BSBI NEWS

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Botanical Society of Britain & Ireland

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Front cover *Vicia orobus* (Wood Bitter-vetch), Montgomeryshire (see p. 35). *Gill Foulkes*

Contributions for the next issue of ***BSBI News*** (no. 142) should be sent to the Editor Andrew Branson (**andrew.branson@bsbi.org**) by **27th July 2019**.

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BSBI DIARY AND EXHIBITION MEETING

The diary dates for the coming year are shown below. This year's BSBI Annual Exhibition Meeting and AGM will take place at the Natural History Museum, London, on Saturday 23rd November. More information will be posted as it becomes available at: www.bsbi.org/annual-exhibition-meeting. A flyer and booking form will be circulated with the September issue of *BSBI News*, but the Organising Team has already started approaching speakers and potential exhibitors. To enquire about an exhibitor stand, please email: meetings@bsbi.org.

2019		
Friday 5 April	Committee for Scotland	Perth
Saturday 27 April	Committee for Ireland	Glasnevin, Dublin
Tuesday 21 – Thursday 23 May	Welsh AGM & Summer Meeting	Llanelli
Tuesday 4 June	Board of Trustees	Linnaean Society, London
Saturday 13 – Friday 19 July	Annual Summer Meeting	Malham Tarn
w/c Monday 9 September	Board of Trustees	e-meeting
w/c Monday 9 September	Board of Trustees' Investment Committee	e-meeting
Friday 13 September	Committee for Scotland	Perth
Saturday 21 September	Irish AGM	Glasnevin, Dublin
Tuesday 24 September	Meetings and Communications	Natural History Museum, London
Saturday 25 September	Committee for Wales	Plas Dolerw, Newtown
Tuesday 8 October	Records and Research	London
Thursday 10 October	Publications	London
Monday 21 October	Training and Education	The Gateway, Shrewsbury
Saturday 2 November	Scottish AGM and Botanists' Conference	Royal Botanic Gardens, Edinburgh
Friday 22 November	Council	Linnaean Society, London
Saturday 23 November	AEM & AGM	Natural History Museum, London
Tuesday 3 December	Board of Trustees	Linnaean Society, London
2020		
Tuesday 28 January	Records and Research	London
Monday 10 February	Training and Education	The Gateway, Shrewsbury
Spring 2020	Recorders' Conference	tbc

Delyth Williams, Honorary General Secretary

Vascular plant Red Data List for Great Britain:

a summary of amendments in years 12 and 13 (2017–18) of the annual amendments process

SIMON J. LEACH
on behalf of the GB Red List Group for vascular plants

Following previous updates (listed under 'References' below), the GB Red List Group for vascular plants has now agreed further changes to the GB *Red Data List* covering years 12 and 13 (2017–18) of the annual amendments process. As usual, these have been submitted to JNCC to be incorporated into the master list on the JNCC website. In addition, a copy of the latest version of the *Red Data List*, including the Waiting List, is posted on the 'Resources' page of the BSBI website.

The amendments, summarised below, fall into four categories: (a) additions to the Main List; (b) amendments to taxa already on the Main List; (c) additions to the Waiting List; and (d) removal of taxa from the Main List or Waiting List to the Parking List. For an explanation of the various lists, see Cheffings & Farrell (2005) and Pearman & Leach (2017). It should be noted that, as usual, all new or amended threat statuses have been determined in accordance with the IUCN threat criteria used to compile the original GB *Red Data List* (IUCN 2001, 2003). In the following account, threat categories are abbreviated as follows: **EX** extinct, **EW** extinct in the wild, **CR** critically endangered, **EN** endangered, **VU** vulnerable, **NT** near threatened, **DD** data deficient, **LC** least concern (= not threatened) – see Cheffings & Farrell (2005) for definitions of these categories, and Stroh *et al.* (2014, p. 10) for a handy summary of the IUCN threat criteria A-D and the various sub-criteria.

JNCC has recently pointed out to us that, under IUCN guidelines, **EX** and **EW** should really only be used to denote taxa that are *globally* extinct – so an extinct GB endemic would be either **EX** or **EW**, but an extinct or extinct-in-the-wild taxon that is *still extant somewhere else in the world* should be listed as **RE** regionally extinct.

Additions to the Main List

- *Botrychium nordicum* (Nordic Moonwort). New to Britain, this is a highly 'cryptic' species, genetically distinct but hard to separate morphologically from *B. lunaria* (Moonwort) (Dauphin *et al.*, 2014; Rumsey, 2019a). It is an 'Arctic' species, and so is likely to have a mainly upland/northern distribution in GB (Rumsey, 2019a); as such, it may well prove to be **LC**, since the decline of *B. lunaria* in Britain has involved mainly lowland populations, reflected in the fact that *B. lunaria* is **VU** in England (Stroh *et al.*, 2014), but **LC** across GB as a whole. Nevertheless, pending a better understanding of the distribution of *B. nordicum* we have decided, for now, to add it to the Main List as **DD**.
- *Dryopteris affinis* ssp. *kerryensis* (a Golden-scaled

Male-fern). This taxon, previously considered to be an Irish endemic, was reported new to Britain by Golding (2018) following its discovery in 2017 in Cumberland (v.c. 70). The *D. affinis* group is taxonomically troublesome, with *'kerryensis'* being recognised as a subspecies of *D. affinis* by Stace (2010), subsumed within *D. affinis* ssp. *affinis* in his just-published 4th edition (Stace, 2019), and given full specific rank, *D. kerryensis*, by Sell & Murrell (2018). The currently known population comprises 20-30 plants in three neighbouring tetrads, but the finder thinks it could yet be found elsewhere in the wetter, milder parts of western Britain. We are inclined to agree, but in the meantime have added it, under the name *D. affinis* ssp. *kerryensis*, to the Main List as **DD**.

- *Lathyrus hirsutus* (Hairy Vetchling). Across much of its scattered British range *L. hirsutus* occurs as a non-persistent alien of waste ground, but Rumsey (2019b) presents the case for some populations in rough grassland/grazing marsh close to the Thames Estuary being possibly native. Its true status is likely to be intractable, but we accept that in S. Essex and N. Kent it should, at the very least, be categorised as 'Native or Alien'; as such, *L. hirsutus* is now removed from the Waiting List and added to the Main List as **VU** under criteria B1a+b(iv). This threat status is calculated on the basis of observed/inferred changes in habitat quality, area of occupancy and population size *within its putative native range* (see Rumsey, 2019b), so should *not* be applied to the species more generally.
- *Taraxacum* species. Two dandelions are added to the Main List. *T. calophyllum*, a species with a chequered history and presumed to be synonymous with *T. stictophyllum* by Dudman & Richards (1997), has had its taxonomic position clarified. Richards & Ferguson-Smyth (2016) confirmed it as a 'good' species, with records from at least two localities in Orkney, on Hoy and Mainland, plus more recent records of it from S.W. Scotland, on the Isle of Bute (Richards, pers. comm.). Until its wider distribution has been elucidated, *T. calophyllum* is added to the Main List as **DD**. *T. claudiae*, also described by Richards & Ferguson-Smyth (2016) and currently known from just a single small area on South Ronaldsay, is added as **DD**. Both taxa are assumed to be Scottish endemics.
- *Teucrium chamaedrys* (Wall Germander). There has long been debate over the status of this species in Britain. We agree with Rumsey (2018) and others – e.g. Sell & Murrell (2009), Stace (2010) and Stace & Crawley (2015, p. 537) – that, while undoubtedly widespread in Britain as an alien of garden origin, *T. chamaedrys* at Cuckmere Haven, E. Sussex, is probably native. It grows there as stunted plants in exposed, grazed and trampled clifftop chalk grassland. Morphologically, the Cuckmere *T. chamaedrys* differs in several respects from alien populations elsewhere in GB, and is much closer to native material from nearby

Teucrium chamaedrys at Cuckmere Haven, East Sussex, where it is thought to be probably native. *John Martin*

northern France. With fewer than 50 plants/clonal patches at its sole presumed-native site, *T. chamaedrys* is removed from the Waiting List and added to the Main List as **CR** under criterion D1.

- *Zannichellia obtusifolia* (Thin-leaved Horned-pondweed) has been recently discovered in N. Essex (Adams, 2017). Stace (2019) gives it as 'possibly native', and we think it plausible that this southern European/Mediterranean species could be either a previously overlooked native or recent natural colonist. It is added to the Main List as **DD**, with (for now) an equivocal status of 'Native or Alien'.

Amendments to taxa already listed on the Main List

- *Aster linosyris* (Goldilocks Aster) was assessed as **VU** in Wales (Dines, 2008) and as **EN** in England (Stroh *et al.*, 2014), yet for GB as a whole is presently listed as **LC**. As a clonal/patch-forming species, any assessment of population size is bound to be problematic, but a rapid survey of the most recent counts from known sites suggests a total GB population of less than 1,000 plants; as such, its GB threat status has now been amended to **VU** under criterion D1.
- *Callitriche palustris* (Narrow-fruited Water-starwort) has been discovered at a single site in England (Brown & Roberts, 2017), meaning there are now five sites in GB, four in Scotland and one in England. The entry for this species has been suitably amended; for now, it stays on the *Red List* as **VU** under criterion D2, but a further re-assessment will be necessary if any more localities are found.
- *Cystopteris diaphana* (Diaphanous Bladder-fern). Although still occurring as a presumed native in fewer than five sites, we no longer think that its populations are under any plausible threat that could drive the species to become 'critically endangered or … [regionally] extinct in a very short time period' – the requirement for a threat status of **VU** under criterion D2 in Cheffings & Farrell (2005, p. 22). We have therefore decided that its status of **VU** is no longer warranted, so it is now amended to **LC**.
- *Hypochaeris maculata* (Spotted Cat's-ear), previously **NT**, is amended to **VU** under criteria B1a+b(iv), bringing it into closer alignment with the country-level assessments of **EN** in Wales (Dines, 2008) and **VU** in England (Stroh *et al.*, 2014).
- *Taraxacum rubellum* (Red-fruited Dandelion). British material previously referred to this (non-endemic) taxon is now considered to be a separate species, named *T. rufofructum* (Richards & Ferguson-Smyth, 2016). Thus, *T. rubellum* (**LC**) is deleted from the Main List and replaced by *T. rufofructum* (still **LC**, but now a Scottish endemic).
- In line with advice from JNCC, the following 19 extinct taxa are now listed as **RE** (regionally extinct) rather than **EX** or **EW**: *Achillea maritima, Angelica archangelica, A. archangelica* ssp. *littoralis, Arnoseris minima, Asplenium fontanum, Carex davalliana, C. trinervis, Caucalis platycarpos, Cystopteris alpina, Euphorbia peplis, Filago gallica, Galeopsis segetum, Papaver bivalve* ssp. *hybridum, Pinguicula alpina, Rubus arcticus, Saxifraga rosacea* ssp. *rosacea, Spiranthes aestivalis, Tephroseris palustris, Trichophorum alpinum.*

Additions to the Waiting List

- *Betula pubescens* ssp. *celtiberica* (= *B. celtiberica*) is added to the Waiting List while its status and distribution are clarified. Most records of it are from Wales, but it is likely to be widespread elsewhere in W. and N. Britain (Stace, 2019).
- A healthy population of *Serapias lingua* (Tongue-orchid) was discovered in N. Essex in 2017 (Waller & Cole, 2017), and it re-ignited the debate about whether occurrences of southern European/Mediterranean *Serapias* species in Britain were introductions or could be the result of 'natural colonisation' (e.g. Pearman *et al.*, 2017). For the moment, we are adding *S. lingua* to the Waiting List, where it joins several other species with similarly debateable origins, e.g. *Ophrys tenthredinifera, Pancratium maritimum* and *Serapias parviflora*.

