula.

be seen at Aileodair [NF 8872] in North Uist) – both of these are protected species which should not be disturbed.

A suggestion for an interesting location is Loch Torcusay and Loch na Liana Moire, Benbecula (NF 7653). Early in the year *Hierochloe odorata* (Holy-grass) makes a good show, as there is an extensive population next to Loch Torcusay, extending to the road verge. But later in the year it is a challenging plant to pick out, with the persistent glumes the best giveaway. *Potamogeton* × *billupsii* is in Loch na Liana Moire, together with its parents *P. coloratus* (Fen Pondweed) (rare in v.c. 110) and *P. gramineus* (Various-leaved Pondweed), (widespread, but only where there is some base richness). This used to be the only extant British locality for this hybrid, but it has since been found in Anglesey (Bonner, 2009).

A lot of the Outer Hebrides is peaty moorland, and I have certainly done my fair share of botanising in this sort of habitat. Not many people relish a long, rough walk to bash a tetrad that may have fewer than 70 species in a whole day of recording (they're not all so species-poor though). I will certainly take this chance to express my gratitude to those hardy few who have regularly put in these efforts! From this type of terrain comes one of my catchphrases – when asked 'What shall I wear on my feet today?', my stock phrase is 'The answer's always wellies!', and indeed I use them everywhere (and go through a pair every year or two). But especially for soggy moorland with a scattering of lochs to paddle in, wellies are invaluable.

It is harder to select a characteristic moorland site, and the more interesting species tend to be in flushed areas where there is some extra base movement. One nice and accessible area is the Lundale River next to the road to Great Bernera (c. NB 189307), which has a fairly reliable population of *Hammarbya paludosa* (Bog Orchid) and a good selection of *Carex* spp. including *Carex pauciflora* (Few-flowered Sedge).

Some areas of the Outer Hebrides are quite mountainous, particularly North Harris which contains all the highest peaks, though South Harris, west Lewis and South Uist all contain ground above 400 m. An Cliseam ('The Clisham') is the highest,

Hammarbya paludosa (Bog Orchid), Kinsoval, Lewis.

An Cliseam from one of the setting off points.

Micranthes [Saxifraga] stellaris (Starry Saxifrage) on Tomnabhal summit.

Members of the British Pteridological Society at a site for *Cryptogramma crispa* (Parsley Fern) near the summit of An Cliseam; the mouth of Loch Seaforth is in the distance.

at 799 m, and although not the most botanically interesting, it is relatively accessible with a straight up and down walk from the main road (starting at 150 m altitude). Look out for *Micranthes [Saxifraga] stellaris* (Starry Saxifrage) and *Salix herbacea* (Dwarf Willow) at the summit and also *Dryopteris expansa* (Northern Buckler-fern) and *Cryptogramma crispa* (Parsley Fern). Hardy folks may want to continue to the west of the summit and look for *Luzula spicata* (Spiked Wood-rush), but this makes for a longer walk. On a good day the view from the top is wonderful.

Curracag is the Outer Hebrides Natural History Society (*www.curracag.org.uk*). It has a nice regional journal, *Hebridean Naturalist*, which contains interesting articles about all aspects of the natural history of the islands. It is connected with the local volunteer-run records centre, Outer Hebrides Biological Recording (OHBR: *www.ohbr.org.uk*). You can look at either site for details of events you might join (they are most active in the Uists). Please pass on records of vascular plants to me and everything else (bryophytes, beasties, fungi, etc.) to OHBR.

My site suggestions have been well scattered over the islands, so one last suggestion for a place to go with a bit of everything, which is Uig and the Beirigh peninsula. There are large and rich machair areas around Uig Bay and Traigh na Beirigh. Some alpines get down to sea level here – *Silene acaulis*

(Moss Campion) can be seen next to the footbridge in Uig bay (NB 049334), but also in many places round the coast. *Saxifraga oppositifolia* (Purple Saxifrage) is in the extreme SW corner of Traigh na Clibhe (NB 079364). Both of these flower early in the botanical year, in May. Loch Sgailler (NB 0835) is influenced by sand and has *Potamogeton gramineus* (and an old record for *Potamogeton crispus* [Curled Pondweed], though this has not been seen for many years). For the hardier, the Uig hills can be approached along a track belonging to the estate (only for walkers), and there are interesting species scattered among the hills, including *Saussurea alpina* (Alpine Saw-wort) and *Rubus saxatilis* (Stone Bramble), though they are not always easy to find.

The Outer Hebrides is a fantastic, varied vice county, and when the sun shines and the sea is blue it is incomparable. Though I confess, it does rain every now and again… so do turn up with full waterproofing, and I hope that you won't need it.

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Saussurea alpina (Alpine Saw-wort), *Rhodiola rosea* (Roseroot) and *Cystopteris fragilis* (Brittle Bladder-fern) on a ledge on Tahabhal, Uig.

Silene acaulis (Moss Campion), Timsgarry, Uig Bay.

ADVENTIVES AND ALIENS

Adventives and Aliens News 22

COMPILED BY MATTHEW BERRY

I promised a longer preamble last time and here one is – unavoidably a miscellany of odds and ends that have accumulated over a considerable period, though none of them out of date as such.

It is easy to forget that non-native plant species which have become so familiar in some parts of Britain and Ireland that they barely register as aliens any longer, have only recently arrived in others and are spreading detectably in many more. Graeme Kay, VCR for Cheshire, provided the following illuminating statistic for *Polypogon viridis* (Water Bent) in v.c. 58, where it was first recorded in 2006. As of 2019 it was known in 55 sites, some harbouring established populations. He describes it as 'spreading faster than any previous species'. A botanist just now starting to explore urban habitats in certain southern vice-counties will be already too late on the scene to observe this rapid spread first hand.

Graeme Kay also reminded me of the v.c. 58 site for *Mentha cervina* (Hart's Pennyroyal), the species that was recently discovered by Ambroise Baker at South Gare (v.c. 62). The Cheshire record was featured in Adventives & Aliens News 5 (with photos), where I erroneously gave the location as Chorley. It should be Chorlton (my apologies). It was certainly still present there in 2019, indeed Graeme described it as 'thriving'.

Adventives & Aliens News 20 contained a v.c. 58 record of *Caltha palustris* subsp. *polypetala*. This is the name often applied to large-leaved, large-flowered (and perhaps also *flore pleno*) garden forms of *C. palustris* (although Stace [2019] only mentions var. *barthei* in relation to them). However, Rodney Burton explained to me that strictly speaking the name *C. palustris* subsp. *polypetala* refers to a quite different plant, a native of the Caucasus and Asia Minor (plus Bulgaria and Iran), which normally has flowers with seven, relatively narrow perianth segments. It is presumably almost unknown as a garden plant in Britain and Ireland. He also writes about this matter in *Wild Flower Magazine* Autumn 2020 (No. 513), on p. 18.

Every year I check the constituents of 'wild flower seed mixtures' sown in parks and gardens around Eastbourne, to see what might turn up later in recordable spots in gutters, pavement cracks and at the bases of walls, etc. This year *Iberis amara* (Wild Candytuft) was a feature of a number of them for the first time. The chalky soils and relatively Mediterranean local climate (even if it is not strictly a Mediterranean plant) might be to the species' liking, although I have only ever seen *I. umbellata* (Garden Candytuft) before. Indeed non-native records of *I. amara* seem to be rare generally. While it might struggle to rival its (usually) pink-flowered congener for number of casual occurrences, it will certainly never compete with that other white-flowered annual crucifer, *Lobularia maritima* (Sweet Alison), a very frequent street weed in Eastbourne.

Having the information to hand, a few more updates are in order. Colin Pope observed that *Pelargonium inodorum* (Scentless Geranium) was still present at its v.c. 10 site in 2020 and that it even appeared to be spreading (see *BSBI News* 131: 54). Is it present elsewhere? *Calepina irregularis* (White Ball-mustard) could not be detected at its Southampton (v.c. 11) site in 2015, the year after its discovery there (see Adventives & Aliens News 6). Nor has it been observed since. In October 2020, George Hounsome and Eric Clement found c. 40 plants of *Bidens frondosa* (Beggarticks) surviving at the head of a now badly overgrown ditch at Elson, Gosport (v.c. 11), where it was first recorded in 2010 (see Adventives & Aliens News 4). Is it more generally

overlooked in this sort of habitat, particularly in vice-counties along the south coast of England? All three updates are courtesy of E.J. Clement.

I will finish by highlighting the embarrassment of botanical riches my inbox often seemed in the final weeks of summer/autumn 2020. These records came from VCRs and non-VCRs alike and I am exceedingly grateful for every single one of them. I did not have the space to use as many as I would have liked in this issue, but more will be used in News numbers 23 and 24. Many thanks.

V.c. 2 (E. Cornwall)

Euphorbia corallioides (Coral Spurge), Saltash (SX42875914), 28/8/2020, P. Pullen (conf. T. Walker/comm. P. Pullen): growing as a roadside plant at the foot of a wall. There are two earlier v.c. 2 records. A native of Italy and a garden escape in this country. It has been known at Slinfold (v.c. 13) since c. 1808 (extant as recently as 2005), see Sussex Botanical Recording Society (2018), p. 151. 'Coral' refers to the pinky-orange colouration sometimes seen on the stem and 'leafy' parts of the inflorescences. Clement et al. (2005): 181; Stace (2019): 360. See v.c. 12.

V.c. 3 (S. Devon)

Darmera peltata (Indian-rhubarb). Plymouth (SX5485556227), 2/5/2020, P. Pullen: one large clump in wet grassland, Plympton area. First recorded here in 2015. A rhizomatous garden plant (Saxifragaceae) that likes wet places, native to California and Oregon. See Adventives & Aliens News 1, v.c. 13. Stace (2019): 137.

V.c. 6 (N. Somerset)

Scilla peruviana (Portuguese Squill), Westbury Quarry (ST505504), 15/6/2019, P. Steele: one plant in flower near rim of quarry and another not in flower close by. New to v.c. 6. It is a native of Portugal, Spain, France and Italy (not Peru!), where its typical habitat is damp, nutrient-rich meadows. It is a variable species. A rare garden escape/throw-out. Stace (2019): 965.

Darmera peltata, Plymouth, South Devon (v.c. 3). *Phil Pullen*

Scilla peruviana, Westbury Quarry, North Somerset (v.c. 6). *Pat Steele*

V.c. 9 (Dorset)

Clerodendrum trichotomum Thunb. (Harlequin Glorybower). Swanage (SZ0252679670), 3/9/2020, D. Leadbetter (det. M. Berry): seedling or sucker on bank close to garden fence near Cauldron Barn Farm. A large deciduous shrub (Lamiaceae) native to E. Asia. It can be easily distinguished from *C. bungei* (Glory Flower) by the white flowers which

Euphorbia serpens, Gosport, South Hampshire (v.c. 11). Top: plant in situ; bottom: underside of shoot showing capsules and flower. *John Norton*

Salvia forsskaolei, Studland, Dorset (v.c. 9). *David Leadbetter*

are c. 3.5cm across (dark pink and c. 2cm across in *C. bungei*) and the winged inflated calyces (unwinged and short-tubular in *C. bungei*). Both have foetid subopposite leaves and sucker freely. See Adventives & Aliens News 18, v.c. 17. Most/all British material is var. *fargesii*.

Salvia forsskaolei L. (Indigo Woodland Sage). Studland (SZ0369381564), 7/7/2020, D. Leadbetter: one plant by grassy path at south end of Glebeland Estate. A garden plant (Lamiaceae) native to Bulgaria, Greece and Turkey. A glandular hairy, little branched perennial up to 100cm tall. The flowers are violet-blue with white or yellow markings on the lower lips and deeply divided upper lips. The leaves are relatively large, ovate and with cordate bases. It is in the same section as *S. glutinosa* (Sticky Clary). There is only one other record in the BSBI Distribution Database (DDb), for v.c. 19.

V.c. 11 (S. Hants)

Euphorbia serpens Kunth (Matted Sandmat). Gosport (SU6053000197), 12/9/2020, J.A. Norton & D.R. Allan (conf. E.J. Clement): a c. 80 × 20cm patch on tarmac pavement, outside just one house on Pelham Road, plus small plant nearby on road kerb. New to v.c. 11. *E. serpens* is glabrous (including capsules), roots at the nodes, has more or less smooth seeds and entire, suborbicular leaves. John Norton recognised it immediately being familiar with it in the Arabian Gulf, where it is a common species in big cities in irrigated flower beds. A native of tropical America, it is most likely as a 'container alien' (particularly potted olives and palms from southern Europe), but has also been associated with bird-seed and wool waste (shoddy). There is a fine account of nine different species of 'sandmat' (syn. *Chamaesyce*), including *E. serpens*, only five of which are currently known for Britain and Ireland, in *Essex Botany* No. 10, Winter 2019, pp. 12–18.

V.c. 12 (N. Hants)

Euphorbia corallioides (Coral Spurge). Littleton (SU454329), 13/4/2020, D.J. Pearson (comm. A. Mundell): in Church Lane. The second v.c. 12 record, the first being for 2010.

V.c. 13 (W. Sussex)

Amaranthus blitum (Guernsey Pigweed). Bognor Regis (SZ93649931), 13/8/2020, M. Shaw (conf. M. Berry): growing in crack between garden wall and pavement, Lyon Street. A Mediterranean annual known as a bird-seed and grain alien, nursery weed and former wool casual. Probably increasing. Clement et al. (2005): 63; Stace (2019): 530.

V.c. 14 (E. Sussex)

Ampelopsis glandulosa (Wallich) Momiy. var. *brevipedunculata* (Maxim.) Momiy. (Amur Peppervine). Eastbourne Seaside (TQ6181600030), 15/8/2020, M. Berry (conf. E.J. Clement): two stems surviving in a twitten off Clarence Road. Its exact status is unknown but a planted specimen is present in an adjacent garden. A native of E. Asia (Vitaceae). The leaf shape is variable, ranging from almost entire to deeply 3- or 5-lobed. The tiny 5-petalled green-white flowers occur in leaf-opposed corymbose cymes and give way to blue, pink and purple berries. These have a glassy, almost artificial appearance which accounts for the alternative English name 'Porcelain Berry'. The petals are free (united at the tips in *Vitis*), the tendrils 2-branched (3- to 12-branched in *Parthenocissus*) and always without adhesive pads. The Manual of the Alien Plants of Belgium states that it is 'dispersed by berry-eating birds and small mammals'. As with *Parthenocissus* spp., members of this genus can be invasive. There are no other records in the DDb as yet.

Cotoneaster marginatus (Fringed Cotoneaster). Lewes (TQ3984509562), 6/9/2020, P. Harmes (det. J. Fryer): in roadside hedge between A277 and Houndean Rise. It is like *C. integrifolius* (Entire-leaved Cotoneaster) but with more flowers per inflorescence. The dull, sparsely villose berries are also a quite distinctive (dark) ruby colour. New to Sussex. Stace (2019): 243.

Teucrium hircanicum L. (Iranian Wood Sage). Eastbourne Seaside (TQ6244300211), 12/9/2020, M. Berry (conf. E.J. Clement): two self-sown plants in a twitten between Sidley Road and Bexhill Road. A garden perennial (Lamiaceae) from south-west Asia with slender spires of close-packed, burgundy

Euphorbia corallioides, Littleton, North Hampshire (v.c. 12). *Dave Pearson*

Cotoneaster marginatus, Lewes, East Sussex (v.c. 14). *Paul Harmes*

flowers and rather foetid leaves. There is only one record in the DDb, for v.c. 29, but see also Adventives & Aliens News 12, v.c. 14.

Erigeron annuus (Tall Fleabane). Lewes (TQ4203210658), 21/5/2020, P. Harmes: one plant in grassy track, Brooks Road. The first Sussex record. A N. American native (Asteraceae) which is fully established in a variety of habitats in Central Europe. In Belgium it is an increasing escape from cultivation. As of 2/11/2020 there were, minus duplicates, 88 records in the DDb, 34 of which were post-2000. Stace (2019): 783–784. See v.c. 17.

V.c. 17 (Surrey)

Erigeron annuus (Tall Fleabane). Milford area (SU94334305), 23/10/2018, G. Hounsome: a few plants still present on north verge between the roundabouts at the A3/A283 junction. First recorded at this site in 2015, the plants have been determined as subsp. *strigosus*. It has been known at Haslemere Station (v.c. 17), albeit with large gaps in the record, since 1983.

V.c. 19 (N. Essex)

Arachis hypogea (Peanut). Broomfield C.P. (TL7134310668), 7/9/2019, G. Clark (comm. K.J. Adams): single plant in flower (and with nibbled leaflets) on disturbed ground by footpath a long way from habitation, south of Newland Grove. An annual legume originating in tropical S. America and an important food crop in warmer countries. A bird-seed/food refuse and former tan bark casual of southern England. See *BSBI News* 120 back cover for photos of a plant in the fruiting state. Stace (2019): 162.