Fruit capsules of *Fritillaria meleagris*, a species removed from the Red List as no longer considered to be native in Britain. *John Martin*

Removal of taxa from the Main List or Waiting List to the Parking List

- *Fritillaria meleagris* (Fritillary). All evidence, both historical (Pearman, 2013) and genetic (Day, 2017), points to this species being a neophyte in Britain. The standard Floras also now concede that it is, at most, only 'doubtfully' or 'possibly' native (e.g. Stace, 2010, 2019). Originally on the Main List as **VU** under criterion A2c, it is now removed to the Parking List.

  Some will be shocked to learn of this species being dropped from the *Red List*, and it serves to emphasise the limitations of a Red-listing process concerned solely with *native* species (and archaeophytes), rather than with species more generally. This is the reason, of course, why so much of our time is spent considering 'matters of status'; and there is, perhaps, a need for agencies and interested groups to develop other mechanisms to address the conservation of non-native species of cultural, historical or ecological value, of which *F. meleagris* is a prime example.
- *Lonicera xylosteum* (Fly Honeysuckle). Following a review of the evidence (Pearman, 2007), this species is now generally regarded as a recent introduction, even in its W. Sussex stronghold where it was first discovered at the beginning of the 19th century. While the 3rd edition of Stace (2010) listed it as 'possibly native', the just-published 4th edition (Stace, 2019) gives it as a 'neophyte'. Previously on the Waiting List, it is now removed to the Parking List.
- The inclusion of *Scrophularia scorodonia* (Balm-leaved Figwort) in the *Red List* has always been problematic. Most standard Floras describe it as 'probably native' (e.g. Stace, 2010, 2019), yet it was listed as a neophyte in the *New Atlas* and had a note to that effect against its entry in the *Red List* (Cheffings & Farrell, 2005). While some have argued for it being native, on balance we agree with Pearman (2007) that it is almost certainly an introduction. As such, we are now removing it from the Main List (where it was listed as **LC**) to the Parking List.

Looking ahead

There are numerous further amendments to the GB *Red List* in the pipeline. Vol. 1 of Sell & Murrell (2018) poses huge challenges, as a quick look at *Ulmus*, *Limonium*, *Polygonum* and *Ranunculus auricomus* will confirm. A major overhaul of the hawkweeds is now needed following publication of the 2nd edition of the *Hieracium* Atlas (McCosh & Rich, 2018), while we still have to work through the nomenclatural implications of 'Stace 4' – certainly not a task for the faint-hearted (*Jacobaea vulgaris* here we come!).

Recently there have been several instances of taxa being assigned incorrect (usually out of date) GB threat statuses in papers, BSBI handbooks and local Floras. Can we suggest, please, that authors consider contacting the Red List Group to check that the threat statuses they are using are correct? Also, anyone needing to assign threat statuses to newly described taxa can get the Group to check them (and the supporting data underpinning them) prior to publication. If you wish to contact the Group please, in the first instance, email simonleach@phonecoop.coop.

Acknowledgements

The present note is written on behalf of the GB Red List Group for vascular plants, coordinated by BSBI and involving representatives from the BSBI, Natural Resources Wales, Natural England, Natural History Museum, Plantlife, RBG Kew, RBG Edinburgh and Scottish Natural Heritage. Thanks to Mike Fay, Aline Finger, Andy Jones, Sonia Khela, Iain Macdonald, John Martin, Tim Pankhurst, David Pearman, John Richards, Fred Rumsey, Pete Stroh, Ian Taylor, Kevin Walker and Julian Woodman for assistance in gathering together relevant information and/or helpful comments on the draft.

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Myosotis stricta: a likely native and overlooked forget-me-not in Britain

ANDREW JONES & FRED RUMSEY

The forget-me-not *Myosotis stricta* Link ex Roem. & Schult. (Upright Forget-me-not) is very widely distributed through Eurasia (even Iceland) and in North America, where it is certainly introduced. It is surprising, therefore, that its range apparently stops at the English Channel, in Belgium and north France, and the species seemed not to occur in Britain or Ireland (Fitter, 1978). *M. stricta* is, however, ecologically and morphologically close to other small-flowered and variable annual forget-me-nots, especially *M. ramosissima* Rochel (Early Forget-me-not) and British floras have generally neglected this species, so it could also be overlooked. (Presciently, Francis Rose included *M. stricta* in his original *Wild Flower Key* (1981) as a species in nearby Europe, but then confused matters with misleading descriptions of the leaf hairs and an 'infl in fr … compact [and] short'.)

Myosotis stricta, Skane, Sweden. *Cherrug Nature Photography*

For these reasons, we undertook a sample search for *M. stricta* in British herbaria, looking especially in the folders of similar annual species, but without early success in **OX** or **KEW**. In the **BM**, however, we found a specimen filed amongst *M. ramosissima* from Westmorland in 1914 and originally determined by A. E. Wade as *M. stricta* – but subsequently rejected by Clement & Foster (1994) 'in error'. In fact, the first identification had merit, since the specimen possessed very distinct hooked hairs on the lower leaf surfaces, which is the most obvious feature of *M. stricta*, figuring prominently in the key in *Flora Gallica* (Tison & de Foucault, 2014). Subsequent further investigations through the mounted and unmounted specimens at **BM** revealed a second specimen, previously identified by G. Verberne in 1956 as *M. micrantha* Pall. (a synonym of *M. stricta*), demonstrating this feature even better (see Fig.1). The redeterminations as *M. stricta* have since both been confirmed by Norbert Holstein.

The specimens we now regard as British *M. stricta* are therefore:

- '*M. collina* Hoffm.', walls in West Burton, Wensleydale, N. Yorks. v.c.65, May 1902, T. Foggitt. det. *M. micrantha* (Pall.), G. Verberne (8/1956), **BM**.
- '*M. versicolor* Sm.', Sandscale, Furness [v.c.69] 6.V.[19]14, W.H. Pearsall ex Herb. W.C. Barton det. *M. stricta*, A.E. Wade (15/3/1939), **BM**. The sheet has an ms. note from F.A.L[ees] regarding

Figure 1. *Myosotis stricta* (T. Foggitt, 1902 **BM**) showing the characteristic hooked hairs on the underside of the leaf.

the behaviour of the calyx in *M. versicolor* (= *M. discolor*).

Since *M. stricta* very closely resembles other British annual Forget-me-nots, especially *M. ramosissima*, *M. discolor* (Changing Forget-me-not) and *M. dubia* Arrond. (*M. discolor* ssp. *dubia* (Arrond.) Blaise), we believe it has previously been confused with these species and is most likely to be overlooked. It has the blue corolla with a short tube of *M. ramosissima* but with particularly small flowers (<2mm across), like *M. dubia*. The persistent fruiting calyces, which may be slightly larger than those of *M. ramosissima* at 3-4.5mm (vs 1.7-3.8mm), are held rather strictly upright on erect to erecto-patent pedicels and are **all** shorter than the calyx. The inflorescence axis has an indumentum of somewhat appressed, forwardly-swept, bristly hairs, with occasional more patent hairs (unlike *M. ramosissima*). As mentioned earlier, the presence of an indumentum of fish-hooked hairs on the lower surface of the leaves, particularly the midrib and its continuation onto the stem, is the character that most easily separates *M. stricta* from all other British species. (Nb. similar hooked hairs are present on the calyx of *M. ramosissima* but not its leaf-surfaces).

It is easy to see why this species could have remained overlooked in the British Isles. From its European ecology and the location and probable habitats of British specimens, the species seems likely to be native here, but its rarity in collections suggests a scarce or at least very local distribution. For now, we suggest that it should be treated as Data Deficient for Red-listing purposes. Certainly, in France *M. stricta* is 'très dispersé' and 'RR' (Tison & de Foucault, 2014) but, on the same authority, we can look for it 'on decalcified sand or clay arising from hard limestone'. The species may be searched for in leaf from March, but is perhaps most easily recognised in flower or in fruit from May-June.

Acknowledgements

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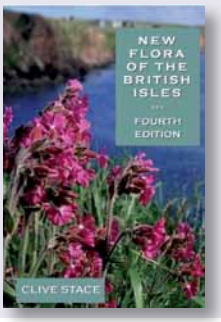
Stace Fourth Edition. What's new?

MARTIN RAND



The fourth edition of Clive Stace's *New Flora of the British Isles* (Stace, 2019) appeared in January this year, and has been eagerly discussed by botanists. It has some very significant changes; inevitably, classification and name changes excite the most interest and, in some quarters, dismay or even cynicism. Given the developing state of knowledge in molecular taxonomy, this edition was not just inevitable but to be welcomed, and it would be rash to predict that other taxonomic changes will not arise in the future. Clive Stace has already written about the science and the issues underlying these name changes (Stace, 2018) with authority and cogency. In contrast, this will be a short guide to the major differences for those who have yet to acquire their copy (and those who haven't opened it).

General and physical changes

The overall format and presentation have changed little, although this edition has been published by the author and not by Cambridge University Press. Despite a net increase in the number of taxa covered, it has the same footprint but manages a 25% reduction in thickness and a 33% reduction in weight! This is achieved by using a thinner paper, similar to that used by several recent regional Floras on the Continent which seem to stand up to use well. It has good tensile strength and its 'tearability' is no worse. The way the cover is plasticised suggests that it won't delaminate as readily as its predecessors. In my opinion, these changes make it quite suitable for field use as a matter of course, although at 1.2kg others may take a different view.

Coverage

There are more than 200 taxa (including hybrids) covered for the first time, but set against these, alien plants that formerly had full species accounts, but have not been recorded since 1999, have had their accounts removed. Most, however, keep a brief mention under their family or genus, like many other uncommon or casual aliens in editions 2 and 3, and are still keyed out in keys to genera or species. This is certainly useful for those that may reappear: 19 years is not a big gap.

Among the highlights, several ferns make a first appearance, including some very popular garden centre species that are escaping to a greater or lesser degree. There are welcome additions to the gymnosperms, embracing *Pinus*, *Picea*, *Abies*, *Thujopsis*, *Thuja*, *Calocedrus* and *Platycladus*. However, if you are looking at planted trees in the 'big' genera you will still need a fuller account such as Mitchell (1972). The same goes for additional hybrids, which are usually listed but not described; for these you will need Stace *et al.* (2015), one of the BSBI Handbooks that covers hybrids, or Sell & Murrell (1996–2015).

On the basis of the third edition, I have recorded *Mahonia* × *wagneri* a number of times when the fourth edition makes clear, with its new treatment, that I should have been recording *M.* × *media*. There are other instances where an enhanced genus treatment (including the notes above the species accounts) will repay attention and perhaps lead to some re-thinking among recorders.

Lovers of critical groups will appreciate the addition of a couple of widely planted ornamentals and several 'new' endemics to *Sorbus*. There are

Adoxa moschatellina. The family Adoxaceae in Stace 4 includes *Sambucus* and *Viburnum*, as well as *Adoxa*. *Bob Gibbons*

seven further accounts for *Cotoneaster*, and one native and one alien are added to *Alchemilla*. There are many other smaller additions within many families yielding new species accounts, or brief mentions which often include useful ID information. It would be tedious to list them all within this article but I have prepared a detailed list covering all types of changes, which will be available on the BSBI website: https://bsbi.org/taxon-lists.

Taxonomic changes: general observations

This is the area in which the most striking change has occurred, and it is perhaps worth reiterating briefly the reasons for changed attributions at family or genus level, often leading to name changes at the species level or below. On the one hand, we have to consider evidence that some taxa previously grouped together by name do not have a common ancestral lineage (i.e. they are polyphyletic, rather than monophyletic). Since scientific naming and attribution are supposed to represent ancestral relationships, it is crucial that when the evidence is solid, groupings and some names that go along with them are also changed. Of course, not all molecular evidence is that solid, especially at the lower taxonomic ranks, and Stace has been cautious about early adoption of changes – no doubt a major reason why a lot of change was deferred from the third to the fourth edition. Adoption of a rigorous monophyletic approach does not rule out splitting or lumping at a given level. Differences in theoretically equally valid approaches can be seen, for instance, between the *New Flora* and the seriously lumpy Christenhuz *et al.* (2017).

On the other hand, a paraphyletic grouping means that all its members have a common evolutionary ancestor or ancestral group, similar to monophyletic grouping, but with the important difference that not all the descendants of that ancestor belong to the grouping. Anyone having trouble getting their heads round these relationships

could do worse than look at Figure 2.6 in Stace (1980, 1991); you just need to remember that the diagrams are upside down compared with the traditional family tree. Paraphyly does not create the same relationship issues as polyphyly for naming, and Stace has not sought to be strict about this where it creates practical usage difficulties – for instance, by forcing the creation of 'super-genera' with huge species memberships and over-complex keys.

On the purely practical side, splits from several large genera are still keyed under a single key, because in such cases splitting the key would make it harder to arrive at a determination and would obscure useful morphological differences (i.e. the key is best left 'artificial'). This is a very welcome feature.

Change examples

Not a lot has happened at the family level. This is where the work of the Angiosperm Phylogeny Group (APG) came earliest to solid conclusions, and most changes were already in place in the third edition.

Families Cystopteridaceae and Athyriaceae are split from Woodsiaceae. Contrast this with the approach of Christenhuz *et al*. (2017), where they all disappear, along with several other families retained by Stace, into Aspleniaceae. I imagine few English readers will shed tears over Stace's more splitty approach. Adoxaceae takes on *Sambucus* and *Viburnum* from Caprifoliaceae, ruining its reputation as one of the smallest families in the world. Lemnaceae, on the other hand, is now sunk into Araceae. Xanthorrhoeaceae becomes Asphodelaceae and Alliaceae becomes Amaryllidaceae (while retaining the same genera).

Major genus splits:

- In Crassulaceae, *Sedum* splits into *Rhodiola*, *Sedum*, *Phedimus, Hylotelephium* and *Petrosedum*.
- In Fabaceae, *Vicia* splits into *Vicia, Ervilla* and *Ervum*.
- In Polygonaceae, many *Persicaria* are transferred to *Koenigia* and some more are split to *Bistorta*; *Fallopia* splits to *Fallopia* and *Reynoutria*.

In Stace 4, Golden-samphire has been split from *Inula* and is now *Limbarda crithmoides*.
Bob Gibbons

- In Caryophyllaceae, *Minuartia* splits to *Minuartia, Sabulina* and *Cherleria*.
- In Amaranthaceae, *Chenopodium* further splits to *Chenopodium, Lipandra, Chenopodiastrum, Oxybasis* and *Blitum*.
- In Boraginaceae, *Lithospermum* splits to *Lithospermum, Aegonychon* and *Buglossoides*.
- In Asteraceae, *Filago* splits to *Filago* and *Logfia*; *Gnaphalium* splits to *Omalotheca, Gnaphalium, Gamochaeta, Pseudognaphalium* and *Laphangium*; *Aster* splits to *Symphyotrichum, Aster, Eurybia, Galatella* and *Tripolium*; *Anthemis* splits to *Anthemis* and *Cota*; *Senecio* splits to *Senecio* and *Jacobaea*.
- In Apiaceae, *Apium* splits to *Apium* and *Helosciadium*.
- In Potamogetonaceae, *Potamogeton* splits to *Potamogeton* and *Stuckenia*.
- In Poaceae, *Stipa* splits to *Stipa, Stipellula* and *Celtica*; *Avenula* splits to *Avenula* and *Helictochloa*;

Deschampsia splits to *Deschampsia*, *Aristavena* and *Avenella*; *Festuca* splits further to *Festuca* and *Drymochloa*.

Major genus merges:

- In Cupressaceae, *Cupressus* now covers *Cupressus, Chamaecyparis, Xanthocyparis* and ×*Cuprocyparis*.
- In Fabaceae, *Tetragonolobus* and *Dorycnium* are merged into *Lotus*.
- In Primulaceae, *Lysimachia* now includes *Lysimachia, Glaux, Anagallis, Trientalis* and *Centunculus*.
- In Asteraceae, *Conyza* is merged into *Erigeron*; *Soliva* is merged into *Cotula*.
- In Poaceae, *Elytrigia* is merged into *Elymus*.

There are many other splits, merges and transfers which are covered fully in my change list at https://bsbi.org/taxon-lists.

Other changes

One has to single out the treatment of *Rosa*, which now adopts the specific names long used on the Continent for our 'Groups' of *R. canina*, or for taxa we have treated as subspecies. Other species naming also occurs. As a result, there is change (and greater clarity) in the denotation of numerous hybrids.

Otherwise, as well as name changes at the specific and infraspecific level, which I have not dealt with here, there is quite a bit of shuffling around between full species accounts and brief mentions, leading in some cases to enhanced or reduced keys. I have not had time to look systematically at changes to the text of keys and accounts, but I am aware that the author has made many improvements, and where I have come across them, they are indeed helpful to the user in the street. Distributions have been updated, and the rarity status has been revised from data held on the BSBI's Distribution Database.

Any complaints?

Not really. This will of course replace the third edition for many people, surely standing for a long time, rather longer than its predecessor; and this it deserves to do. I have a few personal grumps:

- I think it is a pity that the treatment of *Pteris* stayed at the one species, given that several others are now commoner as escapes than the one included. One could make similar comments about a few other alien genera, but I realise that a book such as this has to stop somewhere!
- I'm saddened by the switch back to subspecies level for plants of the *Dryopteris affinis* complex, particularly as it means that *D. affinis* ssp. *paleaceolobata* has disappeared, leading again to confusion with *D. affinis* ssp. *cambrensis* by folk who are not familiar with the latter. The change may also complicate the correct attribution of records in the short term.
- I am surprised that *Sanvitalia procumbens* has been added as a mention and *Melampodium* has not, given that most of the huge amount of nursery material (and resulting casual escapes) now sold as *S. procumbens* is actually *Melampodium*. (This can be verified by turning over the trays in your local garden centre to look at the involucral bracts, as long as you can run fast when the plugs fall out.)

In conclusion…

You need it. Buy it! Use it!

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BSBI New Year Plant Hunt 2019

KEVIN WALKER & LOUISE MARSH

BSBI's eighth New Year Plant Hunt (NYPH) attracted almost 1,500 volunteers who used smartphones and online recording to submit lists of native and non-native plants they found in flower in the wild during a three-hour walk at locations across Britain and Ireland. A full analysis is available at www.bsbi.org/new-year-plant-hunt, but below we summarise this year's results and compare them with those from previous years.

Background

Since 2012, the Botanical Society of Britain & Ireland (BSBI) has run an annual hunt for plants in flower during a four-day period over New Year. Originally intended as a fun and competitive activity for botanists during a quiet period, it is now helping to build-up a picture of 'normal' winter flowering as well the response of plants to 'unseasonal' weather conditions which are increasingly being reported from around the globe. As such, NYPH is helping to improve our knowledge of how our wildlife is responding to rising temperatures and changing weather patterns. Through the use of new technology and social media, the NYPH is also raising the profile of the BSBI and introducing its work to new audiences.

A group in Leicestershire on the New Year Plant Hunt. A total of 57 flowering taxa were recorded on the day. *Louise Marsh*

Method

For NYPH 2019, volunteers picked a day between Friday 28th December 2018 and Tuesday 1st January 2019 and recorded all the wild or naturalised native and alien plants they found in bloom on a three-hour walk. Full details of how people hunted for and recorded their finds can be found at www.bsbi.org/new-year-plant-hunt-how-to-take-part. Results were displayed in real-time on a dedicated website www.nyph.bsbi.org, which featured an interactive map, statistics, social media feeds and longest lists (Fig. 1).

For analyses, species were categorised as native

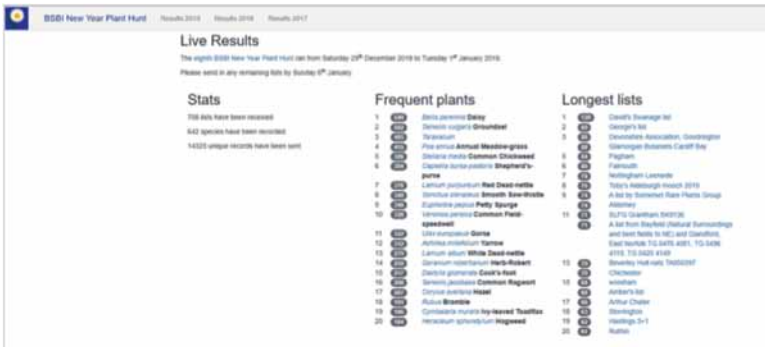

Figure 1. Screenshot of the New Year Plant Hunt 2019 Live Results webpage showing locations across Britain and Ireland from where lists had been received.

Figure 2 (below). Map of the New Year Plant Hunt lists received in 2019. Each dot represents a hectad (10 × 10km grid square) in which at least one NYPH list was recorded.

or alien following Preston *et al.* (2002) and assigned to one of four categories based on normal flowering phenology, with the typical flowering months taken from Clapham *et al.* (1987) and Sell & Murrell (1996–2018). Species were then categorised as:

- 'expected' if they normally flower at New Year;
- 'early' if they typically flower in spring and complete flowering by midsummer at the latest;
- 'late' if flowering typically extends from midsummer to autumn;
- 'early or late' for species with an extended flowering period (spring to autumn) or just flowering briefly during the summer months.