V.c. 27 (E. Norfolk)

Persicaria glabra (Willd.) M. Gómez (Denseflower Knotweed). Aylsham (TG1989428404), 6/8/2019, Norfolk Flora Group (det. J. Akeroyd/comm. M. Padfield): in a grazing field with marshy areas. The bristly-scabrid leaf margins and veins of the lower leaf surfaces indicated var. *scabrinervis* (Hook. f.) Hara (det. J Akeroyd). The entire non-ciliate ochreae distinguished it from *P. maculosa*. The flowers were bright pink in this case, but *P. glabra* can have a white perianth and confusion with the highly variable *P. lapathifolia* would probably be the most likely cause of misidentification. The flora descriptions of this species also differ slightly, with the N. American plant somewhat distinct from that found in the Old World. A plant of the Tropics, it has been known as a wool and bird-seed casual. The vector in this case would have to be a matter of pure conjecture. For a full account of a recent v.c6 record and further descriptive detail, see *BSBI News* 144, pp. 56–57.

Arachis hypogea, Broomfield C.P., North Essex (v.c. 19). *Graham Clark*

V.c. 31 (Hunts)

Oenothera stricta (Fragrant Evening-primrose). Great Gransden (TL268558), 26/8/2019, D. Broughton: one plant at base of lamp post self-sown from a garden some 10 m distant, West Street. New to v.c. 31. A native of Chile (Onagraceae) which occurs mostly as a garden escape but historically also a wool alien. Stace (2019): 388.

V.c. 35 (Mons)

Nonea lutea (Yellow Nonea). Mynydd Garnclochdy (SO2807), 25/6/2019, S. Tyler: around farm buildings at Hendre Farm. There are no other v.c. 35 records in the DDb. An increasing garden escape (Boraginaceae). See *BSBI News* 16: 1 for a drawing; Adventives & Aliens News 18, v.c. 38 for a photo. Stace (2019): 592.

Oenothera stricta, Great Gransden, Huntingdonshire (v.c. 31). *David Broughton*

Chaenorhinum origanifolium, Frisby on the Wreake, Leicestershire (v.c. 55). *Stephen Woodward*

Ammi majus (Bullwort). Llancayo (SO3603), 28/10/2019, E. Wood & S. Tyler: all along the edge of a Lucerne crop. There are three other v.c. 35 records, but this is the first for at least twenty years. An annual umbellifer, native to S. Europe, N. Africa and Asia Minor. These days, but not in the past, it is often an escape from cultivation. Clement et al. (2005): 204; Stace (2019): 866.

V.c. 36 (Herefs)

Pratia pedunculata (Blue Lawn-lobelia). Pipe and Lyde (SO503439), 17/8/2019, A. Woods (comm. A. Woods): lawns at Kenchester Water Gardens, locally abundant. A creeping garden perennial (Campanulaceae), a native of Australia, used for lawn/ground cover or as a rockery plant. Most records are for lawns. Stace (2019): 713.

V.c. 55 (Leics)

Chaenorhinum origanifolium (Malling Toadflax). Frisby on the Wreake (SK694177), 18/7/2020, S. Woodward & H. Ikin (det. M. Wilcox): single plant on outside of garden wall beside a village lane. A perennial herb, native to south-western Europe (Veronicaceae but formerly in Scrophulariaceae), grown in gardens as a rockery plant and long established on walls at West Malling (v.c. 16). *C. rubrifolium* has been recorded in error for it in the past. It is a diminutive annual with a basal rosette, not grown in gardens. Clement et al. (2005): 245; Stace (2019): 627.

V.c. 57 (Derbys)

Lathyrus vernus (Spring Pea). Chesterfield area (SK3564967611), 27/4/2020, M. Lacey: growing in a hedgerow some way from habitation, Stubbing Court. New to v.c. 57. A garden plant (Fabaceae), found through much of Europe as a native. See Adventives & Aliens News 8, v.c. 24. Stace (2019): 173.

V.c. 58 (Cheshire)

Persicaria pensylvanica (Pinkweed). Dodleston (SJ361609), 9/7/2020, J. Shanklin (comm. G.M. Kay): weed in back yard, the Old Rectory. Origin unknown. It was var. *laevigata*, with glabrous leaves. The first v.c. record. An oil-seed casual (Polygonaceae) from eastern N. America. In Belgium it is a rather frequent soya bean alien of port areas. Stace (2019): 464.

V.c. 62 (N.E. Yorks)

Viburnum tinus (Laurustinus). North of Redcar Works (NZ5712325773), 26/2/2020, D. Barlow: single bush at side of road to South Gare. There have only been five previous v.c. 62 records. See v.c.H32.

Hedera algeriensis (Algerian Ivy). South Gare (NZ5792725156), 25/2/2020, D. Barlow: two plants on the soil mound bank facing the golf course, old railway crossing. New for the county. An evergreen climber (Araliaceae) from N. Africa, available in a number of cultivars (e.g. 'Gloire de Marengo'), which is recorded outside gardens less frequently and widely than the hardier *H. colchica* (Persian Ivy). Stace (2019): 840.

Securigera varia, Bradford, South-West Yorkshire (v.c. 63). *Mike Wilcox*

V.c. 63 (S.W. Yorks)

Securigera varia (Crown Vetch). Bradford (SE1554431530), 7/2020, M. Wilcox: on waste ground. Known at this site since 2005. The first v.c. 63 record was for 1978. A glabrous, spreading perennial herb (Fabaceae) native to Europe and south-west Asia, with 10–20 pink and white flowers in an umbel. A garden plant in Britain and Ireland which can escape to become established in waste places. Stace (2019): 167.

Gypsophila muralis (Annual Gypsophila). Brighouse (SE14672281), 17/10/2019, A. Kafel: under railings at pavement edge on north corner of Bethel Street and Bradford Road. The first v.c. record. An annual garden plant (Caryophyllaceae), native to Eurasia. See Adventives & Aliens News 16, v.cc. 13 and 69. Stace (2019): 504.

V.c. 64 (M.W. Yorks)

Silene schafta (Caucasian Campion). Kirk Hammerton (SE4612855541), 14/9/2019, D. Broughton: two well-established clumps growing out of face of brick wall. A perennial garden plant (Caryophyllaceae) native to the Caucasus. It has been established on walls of Ludlow Castle (v.c. 40) since c. 1915, extant as recently as 2002. Stace (2019): 502.

V.c. 67 (S. Northumb)

Herniaria glabra (Smooth Rupturewort). Corbridge (NY9885564439), 21/8/2020, A. Baker (conf. and comm. A.J. Richards): seeded from a municipal trough into pavement cracks in village centre. It is also an uncommon native (Caryophyllaceae) of dry sandy habitats. Stace (2019): 495.

V.c. 95 (Moray)

Actaea rubra (Aiton) Willd. f. *neglecta* (Gilman) B.L. Rob. (White-berried Red Baneberry). Speybridge (NJ03722671), 15/8/2020, A. Amphlett (det. M.

Crawley/comm. A. Amphlett): one fruiting plant on south-west side of minor road behind fence at the edge of a strip of woodland beside the R. Spey. Opposite a house but no other garden plants present with it, possibly self-sown. The first record in the wild in Britain and Ireland. A native of N. America, the nominate forma *rubra* is red-berried. *A. spicata* (Baneberry), a rare northern native and even rarer garden plant, has black berries. The Asian native, *A. simplex* Wormsk. ex Prantl (syn. *Cimicifuga simplex*) (Bugbane), is also a garden plant. It is taller with longer inflorescences and more conspicuous flowers. The fruits are follicles not berries. *A. rubra* can be distinguished (with some difficulty?) from the Eurasian *A. erythrocarpa* by its wider berries (greater than 10 mm across vs 8–10 mm across). The latter might also be in cultivation.

V.c.H32 (Co. Monaghan)

Viburnum tinus (Laurustinus). Inishkeen (H927068), 8/8/2020, A. Fitzgerald (det. P. Green & B. Seales): in a disused gravel quarry. New to the county. A native of the Mediterranean (Adoxaceae, but formerly in Caprifoliaceae), it is widely planted in gardens and shrubberies and bird-sown from them. It has a preference for calcareous substrates. Clement et al. (2005): 277; Stace (2019): 825.

Phalaris minor (Lesser Canary-grass). Near Drumirril (H933046, H933052), 8/8/2020, A. Fitzgerald: at the edge of a maize crop. The second H32 record. Alexis Fitzgerald commented that in Ireland it is particularly concentrated in south-eastern counties. In that region it is also often in arable. A native of the Mediterranean and south-west Asia. For illustrations of it with other *Phalaris* species see *BSBI News* 39: 1. Stace (2019): 1070.

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Actaea rubra f. *neglecta*, Speybridge, Moray (v.c. 95). *Andy Amphlett*

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Glyceria grandis S. Watson (American Manna-grass) in Surrey

GEORGE HOUNSOME

Plate 1. *Glyceria grandis* (American Manna-grass) en masse at Great Squires Wood, Surrey, June 2020. *Photographs by the author.*

In August 2019 I was exploring Squires Great Wood, an area of mixed Forestry England woodland north of Coldharbour, Surrey (v.c. 17). I came across a small pond (at grid reference TQ147461) with evidence of planting in the dim and distant past, and at one end was a small patch of a fruiting grass that I didn't recognise. The tallest culms were approaching a metre in height and the panicles, although occupying a lot of space, were extremely diffuse with tiny spikelets, more so than any grass of that size that I'd seen before. Most of the spikelets were empty, with only the glumes remaining, but the lemmas of the few remaining ones were just over 2 mm long with seven prominent veins. A few florets were occupied by small black bodies which I incorrectly took to be caryopses, but more of that later. I assumed it was an established planting, took a few photographs and a piece to take home to try to name it and moved on. A few hundred metres to the north, by a narrow ditch in woodland, where it certainly would not have been planted, I found another patch, so I revised my assessment of its status to 'naturalised'.

I still had no idea even which genus it might be, but after several phone calls to Eric Clement, sending him a specimen and following up likely suggestions we arrived at *Glyceria grandis* S. Watson (American Manna-grass), native to North America and Canada. Indeed, the wet habitat and the shape of the leaves, parallel-sided narrowing towards the tip, was characteristic of the genus.

It was once listed in the RHS Plant Finder but not since 1997, so as it was probably introduced

before that date it has been there for at least twenty years. The BSBI Distribution Database (DDb) has a single record for the UK, by M.J. Lucas on marshy ground near a supermarket in Huddersfield in 2009.

In November 2019 Eric and I returned to the site and were squelching through alder carr about a mile and a half north-east of Squires Great Wood. We came across much more *G. grandis* in wet woodland, so the plant seems to be more widely naturalised than I had first thought. It was associated with square metres of *Cardamine amara* (Large Bitter-cress). The common factor in all three of the Great Squires Wood locations is that they are by or near the Pipp Brook, a stream arising from a spring at Magg's Well on Coldharbour Common, which then flows north to the River Mole at Dorking. The plant may have become established in other sites downstream so, although much of it is inaccessible, over the course of the winter I looked for it in the few of the parts I could reach, but fruitlessly. A summer search might have more success. On the planned return visit to the Squires Great Wood pond site in June 2020 it was in full flower in several places round the pond (Plate 1), showing the airiness of the panicles (Plate 2). The spikelets are about 5 mm long with up to six florets.

Ryves et al. (1996) lists both *G. grandis* and *G. striata* (Lam.) Hitchc. (Fowl Manna-grass), both with the comment that they are potential aliens, established and spreading in North-west Europe and Scandinavia. They are very similar, distinguished by the length of the lemmas, 2–2.7 mm in the former and 1.25–2.0 mm in the latter. The seven prominent veins of the lemmas are present in both species. I have never seen *G. striata* and as far as I can tell it has never been available commercially in these islands. I can't imagine why anyone would want to plant either of them as they have no obvious beauty. *G. canadensis* (Michx.) Trin., another North American species, listed in the DDb in one site in Dunbarton (v.c. 99) in 2006, has a similar habit but is a larger plant with longer, obscurely-veined lemmas.

The black objects in the autumn florets: Eric informs me that they were caused by a smut, possibly *Ustilago glyceriae*, which infects the ovaries, filling them with powdery black spores. My thanks go to him for guiding me through unfamiliar areas of botany.

Plate 2. *Glyceria grandis* panicle.

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Allium ampeloprasum var. *ampeloprasum* (Wild Leek) does not set seed on Flat Holm

TIM RICH

Allium ampeloprasum L. var. *ampeloprasum* (Wild Leek) is generally regarded as an archaeophyte-denizen in Britain and Ireland (Preston et al. 2002; Stace 2019), though some authors accept it as native (Storrie 1886; Sell & Murrell 1996). There are scattered records across Britain and Ireland, presumably as escapes from cultivation (cultivars are grown as 'Blue Leek', 'Elephant Garlic', etc.). Wigginton (1999) stated that var. *ampeloprasum* reproduces by both seed and bulblets.

Allium ampeloprasum var. *ampeloprasum* is listed in the British Vascular Plant Red Data Book (Wigginton 1999) and so in 2016 I was asked to collect seed for the Millennium Seed Bank. The best known sites are Flat Holm, where it has been known since 1688 (Wade et al., 1994), and Steep Holm, where it has been known since 1625 (Roe, 1981). On Flat Holm, the population of 500–1000 plants is very strongly clustered in discrete groups around the Visitor Centre and farmhouse, the cliffs at Jackdaw Point and one outlier (Plate 1; Rich, 2018).

On 18 August 2016, after the plants had been flowering for about a month (pers. comm. Marianne Bony, warden), I was surprised to find that although the capsules were apparently mature, the seeds were not ripe. Other inflorescences still had flowers which were being visited by flies and bees. A second visit on 15 October 2016 showed hundreds of 'ripe' inflorescences but no seed, all ovules being small, white and soft. With permission, one bulb was taken to cultivate in Cardiff; the plant has grown and increased vegetatively but despite flowering every year since has not set any seed.

In contrast, on a family holiday in Portugal in July 2016, a native population of *A. ampeloprasum* var. *ampeloprasum* with seed was observed scattered on sea cliffs at Piedade, Lagos (Plate 2). Seed was collected for cultivation in my Cardiff garden near the Flat Holm plants. The Piedade plants flowered for the first time in July 2020 and set ripe seed in September (Plate 3). Hoverflies, Honey Bees and bumblebees were regularly observed visiting both the Flat Holm and Piedade plants in the garden. Other than in being sterile and slightly less robust, the Flat Holm plants are very similar to the Piedade plants.

The failure of seed set in plants from Flat Holm suggests this is a sterile cultivated clone, as may be *A. ampeloprasum* var. *babingtonii* and var. *bulbiferum* (Stearn, 1987). The highly clustered distribution on Flat Holm is indicative of vegetative spread rather than reproduction by seed. The Flat Holm and Steep Holm plants are reputedly of the same origin, but this may not be the cases for other colonies so I have also examined all the British var. *ampeloprasum* specimens in BM, E and NMW and not found any seed (though many were collected in flower rather than fruit), in contrast to European material where a range of specimens had seed.

I have also cultivated var. *babingtonii* (Babington's Leek) since 1997 and never observed seed (Plate 3). Treu et al. (2001) found var. *babingtonii* does not

Plate 1. *Allium ampeloprasum*, Jackdaw Point, Flat Holm 2016. *Photographs by the author.*

set seed as it consists of a single male-sterile and female-sterile clone which only reproduces from bulbils in the inflorescence and bulblets in the ground. Similarly, the Flat Holm plants are also likely to be a single sterile clone, but this has not been tested.

The Flat Holm plants are likely to be of cultivated origin and are not wild, and thus do not merit being listed in the Red Data Book or as a feature of Flat Holm SSSI. It was reported to be in decline by Wigginton (1999), the reason for which is clear from Storrie (1886); they are 'worthless as a vegetable' and the 'taste is most abominable, and remains in the mouth for days after eating'! The lack of seed set also suggests this Flat Holm clone is not a direct ancestor of the cultivated leek *A. porrum*, which reproduces solely by seed. Consequently, sadly, the 'wild' leeks on Flat Holm are unlikely to be directly associated with one of Wales' national floral emblems.

Plate 2. *Allium ampeloprasum* var. *ampeloprasum* on sea cliffs at Piedade, Portugal with (inset) ripe seed, 2016.

Plate 3. Inflorescences from *Allium ampeloprasum* plants cultivated in garden, Cardiff, September 2020: (*a*) var. *babingtonii*, Scilly Isles; (*b*), var. *ampeloprasum*, Flat Holm; (*c*) var. *ampeloprasum* Piedade, Portugal.

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A super problem with the naming of British Rhododendrons

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Rhododendron ponticum has been, famously, a conservation headache in Britain for many decades. Recently, however, a new and wholly avoidable problem has arisen with this species: one of naming. The problem stems from Cullen's (2011) decision to name hybridized British material of this species as '*R.* × *superponticum*'. Unfortunately this unhelpful name has increasingly found its way into the literature, and even Stace (2019) felt compelled to include it.