Results

Participation

In 2019, 1,471 recorders took part in NYPH, around 500 more participants than took part in 2018. Much of this increase may, however, reflect more precise reporting of the number that took part via the online

Table 1. The number of plant species recorded in flower during the New Year Plant Hunt, 2014–2019. The percentages are given in parentheses.

Status	2015	2016	2017	2018	2019
Native	206 (56%)	313 (51%)	264 (54%)	290 (55%)	327 (52%)
Alien	160 (44%)	298 (49%)	228 (46%)	242 (45%)	300 (48%)
Total	366	611	492	532	627

Table 2. The species recorded most frequently in flower at New Year 2015–2019. Species are listed in their rank order in 2019; = indicates equal rank.

Species	2015	2016	2017	2018	2019	% lists	Change
Bellis perennis (Daisy)	1=	1	1	1	1	77.1	=
Senecio vulgaris (Groundsel)	3	3	2	2	2	70.5	=
Taraxacum agg. (Dandelion)	1=	2	3	3	3	68.1	=
Poa annua (Annual Meadow-grass)	4	4	4	4	4	63.9	=
Capsella bursa-pastoris (Shepherd's-purse)	6	11	6	7	5=	53.9	+2
Stellaria media (Chickweed)	10=	29	8	8	5=	53.9	+3
Lamium purpureum (Red Dead-nettle)	13	8=	9	6	7	52.8	-1
Sonchus oleraceus (Smooth Sow-thistle)	7	6	11	14	8	49.0	+6
Euphorbia peplus (Petty Spurge)	8	14	7	10	9	48.6	+1
Veronica persica (Common Field-speedwell)	12	22	10	13	10	46.1	+3
Ulex europaeus (Gorse)	5	5	5	5	11	45.2	-6
Achillea millefolium (Yarrow)	14	15	12	13	12	43.8	+1
Lamium album (White Dead-nettle)	9	10	16	9	13	39.2	-4
Geranium robertianum (Herb-Robert)	23	8=	29	29	14	36.4	+15
Dactylis glomerata (Cock's-foot)	22	26	21	22	15	30.5	+7
Jacobaea vulgaris (Common Ragwort)	16	7	15	21	16	29.2	+5
Corylus avellana (Hazel)	25	17	20	18	17	29.1	+1
Cymbalaria muralis (Ivy-leaved Toadflax)	19	21	13	15	18	26.1	-3
Heracleum sphondylium (Hogweed)	10=	12	18	11	19	25.8	-8
Rubus fruticosus agg. (Bramble)	27=	19	43	31	20	24.7	+11

form which for the first time allowed recorders to input the size of the group taking part. Many people opted to join one of the 30 group hunts advertised in advance via the BSBI website, and comments on social media suggest that others opted to go out recording with family and friends, making the NYPH a social event as much as a recording exercise. A total of 712 lists were submitted comprising 14,193 records (compared to 612 lists comprising 9,907 records in 2018).

Number and rank of species

In 2019, 627 species were recorded in flower, 95 more than in 2018 and 16 more than in 2016 when a record-breaking number of species were recorded in flower. As in previous years, this total was roughly

equally distributed between natives and aliens: in 2019, aliens comprised 48% of all the species recorded in flower (Table 1). The four species most frequently recorded in flower in 2019 were identical to previous years (Table 2).

Phenology

Of the species recorded in flower in 2019, 58% were flowering late, 24% were flowering early, whereas 7% were flowering as expected at New Year (Fig. 3). For 12% of species it was not possible to say with certainty whether a species was flowering early or late at New Year. These percentages were almost identical to previous years, the only notable difference being the slightly higher proportion of species flowering early in 2016.

Comparing results with weather data

In 2019, far more species – particularly natives – were recorded in flower during the NYPH than in the previous two winters (Table 1). This appears to be due to mild weather experienced in Britain and Ireland in November and December 2018, which saw temperatures well above the long-term average, in contrast to the widespread frosts of the 2017 and 2018 winters, which curtailed the flowering of many species (Fig. 4).

Without an historic baseline, we cannot tell whether plants are flowering more often now than in the past, but NYPH results do show how plants respond to 'unseasonal' weather. The main effect seems to be a continuation of flowering where milder conditions permit. The implications of this for plant performance are far from clear. The premature spring growth of some arctic-alpine plants during warmer winters is known to cause severe damage to some species owing to depletion of carbohydrate reserves during winter and damage to tender buds and flowers when exposed to late-winter snow and frost (Crawford, 1997, 2000). Shifts in flowering time are also predicted to cause asynchrony between flowering and associated pollinator activity, with potential knock-on effects for plant and insect productivity (Solga *et al.*, 2014). For many species, however, the impacts of changing

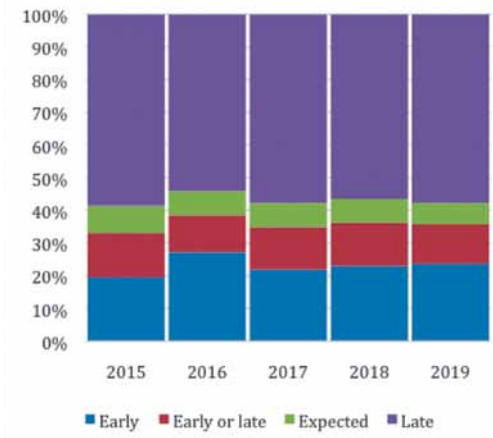

Figure 3. The percentage of plant species that were flowering early, late or as expected at New Year, 2015–2019. See Table 1 for an explanation of the categories.

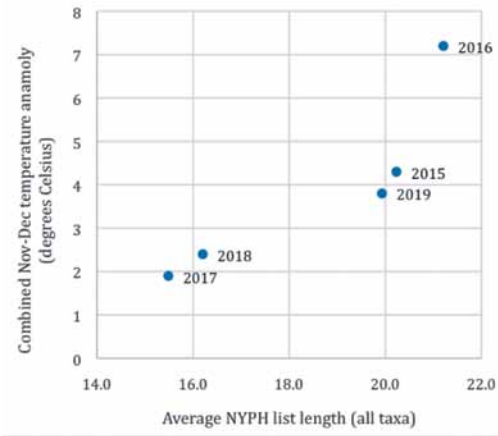

Figure 4. The combined UK mean temperature anomalies for November and December plotted against the average NYPH list lengths, 2015–2019. Temperature data from UK Met Office (http://www.metoffice.gov.uk/climate/uk/summaries).

weather patterns on plant performance have yet to be investigated. Further work is needed before the ecological implications of warmer winters can be fully understood.

One assumption often made about warmer winters is that the first flowering of spring-flowering species will be advanced. There is good evidence for this in Britain, with many species displaying earlier

first flowering dates due to climate change (Fitter & Fitter, 2002; Amano *et al.*, 2010). The evidence from NYPH is, however, more equivocal, with only a few species flowering earlier rather than late, presumably because significant advances in first flowering would be needed for the vast majority of species to be in flower at New Year, given that the majority of temperate species typically start to flower in late-March and April. Many spring-flowering species also require periods of freezing (stratification) followed by warming to break dormancy and stimulate spring growth, so phenological responses to warming will not be straightforward to predict (Crawford, 1997, 2000). The mild conditions recorded in 2015, 2016 and 2019 may therefore have suppressed rather than stimulated earlier flowering of some species.

Further work is needed to better understand the links between milder weather and the unseasonal flowering events revealed by the NYPH and should focus on correlations between flowering and climate data, whilst taking into account the potentially confounding effects of latitude, the built environment and survey effort.

One of the NYPH's most intriguing findings has been the sheer numbers of species blooming at New Year. British and Irish Floras suggest that only c. 2% of our native species should be in flower over New Year, but numbers have been significantly higher than this in each year of the survey. The large numbers of alien plants in flower has also been of note: this is in part due to most NYPH searches taking place in urban and suburban areas near people's homes, where alien plant diversity is highest, with both aliens and natives benefitting from the 'urban heat island-effect' whereby temperatures are maintained 1-2°C above those in the surrounding countryside.

Media coverage

Louise Marsh was interviewed about NYPH on BBC Radio 4's *Today* programme; two joint County Recorders, Helena Crouch (Somerset) and Jonathan Shanklin (Cambridgeshire), were interviewed on regional TV news programmes; Alex Morss was interviewed on local radio in Bristol and Maria Long's comments about the NYPH in Ireland appeared in the *Irish Mirror*.

Acknowledgments

We owe a huge debt of gratitude to all the volunteers who took part in NYPH 2019 as well as the support team who worked tirelessly to make the project a success, most notably Tom Humphrey (BSBI Database Officer) for developing and supporting the online recording form and website; Brian Laney, Ciara Sugrue, Ellen Goddard, Ian Denholm, Mary Dean and Natalie Hunt for providing support over the busy New Year period; and to BSBI Country Officers Barbara Brown, Maria Long and Jim McIntosh for supporting recorders in Wales, Ireland and Scotland.

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Planted *Tilia cordata* infested with *Viscum album*. *Tim Harrison*

Viscum album hot-spots and not-spots in south Buckinghamshire (v.c.24)

TIM HARRISON

In the course of Atlas 2020 surveying in south Buckinghamshire (v.c.24), a puzzling distribution of *Viscum album* (Mistletoe) has been noted. There are some spectacular hot-spots with abundant *V. album*, but also several 'not-spots' with none.

By far the most diverse hot-spot I have found is monad SU8792 in High Wycombe (coincidentally, where I live!). The habitat here is part urban and part open planted parkland (formerly belonging Wycombe Abbey) in the valley of the River Wye, bounded to the south-west by mixed broadleaved woods growing on a steep north-east-facing chalk slope. These woods were formerly managed for timber production but have been derelict for at least 70 years. The woods are, incidentally, notable for populations of *Hordelymus europaeus* (Wood Barley) and *Cardamine bulbifera* (Coralroot Bittercress).

I have noted 20 tree species in this monad which are infested with *V. album* (Table 1). All these species have been planted, except *Salix cinerea*.

Most of the *Tilia* × *europaea* are 100–150 years old, but a small proportion are older (perhaps up to 250 years old) and each tree can play host to up to 60 *V. album* plants; the total *V. album* population in the monad probably exceeds 2,000 plants. Some infested

Table 1. Species in SU8792 infested with *Viscum album*.

Acer negundo (Ashleaf Maple)
Acer platanoides (Norway Maple)
Acer pseudoplatanus (Sycamore)
Acer saccharinum (Silver Maple)
Carpinus betulus (Hornbeam)
Crataegus monogyna (Hawthorn)
Malus pumila (Apple)
Malus tschonoskii (Chonoski Crab)
Malus x *purpurea* (Purple Crab)
Malus x *robusta* (Hybrid Siberian Crab)
Robinia pseudoacacia (False-acacia)
Populus x *canadensis* 'Serotina' (Hybrid Black-poplar)
Salix alba (White Willow)
Salix cinerea ssp. *oleifolia* (Rusty Willow)
Salix x *fragilis* (Crack-willow)
Sorbus aria (Whitebeam)
Sorbus aucuparia (Rowan)
Tilia x *europaea* (Lime)
Tilia tomentosa (Silver Lime)
Tilia cordata (Small-leaved Lime)

Deformed and infested *Tilia* x *europaea*. *Tim Harrison*

T. × *europaea* are also badly deformed (see above) possibly by bacterial or viral infection, but trees with deformities are no more infested than those without.

Uninfested species within the same families can be seen growing adjacent to each other. For example, infested *Populus* × *canadensis* 'Serotina' growing next to uninfested *Populus nigra* 'Italica', even though this latter species can be heavily infested in the nearby Thames Valley; badly infested *Tilia* × *europaea* adjacent to uninfested *Tilia tomentosa* (although other *T. tomentosa* trees are weakly infested); infested *Malus* × *purpurea* growing within 10m of uninfested *Malus pumila*, even though the latter are often considered to be the traditional British host for *V. album*.

This level of *Viscum album* infestation has been recorded in some continental European settings (Procházka, 2004; Kołodziejek *et al.,* 2013; Tivadar *et al.,* 2013). The latter authors conclude that the older the tree, the greater the chance of infestation. This is not the case in SU8792. The five infested *Sorbus aucuparia* trees are less than 16 years old and, according to the gardener who planted them, they were not infested at the time of planting.

Hot-spots and 'not-spots'

Within the greater High Wycombe area there are hot-spots and 'not-spots'. For example, in West Wycombe (SU8294) 4.5km to the north-west of SU8792, the degree of infestation is as high as in SU8792. *Tilia* × *europaea* is heavily infested and often shows the same striking deformities. *T. cordata* shows minor infestation, whilst *T. tomentosa* shows none whatsoever, even adjacent to heavily infested *T.* × *europaea*. Likewise, other susceptible species (*Salix*, *Malus*, *Populus* cultivars) are infested as is, exceptionally, *Fraxinus excelsior*.

At Bradenham Manor (SU8297), 2.5km north-west of West Wycombe, mid-19th century *T.* × *europaea* (without deformities) and *M. pumila* cultivars all show moderate to heavy infestation. However, at Hughenden Manor (SU8695), 2.5km north-east of West Wycombe, there is a significant 'not-spot' and *V. album* is conspicuous by its almost total absence on all potential (and abundant) host trees (two plants seen).

The Bury Estate in Chesham (SP9501) is another prominent 'not-spot'. It has abundant mature *T.* × *europaea* planted in the early to mid 19th century and I have seen no *V. album* (a general feature of hectad SP90). Meanwhile, the Latimer Estate (TQ0098), only 6km to the south-east along the valley of the River Chess, has plentiful infested *T.* × *europaea* of a similar age. *V. album* is absent between the two sites, despite potential hosts (*Populus* cultivars) being abundant.

Elsewhere in v.c.24, *V. album* is only patchily distributed. Druce (1926) describes it as 'local and rather rare'. These days, *V. album* is present in most monads adjacent to the River Thames where suitable hosts can be found, but often in small numbers. Urban *V. album* hot-spots in both v.c.24 and v.c.22 (Berkshire) usually have good populations of *T.* × *europaea*¸ often in the grounds of large estates. Infestations also occur on the other usual suspects (largely *Populus* cultivars), although exceptionally *Alnus glutinosa* (at Wraysbury), *Ligustrum ovalifolium* (at Slough) and *Aesculus hippocastanum* (at Eton) are hosts.

M.J. Crawley (pers. comm.) has mentioned *V. album* hot-spots elsewhere in the Thames Valley region (e.g. Hampton Court) and 'not-spots' (e.g. Kew, Wallingford). *T.* × *europaea* is the principal host for *V. album* in v.c.22, with *P.* × *canadensis* a close second (Crawley, 2014). This distribution is, unsurprisingly, reflected in southern Bucks. Crawley (2014) records at least 12 named host species and more (but unnamed) cultivars from the Royal gardens at Frogmore. I have

seen good examples of badly deformed and heavily infested *T. x europaea* in v.c.22, e.g. Swinley Park, Bracknell (SU6987).

Discussion

How then could a hot-spot develop? Some of the now badly deformed and infested *Tilia* × *europaea* trees at West Wycombe and High Wycombe were planted between about 1750 and 1762 for Francis Dashwood. In conversation with garden staff at West Wycombe, Dashwood apparently sourced all his trees from a single unspecified nursery in the Low Countries. It is interesting to speculate whether they were already infested when they arrived.

Viscum album is spread by birds, notably those of the thrush family and possibly Blackcaps (Briggs, 2011). The seeds pass through their digestive systems unscathed. In High Wycombe, it is likely that once *V. album* became established on *T.* × *europaea* and reached a self-sustaining mass of plants, the open parkland habitat provided good roosting sites for vector species of bird. In recent years, urban amenity plantings of *Sorbus* and *Malus* species which bear small and easily consumed fruit attract passerines, increasing the potential number of host trees. Larger trees (e.g. *Acer*) may become hosts because they provide good roosts; wrinkles and cracks at bough junctions are good places for seeds to lodge. *Robinia pseudoacacia* is likely to become a host because of its deeply fissured bark which retains excreted seeds. In addition, pigeons are attracted to its foliage and young flowers, and they may also provide a vector for *V. album* seed transmission.

Kołodziejek *et al.* (2013) conclude that atmospheric nitrogen pollution is a factor controlling *V. album* distribution, with a higher density of plants found in Łodz city centre compared with the outskirts, but my observations in both High Wycombe and other urban areas in southern Bucks. and Berkshire do not support this conclusion.

Viscum is dioecious, it flowers early (February-April), and fruits only ripen late in the year (November-January). Briggs (pers. comm) has indicated that small flies and early-flying bees are important pollinators. In south Bucks. my observation is that in any given population, female plants outnumber male plants, and in large populations this typically evens out to a female:male ratio of approximately 3:2. This suggests that population dynamics are not wholly dependent on dioecy.

Whatever mechanism applies it seems that, once established, a hot-spot will persist provided there are sufficient hosts and numbers of the right bird species for transmission. Why then are there 'not-spots'? There is likely to be a combination of factors. It is interesting to speculate that a critical mass of *V. album* is needed to start a hot-spot. Thus, even with a large number of hosts, if there are insufficient numbers of *V. album* present then levels of infestation may remain low or non-existent. Some bird species may also favour one area over another area for feeding and, especially, roosting. Another factor may be that some hybrid cultivars are more genetically susceptible to infestation by parasites than others. This may also help to explain why cultivars may be more likely to host *V. album*.

Notwithstanding this speculation, I will lay down the challenge that monad SU8792, whilst not necessarily the most infested in terms of sheer numbers of plants, has the largest number of host species in the UK.

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Diapensia revisted

SIMON HARRAP

I am flattered that Michael Scott responded to my article on *Diapensia lapponica* (Diapensia), even if it was a rebuff! (*BSBI News* 138: 27–30, 139: 17–20). Scott is an expert on mountain plants and has authored what seems likely to be a standard reference on our alpine flora. I have read his *Mountain Flowers* from cover to cover, enjoyed it, and learnt a great deal from it. Botanical novices like me look to such experts for considered, well-judged opinions, which is why I think it important to challenge him on a couple of the points that he raised in his response, as they are important points of principle.

Scott asks, 'What happened to the spirit of scientific enquiry?' I would like to answer this. In my understanding of the scientific method, it is perfectly acceptable to come up with a myriad of hypotheses, but they should then be *tested*. In this way the hypothesis can be shown to be wrong, or it can pass the test and gain credence. This is why his account of *Diapensia* disappointed me so much. The 'Norwegian Boots' theory that Scott promoted should not have been put into print because, on the basis of almost everything that we know about the species and the circumstances, it is highly likely to be wrong. And it is the very *spirit of scientific enquiry* that *demands* that once a theory had been shown to be wrong, it should be discarded and not given credence or needlessly repeated.

To return to *Diapensia*, the theory championed by Scott is that it was brought to Scotland as seed or capsules by Norwegian servicemen; Scott (2016) states 'in the tread of their boots, woollen socks, or trouser turn-ups'. From this hypothesis several predictions can be generated and hopefully tested. Three that spring to mind are:

1) The Norwegians had been in contact with *Diapensia* is Norway and picked up seed or propagules.
2) The Norwegians were wearing the same clothing and/or footwear whilst training in Scotland that they had been wearing in Norway.
3) The plants found in 1951 cannot pre-date the arrival of Norwegian servicemen.

To address points 1 and 2 we need to consider in practical detail the proposed method of transportation of seeds or capsules: where did the troops come from and what exactly would they have been wearing? The 'Norwegian boots' theory would pass tests 1 and 2 if the Norwegians had just arrived, hot-foot from the Norwegian fell-fields, armed, equipped and clothed, and gone straight into training. The evidence indicates, however, a far longer, more circuitous and convoluted route.

Germany invaded Norway in April 1940. A little internet research indicates that Norwegian forces were formed in Britain from March 1941 onwards and were made up of military personal that had escaped from Norway following the invasion, sailors stranded overseas in 1940 and refugees picked up during British raids. Thus many of the Norwegians in Britain could not have been anywhere near *Diapensia* habitat in Norway for quite a while. Importantly, Spencer Kidd (2013) states that Norwegian troops serving under British command wore British uniforms with Norwegian insignia. They therefore presumably trained in them and would not be training in the same clothing in which they had escaped from Norway or been working onboard ship. But, if by some remote chance they were wearing the same clothes, they would presumably have laundered them at some stage in the months or years since their escape. It is worth noting that *Diapensia* does not have special mechanisms, such as hooks or barbs, to facilitate transport by fur or feather … or socks.

Point number 3 is the most pertinent point from a botanist's point of view: If we put the earliest possible date for a Norwegian 'introduction' of *Diapensia* as 1941, then in 1951, when found, *no Diapensia plant could have been more than ten years old*. In 1951 there were several hundred plants, and John Raven (who visited in 1952) describes 'great spreading patches of it, two feet or more across…alternating with young and compact cushions.' Given all the information available on *wild-growing Diapensia* (see Scott, 2016 and Harrap, 2018), it seems highly improbable, if not impossible, that ten years from a chance introduction of seed

would be sufficient time to produce the number of plants and the population structure found in 1951.

Locations for rare plants

My second point of principle is that Michael Scott implicitly chides me for mentioning the name of the Scottish *Diapensia* site (has he tried Google lately?). It particularly saddens me that he should go on to mention the fact that John Fisher was 'drummed out' of the BSBI nearly 30 years ago for publishing the location of a selection of rare plants (Fisher, 1991). This little book is one of my all-time favourites, and one of the few books on the British flora that, in my opinion, manages to communicate real enthusiasm and excitement. Given that the BSBI's current policy is to promote the publication of 'Rare Plant Registers', which in most cases give very detailed localities for almost every rarity, Fisher was ahead of his time and should be celebrated. I strongly believe that botanists of all abilities should be encouraged to go and see rare plants, to enjoy them and to improve their understanding of them. (There are a few species that could suffer significant inadvertent damage, but this can often be mitigated with a little thought and good information.) Botanists would then be much better at finding these species in new sites, and more likely to champion their cause. And personally, I am much more likely to go exploring the hills of the western Highlands now that I have seen *Diapensia* and have perhaps a bit of an 'eye' for where it might be found!