To see the trouble this has caused, simply read the article on botanical 'thugs' by Pearman et al. (2019) in *BSBI News* 142. Here, Ian Bennallick lists '*Rhododendron* × *superponticum*' as an invasive pest for Cornwall, whereas Bryan Edwards states that invasive Rhodies in Dorset are *Rhododendron ponticum*. Anyone not familiar with our Rhododendrons would come away concluding that Dorset and Cornwall have different taxa there, whereas in fact both counties contain an inseparable mixture of hybridised and non-hybridised *Rhododendron ponticum* plants. Neither worker can be faulted, because these are not consistently distinguishable, and so each worker had to make an arbitrary choice to call them one thing or the other. Of course, it's not just Dorset and Cornwall. The BSBI database map for '*R.* × *superponticum*' (Figure 1) misleadingly shows the plant as present only in strangely discrete patches around Britain, for example in West Wales the map shows it as abundant south of the river Dovey but absent to the north, which would come as a considerable surprise to the conservationists in Snowdonia who have spent decades keeping the plant in check there. Western Scotland has no records either. The patches on the map reflect the locations of recorders who have decided to use the name '*superponticum*', and have no biological meaning.

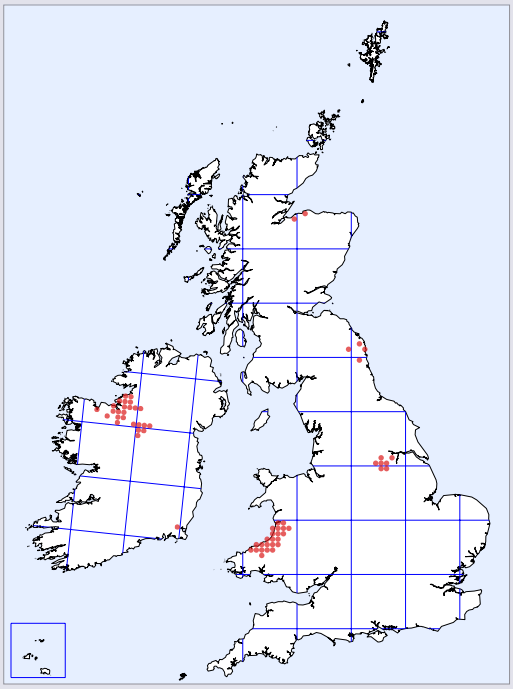

Figure 1. UK distribution map of *Rhododendron* × *superponticum* (hectads). *BSBI Distribution Maps*

As we'll see below, *some* individuals can be confidently assigned to '*R.* × *superponticum*' (though only if one stretches the rules of taxonomy to near breaking point), while for other specimens it is simply impossible. It is a name mired in chaos.

Let me summarise the background to this. *Rhododendron ponticum* belongs to the subgenus *Hymenanthes*, within which every one of the >200 species seems to be highly interfertile with every other. As a result of both deliberate and accidental hybridisation in cultivation, mostly during the 19th century, some British material of *R. ponticum* acquired genetic material from *R. catawbiense*, *R. maximum* and very probably *R. arboreum* (Milne & Abbott, 2000; Milne, 2017). Other species could have occasionally

Introgressed *Rhododendron ponticum* with corolla flecks. *Richard Milne*

been involved, too; likely candidates are *griffithianum*, *fortunei*, *campylocarpum*, *caucasicum* and *thomsonii*, based on these being extensively used in cultivar creation then and since (Milne, 2017, p. 67). Additionally, most or all naturalised populations derive from local plantings and a few may have picked up DNA from yet more related species if these were grown nearby. Despite all this, many escaped plants are still likely to be pure *ponticum*s that have avoided hybridisation altogether. Hence our British material comprises a dizzying array of potential parentages, varying both within and between populations; it is quite impossible to neatly subdivide it.

If it were possible to consistently distinguish hybrid from non-hybrid material, then taxonomic subdivision of these would be appropriate. But it is not possible. Partly this is because non-*ponticum* germplasm is a small minority in most hybridised plants, averaging probably 5–10% across all British Isles material (Milne & Abbott, 2000). Hence many introgressed plants are morphologically indistinguishable from pure *ponticum*, and you'd need to sequence most of the genome to find out which other species, if any, were involved. Moreover, it's quite possible that some plants could be *ponticum* with as little as ~1% DNA from other species, as would happen if *ponticum* crossed with (e.g.) *catawbiense* then backcrossed with pure *ponticum* for six generations. Such plants would still technically fall under '*superponticum*' but most would be indistinguishable from *ponticum*. Further generations of backcrossing would dilute the *catawbiense* influence still further, so there is no clear cut-off between pure and non-pure material. From this, any attempt to consistently distinguish hybrid and non-hybrid material has little or no chance of success.

In the face of such daunting obstacles, Cullen (2011) nonetheless described *R.* × *superponticum* as a distinct taxon, offering up three ways to distinguish it from pure *R. ponticum*, none of which work. First, he uses location – if it's in Britain, it can be *R.* × *superponticum*, if not, it can't. So if a seed blows across the channel to France, does it instantaneously become a new taxon? Do identical clones of cultivars like Cunningham's White (*ponticum* × *catawbiense*) belong to different taxa if grown abroad? Furthermore, if we slavishly assign taxon based on location, then any non-hybridised plants of *R. ponticum* in Britain will all be erroneously misidentified as '*R.* × *superponticum*'. While location can sometimes be used to aid identification (e.g. rare *Limonium* species) it can never stand alone as a defining trait.

Cullen's (2011) second criterion is no better: '*R.* × *superponticum*' is supposedly distinguished from pure *R. ponticum* because it is more vigorous. However, there is no way to objectively measure vigour, without digging up plants from multiple sites and comparing them via lengthy trials in a common garden. Moreover, vigour is well known to increase in invasive alien populations relative to source populations – think Japanese Knotweed or Himalayan Balsam – even without any form of genetic change. Furthermore, some species grow more vigorously when the habitat is altered in a way that suits them, like Gorse, Ragwort and Bracken in Britain; in fact this has been shown of *R. ponticum* itself in its native Turkey (Colak et al., 1998). Hence increased *R. ponticum* vigour in the UK probably has nothing to do with hybridisation, and instead reflects favourable habitat conditions. So the character of vigour is completely useless for taxonomic distinction, and even Cullen (2015) himself later acknowledged this.

Finally, there are morphological differences such as hairy ovaries and longer calyx lobes that, if present, confirm that a plant is not pure *R. ponticum*, and hence can be referred to '*R.* × *superponticum*'

(though see below). However, as noted above, much of our hybridised material lacks obvious distinguishing traits, as would be expected if the individual is at least 95% *R. ponticum* by ancestry. My own work confirmed that individuals bearing a genetic marker from another species are not always morphologically distinguishable from pure *ponticum* (Milne & Abbott, 2000), and in every naturalised English Rhododendron population surveyed by Cullen (2011) at least 50% of plants were indistinguishable from *R. ponticum*. Hence these characters can identify *some* hybridised individuals as *R.* × *superponticum* but not all of them; conversely, *no* plant can confidently be placed within *R. ponticum* over *R.* × *superponticum* based on the absence of characters that only some members of the latter possess. Given the uselessness of the two other characters cited, pure *R. ponticum* can never be distinguished confidently from *R.* × *superponticum*, and the reverse can only be done sometimes.

Remarkably, the problems with the name *R.*× *superponticum* do not stop there. Cullen's (2011) description defined '*superponticum*' as hybrids of *ponticum* with any of *catawbiense*, *maximum*, and/or *macrophyllum*, though the last is irrelevant as it has always been very rare in cultivation here, and is almost certainly never involved. Therefore, *ponticum* plants that contain DNA of any species other than *catawbiense* and/or *maximum*, technically fall outside '*superponticum*' as Cullen defined it. As noted above, *R. arboreum* may often be involved, and many other species could chip in occasionally, placing much hybridised material strictly outside Cullen's definition. Based on morphology, it is completely impossible to rule out involvement of these further species, in the same way that plants that look like pure *ponticum* might not be; this would appear to make the name '*superponticum*', completely unusable. Cullen (2011) tried to get around this by claiming that specimens involving species other than *ponticum*, *catawbiense* and/or *maximum* were always planted cultivars hanging on as relicts, but this is simply untrue – specimens with dark red corolla flecks are often present among naturalised populations, at least in Scotland, indicating other species' involvement.

Whether they realise it or not, those who've tried to use the name '*superponticum*' have had to expand it past Cullen's definition, to cover ALL hybridised plants of *R. ponticum* that occur in the UK, regardless of precise parentage. Given that a hybrid name does not specify relative amounts of a species present, such a catch-all name would technically include all hybrids of *R. ponticum*. This would mean that any UK cultivar with *ponticum* in its ancestry, even a tiny bit (and there are hundreds; Milne 2017, p. 67) must fall under *R.* × *superponticum*, at least if growing in the UK. This has the potential to cause all these harmless cultivars to be banned or restricted under legislation intended to curb invasive *R. ponticum* (Cox, 2014). Furthermore, it means that the well-known natural hybrid *R.* × *sochadzeae* (*ponticum* × *caucasicum*) from Turkey would have to be swallowed by *R.* × *superponticum* as well, except that the former name has priority. What a tangled web!

To summarise, therefore, we have a name that either encapsulates only some of the hybridised material in Britain, or is so broad that all hybrids of this species must be lumped under it, and which in either case cannot consistently be distinguished from pure *R. ponticum*. Hence the practical nightmare that has arisen for anyone trying to name a stand of the plants. A taxon that can neither be clearly defined nor reliably identified is one that should never have been erected.

There is no simple answer for how to subdivide classification of British *R. ponticum* plants, which is why I never attempted it. There has never been, and probably will never be, a better solution than to refer to them all as *R. ponticum*, while acknowledging the existence of introgressed germplasm from many other species in many but not all of our plants. The name *R.* × *superponticum* has caused nothing but confusion since it was coined, and while flora writers may be bound to admit its existence among our material, its use should otherwise be quietly retired.

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A new identity for a naturalised Chilean *Oxalis*

JULIAN SHAW

Oxalis attracts many monikers, some of them unprintable. One amusing epithet I came cross was Julian Sutton's 'Weeds-R-Us' when he was skilfully writing witty sales talk for an *Oxalis* in his nursery catalogue days. Those of us who have grown what was believed to be *Oxalis megalorrhiza* in a greenhouse would likely agree that was an apposite label. However, it transpires that *Oxalis mirbelii* Dehnhardt (1839) is the earliest available name for *Oxalis megalorrhiza* sensu Dandy & Young (1959), a succulent *Oxalis* that is widely cultivated as a curiosity, a greenhouse alien, and naturalised in the Isles of Scilly (Lousley, 1971; Parslow & Bennallick, 2017; Stace, 2019) where it was said to be introduced in 1894 (King, 1985). Records show a large consignment of assorted succulent plants was received at Tresco Abbey Gardens from Kew on 12 April 1894, perhaps this *Oxalis* '*carnosa*' as it was then known, was amongst them. However, a painting dated 1879 by Fanny Dorrien Smith reproduced in King (1985: 71, painting no. 8) shows the plant as *Oxalis crassifolia* misapplied. pointing to a prior introduction. Perhaps the use of the pseudonym is responsible for the date of introduction confusion. There is an excellent modern delineation by Barbara Everard in Lousley's *Flora* (1971, p. 251). Sometime after its arrival in Britain, Lindley (1827) and Hooker (1828) misidentified it as *Oxalis carnosa* Mol. Subsequently Dandy & Young (1959) misidentified it as *O. megalorrhiza* Jacq.

Recent collections from *lomas* vegetation (coastal vegetation sustained by fog) in southern Peru by a Kew team (Whaley et al., 2019) included plants with massive subterranean roots that match the drawing of a plant found there and illustrated in 1714 by French explorer Louis Feuillée. As this *Oxalis* was one of the plants in this publication that somehow was overlooked by Linnaeus, it fell to an Austrian botanist Nikolaus Joseph Jacquin to name Feuillée's plant *Oxalis megalorrhiza* in his 1794 *Oxalis* monograph. This is quite distinct from the plant found in Valparaíso, Chile that was introduced to Britain by James McRae back in 1825.

Oxalis mirbelii belongs to section Carnosae, consisting of mostly locally endemic species distributed along the western coast of South America, from Chile to Ecuador and the Galapagos (Heibl & Renner, 2012). While the Chilean species have been the focus of many studies, comparatively little work has been done on those from Peru, which has been hampered by difficulty of access, paucity of material and loss of many types in the Berlin herbarium. Had better material from Peru been available at the time, it is unlikely Dandy & Young would have confused the two species concerned.

Alicia Lourteig's (2000) monographic revision of South American *Oxalis* failed to notice this misidentification and consequently she included Peruvian material of *Oxalis megalorrhiza* within *O. pachyrrhiza,* but that is another story that does

not concern us here. However, she did neotypify the name *Oxalis mirbelii* Dehnhardt on a specimen cultivated in 1853 in Vienna, thus ensuring correct application of the name. The type can be viewed online here: *herbarium.univie.ac.at/database/detail.php?ID=1007038*.

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Recording 'tropical' adventives in Britain and Ireland – a possible solution?

ALEXIS FITZGERALD

I was very glad to see that my reporting of *Pilea microphylla* as a 'tropical' adventive in the April 2020 issue of *BSBI News* (FitzGerald, 2020) had intrigued some botanists (Milne, 2020), and posed the question as to how we are best to address more generally the issue of recording and mapping adventive/alien species which can only survive in artificially created, indoor, tropical-like environments in Britain and Ireland. Milne (2020) suggested various possible strategies, which included the more extreme options of either excluding or including all exclusively indoor alien plant records, as well as more middle-ground approaches of including records of species that occur outside of botanic gardens glasshouse settings (such as in indoor plant nursery or office/home environments), or 'that have naturalised independently in two or more indoor locations'.

His final suggestion was perhaps most intriguing, with the idea of maintaining a new and separate 'vice-county' for these indoor species. To me, it would seem most appropriate not to include these 'tropical' species with the rest of our standard distribution maps and analyses, unless and until they show themselves capable of surviving (even very casually) outdoors. However, operating on the principle that more information is always better than less in science, it would seem advisable to instead establish a detailed and routinely updated spreadsheet of records of adventive species (both vascular plants and bryophytes) of these indoor tropical-like environments across Britain and Ireland, whether they are survivors, casual or truly naturalised (as per Stace & Crawley [2015] and Stace [2019]. I would be happy to volunteer my time to establish and maintain such a database. However, other botanists may already be doing this in some fashion, unbeknownst to myself, and so their contacts and guidance would be much appreciated, and I would be more than happy to pass on the baton if someone else was particularly keen and engaged.

This strategy would mean that the information is reliably recorded in a detailed fashion, whilst acknowledging the precarious reliance of these species on artificially maintained, indoor, climatic conditions (recalling the Addenda/Appendix lists of excluded species often reserved at the codas of older Floras for casual, non-naturalised alien members of their respective floras, e.g. Colgan [1904], Brunker, [1951], etc.). Furthermore, considering floristics beyond these islands, this database may serve as a useful reference for other regions of Europe (and perhaps beyond) which may be more amenable to these species escaping and becoming established members of their wild floras.

I have designed a simple spreadsheet for the purpose of recording 'tropical' adventive glasshouse species, which is essentially an edited and expanded version of the Excel output from a standard BSBI Distribution Database species data download. The newly added columns importantly include climatic data; specifically ambient temperature (° C) and specific humidity (g/kg), to take account of the climatic conditions which separate these species from the rest of our outdoor alien flora. I would be pleased to send a copy to anyone who wishes to contact me at my email address given below. I would therefore request records of greenhouse or other exclusively indoor 'tropical' adventive species (from botanic gardens glasshouses, garden centre/plant nursery glasshouses/polytunnels or other suitable indoor localities). To develop a full representation of the flora of these environments, species which also occur outdoors in Britain and Ireland, e.g. *Selaginella kraussiana* (Kraus's Clubmoss), *Soleirolia soleirolii* (Mind-your-own-business), etc. may also be included in any submitted lists.

Useful resources for identification of such tropical weed species may be difficult to find or access; however, they may include such standard reference books as *The Kew Tropical Plant Families Identification Handbook* (Utteridge & Bramley, 2015), amongst others. A few guides to tropical 'weeds' have been published since the 1970s; however, many of these are now extremely difficult (or expensive) to acquire and generally focus on the weeds of trackways, fields, pastures, arable ground, etc. in tropical countries and so may in fact be of quite limited benefit to our tropical greenhouse environments (Jerry D. Doll, pers. comm., October 2020). Reference books for the identification of herbaceous species in tropical rainforest habitats would perhaps be more applicable and useful. Consultation with in-house botanical staff at botanic gardens will also be invaluable for identification purposes, and perhaps even with an interested email list of BSBI botanists, or indeed colleagues on social media from different parts of the world. The collection and pressing of voucher specimens to support identifications should ideally become routine for such under-studied species (as long as permission to collect samples is received from your local botanic gardens/greenhouses). I for one will certainly be paying much more attention to these 'tropical' aliens in the future and learning to identify them in my local botanic gardens!

Acknowledgements

My thanks to Jerry D. Doll and Richard Milne for their useful correspondence.

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NOTICES

FROM THE MEMBERSHIP SECRETARY

An updated List of Members will be available soon on the members only section of the BSBI website (*bsbi.org/members* [password protected]), correct to the end of 2020. If any member without internet access would like a printed copy of the end of year List, please send me a stamped (£1.40) addressed label or envelope (C5 size or larger).

When sending change of address details please remember to give your membership number or your old address, especially postcode and include any new phone number.

Following Brexit, it might be useful if all Irish members would please let me have their Eircode, if they have not done so already. If you don't know it, visit *https://finder.eircode.ie/#/* to find out.

Gwynn Ellis
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FIELD MEETINGS 2021

We have attempted to arrange a varied programme of field meetings for 2021 and these are listed in the Yearbook and on the Field meetings and indoor events web page. There are also a few indoor meetings, which at least at the beginning of the year will be held by Zoom. The web page may show additional meetings to those listed in the Yearbook, so it is worth a visit, particularly as it allows you to sort meetings according to your requirements. The coronavirus pandemic adds considerable uncertainty as to whether and where meetings will be able to go ahead and I fear that it is almost inevitable that some will have to be cancelled. We will flag these as soon as possible on the web page and if you have booked, the organiser will contact you. The coronavirus guidelines differ from county to county and between countries, so it will be very important to follow your local guidance, even when a meeting might be permitted in the host county. If there is any uncertainty it is best to play safe and simply enjoy your local flora – there are always new finds to be made locally and your Vice-county Recorder will be delighted when you turn up something surprising.

Jonathan Shanklin
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NEW YEAR PLANT HUNT

By the time you read this, our tenth New Year Plant Hunt will be over and we'll be hard at work analysing the results, a summary of which will appear in the April issue of *BSBI News*. The full analysis and the press release will be available here: *www.bsbi.org/new-year-plant-hunt*. Meanwhile, head over to our results page: *www.nyph.bsbi.org/results.php* to view the longest lists, the most frequently recorded taxa and the map showing all the locations where you recorded wild or naturalised plants in bloom at New Year.

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OPT IN TO OUR NEW MONTHLY NEWSLETTER

We have just launched a new eNewsletter to keep members and supporters updated on BSBI projects, activities, fundraising, news and events. It will arrive in your Inbox in the middle of each month but in order to receive it, you need to opt in by signing up here: *bsbi.org/email-signup*. Why not try it out and if you don't like it, just click the Unsubscribe button at the foot of each issue and you won't receive any more issues.

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BSBI'S FIRST VIRTUAL ANNUAL EXHIBITION MEETING

The 2020 Annual Exhibition Meeting was held on Saturday 21st November and for the first time ever, it was a virtual event which attracted c. 400 people over the course of the day. We featured eleven talks focused on how BSBI members and partners have responded to lockdown. We heard from award-winning journalist Isabel Hardman about how nature helped her mental health and from Fal Sarker about botany for the visually-impaired; we enjoyed updates on projects such as Plant Alert, More Than Weeds, the National Plant Monitoring Scheme and the Garden Wildflower Hunt; and we heard about plant apps around the world and about the recent book 'Britain's Orchids' which features BSBI maps. Attendees also enjoyed a virtual herbarium tour with the Natural History Museum's

Fred Rumsey and a panel discussion on the subject 'Wildflower seed-mixes: should we sow only native species?'.

In a 'normal' year, we would be telling you how enjoyable the talks were and pointing you to the PowerPoint presentations – enjoyable but very much a second-best option. However, one advantage of a virtual Exhibition Meeting is that all the talks, delivered on the day via Zoom, could be recorded and uploaded to the BSBI's new YouTube channel (just search for 'BSBI' to find the channel, and please click the subscribe button to be notified of future videos). Visit the event playlist to enjoy the Exhibition Meeting experience any time you please and from the comfort of your own home.

There were 37 electronic exhibits on a wide range of botanical subjects, from rare and/or vulnerable species to new ways to engage with more common species: via Wild Flower Hour on social media; exploring one's local area under lockdown; writing a site flora or looking at the plants of allotments in Warwickshire. Another advantage of a virtual Exhibition Meeting is that the posters can be viewed again at leisure and there are lots of links to click on so you can find out more. Browse the exhibits here: *www.aem.bsbi.org/exhibits*.

One of the best things about the Exhibition Meeting is the chance to spend a day with fellow BSBI members, to catch up with old friends and meet new ones. Thanks to Covid, that was never going to be an option in 2020 but your feedback suggests that you appreciated having a virtual event without the expense and bother of travelling to London. We were able to welcome many more people than usual and from much further afield (Canada, China, Australia). View screenshots and comments from the event on the BSBI Twitter feed under the hashtag #BSBIExhibitionMeeting.

We'd like to thank BSBI trustee Sandy Knapp and President Lynne Farrell for welcoming us to the meeting – Sandy also chaired the panel discussion. Fred Rumsey and George Garnett introduced us to some favourite specimens from the NHM herbarium; the three talk sessions were chaired by Jodey Peyton, Kylie Jones and Ian Denholm who stepped in valiantly at the very last minute after Ellen Goddard contracted Covid. BSBI Database Officer Tom Humphrey and Ryan Clark handled the technology; Moira O'Donnell, Isobel Girvan and BSBI Hon Gen Sec Steve Gater were key members of the Organising Team; April Webb, Joshua Ajowele, Joshua Styles and Leif Bersweden provided essential comms support. The meeting was only possible thanks to the hard work of all these volunteer members of BSBI's Events & Communications Committee working alongside Tom. A huge thank you to them and to all the speakers, exhibitors and attendees who contributed to the day's resounding success.

Louise Marsh
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BSBI'S HEAD OF OPERATIONS MOVING ON

Jane Houldsworth is leaving BSBI to take up a new role in a recently established charitable foundation. We are all sorry to see Jane leave. Since she arrived in 2013 she has helped to substantially improve our governance and as a consequence put the future of the Society on a more secure footing. As our first Head of Operations, she has worked hard to strike a balance between the valued roles of our volunteers and staff. She has provided constant support to the work of the Standing and Country Committees and worked tirelessly to secure the resources that allowed us to maintain or extend our staff complement. Since Jane arrived we have been able to appoint a Communications Officer, Finance Manager and most recently a Fundraising Manager. Jane also secured the funds to allow us to complete our new Strategy and undertake a governance review both of which provide us with a strong platform for the future. We regret that Jane will not be on that journey with us but we thank her for all that she has done for the society and wish her well with her new role.

Chris Miles
Chair of the Trustees

BSBI PHOTOGRAPHIC COMPETITION

Thank you to all 41 members who contributed a total of 111 entries to the 2020 BSBI Photographic Competition. Natalie Harmsworth, the competition organiser, produced a very attractive display on the Scottish Botanists' Conference 2020 website, where participants could vote for their favourites. The photographs were also displayed on a loop during breaks at the conference and at the Annual Exhibition Meeting.

The winner in the Native category was 'Broad-leaved Willowherb (*Epilobium montanum*), Fife' by Alison Davies and the winner in the Alien category was 'Canary Grass (*Phalaris canariensis*) at Port William, Wigtownshire' by Alan Wake (*shown on the back cover of this issue with some of the other entries)*. Congratulations to both Alison and Alan

for their excellent winning images. Book token prizes were very kindly sent to the winners by BSBI/ Summerfield Books. The entries can still be viewed on the SBC website and on BSBI Flickr (search for 'BSBI Flickr') – where you can also see all the entries for the previous five years.

We will repeat the competition in 2021 with the same two categories – Native and Alien – to help illustrate Atlas 2020. The competition is free to enter and open to all BSBI members who are amateur photographers. For more information and competition rules, see the BSBI website.

Jim McIntosh
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PANEL OF VICE-COUNTY RECORDERS

Gerry Sharkey has retired after being VCR for E. Mayo (H27) and W. Mayo (H28) since 1989. Before Gerry took on Mayo, one of Ireland's largest counties, he was VCR for N. Tipperary (H10) from 1984 to 1989. Gerry was an active member of the Committee for Ireland, where he served from 2005–2007 and 2009–2019, and was Chair from 2012–2014. Gerry was also a member of the Records & Research Committee for many years. We send our thanks to Gerry, and wish him a relaxing retirement.

In England, there are vacancies for Buckinghamshire, East & West Sussex and Dorset (alongside Robin Walls). In Scotland, there are vacancies in Argyll (alongside Gordon Rothero), Banffshire, Dunbartonshire and Midlothian. And in Ireland, Cavan, Co. Longford, W. Mayo and Waterford are currently without a VCR in post.

If you, or someone you know, are interested in taking up the role of VCR (or perhaps first trying it out as a trainee VCR), and would like to discuss what is involved, then please do get in touch with me, or the relevant Country Officer, using the contact details given on the inside front cover.

Pete Stroh
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BRITISH & IRISH BOTANY 2:4

The fourth and final issue of the 2020 volume of *British & Irish Botany*, BSBI's open access, online scientific journal, was published in December. You can view or download the papers free of charge, as well as previous issues and guidelines for submission, from the B&IB website: *https://britishandirishbotany.org/index.php/bib*. You can also phone us on 07725 862957 to discuss a proposal.

Ian Denholm & Louise Marsh
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Hybrids in *Juncus* section *Juncotypus*, with a description of *J.* × *lancastriensis* (Juncaceae) – Clive A. Stace

Geographical patterns in the flora of Cambridgeshire (v.c. 29) – Mark O. Hill, Christopher D. Preston, Jonathan D. Shanklin

A review of the ecology and status of the Kerry Lily *Simethis mattiazzii* (Asphodelaceae) in Ireland – Darach Lupton, Micheline Sheehy Skeffington

Patrolling the Scottish Border; plant migration history – Michael E. Braithwaite

Ground flora of field boundary dry stone walls in the Burren, Ireland – Lindsay Hollingsworth, Marcus Collier

Galeopsis speciosa (Lamiaceae): an Open Vegetation seed bank community at Worsley in Salford (v.c. 59), revealed during construction of the new Royal Horticultural Society Garden at Bridgewater – Michael J. Crawley

MEMBER'S NOTICES

Seeds from Ware 2021

My customary list of seeds is again freely available to BSBI Members. If interested parties would send me an SAE then I will return a copy of this year's seed list for them to choose from. Please send to me at the address below.

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The Rare British Plants Nursery

We are a specialist plant nursery based in Mid Wales. We cultivate some of the rarest and most threatened native British plants for habitat restoration schemes, species recovery projects and scientific research. Our plant nursery is home to a unique collection of rare British plants.

More information about our work and the species that we hold in cultivation can be found on our website: *www.rarebritishplants.com*.

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COUNTRY ROUNDUPS

Compiled by Pete Stroh
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ENGLAND

Aside from the spectacular discovery of *Serapias vomeracea* (Long-lipped Tongue-orchid) in the wilds of Kent (see article, p.7), perhaps the biggest botanical find in England this summer was for the small in stature *Helosciadium repens* (Creeping Marshwort). A new population of this Endangered species was reported by Mark Webster and Ian Woodward near to the Little Ouse in Thetford, West Suffolk, and fruiting material was later confirmed in the field by Fred Rumsey. I'll leave Ian and Mark to say more about their discovery elsewhere in this issue (p.3).

Rather like waiting for a bus (or more topically, a vaccine), no sooner had the Thetford plants been reported than news reached me via Judy Webb that *H. repens* had been found at Walthamstow Marshes SSSI in South Essex after an absence of 11 years. While the Thetford discovery was a combination of disturbance, considerable luck and sharp eyes, the Walthamstow resurrection was conservation at its best: a review of the species' ecological requirements, consultation with experts and the implementation of targeted grazing management. Thanks to Eamonn Lawlor and his team at the Lee Valley Regional Park Authority, and the cows of course, *H. repens* flowered and fruited in poached areas this year, meaning that the seed bank has again been replenished. 2020 started with one extant native site nationally, and ended with three – a little good news in such a troubling year.

Keeping our feet wet and the plants dynamic, *Lythrum hyssopifolia* (Grass-poly) has appeared from the seed bank at a pond in Heydon, East Norfolk following restoration works, after being absent (above ground) from the county for over 100 years. You can read more about the find here *www.bbc.co.uk/news/science-environment-55104153* and on p.11 of this newsletter.

The splendid discovery by Graham Waugh of a reservoir drawdown dominated by *Alopecurus aequalis* (Orange Foxtail) at Colt Crag Reservoir, South Northumberland, has extended the English range northwards by almost 100 miles. The site supports a nice drawdown assemblage, including *Bidens tripartita* (Trifid Bur-marigold) which has been found at only one other site in the county this century. John Richards' regular Newsletters detailing outstanding finds in the county can be found at *bsbi.org/northumberland*. Whilst recording a water meadow at Shalford in Surrey, Bill Stanworth, David Streeter and Ann Sankey found *A. aequalis*, new to the hectad, in the middle of a dense stand of *Persicaria maculosa* (Redshank) interspersed with *P. hydropiper* (Water-pepper), and a few days later Helena Crouch and Judy Moss, enticed by the spectacle of the pool vegetation, found another patch of *A. aequalis* further south. I do wonder if the Foxtail may be lurking in other suitable areas – it's easily missed if not in flower. See the Scotland Roundup for more Foxtail news.

Alopecurus aequalis (Orange Foxtail). *Pete Stroh*

Plants that persist as viable seeds underground for extended periods can be difficult to detect, even for BSBI members. *Fallopia dumetorum* (Copse-bindweed) is a classic example of a genuinely scarce species with a restricted distribution whose seeds can lie dormant in the soil for decades. It had not been recorded in Kent since the 1970s, but Geoffrey Kitchener reports that not only was it found in its last, and classic, locality this year but it was also located in sites with last records 72 and 145 years beforehand! Geoffrey's annual newsletter *bsbi.org/kent* is always an interesting read, as is the draft online Rare Plant Register – do have a look, it's a goldmine of information. In West Gloucestershire, another rare species with a (probably) persistent seed bank, *Stachys alpina* (Limestone Woundwort), was discovered by David Hawkins on a canal towpath not very far from Daneway Banks. The debate on its British status fell down on the side of neophyte, but regardless of your point of view, it is a very rare species in the wild in England, and an excellent record.

Following the long tradition of notable discoveries just after the publication of a County Flora, Cornwall added a new native taxon to its list, if but briefly. Whilst walking near to Rough Tor on Bodmin Moor in August, George Tordoff found a fern which he thought was *Cryptogramma crispa* (Parsley Fern), not known from Cornwall, and with only one site in Devon. Fred Rumsey confirmed George's identification from photos, and the following day, in torrential rain, Ian Bennallick, David and Anita Pearman and Tina Nightingale went to the site (aptly named Showery Tor) and found the fern. That's the good news. The bad news is that there was no sign of it three days later, and it couldn't be located in a follow-up visit in October. It didn't seem a plausible target for collectors, but it is a very plausible target for grazing animals, as it is known to be susceptible to browsing by sheep and cattle. The sheep-head-high crevice where the fern was growing is also a good place for livestock to congregate and shelter in bad weather. In previous years whole plants of *Huperzia selago* (Fir Clubmoss) have been seen by Ian dying on the turf, dislodged by the grazing-pulling action of the animals. Parsley Fern appears to have succumbed to a similar fate. But perhaps it lurks elsewhere on Bodmin Moor?

The only South-West Yorkshire Botany Group meeting of the year produced their own county-first fern with the discovery of *Dryopteris aemula* (Hay-scented Buckler-fern) in the Peaks National Park. Unfortunately, Mike Cannaway of the British Pteridological Society could not attend due to the highly restrictive Covid lockdown in the North-west, despite living only a few miles away. I hope it's still there when Mike can get to the site – at least it's not quite as palatable to animals as *Cryptogramma crispa*! Continuing the fern theme, Alan Wilmot reports that in Derbyshire *Osmunda regalis* (Royal Fern) has established naturally on the high moors of the county. Immature non-fertile plants have been known for about ten years, but individuals have now been found with fertile fronds for the first time; for example, Dave Mallon found one fertile plant at Snake Summit in September. And in North Devon, Sam Bosanquet recorded a first for Lundy with the discovery of the gametophyte form of *Trichomanes speciosum* (Killarney Fern). No doubt Sam also found a few nice mosses nestled nearby.

In a tenuous 'island' link, *Wahlenbergia hederacea* (Ivy-leaved Bellflower) was noticed flowering in a well-botanised acidic bog in the middle of the Isle of Wight after an absence in the vice-county of just over 100 years. Three years ago, invading gorse scrub was uprooted from the very spot where it was discovered, and it seems likely that the Bellflower has established from long-lived seed disturbed by the works. For members who are 'staycationing' in 2021, it's worth knowing that Rosemary Parslow has published a concise book *Discovering Isles of Scilly Wild Flowers*, containing information about common species and a few Scilly specialities. If a rugged landscape is more to your liking, then the North-west is a tempting alternative for a holiday. In Westmorland, Roger Golding found a second population of *Dryopteris affinis* subsp. affinis (previously subsp. *kerryensis*) (Golden-scaled Male-fern) near Rydal Water. The only other known British sites are in Ennerdale (Cumberland), where Roger found a new site for *Dryopteris aemula*. This, surprisingly, is an RPR species in

Checking out the *Cryptogramma crispa* (Parsley Fern), Bodmin Moor, Cornwall, 27 August 2020. *Ian Bennallick*

Cumbria despite the abundance of one of its preferred habitats, Atlantic oak woodland. *Genista anglica* (Petty Whin) is in decline in many parts of England, so a new site in the Eden Valley (Cumberland) was an excellent find by Nigel and Lois Harbron and Linda Robinson. Another splendid record was made by David Eastlick who found and identified *Pyrola rotundifolia* subsp. *rotundifolia* (Round-leaved Wintergreen) near Whitbarrow (Westmorland) and contacted Lynne Farrell for confirmation. This is the first Cumbrian record for this subspecies this century. In nearby N.W. Yorkshire, new locations were revealed for *Genista tinctoria* (Dyer's Greenweed) (found by Martin Hammond at Thornborough Henge) and *Orobanche reticulata* (Thistle Broomrape) at the new extension to Nosterfield N.R. (spotted by Pandora Soresby and Chris Weaver).