Finally, Scott states that I did him a discourtesey of not quoting him in full, and omitting the phrase 'until someone can identify some special feature of the Glenfinnan site to explain [*Diapensia*'s] survival there.' The great irony is that Scott himself expressed, clearly and very elegantly, why there *need be no special feature of the site* with his 'chequerboard theory' (see pp. 58–59 of Scott, 2016): 'Imagine a board for Chinese chequers, completely filled with playing pieces. If you were to remove these chequers one by one on a truly random basis, you could never predict which would be the last chequer left on the board. By that token, there is no reason why that chequer was the last to survive; it is purely a matter of chance.' Maybe *Diapensia* has been slowly vanishing from Scotland for thousands of years, and its continued presence on the summit of Fraoch-bheinn is largely or entirely … a matter of chance. In my eyes, that is enough to make it very special.

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Editor: I feel this topic has been fully discussed in these pages and the correspondence on this is now closed.

An intertidal adventure

RO FITZGERALD

On 15th June 2018 four close-knit botanical friends, the members of a regular 'Friday Group' recording in West Somerset (v.c.5), gathered at the hamlet of Stolford on the shore of Bridgwater Bay to look for a 'lost' plant which had last been seen here in 1969. We all belong to the Somerset Rare Plants Group (SRPG), the flora group recording and monitoring rare and common plants in both parts of Somerset. This hunt had been more than two years in the planning, but given various unknown and possibly dangerous aspects of the habitat, it seemed best to keep the party small. The personnel were Graham Lavender and Ian Salmon (leaders of the Friday Group), Jeanne Webb and myself. We were joined by Steve Parker, one of the v.c.5 BSBI Recorders, who had long been interested in trying to locate this missing rarity. The target species is not only extremely rare locally (in fact, believed to be extinct in all Somerset, v.c.5 and v.c.6, when Helena Crouch wrote a Rare Plant Register account in 2016), but is one of the most mysterious and seldom seen of our native plants.

Heading out on the search for *Zostera marina* off Stolford, v.c.5. *Ro FitzGerald*

Eelgrasses in Somerset

Zostera marina (Eelgrass) belongs to a group of flowering plants which grow actually in the sea! Britain and Ireland have two eelgrass species: *Z. marina* and *Z. noltei* (Dwarf Eelgrass). Please ignore references to *Z. angustifolia*, a morphological variant which used to cause plenty of arguments, but is now definitively lumped with *Z. marina*. Our two *Zostera* species are found scattered round the Irish coast; in Britain mostly across the south (including the Isles of Scilly) and in western Scotland; with some clusters of distribution on the Welsh side of the Bristol Channel, in the Thames Estuary and on the East Anglia coast; and in the Firth of Forth and the Moray Firth. The IUCN Red List citation lists their habitat as 'Marine Neritic, Marine Intertidal', which basically translates as 'visible at low tide or always under water'. The Somerset county history (and probably in other places) of *Z. marina* has always been obscure because of the difficulty of ever seeing populations, and because sometimes the only sign of an eelgrass population may be leafy strands washed up on a beach, with no way of checking their source. Captain Roe's *Flora of Somerset* (1981) mentions a couple of records from Stolford in v.c.5 (1957 and 1969), and says former records between the mouth of the Brue and Brean Down in v.c.6 had not been confirmed since 1929. *The Atlas Flora of Somerset* (Green *et al.*, 1997) cites the most recent Stolford sighting – 1969 – but considered the plant 'Extinct'. Helena Crouch and Fred Rumsey had found a leaf on the beach at Burnham in 2015, but could not pinpoint a source, so Helena's Rare Plant Register (in preparation) had to maintain the 'Extinct' category for both vice-counties.

Graham and Ian spent a year planning the search. Tide tables were consulted for special low-tide dates, and the possibility of searching from a boat was investigated, but proved too likely to result in a day stuck on a mud bank! In spite of the intertidal zone off Stolford having been well used by the famous historic 'mud horse' fishermen of this part of the Severn Estuary, their guidance was no longer available, and the likelihood of soft mud or quicksand dangers was unknown. Walking roped together was discussed, indeed, the whole project took on the aspect of a 'Famous Five' adventure!

The project gained added impetus a month or so before the chosen date when work on the Taunton herbarium (**TTN**) revealed the key specimen referred to in the published sources. The date, 1957, and the collector, Derek Ranwell, then with the Nature Conservancy (now Natural England) were known, but the thrilling aspect for us was in the notes on the label. Some collectors give frustratingly little detail, but this one was a model of clear information! It specified 'Mudflats off Catsford Common…100 yards east of Little Arch and just below the toe of the shingle beach'. With a little local knowledge (Little Arch is a sluice bringing brackish seepage and fresh water off the salt grazing fields of Catsford Common, behind the substantial shingle bar) we could work out exactly where to start searching. He also described

the habitat so precisely that none of us has been able to add anything significant to his account of seeing the plants: '… at low tide in fresh-water drainage runnels with mud and pebble bottoms lying between soft mud ridges'. These strange and precise conditions were exactly as we found them 61 years later, with a rocky or pebbly substrate (below varying amounts of soft mud) seeming to give the plants the necessary firm rooting base, with daylight for photosynthesis, as plenty were in flower.

Anyone who has walked the beaches near Hinkley Point or the mouth of the Brue will be familiar with that fine mud deposited by the brown waves of the Severn Sea, and with the way it moves with tides and winds. Here some exposed low limestone ridges, running out from the shingle, give a helpful clue to the site, as this lias breaks easily, providing a stony base which mud is washed onto. The seepage runnels coming from under the Stolford shingle bar must keep the *Zostera* colony with enough daylight to flourish, as these clear 'streams' all had pillowy mud ridges pushing close to them. Away from the area with runnels we found no plants, and were quickly discouraged from venturing onto deeper mud flats by walking difficulties. The habitat is probably changeable within the immediate area, as mud comes and goes with weather and tides, but it was striking that the population extent we observed was so exactly like that seen by Ranwell in 1957, making it likely that this is the one place in the area where conditions precisely suit the plant's requirements.

It was a thrilling time. First steps away from the shingle were cautious (frankly nervous on my part!), but when it proved possible to follow the runnels and keep to a firm substrate we scattered more bravely. The first cry of 'found!' came from Jeanne, and soon we were all calling out good examples. Ranwell's label had estimated the population as occupying '4-5 acres' and Ian and Graham ventured out to establish the present extent, as well as taking grid references and checking monad boundaries. Very pleasingly, there seems to be no decrease, so we were all glowing when we finally returned to land, and I felt so grateful that the efforts of Graham in particular had inspired us to set out on what had seemed to me a scary, uncomfortable, and possibly hopeless search!

Our search date was well chosen, not just because of the low tide, but because the population proved to be flowering. 'Flower' is perhaps a kind word for the bizarre structures we found pocketed in the leaf blades, but flowers and fruits (as well as leaf characters) are important in distinguishing *Z. marina* from *Z. noltei*. We were very keen to make a clear identification, because large populations of *Z. noltei* are known on the Welsh side of the Severn Estuary, almost opposite our colony. Luckily the excellent, mature plants we found made it definite that this population is *Z. marina*, confirming the earlier records. Critical characters are clearly given in Stace 3, and for anyone keen to get to know these curious plants, the Seagrass Trust, based in Wales, produces much useful information.

Zostera marina off Stolford, v.c.5. *Ro FitzGerald*

A wider perspective

The good result is actually more important than just having a successful find of a local target species. Eelgrasses, sometimes called seagrasses, actually have wider importance in the web of biodiversity, and they are threatened and decreasing globally. Their strange underwater meadows are a crucial nursery habitat for fish and other marine creatures, and when exposed at low tide form a vital food-source for birds such as overwintering Brent Geese who graze the leaves.

In the Mediterranean, most seagrass populations are a rather similar plant, *Posidonia oceanica*, which

grows in rather deeper water. This species has a place in literature and folklore because its fibrous dead leaves and roots can be rolled around in that sea's narrow tidal range to form curious balls, found quite often on beaches. These balls seem so well constructed that there used to be speculation about their being man-made, and they are known as Neptune Balls (or *egagropili* in Greece). Apparently, classical writers knew of these 'bodies' thrown up by the sea. Galen and Aristotle mention burning them to use the ashes as a cure for scrofula. Where very numerous they were reportedly used in papermaking and to stuff mattresses. This may all seem very distant from Bridgwater Bay, but the importance of this group of plants is the same world-wide as a habitat for creatures which are themselves threatened and declining, and, in particular, as shelter for immature populations, and to help migrating birds on their increasingly dangerous and difficult journeys.

The European Red List of Habitats points out that in areas where beds occur 'the abundance and diversity of the fauna and flora living in seagrass meadows are consistently higher than those of adjacent unvegetated areas'. Decline is thought to be happening because of 'anthropogenic disturbances (e.g. benthic trawling, shellfish digging, boat anchoring), and deterioration of water quality'. We must hope that our precious Stolford population will persist. It is 'upstream' of the current major coastal works for the expanding Hinkley Point Power Station, which are extending west not east, but new management policy for the shingle bar – future storm breaches are not to be 'mended' – may alter the land habitat which has been the source of the apparently essential freshwater seepages for centuries.

For anyone interested in the amazing eelgrasses and seagrasses, I do recommend the 1984 BSBI Presidential Address given by John Cannon, then Keeper of Botany at the Natural History Museum. Titled 'Seaballs and Lakeballs', it gives a delightful overview of these strange objects, memorably recording his experiments in his domestic washing-machine ('a Hotpoint Automatic De Luxe 1972 – a top loader') on making such balls at home (with some success after three washing cycles)! His observation that 'the only real way to gain an impression' of a seagrass meadow in the Mediterranean is by snorkelling, allowing one to 'float gently over a *Posidonia* bed, observing the plants and numerous small animals' evokes idyllic holiday memories. The paper appeared in print in *Watsonia* 15 (1984–1985). Unfortunately, Part 3 is not yet up on the BSBI online archive, but can be tracked down to read in a Harvard archive version.

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Habitat of *Eleocharis parvula* in Easter Ross (v.c.106)

ANDY AMPHLETT

Eleocharis parvula (Dwarf Spike-rush) is a rare species, in Great Britain and Ireland recorded from only seven hectads post-1999 (23 hectads pre-2000; Table 1).

It was first recorded in England, Wales and Ireland in the 19th century. In England it is listed as Endangered (Stroh *et al.,* 2014) and in Wales as Vulnerable (Dines, 2008). It was discovered in Scotland in 1999 (Dines & Preston, 2000) in the estuary of the River Conon, near Dingwall (v.c.106), some 500km north of the Welsh populations. The species account in Atlas 2000 (Preston *et al.,* 2002) observed that 'It is easily overlooked, and its discovery in Easter Ross in 1999 suggests that it may be found in other northern sites.' As predicted, a second Scottish site, at Kyle of Tongue, v.c.108, was found by Clive Chatters in 2016, 100km further north.