In Herefordshire, Stuart Hedley's keen botanical nose sniffed out a new site for *Sorbus porrigentiformis* (a Whitebeam) at Downton Gorge (conf. by Tim Rich), significantly extending the known national range for this taxon, and in North Somerset Daphne Osmond found only the second county record for *Lathyrus hirsutus* (Hairy Vetchling) on the margin of a wildlife pond at Haddon Wood, Alhampton. This and a whole host of other meticulously compiled RPR accounts can be enjoyed at *www.somersetrareplantsgroup.org.uk/new-rare-plant-register*.

Pyrola rotundifolia (Round-leaved Wintergreen, Whitbarrow, Cumbria 7 August 2020. *Lynne Farrell*

I'm fast running out of space, but there is plenty of extra reading elsewhere. In Hampshire, for example, a newsletter is published twice a year, compiled by Catherine Chatters and John Norton. The current issue (and all previous ones) can be downloaded from *hantsplants.org.uk*. I must just briefly mention Alison Bolton's find of *Utricularia intermedia* (Intermediate Bladderwort), a very rare plant in England save for the North-west. In the New Forest it is confined to a single valley mire where the population has suffered the indignities of having a 19th-century railway built through the middle of it and falling foul of 20th-century Forestry Commission drainage schemes. But Alison found a large, previously unrecorded site for the species about two kilometres away on a different branch of the same river catchment, at least doubling the total county population. And as a cherry on top, when Martin Rand and a small team of bog-trotters went to check out the *Utricularia*, they found *Carex lasiocarpa* (Slender Sedge) in the same valley mire, an extremely rare sedge in the New Forest and in southern England generally.

Peter Stroh

WALES

Despite the restrictions during 2020 due to Covid-19, botanising continued to some degree in most Welsh vice-counties. In Monmouthshire, Sam Bosanquet spotted a new hectad record for *Ornithopus perpusillus* (Bird's-foot) on a lawn at The Kymin, Monmouth, and also found new hectad records for gametophyte stages of *Trichomanes speciosa* (Killarney Fern) at various sites among wet rocks in tiny watercourses in woodland at Penallt. A survey of plants along the sea wall by the Severn Estuary was carried out from late June to August by Matt Pickard and Barry Stewart (BS). Notable finds include new hectad records for *Lotus tenuis* (Narrow-leaved Bird's-foot Trefoil), *Trifolium striatum* (Knotted Clover), *Atropa belladonna* (Deadly Nightshade) and *Agrimonia procera* (Fragrant Agrimony). A visit to Llanwern Steelworks by BS in June 2020 revealed only the sixth county record for *Schoenoplectus tabernaemontani* (Grey Club-rush), a RPR taxon for Monmouthshire, growing amongst reeds. A second site in Monmouthshire was found by Dave Green for the calcicole *Hypericum montanum* (Pale St John's-wort), near Blackcliff in the Wye Valley. Three or four plants of *Euphorbia stricta* (Upright or Tintern Spurge) were seen on 16 October by SJT and Lauri MacLean naturalised in a garden at Dyffryn high on the slopes of the Blorenge and well away from its Wye Valley stronghold. The owner thought that when she moved from Sussex to Monmouthshire in 1992 it had come with her in a plant pot; it has therefore persisted for nearly 30 years.

In Breconshire, undoubtedly the most exciting county record of the year was for *Pyrola minor* (Common Wintergreen) – possibly recorded the v.c. 42 side of the border in 1911 but just as likely not. The population was discovered by Arlene Jones at Abercraf in quite large numbers and area of distribution. A bryological exploration by Claire Halpin and Sharon Pilkington resulted in new records of *Sagina nodosa* (Knotted Pearlwort) and *Lycopodium clavatum* (Stag's-horn Clubmoss) in Cwm Callan. The pearlwort was only the third record since 2000 in the county. Tim Rich has been updating records of Breconshire's endemic and rare *Hieracium* with some in decline and others doing well. You can find his information videos on YouTube here: *bit.ly/hawktim*. He also provided the first record since the 1970s of *Rosa spinosissima* (Burnet Rose) on Tarren yr Esgob.

The Montgomeryshire Flora group had three informal outings in early September (max. of 6 people on each) recording on the floodplain around Melverley, Arddleen and Meifod. The New Cut near Arddleen produced several interesting finds including two duckweeds not recorded in the nearby canal since 2000; *Lemna gibba* (Fat Duckweed) and *Spirodela polyrhiza* (Greater Duckweed). *Hydrocharis morsus-ranae* (Frogbit) was considered extinct in the 1996 county Flora, but is now locally abundant in the New Cut, Canal and Wern Reserve. It seems to behave like an invasive species – could it be a native strain here? On the same outing John Clayfield found *Hordeum secalinum* (Meadow Barley), a rare species in the county. Following the meeting Sue Southam checked on *Stellaria palustris* (Marsh Stitchwort) and *Oenanthe fistulosa* (Tubular Water-dropwort) and recorded both species in several locations across boggy ground near the canal. These are both Section 7 species, listed as 'Vulnerable' in the UK but with only Marsh Stitchwort listed as 'Vulnerable' in Wales. This is the only site for Marsh Stitchwort in the county and Fine-leaved Water-dropwort is scarce with only two post-2000 sites. Other interesting finds in the floodplain included a few sites for *Chenopodium polyspermum* (Many-seeded Goosefoot), scarce in v.c. 47, and a single site for *Stachys arvensis* (Field Woundwort), rare in the county.

In Carmarthenshire, Richard and Kath Pryce reported that recording was inevitably not very prolific during and following the lockdown. The exception was Ian Morgan's daily walks recording the urban weeds and aliens of the streets and back-lanes in Llanelli. Among the many aliens, Ian discovered a small but robust colony of *Orobanche minor* (Common Broomrape) growing close to the level-crossing at the east end of Llanelli railway station; this species has declined considerably as the brownfield sites on which it seemed to have found a stronghold in the town have been steadily redeveloped over the past couple of decades. Theresa Greenaway also did some valuable recording in her home district near Felingwm, an area visited by few other botanists. Included among her numerous records was the first hectad record of *Hypericum* × *desetangsii* (a hybrid St. John's-wort) since 1993 and a species list from a hitherto unrecorded species rich rhôs-pasture site which included the first recent localised tetrad records of *Trocdaris verticillata* (Whorled Caraway), *Lysimachia tenella* (Bog Pimpernel) and *Hydrocotyle vulgaris* (Marsh Pennywort).

In Caernarvonshire, Iwan Edgar checked two known sites near Pwllheli for *Hypericum linariifolium* (Toadflax-leaved St. John's-wort) and found between 400–500 plants at Allt Fawr and over 100 plants at Penmaen. Julian Driver found *Cerastium alpinum* (Alpine Mouse-ear) on cliffs at Carnedd Llewelyn, last recorded in 1996, and discovered a new hectad record for *Galium boreale* (Northern Bedstraw). Ian and Linda Fraser searched around old mine sites in the Gwydyr forest and made good updates for *Noccea caerulescens* (Alpine Pennycress), *Epipactis helleborine* (Broad-leaved Helleborine) and *Asplenium septentrionale* (Forked Spleenwort). They also recorded, at Conwy, between 500–600 *Ophrys apifera* (Bee Orchid) in various stages, some flowering/fruiting and some as basal rosettes. Mari Roberts ventured into Llyn Nantlle, the lake near her home, looking for *Elatine hexandra* (Six-stamened Waterwort) and managed to find several plants flowering. Mari and Wendy McCarthy, accompanied by Lesley Ball, visited the Vardre, an interesting site with complex geology near Deganwy where they were pleased to see that *Dianthus deltoides* (Maiden Pink) was flowering well in several places. They also managed to spot the appropriately named *Hieracium deganwyense* flowering on cliff ledges.

Delyth Williams reported that there were no field meetings in Denbighshire but a few botanists did manage to escape and in the fine weather where better to go than the beach? Between Pensarn and Towyn new sites were found for *Apium graveolens* (Wild Celery), *Oenothera stricta* (Fragrant Evening-primrose), *Polygonum oxyspermum* subsp. *raii* (Ray's Knotgrass) and *Brassica*

oleracea (Wild Cabbage). There was some late-season recording of an urban nature reserve, with new records for *Dryopteris affinis* subsp. *cambrensis* (Golden-scaled Male-fern) by Nant Mill and *Erodium moschatum* (Musk Stork's-bill) in Moss. *Elatine hydropiper* (Eight-stamened Waterwort) was found in Hanmer Mere, possibly its only site in v.c. 50.

Ian Bonner and Nigel Brown wrote that from March onwards all but one of the Anglesey plant records have come from local residents and these have been sparse and usually restricted to additions close to people's homes. However, this has still resulted in nine first county records (all aliens or neophytes). Full details of these will be included in an extended report for the Welsh Bulletin and the Anglesey web page. The only lengthy list came from Mandy Forde, botanising around her home close to the Valley Lakes. Her list of 180 taxa included some nice finds such as *Filago germanica* (Common Cudweed), a distinctly uncommon plant with only five post-2000 sightings, *Anthriscus caucalis* (Bur Chervil) with only six recent monad records, all from sandy sites near the west coast and *Trifolium subterraneum* (Subterranean Clover) which has significantly more recent records from thin sandy soils in the west and north-west than in the past.

Two species are of particular concern on Anglesey: *Allium ampeloprasum* (Wild Leek) and *Juncus capitatus* (Dwarf Rush). A single colony of Wild Leek has been known since the 1970s from a roadside near Holyhead Mountain. If the Morlais Tidal Power project goes ahead, its habitat is threatened by the landfall works. It has been increasingly hard to find Dwarf Rush at Cymyran in recent years because succession and lack of disturbance has almost completely eliminated areas of open damp peaty sand. With the agreement of NRW and the landowners concerned, bulbs of the Wild Leek and turves from likely Dwarf Rush habitat have been taken into cultivation by Robbie Blackhall-Miles to safeguard these populations and, in the case of the Dwarf Rush, potentially reintroduce plants once remedial management work has been undertaken.

Finally, and most regrettably, Bridgend County Borough Council has pulled out of managing Kenfig Dunes NNR and the visitor centre in West Glamorgan due to financial constraints. Lynne Farrell as BSBI President and SJT as Chair of the BSBI Wales Committee wrote to the Kenfig Corporation Trust, copying the letter to NRW and to Bridgend Council, urging the Trust to come to an agreement over management with a conservation body.

Stephanie J. Tyler and Elsa Wood

Juncus capitatus (Dwarf Rush). *Pete Stroh*

SCOTLAND

We had an all-time record number participating in this year's Scottish Botanists' Conference (SBC). 350 people registered, and we think most participated at some point in the two-day programme, with up to 240 watching at any one time. It was great that so many people from the 'four airts' were able to participate, including botanists in Orkney and the Outer Hebrides as well as 74 from England and nine from beyond Britain & Ireland.

It was the first major online conference that the BSBI, the lead organiser, has ever held, and it wasn't without technical glitches and gremlins – we are sorry about that. We have edited out the glitches and corrected sound levels on the talks and workshop recordings, and they are all available on the BSBI YouTube channel and the Scottish Botanists' Conference website – where, incidentally, you can also still view the exhibits and posters.

The keynote was a fascinating and truly inspirational lecture by Prof. Peter Hollingsworth, RBGE's Director of Science, on *350 Years of International & Scottish Botany by RBGE*. From the feedback survey we also know that participants really enjoyed Matt Parratt's *Introduction to Conifer ID* workshop and Rebecca Yahr's *Introduction to Lichens* – refreshingly presented using blackboard, chalk and a USB microscope! But many gave up on Mark Duffell's *Introduction to Winter Tree ID* workshop because the audio was so quiet. However, we can't recommend watching the corrected version highly enough.

Of course, everyone missed the opportunity to browse in Summerfield Books bookstore and meet up with old friends over coffee or lunch in the RBGE

canteen and we really hope we can meet in person at this year's Scottish Botanists' Conference – possibly with the event also being broadcast live.

Despite the restrictions we've all been under, online exhibits demonstrated that plenty of interesting finds had been made in 2020 (some were reported in the last *News*). In Kincardineshire, recorders David Elston and David Welsh reported several notable finds. Wetland plants included *Carex vesicaria* (Bladder-sedge) at Whitewater Moss, the first county record since 1860; *Utricularia minor* (Lesser Bladderwort) at Greendams, the second site in the county since 1860; and *Equisetum* × *littorale* (Shore Horsetail) at Catterline, only the second record for the county. Other good finds included the first Scottish record since 1995 for the hybrid willowherb *Epilobium montanum* × *parviflorum* (*E.* × *limosum*), at Benholm.

In West Perthshire, Liz Lavery reported on two new vice-county records in Loch Venachar. The first was *Alopecurus aequalis* (Orange Foxtail), found on exposed mud at the west end of the reservoir by Michael Usher in July, following the long, dry spring. This attractive annual grass is quite widespread as a native in southern Britain and although rare in Scotland, there are several post-2000 records, the majority of which occur in natural drawdown zones. It has also been found as an aquatic weed in a couple of garden centres and a rubbish tip, but it is quite possible that at least some of the more recent records, including the one above, are of native occurrences arriving via wildfowl. While searching for the foxtail in Loch Venachar, co-recorder Jane Jones unfortunately discovered the non-native invasive *Crassula helmsii* (New Zealand Pigmyweed) for the first time in the county.

Luke Gaskell decided to use the travel restrictions to systematically record the flora of a 10 km square near his home, NT43, which is in Selkirkshire. He visited nearly half the 1 km squares (monads) and collected a remarkable 7,500 records of more than 600 species. Luke is a farmer with a particular interest in arable weeds. Notable finds which are rare in the county and/or declining included *Anchusa arvensis* (Bugloss), *Agrostis*

Prof. Peter Hollingsworth giving a talk at the Scottish Botanists' Conference to mark RBGE's 350th anniversary.

Carex vesicaria (Bladder-sedge). *Pete Stroh*

gigantea (Black Bent), *Stachys arvensis* (Field Woundwort), *Veronica agrestis* (Green Field-speedwell) and *Anisantha diandra* (Great Brome). Luke noted an alarming amount of tree-planting in progress, often on high quality herb-rich ground – an issue about which the BSBI Committee for Scotland has previously expressed concern to the Forestry Commission. He discovered a good colony of *Sedum villosum* (Hairy Stonecrop), not known in the hectad since 1923, on Ashiestiel Hill, in an area due to be afforested. Hopefully the site can be protected now its existence is known.

New county records in Luke's square included *Rumex hydrolapathum* (Water Dock), possibly spread from Dawyck botanic gardens, and *Spirodela polyrhiza* (Greater Duckweed), new to south-east Scotland in a lake at Hollybush. *Spirodela* is rare in Scotland but not considered to be native here. A first record for Dumfriesshire found by Bob Merritt at Auchencrieff Loch was also reported in Chris Miles' exhibit.

Botanists love counting orchids, and an interesting talk was given at the SBC by Chris McInerny of

the University of Glasgow on Bee Orchids (*Ophrys apifera*). Chris has made annual counts of flowering spikes on a road embankment near Lendalfoot, south Ayrshire, since discovering it there in 2014. Numbers have generally declined from 110 spikes in 2014 to 25 in 2019. A correlation was proposed between flowering and winter rainfall, rather than spring/summer rainfall or temperature, and this stimulated some lively debate. The site forms part of Bennane Head grasslands, a west coast SSSI best known for its populations of *Orchis morio* (Green-winged Orchid).

In August, across the country in St Andrews, a single specimen of a puzzling *Epipactis* was discovered in a woodland clearing in the town. It was in the 'narrow-lipped' species-complex, possibly *E. leptochila* (Narrow-lipped Helleborine) itself unknown in Scotland, but *E. dunensis* (Dune Helleborine) seems more likely, for which there are two records in central Scotland on bings. Hopefully better specimens will appear in 2021.

Arran is perhaps best known for its endemic whitebeams, which are restricted to the north-west of the island in Glen Catacol. A poster at the Annual Exhibition Meeting by Robbie Blackhall-Miles described the exciting discovery last summer of a second extant plant of *Sorbus pseudomeinichii* (Catacol Whitebeam or False Rowan). See Robbie's article on the discovery on p. 15. This endemic *Sorbus* microspecies is the result of hybridisation and repeated backcrossing between *S. aucuparia* (Rowan) and *S. rupicola* (Rock Whitebeam). *Sorbus pseudomeinichii* was published as a new endemic tree from Arran in 2006. Three trees were found originally: two mature and one sapling. Subsequent flooding had destroyed one tree and it is presumed grazing deer had killed the sapling, leaving just a single mature individual on the side of the Catacol Burn, making it arguably one of the rarest trees in the world, and increasing the significance of this new find.