In widely consulted Floras, older accounts of *E.*

Eleocharis parvula habitat (foreground), by estuary of River Conon, v.c.106. *Andy Amphlett*

parvula describe its habitat as 'wet sandy places, chiefly in salt-marshes' (Bentham & Hooker, 1947), and 'wet sandy places near the sea' (Clapham *et al*., 1952). Later descriptions substitute 'muddy' for 'sandy', e.g. 'wet muddy places by the sea' (Clapham *et al.*, 1962, 1987), and 'wet muddy places by sea and in estuaries' (Stace 1991, 1997, 2010).

The ecology of the English and (in particular) Welsh populations is described by Byfield (1999) as:

- tidal pans and creek margins,
- on firm bare muddy substrates,
- in almost all localities, close to the upper limits of tidal influence,
- avoiding strongly saline conditions,
- never occurring with halophytes such as *Tripolium pannonicum* (Sea Aster),
- reliant (in Wales) on grazing by sheep or cattle in extensive grazing marshes.

Table 1. *Eleocharis parvula*. Hectads pre-2000 cf post 1999. From DDb 9th February 2019.

	pre 2000	2000-	Total
England	9	3	9
Wales	8	2	8
Scotland	1	2	2
Ireland	3	0	3
N. Ireland	2	0	2
Total	23	7	24

Dines & Preston (2000) describe the v.c.106 population as growing 'in a substrate of fine mud, or in predominantly stony areas with mud in the interstices of the stones ... the most frequent associate was *Callitriche stagnalis* (Common Water-starwort), which grew as small, prostrate, fruiting plants which were abundant on the mud banks but did not form a complete cover. Other associates were very occasional plants of *Armeria maritima* (Thrift), *Cochlearia officinalis* (Common Scurvygrass) and *Triglochin maritima* (Sea Arrowgrass).' They noted that the plants 'would have been submerged under 50-75cm of water at high tide'. This habitat appears similar to the *Flora Europaea* account (Walters, 1980), which gives the coastal habitat as 'tidal mud'.

I visited the v.c.106 site with Liz Amphlett on 15th September 2018, and we quickly relocated the plants at the location where Brian Ballinger and others had recorded the plants between 2004 and 2011. Plants were found along a 190m length of a creek at the north-western edge of the estuary, and were noted in eight 10m grid squares, within three adjacent 100m squares. As we were onsite with a rising tide, we were only able to search from the landward side of the creek, so there may have been additional stands.

The main part of the population is at the north end of the creek, NH552574, in a small bay fringed

Eleocharis parvula growing with *Callitriche stagnalis*. **Right** *E. parvula* with turion at end of rhizome. *Andy Amphlett*

by *Phragmites australis* (Common Reed) on its northern side (see opening photograph). This is some 200-250m NNW of where Dines & Preston had reported their find. After discussion with Chris Preston, it is clear that the original find was along the same creek, the discrepancy being due to the original grid reference being estimated from a map.

Here the plants grow on the surface of, or partially submerged in, deep soft silt. Most leaves were apparently held below the surface by the surface tension of the liquefied silt. *Callitriche stagnalis* was a frequent associate amongst scattered *Tripolium pannonicum*. Examination of a couple of plants revealed the characteristic white turions (tubers), on slender rhizomes (see above). We saw no flowering or fruiting plants.

The v.c.106 habitat of *E. parvula* is very different to that described by Byfield (1999), being on a very soft substrate, at the lower limit of vascular plant growth, and hence in markedly saline, or at least brackish conditions. At Christchurch Harbour, in South Hampshire (v.c.11), plants also grow on mud banks, only exposed at low spring tides (Robin Walls, in Roberts, 2019), a similar habitat to the v.c.106 site. In Ireland, the habitat is described as tidal mud in estuaries (Parnell & Curtis, 2012). The only other Scottish site, in v.c.108, is on grazed upper saltmarsh (Chatters, 2018), and is more like the Welsh sites.

Therefore, *E. parvula* occurs at two extremes; on inter-tidal mud banks, exposed at low tide, and on high level saltmarshes, often dry, and only inundated on spring tides (Roberts, 2019). This extends the range of habitats worth searching for *E. parvula*, or in which this species should be kept in mind when recording.

Illustrations in Floras are always (?) of flowering/fruiting plants, while in reality this species is typically found in its vegetative form, which may bear little resemblance to more familiar *Eleocharis* species, forming tiny rosettes of prostrate or arching, linear leaves. Almost all photographs and videos of this species on the internet are of material growing in aquaria. However these may all be mislabelled, actually being *E. acicularis* (Needle Spike-rush); none of the images of uprooted plants show the characteristic white turions. There is an excellent set of photographs of *E. parvula* on Jeremy Roberts' website at http://www.edencroft2.co.uk/spikerushes/parvula.html. Hopefully the photographs included with this article, and on Roberts' website, will assist in developing a search image for this interesting, and perhaps under recorded species.

Acknowledgements

Thanks to Chris Preston for clarifying the location

of the original discovery of *E. parvula* by the River Conon. Brian Ballinger, Jeremy Roberts and Robin Walls commented on an earlier draft.

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Pavement weeds in Broadmayne, Dorset

ROBIN WALLS

Broadmayne is an unremarkable village some 6km from Dorchester, in Dorset (v.c.9), where I live with 1,203 other people (2011 Census). At a parish council meeting, whilst I was on holiday in the spring, a resident complained that the village was looking untidy and asked for help clearing the weeds from the pavements. Hearing this alarmed me sufficiently to write to the parish secretary protesting that the weeds contribute much to the botanical diversity of the village and I, for one, like to see them.

Having boldly stated that there was a lot of biodiversity along our pavements, and with an eye to the Atlas 2020 project, I thought I had better collect some evidence. On 4th and 10th June 2018 I walked along 14 urban roads with lengths between 22m and 192m, totalling 1,368m, in National Grid squares SY7286 and SY7386. I counted only the species in the cracks along the road side or the bottom of the garden wall and anything growing in the wall; grassy verges were not included. In the three and a half hours the two excursions took, I found 103 species, plus a few I could not identify. The weather was unremittingly hot

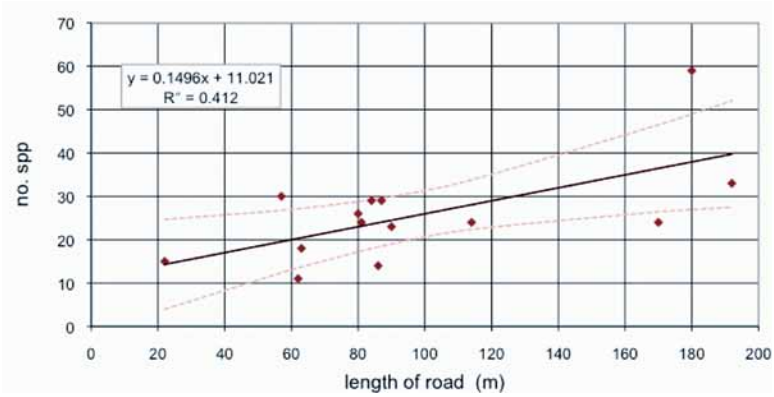

Figure 1. The relationship between the number of species and length of surveyed road. The 95% confidence interval is indicated by red dotted lines.

and we had had no rain in the previous four weeks or more, so I felt that was a respectable total.

I will happily send the full list on request, but here is a summary of the results. In the list there are nine trees, 20 grasses and three ferns. There were ten obvious garden escapes and no very scarce species. There is a significant linear relationship between the road length and number of species found ($R^2 = 0.412$, $p = 0.013$). The graph (Fig. 1.) indicates an intercept of about 11 with 0.15 species added per metre.

Out of interest, I calculated the average Ellenberg scores and the position of the 'community' in the competitor-stress tolerant-ruderal triangle. The species without values available had to be excluded from the analysis, leaving 93 and 71 species respectively. The averages score per taxon (ASPT) is simply the sum of the scores divided by the number of scoring species. One species, *Sonchus oleraceus* (Smooth Sowthistle), was in all 14 roads and *Poa annua* (Annual Meadow-grass) in all except one. Three species – *Catapodium rigidum* (Fern-grass), *Veronica arvensis* (Wall Speedwell) and *Taraxacum officianale* agg. (Dandelion) – tied in third place, being found in 11 roads. Forty of the species I found in only one road. To take account of this wide range I weighted the trait scores by the number of roads where the species was recorded. This may be an extreme weighting, but in the event it made very little difference to the outcome (Table 1). The preponderance of ruderal species and a few salt tolerant species might be expected. The other traits are unremarkable.

Table 1. Ellenberg and CSR scores.

Ellenberg trait (93 scoring species)		ASPT	Weighted mean
Wetness	F	4.806	4.860
Light demanding	L	6.957	7.066
Nutrient	N	5.323	5.436
Reaction	R	6.581	6.603
Salinity	S	0.118	0.137
CSR strategy (71 scoring species)		**ASPT**	**Weighted mean**
Competitor	C	0.258	0.197
Stress tolerant	S	0.206	0.178
Ruderal	R	0.535	0.624

This is the first time I've systematically surveyed pavement weeds, although I know others have. I was surprised by the number of species, especially given the extraordinarily dry conditions. This continued into August, and I was even more surprised to find a good number of the plants survived and even looked fresh and green – unlike my garden! The overwhelming feature in reports about pavement weeds revealed by Google searching for similar surveys, is how to get rid of them. Regretably, my tidy-minded neighbour's view of the street is universal.

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INTRODUCING MY VICE COUNTY

Montgomeryshire v.c.47
Recorders: Kate Thorne & Gill Foulkes

Montgomeryshire (v.c.47) has been described as 'a relatively unsung part of Wales but it is full of choice plants and quiet beauty and deserves to be better known'. 'Quiet beauty' describes this county well. Hills are widespread but tend to be less dramatic than in the counties to the north, with plateaued summits, and the landscape is dominated by pasture, with frequent woodland, hedges, trees and conifer plantations, also several wind farms. Only a few small towns are present, and arable land is largely confined to floodplains in the east.

Uplands and acid grassland

The highest hills include the Berwyns (north) and Plynlimon/Pumlumon (south-west), both of which are shared with other Welsh counties; Montgomeryshire has part of the highest Berwyn mountain, Moel Sych which is 827m high.