Jim McIntosh and Ian Strachan

IRELAND

It came as a complete surprise when Jane Houldsworth contacted me to enquire if I would like to step into Sarah Pierce's shoes, and take over as Ireland Officer while Sarah was on maternity leave. The BSBI grapevine had kept this quiet as it was the first I had heard of this news. This was August, which meant I had until October before I started working for the BSBI again; last time around it was as the Wales Officer, while Polly Spence-Vellacott was on maternity leave.

The Aquatic Plant Project continued into September with two webinars and one online workshop led by Nick Stewart. The introduction to Aquatic Plant Identification workshop was attended live by 91 people, and a Stonewort webinar was attended by 52 people. The videos of these have been posted online, and at time of writing have been viewed over 500 times. As part of this project four days of recording were done in the midlands by me, being joined by Kate Harrington for one day. The aim was to visit hectads to try and refind sites and update aquatic species that hadn't been reported from hectads post-2000. This was hampered by the fact that there had been exceptional August rainfall, and many loughs and turloughs were more than a metre above their usual levels for the time of year. The River Shannon was in such flood that in places flood water stretched out for more than 0.5 km. Despite this at least one aquatic species was updated for the majority of hectads visited. The star find was *Callitriche truncata* (Short-leaved Water-starwort) in Lough Ree, which is one of 68 plant taxa protected in the Republic of Ireland under the Flora (Protection) Order, 2015. E.S. Marshall first found *C. truncata* new to Ireland in the River Slaney, Co. Wexford in 1897.

Callitriche truncata (Short-leaved Water-starwort). *Paul Green*

Lough Ree is large, stretching for 26 km from Lanesborough in the north to Athlone at its southern point, and at its widest is 11 km. *C. truncata* was first found in Lough Ree this year at Barley Harbour, Co. Longford, and subsequently in Co. Roscommon, followed by Co. Westmeath, from a total of five hectads. *C. truncata* can't be a recent arrival as it was so abundant in some locations that it was forming large rafts along the shoreline. There is a possibility that it has been overlooked as *Callitriche hermaphroditica* (Autumnal Water-starwort), which has been recorded from at least one location where I found *C. truncata*.

Epipactis phyllanthes (Green-flowered Helleborine) – recently discovered in Co. Armagh (image of a plant from a different Irish site). *Geoff Campbell*

John Faulkner, Hannah and Robert Northridge found *Potamogeton* × *lintonii* in a flooded quarry at Carrickaness and in the Blackwater River at Blackwatertown, Co. Armagh. This hybrid was last reported from the county by M.R. Gilson in 1964.

Sticking in Co. Armagh, Martin Smith found *Epipactis phyllanthes* (Green-flowered Helleborine) at Loughgall Country Park, a new county record for this rare orchid in Ireland. Still in Northern Ireland, but further to the west in Co. Fermanagh, Hannah Northridge found a second county site for *Dryas octopetala* (Mountain Avens) at Monawilkin, 5 km from the other extant population. In the north-east David McNeill found *Pyrola minor* (Common Wintergreen) on Cave Hill; this is the only post-2000 record for the Belfast Hills. In the opposite corner of Ireland (but in the Republic), Mairéad Crawford and Oisín Duffy were pleased that they managed to relocate *Hypopitys monotropa* (Yellow Bird's-nest) at Murvagh, as they had searched for it the previous two years without any success.

It has been rather difficult to find interesting plant records to report on in the Republic of Ireland, as many botanist haven't done as much recording in 2020 as usual, partly because of Covid lockdowns being reinstated for a second time in late September, and also because in mid-October we were restricted to a 5 km radius of our homes for exercise, which meant recording was again out of the question. Rory Hodd and Philip Perrin found *Empetrum nigrum* (Crowberry) on the East-Cork (H5) side of the Ballyhouras Mountains, which is new for the vice-county. This is a slight extension of its native range, as it has been known from the Co. Limerick side, on Seefin Mountain since 1989. Crowberry was refound on the Co. Carlow side of Mount Leinster by me, where it hadn't been reported since *The Flora of County Carlow* was published in 1979 by Evelyn Booth. Crossing over the border into Co. Wexford, it took me four hours to relocate *Micranthes* [*Saxifraga*] *stellaris* (Starry Saxifrage) for the county, which I found in the same location as where it was last seen by Ro FitzGerald in 1990.

It is not just BSBI members who have been sending in their plants records; the National Biodiversity Data Centre (NBDC) at Waterford have an online submission form for the public to submit their wildlife sightings. From 1 January to the end of October, 42,815 plant records had been received by NBDC, with half of these received while in lockdown, when over a three-month period from late March through to mid-June we were not able to travel more than 2 km from home in the Republic. This was eventually lifted to 20 km, or travel within the county you lived, before we were all given permission to roam anywhere. From these records I select *Orobanche rapum-genistae* (Greater Broomrape) parasitic on gorse in a field margin at Rathnure, Co. Wexford, found by Colm Moriarty, this being the fourth extant site in the county. And finally, *Vicia sepium* (Bush Vetch) var. *ochroleuca*, with cream-coloured flowers which fade to orange, found by Con Noonan on a road verge at Knocknacaheragh, Co. Kerry, and by Ann Trimble on a road bank at Rathnameneenagh, Co. Waterford, both new county records.

Paul Green

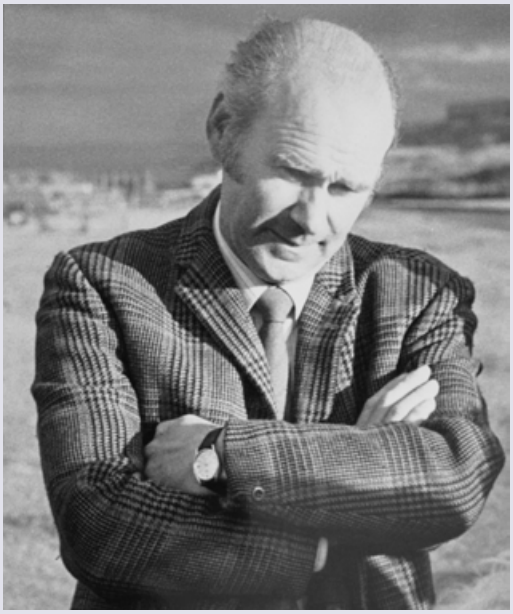
OBITUARIES

GEORGE HODGE BALLANTYNE (1934–2020)

George Ballantyne, who died in 2020, was known to many as a dedicated Vice-county Recorder for Fife and as a longstanding referee for Scottish *Rubus* specimens. All those who knew him will have been saddened by the news of his death.

George Ballantyne was born in Kirkcaldy on 14 November 1934. His father John was an ironmonger. His mother Helen, a secretary, is remembered as a well-read and articulate lady with a particular interest in the works of Walter Scott. George's first botanical memory was of his mother collecting a bunch of early purple orchids to adorn the piano – but not for long, as it soon became apparent that it stank of cats (Ballantyne, 1996). George, a Fifer through and through, was to live in Kirkcaldy for most of his 85 years; even his holidays were not spent too far from the 'Lang Toun'. One of the few periods when he lived elsewhere was during the Second World War when it was decided that it was safer for him to spend a few years with an aunt in the Borders village of Midlem, Roxburghshire. It was here, when exploring the area round the village, that he began to become interested in the countryside. He returned to attend Kirkcaldy High School and it was at a summer dance at the School that he met his future wife Eileen, who he married in 1956. George's second significant period away from Fife was during his National Service, when he ended up driving tanks in Korea.

In a brief and characteristically modest reference to his school days (Ballantyne, 1986), George said that 'I did manage to scrape a pass in Biology (lower) at school, but I failed miserably in pure science subjects and maths. What bent I have is towards literature, a fact reflected in my profession, that of librarian'. After initial posts in the county library service in Fife and with the Royal Society of Edinburgh, George was employed from 1968 by the Society of Writers to Her Majesty's Signet, a private society of Scottish solicitors dating from 1594, as Librarian at the historic Signet Library. His book, *The Signet Library Edinburgh and its Librarians 1722–1972*, was published in 1979 and for this he was awarded the degree of M.A. from Strathclyde University. Another notable work of scholarship was *The Session Papers of James Boswell … in the Signet Library and the Advocates' Library Edinburgh*, a catalogue of papers dealing with the civil law cases involving the lawyer James Boswell, Dr Johnson's biographer. The task of compilation proved to be 'more toilsome' than George had expected, as those Papers in the Signet Library alone had to be found initially amongst the Library's 696 bound volumes covering the relevant period, which were neither ordered chronologically nor indexed by advocate. A further 300 volumes then turned up in a basement cellar of the Library. The catalogue not only includes bibliographical descriptions of the Papers but also pithy summaries of the cases themselves. The catalogue, initially a typescript, is now available on-line. In 1969 George became a founder member of the British & Irish



George Ballantyne, 1984. *Kirkcaldy Naturalists' Society*

Association of Law Librarians. He retired, earlier than expected because of ill-health, in 1994.

In several papers (e.g. Ballantyne, 1996) George dates the start of his interest in wild flowers to the mid-1950s, and implies that he began to botanise in 1955. After a couple of years he was given a copy of McClintock & Fitter's *The Pocket Guide to Wild Flowers* (published in 1956) and this helped him to make progress. He joined the BSBI in 1960 and by 1967 he was leading a botanical excursion to Dumbarnie Links (Ballantyne, 1968). On field meetings he was noted for the patient way in which he would explain the technicalities of plant identification. He became Vice-county Recorder for Fife in 1969 when his predecessor, Win Muirhead, was rather unusually 'asked to step down'. The vice-county comprises the historically separate areas of Fife and Kinross.

For the next 40 years George was sole Recorder for Fife and very active in the role. His major publications were *The Flowering Plants of Kirkcaldy and District* (1970), *The Flowering Plants of Kinross* (1977, with a second edition in 1985), long papers on the more interesting plants of West Fife (1990) and changes in the flora of Balmerino parish over 150 years (1991) and *Wild Flowers in Fife and Kinross* (2002*a*). He wrote about *Orobanche alba*, very rare in Fife, and the apparent spread of *Limosella aquatica* (Ballantyne, 1992; Leach et al., 1994). He became a regular exhibitor at the BSS/BSBI Scottish Exhibition Meeting and he frequently supplied articles for the annual *BSBI Scottish Newsletter*. These elegantly written pieces covered a wide range of topics and often put his own observations into a detailed historical context. I have enjoyed reading them while preparing this obituary and I was surprised that several included autobiographical information, as George always seemed rather reticent in conversation. The last of them was written, literally, about his local patch, and discussed weeds in the potato patch he had cultivated for over 30 years (Ballantyne, 2016). He was a most conscientious correspondent, and when queries were mailed to all Vice-county Recorders a reply written in his rather crabbed hand-writing was normally amongst the first responses. When

George Ballantyne (second from right) at a field meeting of Kirkcaldy Naturalists' Society in 1984.

thanked in person for his help he would normally shrug off the thanks with a self-depreciatory remark.

George developed three special interests while recorder. Initially he was one of the (then) minority of Scottish botanists who had an interest in alien plants. He developed this in the late 1950s when botanising around the harbour at Kirkcaldy, where grain was unloaded for the neighbouring maltings (Ballantyne, 1996). It led him to compile a detailed historical catalogue of ballast aliens in South Fife (Ballantyne, 1971). His other interests were in roses (*Rosa*) and brambles (*Rubus*), and of these it was the interest in *Rubus* that was to become, alongside the Fife flora, his major botanical preoccupation. He started to send specimens from Fife to E.S. Edees in 1968 (Ballantyne, 2008) but it was in 1978, when he attended a joint course on *Rosa* and *Rubus* led by Gordon Graham and Alan Newton at Kindrogan (Ballantyne & Graham, 1980), that he became 'hooked' on *Rubus*. From 1980 he undertook annual batological trips to different areas in Scotland and even into Northumberland (e.g. Ballantyne, 1999; 2002*b*). A lecture on brambles to the first Scottish Recorders' Weekend at Kindrogan in 1983 was subsequently published (Ballantyne, 1984) and from this point he was the acknowledged expert on Scottish brambles. Many of his exhibits and published notes dealt with them. It was at one stage his ambition to produce an atlas of Scottish brambles (Ballantyne, 1996) but in the end he was one of twelve 'regional contributors' to the *Atlas of British and Irish Brambles* (Newton & Randall, 2004). He was able to name a species *Rubus newtonii* after his mentor (Ballantyne, 2002*b*).

The BSBI was not the only society to which George gave long and devoted service. He was a mainstay of the Kirkcaldy Naturalists' Society, editing their centenary publication *The Wildlife and Antiquities of Kirkcaldy District* (1982), to which he contributed the chapter on wild flowers (pp. 81–104), and eventually becoming Hon. President. He was similarly involved with the Botanical Society of Scotland and the Scottish Wildlife Trust, editing for the latter the newsletter of their Fife branch, *Fawn*. He also gave decades of service to the Kirkcaldy Rugby Football Club, unusually turning from player to referee in his 20s then returning to playing in his 30s. He sometimes found himself playing in the same team as his elder son Keith or refereeing teams including both sons Keith and Lindsay. He was at various times convener of the Selection Committee, editor of a newsletter *In Touch* and, almost inevitably, co-editor with J.S. Methven of their centenary booklet, *Passes Past and Present* (1973). Keith tells me that his literary skills sometimes verged on the pedantic and there was an ongoing discussion on whether to write 'lines-out' or 'line-outs'.

Sadly, George suffered from ill-health during the latter part of his life and, although he never lost his enthusiasm for botany, his activities became increasingly limited. Even as early as 1986–87 his participation in the BSBI Monitoring Scheme was restricted by ME, or post-viral fatigue (Ballantyne, 1988), and it was this that led to his early retirement. In 2006 he was hit hard by a return of symptoms, almost overnight (Ballantyne, 2007). For some time he was only able to participate in botany vicariously through the fieldwork of his friends, especially Bill Hay, and his fieldwork was further restricted when he suffered a stroke in 2009. In 2010 he suggested that it was time for him to step down as recorder but in fact a co-recorder, Sandy Edwards, was appointed, who gradually took over the role. Had it not been for his ill-health George would surely have completed the flora of Fife which would have been the natural culmination of his work in the county. In April 2020 he suffered a further major stroke and he died, peacefully at home, on 17 July 2020. Fittingly, the celebration of his life was conducted by Sandy Edwards, his successor as Vice-county Recorder, who is a Humanist celebrant.

If you were asked to select one person to illustrate the work of BSBI Recorders in the second half of the 20th century at its best there would be many names to choose from – and George Ballantyne's would certainly be amongst them.

Acknowledgements

I am very grateful to Keith Ballantyne and Sandy Edwards for much information which I have incorporated into this obituary and to Jim McIntosh for additional help.

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Chris D. Preston

ANITA JO DUNN MBE (1920–2020)

Jo, as she was always known, was a very skilled amateur field botanist. Her knowledge of wild flowers made her the equal to any professional. She was meticulous in her recording. All uncertainties were checked by an authority. Not only did she have an eye for detail, but she also embraced the wider countryside and, in her later years, enjoyed watching garden birds, making notes about their behaviour. She was a charming, modest lady whose enthusiasm for nature was infectious and she will be remembered as a loyal, generous and affectionate friend.

Jo was born on 11 May 1920 in Clifton, Bristol to George and Rose Dunn who a few years before had been resident for a number of years in Buenos Aires, Argentina. She was one of three children; besides Jo there was a brother Horatio James Rennie (born 1917) and a younger sister, Dora Grace (born 1922). It was at the local primary school that Jo first developed her interest in natural history. While at Kingswood Grammar School (now King's Oak Academy) in Bristol she was so taken by the writings of Henry Williamson that she wrote to him. A brief correspondence led to her being invited to tea!

After leaving school Jo took a secretarial course in Bristol and subsequently worked for a local solicitor's firm. Following the outbreak of war, she joined the Women's Land Army and was assigned to work with the Timber Corps in the Lake District. She remained there for much of the war, moving to Sussex in late 1944 where she continued this work

Jo Dunn at 'her' *Stachys germanica* (Downy Woundwort) site, 22 July 1985. *Rosemary FitzGerald*

until mid-1945. Immediately after the war Jo returned to Bristol to work as the personal assistant to Professor W.F. Whittard, head of the Department of Geology at the University. She moved to Juniper Hall Field Study Centre, where she worked with its first warden, Geoffrey Hutchings, then in the mid-1950s to Minterne House, Dorset as personal assistant to Edward Kenelm Digby, 11th Baron Digby and Lord Lieutenant of Dorset. Subsequently she held similar jobs at Lady Margaret Hall, Oxford, Wolfson College, Oxford, Pye's Charitable Settlement, Hawkwood College near Stroud and as P.A. to Sir Alister Hardy, the marine biologist.

In the 1960s Jo became very ill, the cause of which was found to be DDT poisoning. She convalesced for several months in Majorca where she studied the flora. Later she made visits to the Scillies, the Pyrenees, Norway, Switzerland and many other places with friends, making a photographic record of the wild flowers found on each trip. Later her skill as a photographer was recognised when some of her photographs were used in publications, including one of *Stachys germanica* (Downy Woundwort) in Peter Marren's book *Britain's Rare Flowers* (1999).

On retirement Jo settled in Charlbury, west Oxfordshire, where she explored the countryside, undeterred by a knee injury caused by a horse kick. She soon familiarised herself with the local flora and was an active member

of the Wild Flower Society. She contributed a stream of records to *The Flora of Oxfordshire* from its inception in 1967 until publication in 1998.

On one of her local walks in 1984 Jo came across a colony of *Stachys germanica* in a green lane. This thrilling discovery of a very threatened species led to her friendship with Lady Rosemary FitzGerald, whose relatives had rights over the land, and the start of two fruitful botanical projects. The first involved *S. germanica* itself. She visited it regularly to check on the plants, protected them from rabbits with wire cages, organised management of the site and sent annual reports to NCC/English Nature from 1984 to 2004. The stretch of green lane in which this plant was growing was designated a Site of Special Scientific Interest in 1988. She became so knowledgeable about *S. germanica* that she was asked to write the Biological Flora of the species (*Journal of Ecology* 85: 531–539, 1997). For an amateur botanist, this was a big achievement made possible by the help given by the editor, A. J. Willis, which she much appreciated.

The second project involved recording the flora at Ditchley, which Rosemary FitzGerald had started for her late cousin, Martin Wills (then managing the estate). After her work took her to Kent in 1985, Rosemary asked Jo to take over. For the next seven years, Jo tooth-combed the estate with passionate enthusiasm, which culminated in the publication of *The Flora of Ditchley – Wild Flowers of an Oxfordshire Estate* in 1993. She was also involved with other botanical activities, which included the BSBI Monitoring Scheme in 1987/88 and surveys for English Heritage (Deddington Castle, Minster Lovell Hall and North Leigh Roman Villa) in 1992. Later, Jo contributed details of about 20 of the 400 scarce species included in *Oxfordshire's Threatened Plants* (2018).

Jo had a flair for writing. Several articles she wrote were published, including one in *Country Life* entitled 'Wildflower Haven' about the Ditchley Estate. She contributed two papers to *Watsonia* on *Stachys germanica* (16: 430–431, 1987; 18: 359–367, 1991) and several articles to *BSBI News*, including one on conservation headlands for arable wild flowers (77: 45–46, 1997). She shared her great affection for pollarded willows with BSBI members in another article in *BSBI News*, 'Plant life in pollarded willows' (66: 22–23, 1994). She had examined 400 pollards on the banks of the rivers Evenlode and Windrush in west Oxfordshire and recorded 74 species growing in their crowns.

Jo was one of the founder members of the Cotswold Rare Plants Group (CRPG) which was set up in 1995 to collect information about the rare plants of west Oxfordshire. As well as recording, Jo became involved with practical work like translocating *Muscari neglectum* (Grape-hyacinth) bulbs, collected before the site where they grew became built over, to safer locations nearby. She also bulked up two populations of *Stachys germanica*. Sadly, after Jo was no longer able to coordinate this group, membership fell and the cost of insurance increased, making the future of the group uncertain. It was saved in 2013 by bringing the group under the umbrella of the Wychwood Project when it changed its name to Wychwood Flora Group. Reaching a wider audience, membership grew and Jo's legacy continues to thrive.

Jo's work in recording and protecting the flora of west Oxfordshire was recognised in 2005 when she was awarded an MBE. To celebrate her 90th birthday in May 2010, members of the Oxfordshire and Wychwood Flora Groups took her to Otmoor to see the special plants which grow there.

Jo spent her last years in Burford Nursing Home, where she enjoyed watching birds on the feeders outside her room. Sadly, she became infected with coronavirus and died on 13 May 2020, 2 days after her 100th birthday. The words chosen by her nephew for her on-line memorial in the book of remembrance for all those who have died as a result of the Covid-19 pandemic in the UK, set up by St Paul's Cathedral, were very fitting: 'In memory of a dedicated botanist whose passion for her subject was only equalled by her loyalty shown to her many friends and family'.

I am grateful to Rosemary FitzGerald and Tim Bowyer, Jo's nephew, for their help in compiling this obituary.

Brenda Betteridge

VINCENT JONES (1947–2020)

Vincent Jones botanising near his home in Ingleby Greenhow, 2018. *Dave Barlow*

Vincent Jones was born on 10 December 1947. He moved to the village of Ingleby Greenhow when he was six as his father was the school headteacher. Vincent never lived anywhere else and in fact he never travelled abroad throughout his life as there was enough to interest him in Yorkshire and the UK.

All Vincent wanted to do was to be a teacher. He went to Yarm Grammar School, Birmingham University and gained a BSc and MSc in mathematics and a PGCE at the University of York. He was a maths teacher and was fond of saying that he only taught the high achievers at the only school he taught at in his life: South Park Sixth Form College in Normanby. He was a fantastic historian and had a real passion for literature. He chose the most difficult crosswords, eschewing the easier ones: The Daily Telegraph and The Sunday Times crossword. He was also a bridge player: a good one.

Vincent was an eccentric and he was passionate – almost obsessive – about the things that he liked and had little time for the things he didn't like. He kept meticulous records of his petrol consumption and would travel everywhere at the most efficient speed (40 mph). He was proud of having never smoked

or drunk alcohol. Well known for paying his cricket match fees at the end of the season, and by cheque! Most things Vincent did he was very good at, such as village cricket.

Vincent was a prominent member of the Cleveland Naturalists' Field Club. His botanical skills reached a high level when he undertook to study the Hawkweeds (*Hieracium*) in Yorkshire. He spent some thirty years of dedicated field work and time in producing keys which culminated in the publication of his impressive book, *Yorkshire Hawkweeds*, in 2014. He became BSBI Recorder for N.E. Yorkshire (v.c. 62) in 2006 – the area between River Tees, Filey and York – hitherto severely under-recorded. His commitment to this role was total. Few if any other Vice-county Recorders could identify and name Brambles (*Rubus*), Dandelions (*Taraxacum*) and of course Hawkweeds (*Hieracium*) – I consider him to be one of a very small and select band of botanists who really know *Hieracium*. Vincent even has a species named after him, *Hieracium jonesianum* McCosh, and David McCosh and Tim Rich have recently published three new (for science) *Hieracium* species Vincent discovered in the Yorkshire Dales. His extensive herbarium is now in Leeds Museum.

Vincent had suffered from Alzheimer's and apparently also from Dementia with Lewy bodies. His illness really took hold as I was botanising with him in 2018, and in the winter of 2018/19 he deteriorated very quickly. He was taken into a care home in the spring of 2019. I continued to take him out once a week to do some botanising which he really enjoyed as it gave him something to look forward to. He deteriorated even more when he was given a drug which had a massive negative impact on him. He never really recovered from that. He died on 14 July 2020.

Vincent will be remembered for his somewhat eccentric ways, his undoubted skills in botany and as a kind helpful man who always wanted to help young botanists.

Dave Barlow

OBITUARY NOTES

Since we compiled the last Obituary Notes, news has reached us of the death of the following members or former members. We send our sympathy to their families and friends.

Mr J. Harron of Helen's Bay, Co. Down, a member for 47 years and author of the *Flora of Lough Neagh.* We hope to include an obituary of John in a future issue.

Dr R.C. Radley-Smith of Petersfield, a member for 22 years.

Mr D.P. Spicer of South Kilworth, Lutterworth, a member for 40 years.

We noted the death of the European *Rubus* expert **Prof. Heinrich E. Weber** (1932–2020) in the last issue. An obituary has now been published in *Kieler Notizen zur Pflanzenkunde* 45: 3–6 (2020). It says that his roles included that of a '*batologischer Wanderprediger*', a 'batological evangelist' or 'batological itinerant preacher'.

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REVIEWS

Britain's Ferns. A Field-guide to the Clubmosses, Quillworts, Horesetails and Ferns of Britain and Ireland
James Merryweather
Princeton University Press, Woodstock, 2020; pp. 280, with many coloured photographs and maps; sbk, £20.00.
ISBN 9780691180397

Fern books are a rare commodity, but are a field for which Britain is known, and in which it has at least two centuries of sound and respectable history. This new and exciting book is therefore a successive milestone. James Merryweather has gone to a lot of steady, careful and experienced effort to illustrate the material well, from colour photos of whole plants in situ to close-ups of sori and frond structure.

The lead-in text of the book deals excellently with the definition of pteridophytes. It then continues with comparisons of the four main groups (clubmosses, quillworts, horsetails and ferns) and the key features in their overall recognition. This is then followed by species accounts. The book is rounded-off with discussions of field seasonal aspects, urban habitats, variations seen in ferns, and some non-native species (to cover all of these would probably need another book).

The species accounts, which form the main body of the book, are excellent throughout. The text for each, however, is surprisingly brief, giving only general identification overviews for each species. Features of each that are especially useful in identification are emphasised, and tips to note for each species are further helpful in determining particular identities. All the text also stresses key features which are of easily visible size, and which therefore make this book genuinely field-usable. High quality in situ colour habitat photographs are presented for each species. Each also has a single frond-silhouette, which can be of enormous further help in drawing comparisons between species and in confirming identifications. These are important, since such details as frond dissection and marginal serrations are so much more clearly conveyed in photographs than in words. The frond details are usually set against black backgrounds, an excellent choice as it shows details of frond and especially pinna and pinnule margins very clearly. Each species is also accompanied by a general thumbnail range-map of its general presence across Britain and Ireland. This all makes this book very much an identification manual, which is probably its intended remit. The main omission seems to be that most hybrids are not included. This is my only disappointment, since recognition of hybrids in our pteridophyte flora is something in which Britain and Ireland lead the world.

Lastly, this attractive book, which is highly recommended, has a further important role to play. The flora of Britain and Ireland is probably the best-documented of any flora. We know a lot of detail, but there is always more to be uncovered. It is thus immensely important that we have good, readable and accessible publications available that summarise knowledge so far, set baselines, and, especially importantly, help thereby to raise general interest in an otherwise specialist topic. This always helps stimulate onward awareness and perhaps further study for the future.

Chris Page

A Flora of Cornwall
Colin French
Wheal Seaton Press, Camborne, 2020; pp. iv + 548, copious illustrations and maps; hbk, £50.00.
ISBN 9780953461332

The last twenty years has seen an emerging tradition of regional Floras as large, glamorous books for the table top; this one follows and develops that trend. Given just 21 years since the last Cornish Flora appeared, some potential readers may wonder whether it is

worth acquiring another. A short time spent with it will dispel any doubts. Introductory sections on the survey process and the bumpy but triumphant history of the ERICA database show the effort and thought that have gone into attaining the coverage manifested in the rest of the book: 64% of all computerised Cornish botanical records date from since 1999.

The 65-page Introduction includes the elements one expects of a modern Flora, covering climate, geology, topography, designated sites, human activity, habitats, vegetation and recording history. There is commentary, mostly bleak, on changes and prospects. However, this Flora's outstanding features are its huge underlying dataset and the analysis and mapping which that makes possible. The basic recording unit is a 1 km square, itself exceptional for such a large region; but over half of the 2.25 million records amassed have been made at 100-metre or 10-metre resolution. Difficulties in ensuring consistency of approach and coverage at this level are honestly addressed. Interpretive maps support useful analyses of the data at county level.

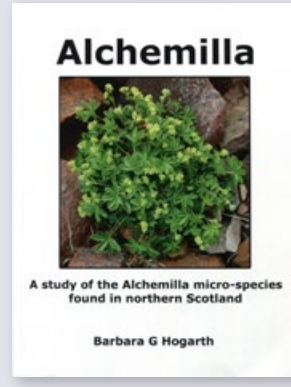
Most of the text is, of course, the species accounts, which follow the taxonomy of Stace's *New Flora* Ed. 4 (2019). Non-natives, hybrids and critical groups are all given good to very good coverage. An unusual feature is a section on 'disseminules', species whose seeds wash up after long Atlantic journeys. Mapping the county at a readable kilometre scale makes the maps a dominant feature; they are included for all except the rarest and commonest non-casual species. Background layers for geology, watercourses and communications lines are used to highlight distribution patterns; occasionally these do not seem especially relevant. Many accounts carry small photographs that are sometimes useful to convey an impression of less familiar non-natives, but I would happily sacrifice most for a few more habitat shots.

Habitat and distribution data and records at 1 km resolution make up the bulk of most accounts. Notable natives (and one or two aggressive non-natives) are given longer accounts and often a local map on an Ordnance Survey base showing 100-metre or 10-metre distribution at important population centres. This is fascinating and should be useful to anyone monitoring or managing these plants. Given the two resolutions and the lack of a grid on these maps, a scale bar would have helped for cases where resolution is not easily inferred.

I do not find the book format visually very appealing, but this is only a matter of taste; the readability of the content is not at issue. Like many heavy books nowadays that need to keep publication costs down, the end boards and spine are not best quality, and I suspect they will crack along the edges with use.

If this book aims to show what can be achieved with heroic levels of effort and a well-organised system for processing data, then it succeeds wildly; I doubt many counties could yet emulate it. Anyone with an interest in the special flora of this area will find this a book to enjoy and learn from. Cornish conservationists, environmental policy makers and major land managers should consider it indispensable, alongside the data resource underlying it.

Martin Rand



***Alchemilla*. A Study of the *Alchemilla* Micro-species Found in Northern Scotland**
Barbara G. Hogarth
Amenta Publishing for Aspen Botanical Advisory Services, Dundee, 2019; pp. 58, with 64 coloured photographs; sbk, £11.00.
ISBN 9781097289554

***Alchemilla*. A Field Guide to the Lady's-mantles of the British Isles**
Barbara G. Hogarth
Amenta Publishing for Aspen Botanical Advisory Services, Dundee, 2020; pp. 62, with 34 coloured photographs; sbk, £10.50.
ISBN 9798641608075

Alchemilla is one of the smaller apomictic genera in the British flora with only about 15–17 species accepted in most recent Floras, and with

no problems caused by the presence of hybrids. The *Field Guide* provides descriptions, distributional and habitat notes, comments on similar species and good photos mostly of the leaves of each of the 17 species covered. There is a tabular key based on leaf characters. An admirable section in the Introduction is entitled 'Observe, describe and keep good records', containing advice that anyone wishing to study a difficult group would do well to follow, and showing, with one example illustrated, how to incorporate photocopies of fresh specimens with drawings of critical features and descriptive notes. Three as yet undescribed species are included, and two commonly recognised native species, *A. acutidens* and *A. minima*, are bafflingly not even mentioned. (*A. sciura* M. Lynes, published in 2019, is also not mentioned, but is possibly the same as Hogarth's *A.* '*cairnwellensis*' from the same site; comparison of the latter with the holotype of *A. sciura* in the Edinburgh herbarium would be needed to confirm this). Two aliens, *A. mollis* and *A. tytthantha* are included, but not *A. venosa* which is included in recent British Floras.

The *Northern Scotland* book is very attractive and considerably more detailed, and includes the recommended kind of annotated photocopies for each of the 13 species covered, as well as many additional; the photos are different from those in the *Field Guide*. The annotated photocopies generally include a whole specimen or inflorescence, several leaves, drawings of the leaf apices and flowers, details, often diagrammatic, of the pubescence of various parts, and descriptive notes on the key diagnostic features. Paradoxically the dismissal of *A. minima* is explained only in this book (as its characters are not retained in cultivation), although it is usually considered to be a Yorkshire endemic. The problem of *A. acutidens* is also discussed only here. *A.* '*caledonica*', described as a refound species in the *Field Guide*, is revealed here as one of the three undescribed species. The book is A4, so is not as suitable for field use as the approximately A5 *Field Guide*. If your botanising is confined to northern Scotland, the former is what you need, but if you are covering the rest of Britain then both books are very strongly recommended. Personally, I would like the Scotland book to be expanded to cover the British Isles, with the exemplary annotated illustrations added for the extra species, and the whole reduced in format to A5. The books do not claim to be definitive, and are all the more stimulating as a result, and should do much, as the author says, to generate 'enough interest to take our knowledge of these fascinating plants a step forward.'

Arthur Chater

The Great Fen. A Journey Through Time
Alan Bowley

Pisces Publications, Newbury, 2020; pp. x +194, over 200 illustrations, 8 maps; hbk, £27.50.
ISBN 9781874357964

Landscape-scale initiatives with the aim of both conserving and enhancing biological diversity have become widely supported in recent decades. This reflects increasing understanding that connectivity and scale are important in protecting wildlife, and that focusing on communities over larger areas may be most beneficial in the long term. The Great Fen project was one of the earliest to be developed, its aim to reconnect the NNRs of Holme and Woodwalton Fens which lie at the edge of what was once the massive Whittlesey Mere in the East Anglian Fens near Peterborough. In this aim it has succeeded, not least because the project became a collaborative one involving farmers, residents and the local Council, as well as environmental and conservation bodies.

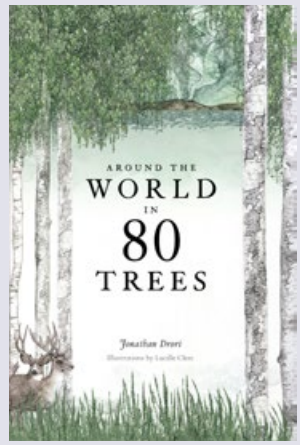
Bowley was involved from the early days of the project, but this account is more than the tale of its inception, funding and development. Its ten themed chapters cover a vast range of information about the area, perhaps more than was really required, from the last Ice Age to the present day, including a history of the Fens and the natural and man-made changes in water levels which have oscillated over the centuries. It covers human history in Fenland and our increasing knowledge of how people lived in, used and managed the area, as well as how it has inspired travellers, poets, painters and campaigners. Outside the reserves, Fenland has become dominated by arable cultivation, with heavy inputs required to maintain

crop production and maintain drainage, a peat soil which has largely blown away and restricted public access. This project is not about re-flooding the surrounding land, but returning it to a pastoral agriculture, with enhancement of the environment for the benefit of plants and animals, whilst encouraging people to share the benefits. It is largely open-ended, with a philosophy that involves some habitat creation and management, but then standing back to see how wildlife responds.

There are accounts of the past and present fauna and flora of the original reserves, together with the history of the reserves themselves. However, this is not the place to look for definitive lists of the plants and animals known from the area; whilst it is sometimes hard to gather a clear picture of the work that has been done in taking on the new areas. The book lacks a good map of the project area marking all the local features mentioned in the text, and whilst the author quotes from a wide range of sources, the inclusion of these in the list of references appears haphazard. There are occasional errors, e.g. the image of *Lathyrus palustris* is of *Vicia sepium*, whilst references to Spiked Sedge or *Carex spicata* would seem to refer to *C. echinata*.

There is a great deal to be learnt from this well-illustrated and broadly researched account, not only about the people and the wildlife of this area and the Fens as a whole, but about the challenges in developing such a project.

Alan C. Leslie



Around the World in 80 Trees

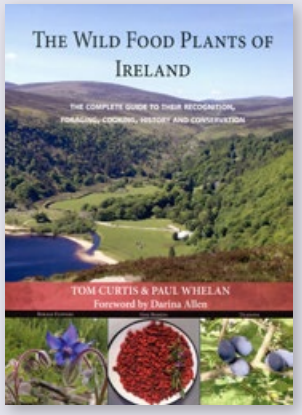
Jonathan Drori

Laurence King Publishing Ltd, London, 2018; pp. 240, with many coloured illustrations; hbk, £17.99. ISBN 9781786271617

Trees occupy a unique place in nature, and are very special to all of us, whether we realise it or not; after reading Drori's book, no-one could have any doubts about that. This is not a botanical text-book, but a personal appreciation of trees world-wide, interweaving botanical facts, folklore, and man's ingenuity and greed in utilising natural resources. No two authors would select the same 80 species (no Pedunculate Oak, European Pines, Yew, Sandalwood or Mahogany, for instance), nor choose to cover the same aspects of the chosen 80 (e.g. no mention of cricket under White Willow, of the pestilential micro-moth *Cameraria ohridella* under Horse Chestnut, or of hop-poles or the fencing industry under Sweet Chestnut). Many extra stories could be told about these wondrous plants, but the author's bias, along with the many charming paintings by Lucille Clere, positively contribute to the reader's enjoyment and comprehension. The main emphasis of the text is on the ways in which the trees have influenced man's activities, both positively and negatively; there is a strong historical element, and many references to the derivation of words, laced with much botanical information.

Of the 80 trees, 9 are natives here and a further 21 or so are much grown and well known to us. I guarantee that no-one will fail to encounter fascinating stories new to them, possibly on every page. The text is well written and easy to read, with an excellent layout. Errors are extremely rare: Hemlock (*Conium*) is a biennial, not a perennial, and in a few cases the author goes out on a limb, as, for example, in suggesting that the Strawberry-tree (*Arbutus*) is an archaeophyte and not native in Ireland, or in implying that Leyland Cypress first arose in Wales, or that dwarfing rootstocks were discovered thousands of years before their development by East Malling Research Station. But these are mere quibbles that do not detract from the excellence of the text and its major contribution to our appreciation and understanding of trees. Very highly recommended to all plant lovers.

Clive Stace



The Wild Food Plants of Ireland: The Complete Guide to their Recognition, Cooking, History and Conservation
Tom Curtis & Paul Whelan
Orla Kelly Publishing, Cork, 2019; pp. ix + 259, c. 180 photographs, c. 140 maps; pbk, €25, £25.95. ISBN 9781912328475

Tom Curtis extends his earlier work on Crop Wild Relatives to discuss plants which can be foraged in Ireland. It appears that his co-author, Paul Whelan, is responsible mainly for the book's layout.

The introduction explains the authors' aim to show chefs and others 'the richness of our native wild flowering plants which have been and still are used for food', and emphasises the role wild plants played as ancestors of present-day crops. This is followed by species accounts, arranged alphabetically according to the English family names. These accounts include photographs of the plant and distribution maps. The former are high quality; the latter are unsatisfactory. Distributions are given by vice-county, so that for coastal species the whole of the vice-counties they occur in is shaded, giving the impression that they grow far inland.

Entries give English, scientific and Irish names; culinary uses; a description of the plant; its status as native, archaeophyte or neophyte; its 'vegetative nature', whether a herb, shrub or tree, and which parts have culinary use (repeating information already given elsewhere); historical uses; whether or not the plant is still used; and the plant's distribution in Europe. Check boxes, which include how many 10 km squares the species has been recorded in, give information on its conservation status and the preservation of material in gene banks.

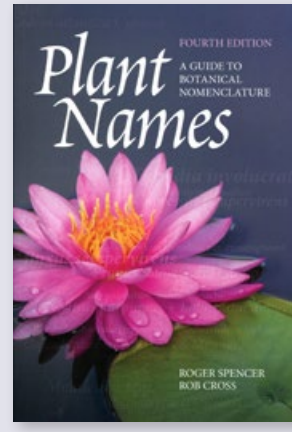
Recipes are absent. The 'Culinary Index' lists 'shepherd's pie with water-cress champ', but on turning to the relevant page it is stated that 'Anthony Worall-Thompson uses the species in a version of shepherd's pie and water-cress champ'. Without further details this can hardly be considered a complete guide to cooking.

The text is confusing in places: 'garden asparagus is derived from wild asparagus and found very rarely as a native on sand dunes in Ireland'. In some places it is simply wrong; Borage (*Borago officinalis*) is described as 'a prostrate, hispid, prickly haired perennial'.

Accounts of 'Legume Animal Forages' and the Grass Family, one dealing with wild relatives of food crops, none of which is foraged, and the other with 'The Animal Forage Grasses', occupy some 36 pages. I fail to see their relevance to the book's title.

A book living up to the above title would be welcome, but I regret that many readers will find this work unsatisfactory.

Roy Vickery



Plant Names. *A Guide to Botanical Nomenclature* (4th edn)
Roger Spencer & Rob Cross
CSIRO Publishing, Clayton South, Victoria, Australia, 2020; pp. xiv + 154, c. 50 coloured illustrations; pbk, £31.50. ISBN 9781486311446

The variation of the plant kingdom is seemingly endless and, over the last 300 years, botanists all around the world have attempted to describe and classify it. This has led, somewhat inevitably, to different names being used for the same plant (synonyms) and the same names being used for different plants (homonyms). It is the job of plant taxonomists to ensure that each taxon has a single, unique name, which reflects its relationship to other taxa and, while the rules governing the use of these names may seem confusing and excessively academic, they are essential to maintain a sense of order out of what would otherwise be a state of chaos.

Plant Names is a handbook that sets out to explain how the rules of plant nomenclature work and how to apply them. It is the fourth edition of a successful series and incorporates the most-recent update (Shenzhen Code, 2018) to the *International Code of*

Nomenclature for Algae, Fungi, and Plants (ICN). The authors of this latest edition are, like their predecessors, established plant taxonomists and work out of the Royal Botanic Gardens Victoria. This is reflected in the examples they cite, which are predominantly of Australian taxa, but this should not dissuade a British audience as the underlying principles remain the same.

The text is divided into four discrete parts. Part 1 'Wild Plants' deals with the use of common names, the Linnaean binomial system and the main rules underlying plant nomenclature. Part 2 'Cultivated Plants and Cultigens' deals with the names of crops and garden plants. Part 3 'Using Plant Names' deals with how to write, pronounce and remember plant names. Part 4 'Plant Name Resources' is simply a list of useful web pages and further reading.

The book is stylishly presented and conveys the information in a plain-English style with the use of figures and information boxes, making it accessible for those not expert in plant taxonomy (such as myself!). However, an omission is the lack of any distinction between invalid and illegitimate names; a subtle, but important difference. That aside it is a comprehensive reference guide full of useful content, but it retails for around £30, which is pricey for an A5 168-page paperback. However, it may be a question of Hobson's choice, as I do not know of any other up-to-date book on this subject.

Stuart Desjardins

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LETTERS

ANOTHER VIEW ON TRANSLOCATION

Dave Trudgill (Letters, *BSBI News* 145) outlines an important issue that could be discussed more intensively in these pages: how should botanists feel about the translocation of species and consequently what standpoint should the BSBI take? One thread of his argument is that the changes in farming methods make it more difficult for seed to spread among increasingly fragmented habitats. This being so, we can give the plants a helping hand to move them over the greater distances resulting from this fragmentation. Many will feel that this is a reasonable position to take, especially when they see it argued in such a well-researched way.

What are the counter arguments? I have a gut feeling that it is wrong to 'meddle', and, as an amateur botanist, I know that I get far less pleasure from seeing a charismatic plant in a place if I know that it has been put there. I myself own land on which I am pretty sure that I could establish *Pseudorchis albida* (Small White Orchid), of which there is a colony barely 2 km away in similar habitat. The pleasure that I would get from this would be minimal, however; whereas if the species made the leap itself my excitement would know no bounds.

This may be taken as a selfish view. What is my excitement worth in the greater scheme of things? Well, it is my excitement in the natural world that fuels my work as a Vice-county Recorder, and in particular my reverence for natural processes. Dave Trudgill regards me as a member of the 'botanical establishment' by virtue of my being a BSBI recorder, and we have a long-running but good-natured dispute about this whole topic. I am not opposed to translocation when it results from a reasoned discussion and a national plan, but I challenge the right of individuals to make the decision themselves. There is no doubt that a lot of this unofficial translocation goes on. Some people are very cavalier about spreading plants around, probably more members of the general public than members of this Society. If recorders are told about

such actions they can at least record them as such, but in most cases they are not so fortunate. In Dave's case I at least am fortunate.

He also makes the point that in our changing climate the helping-hand approach becomes more necessary than ever. I would claim the opposite. Should we be second-guessing where things ought to be? We are observing colonisations and range retractions. Is that not infinitely fascinating?

I used the word 'charismatic' earlier, because there is an understandable bias in our selection of species to translocate. This means that our approach is species- rather than habitat-based, and is equivalent to thinking that you can replace an ancient wood by planting trees somewhere else. Is our predilection for more glamorous species not self-indulgence?

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MORE ON METRICATION

Neil Pinder (*BSBI News* 145, September 2020) suggests 'metricating' vice-counties. Reading the headline, I thought he was suggesting standardised units of, say, 50 km × 50 km. Reading on, I found it was the less radical measure of allocating each monad to the vice-county in which the majority of the area lies. Having struggled throughout 2020 with recording along the eastern boundary of my own vice-county (Armagh, v.c. H37), I was interested to work out what the consequences would be.

This boundary (with v.c. H38, Down) is marked roughly by the line of the Newry Canal, the oldest summit-level canal in the British Isles, and also that of the Belfast–Dublin railway. Unfortunately, it actually follows watercourses, some of them very minor, and meanders back and forth across the canal and, occasionally, the railway. Recording the long-disused canal can be done from the towpath on the west side although you are confined to a narrow strip and you keep changing vice-counties. To know which vice-county you are in, you have to read both the map and the landscape very carefully. Under Neil's system, you would know immediately by reading a GPS. And a re-programmed MapMate might stop re-allocating my records to the wrong vice-county. Decidedly helpful!

Going anti-clockwise, the northern v.c. H37 boundary goes 6 km out into Lough Neagh. The lough impinges on five vice-counties, but their boundaries were immaterial in mapping its flora (Harron, 1986) because the whole of the lough was covered. So metrication along Neil's lines should not be much of an issue… or would it? At the north-east corner, v.c. H37 would cede Morrow's Point to v.c. H39 (Antrim). Oddly, these two vice-counties don't actually abut on land, as a wedge of H38 intervenes; v.c. H37 would get its own back in the next monad to the west by stealing a fragment of Haggan's Point from the delightfully-named Gooseberry Corner area of v.c. H39. Very quirky!

In the north-west, the boundary with v.c. H36 (Tyrone) is the River Blackwater. Subject of a notorious arterial drainage scheme in the early 1980s, this is a large river with several kilometres between bridges. In his *Flora of Tyrone*, Ian McNeill got round the mapping problem by including all records from border quadrants, regardless of vice-county (McNeill, 2010). 'Metrication' using Neil Pinder's model would make the river itself alternate between vice-counties. Messy!

To the south-east, there is a long and varied boundary with v.c. H32 (Monaghan). In places, it follows obvious watercourses but in other places it wanders along the edges of fields. Helpfully, the local authorities have marked points on this boundary with signage and a change in road surface – it is an international border – but other stretches are difficult to follow. Neil's proposals would make recording easier. There would be a small matter of exchanging territory between an EU and a non-EU monad. However, that part of the world is used to fudges. Practical but not without risks!

To the south there is a relatively short, but equally varied, boundary with v.c. H31 (Louth). It passes through attractive scenery with place names familiar to news addicts of the 1970s and

1980s: Crossmaglen, Forkhill, Jonesborough, etc. The local graffiti suggest serious dissatisfaction over boundaries, but I have an inkling it might not just be vice-counties they are on about. Maybe a visit by an American President could smooth things out if necessary, like in the 1990s… but hang on a minute! It looks as though something really serious is brewing in the south-east corner. In a remote afforested gully, the only site for Tunbridge Filmy-fern (*Hymenophyllum tunbrigense*) in v.c. H31 would be incorporated into a monad in v.c. H37. My neighbouring vice-county recorders would be up in arms about that. And worse, I would pass to them my only site for Bog Orchid (*Hammarbya paludosa*). No, no, no! Metrication is definitely out of the question!

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THE SUFFOLK SITE OF *LYSIMACHIA EUROPAEA* (CHICKWEED-WINTERGREEN)

The article by Kenneth Balkow on *Lysimachia europaea* (Chickweed-wintergreen) on Houndkirk Moor, Sheffield sent me to an old notebook where I recorded seeing the plant on Ashby Warren, in Suffolk on 26 May 1973 along with the Suffolk botanist John Trist and Gigi Crompton. At the time this was the furthest south site in the British Isles. The site had been shown to me a year earlier by Francis Rose. Francis first found it according to Simpson's *Flora of Suffolk* (1982) in 1955. I remember him telling me that he had taken the family on holiday to the Suffolk coast and they stayed in one of the camping coaches that used to be shunted into sidings on the rail network. As always, Francis had an eye for likely habitats and often followed up old records using his copy of the *Botanist's Guide* (Turner & Dillwyn, 1805) as a source. This led him to Ashby Warren because several species had been recorded at this locality. The site was a little to the south of a duck decoy on the southern side of Fritton Lake (which was I think still operated when I visited) at about TM 495006. When I first saw the plant it was growing around an old stump under birch woodland with a carpet of *Sphagnum*. A small rivulet was nearby, and the whole habitat had a Scandinavian look. A year later there had been some clearance and the area had become birch-bramble scrub. We did find one plant in flower at the original site. There is also a diagram in my notebook which is annotated '5 plants planted (died later)'. This was a little to the north of the original site. I don't recall the transplants taking place.

Its presence in Suffolk should not come as a complete surprise as I believe it occurs in the Netherlands and is one of a number of eastern boreal species which have occurred in East Anglia, including, for example, *Goodyera repens* (Creeping Lady's-tresses) and *Maianthemum bifolium* (May Lily). There are also two records of *Empetrum nigrum* (Crowberry) from the late 1960s recorded on the cliffs near Cromer and at Winterton. The former later disappeared with an eroding cliff and the latter was destroyed in a car park extension. Petch and Swann (1968) in their Norfolk Flora thought that birds were the most likely source; this may also be applicable with the origin of the *Lysimachia*. Interestingly the true reindeer lichen, *Cladonia rangiferina*, another northern species, was also found a few years ago at Horsey, north of Winterton, where it persists in several clumps. This is its only English lowland site.

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Back cover: Some of the entries for the BSBI 2020 Photographic Competition (see p. 59). Top to bottom, left to right: *Epilobium montanum* (Broad-leaved Willowherb) by Alison Davies (winner: Native category); *Asperula cynanchica* (Squinancywort) by Jessica Hamilton; *Phalaris canariensis* (Canary-grass) by Alan Wake (winner: Alien category); *Orobanche crenata* (Bean Broomrape) by David Steere; *Ervilla sylvatica* (Wood Vetch) by Jake Dalzell; *Digitalis purpurea* (Foxglove) by Sylvia Davidson; *Papaver somniferum* (Opium Poppy) by Anne Burgess; *Parnassia palustris* (Grass-of-Parnassus) with synchronised mosquitoes by Dorothy Dahl; *Echium vulgare* (Viper's Bugloss) by Mary Breeds.