The flora is, overall, dominated by acid-loving species, with acid-grassland winter annuals (in U1 grassland) frequenting nutrient-poor summer-parched south/south-east facing slopes, particularly on the hills in the east, e.g. Corndon, Roundton*, the Breiddens* and the Llanfyllin hills. Such species include *Moenchia erecta* (Upright Chickweed), *Aphanes australis* (Slender Parsley-piert), *Teesdalia nudicaulis* (Shepherd's Cress), *Stellaria pallida* (Lesser Chickweed) and *Ranunculus parviflorus* (Small-flowered Buttercup). Patches of this grassland may also be found around historic ruins, e.g. Montgomery Castle*. Elsewhere the acidic grassland may support *Jasione montana* (Sheep's-bit), *Viola lutea* (Mountain Pansy) and *Wahlenbergia hederacea* (Ivy-leaved Bellflower); the first British record for the last species was from Machynlleth in 1632. Heathland with mire (including blanket bog and wet heath) is invariably present on higher ground, particularly as one moves westwards, with fringes often supporting *Molinia*-dominated 'rhos pasture'. Rush pasture tends to be more ubiquitous.

Narcissus pseudonarcissus in wood pasture. *Tammy Stretton*

County uncommon upland species include *Rubus chamaemorus* (Cloudberry), at its southern limit in Britain, and *Carex bigelowii* (Stiff Sedge), both found only on the Berwyns, *Lycopodium clavatum* (Stag's-horn Clubmoss), *Andromeda polifolia* (Bog-rosemary), *Vaccinium vitis-idaea* (Cowberry), *Diphasiastrum alpinum* (Alpine Clubmoss), *Micranthes stellaris* (Starry Saxifrage), *Neottia cordata* (Lesser Twayblade), *Festuca vivipara* (Viviparous Fescue), *Carex limosa* (Bog-sedge) and *C. magellanica* (Tall Bog-sedge) and, rarely, the eyebrights E*uphrasia micrantha*, *E. scottica* and their hybrid.

Micranthes stellaris. Gill Foulkes

Lycopodium clavatum. Gill Foulkes

Base-rich locations

The east also contains the main areas of limestone in the county. Llanymynech Hill (a once quarried site and easily accessible to the public*) is the only site or one of only a very few sites for calcicoles, e.g. *Gymnadenia densiflora* (Marsh Fragrant-orchid) and other orchid species, *Helianthemum nummularium* (Common Rock-rose), *Scabiosa columbaria* (Small Scabious), *Rosa spinosissima* (Burnet Rose), *R. micrantha* (Small-flowered Sweet-briar), *Potentilla verna* (Spring Cinquefoil), *Euphrasia nemorosa*, *Sorbus anglica* (English Whitebeam), *Avenula pubescens* (Downy Oat-grass) and *Bromopsis erecta* (Upright Brome). The only other significant site for calcicoles is Craig Breidden – the quarried hill at the west end of the Breidden complex. The famous west and south crags of this hill have only a few of the above calcicoles, but also support several *Hieracium* and *Sorbus* species, including *S. stirtoniana* (Stirton's Whitebeam), which is endemic to this site and has only been described post 2000. *Pilosella peleteriana* ssp. *subpeleteriana* (Shaggy Mouse-ear-hawkweed) is another endemic. Of most interest on these crags are the three rarities: *Silene viscaria* (Sticky Catchfly), *Veronica spicata* ssp. *hybrida* (Spiked Speedwell) and *Potentilla rupestris* (Rock Cinquefoil), all of which struggle against continued quarrying and scrub invasion. Associate plants include both calcicoles and calcifuges, the latter including *Erica cinerea* (Bell Heather) and *Petrosedum forsterianum* (Rock Stonecrop). Whilst access to these plants in the wild is difficult (permission is needed to enter the quarry), the remaining (more acidic) Breidden Hills have a number of footpaths that can be followed* and a list of interesting species including U1 annuals and *Potentilla argentea* (Hoary Cinquefoil).

Silene viscaria on south crags, Craig Breidden. *Kate Thorne*

Over the rest of the county, calcicoles are usually found in small pockets, but these are surprisingly frequent. Several river and stream valleys are associated with localised, base-rich rock outcrops. Pont Llogel* (Coed Copi'r Graig SSSI), on the Afon Vrynwy, boasts *Rosa spinosissima*, *Rubus saxatilis* (Stone Bramble), *Thalictrum minus* (Lesser Meadow-rue), *Geranium sylvaticum* (Wood Crane's-bill) and *Melica nutans* (Mountain Melick) close to the path. *R. saxatilis* has also been found on rocks along the Afon Rhiw and Gam. Other base-rich locations

are found along little gorges and streams that cut into several of the hill complexes, such as the Long Mountain and the Kerry Ridgeway in the east, with largely woodland species, e.g. *Daphne laureola* (Spurge Laurel), Trannon Moor, near Carno, with *R. saxatilis* and *Cystopteris fragilis* (Brittle Bladder-fern), Craig Dugwm, near Llandinam, with *Gymnocarpium robertianum* (Limestone Fern), and the Berywns, with *Melica nutans* and *Hieracium* species. This habitat type is typical for *Tilia cordata* (Small-leaved Lime) and there are a number of other riparian cliff locations for *Hieracium* species e.g. *H. carneddorum*, *H. lasiophyllum* and *H. placerophylloides*.

Many of the upland mires support base-rich pockets with *Carex hostiana* (Tawny Sedge), *C. dioica* (Dioecious Sedge), *C. lepidocarpa* (Long-stalked Yellow-sedge), *Linum catharticum* (Fairy Flax), *Pinguicula vulgaris* (Butterwort), *Eleocharis quinqueflora* (Few-flowered Spike-rush), *Valeriana dioica* (Marsh Valerian), *Briza media* (Quaking-grass) and *Galium uliginosum* (Fen Bedstraw). Pockets of calcareous grassland species are sometimes found close to the UI acid grassland e.g. on Roundton, and include *Carlina vulgaris* (Carline Thistle) and *Thymus drucei* (Wild Thyme).

Calcifuge species

The little gorges in the hills are also havens from grazing for many other species. Uncommon calcifuge species include *Drymochloa sylvatica* (Wood Fescue) and *Hymenophyllum* species, predominantly *H. wilsonii* (Wilson's Filmy-fern), which can be found in such locations in the west, as well as *Dryopteris aemula* (Hay-scented Buckler-fern). Lower down the larger rivers (Afon Vyrnwy, Banwy and Gam), in fast-flowing sections, *Trollius europaeus* (Globeflower) grows at a number of sites on small river islands, e.g. at Pont Llogel*, Dolanog and Llanfair Caereinion, but there are two sites of a different nature in the west – in mire and steep upland seepage.

Wetlands

Montgomeryshire has many rivers and lowland pools. Two great rivers – the Afon Hafren (Severn) and Gwy (Wye) – arise in the county on Plynlimon. Whilst the Wye runs briskly down towards Radnorshire, the Severn flows from west to east across the county. Only the Severn (plus its tributaries the Vyrnwy, Banwy and the Camlad) run through floodplains and have associated oxbows. There are also other pools in the more low-lying land in the east. These lowland oxbows and pools, overall, support quite a few uncommon species e.g. *Limosella aquatica* (Mudwort), *Eleocharis acicularis* (Needle Spike-rush), *Veronica catenata* (Pink Water-speedwell), *Rorippa islandica* (Northern Yellow-cress), *R. amphibia* (Great Yellow-cress), *R. sylvestris* (Creeping Yellow-cress), *Butomus umbellatus* (Flowering-rush), *Rumex maritimus* (Golden Dock), *Scirpus sylvaticus* (Wood Club-rush) and *Hottonia palustris* (Water-violet). *Oenanthe fistulosa* (Tubular Water-dropwort) is a rare species in pools on slightly higher ground.

Many small upland pools grace several of the hill complexes, and are amongst the best of Montgomeryshire's features. Many are Local Wildlife Sites rather than SSSIs. Several support *Isoetes* species – *I. lacustris* (Quillwort), *I. echinospora* (Spring Quillwort) and their hybrid – *Sparganium angustifolium* (Floating Bur-reed), *Utricularia minor* (Lesser Bladderwort) and *Lobelia dortmanna* (Water Lobelia). Such pools include Llyn Glanmerin, near Machynlleth, Llyn Gwyddior* and Llyn Coch-hwyad to the west of the Gam valley and Llyn Hir, Llyn Newydd and Llyn y Grinwydden to the east of the Gam. Every species that has ever been found at

Lobelia dortmanna. *Gill Foulkes*

Glaslyn and an adjacent gorge. *Gill Foulkes*

Llyn Gwyddior is, amazingly, still present – there are good colonies of *Luronium natans* (Floating Water-plantain), with *Pilularia globulifera* (Pillwort), and *Persicaria minor* (Small Water-pepper), *Salix repens* (Creeping Willow) and *Euphrasia* x *electa* (*E. micrantha* x *E. scottica*) around the margins. The three pools to the east are less diverse in a surround of mire with frequent pockets of *Hypericum elodes* (Marsh St John's-wort).

Further to the south-west, Glaslyn, Llyn Bugeilyn and Llyn Penrhaeadr, in the Plynlimon SSSI, also support some of the above species, and nearby small pools, near Dylife, support *Utricularia minor* and *Isoetes echinospora*.

Semi-upland pools include Llyn Ebyr, near Llanidloes, which has floating bog around the edge supporting species such as *Carex lasiocarpa* (Slender Sedge). This pool also has *Pilulifera globularia*, *Isoetes lacustris*, *Lobelia dortmanna*, *Utricularia minor* and several stonewort species. Llyn Gwigia, north-west of Newtown, appears to be the only extant site in v.c.47 for *Elatine hexandra* (Six-stamened Waterwort).

In addition to the numerous small pools there are the larger reservoirs, Llyn Vyrnwy and Llyn Clywedog. The north shore of the Vyrnwy reservoir is the only extant location for *Carex acuta* (Slender Tufted-sedge) and also supports *C. elongata* (Elongated Sedge) and *Eleogiton fluitans* (Floating Club-rush).

V.c.47 extends seawards to include some saltmarsh, next to the Afon Dovey (Dyfi), near Machynlleth. This area is difficult to visit, partly because it is private land but also because it is in close proximity to a nesting Osprey site. Species of interest here include *Eleocharis uniglumis* (Slender Spike-rush), *Ranunculus baudotii* (Brackish Water-crowfoot) and *Ruppia maritima* (Beaked Tasselweed), with other common maritime species and, away from the river margin, *Oenanthe lachenalii* (Parsley Water-dropwort) and *Juncus subnodulosus* (Blunt-flowered Rush).

Meadows and pastures

Several meadows (often associated with damp areas) survive in the county, invariably under special site status (SSSIs or LWSs). These (and some species-rich pasture) support a number of uncommon species such as *Dactylorhiza purpurella* (Northern Marsh-orchid), *Genista tinctoria* (Dyer's Greenweed), *Ophioglossum vulgatum* (Adder's-tongue), *Platanthera chlorantha* (Greater Butterfly-orchid), *Anacamptis morio* (Green-winged-orchid), *Bromus racemosus* (Smooth Brome), *Cirsium dissectum* (Meadow Thistle), *Colchicum autumnale* (Meadow Saffron) and *Euphrasia arctica*, with *Dactylorhiza praetermissa* (Southern Marsh-orchid) and *Silaum silaus* (Pepper-saxifrage) only found in the east around Corndon. Meadow species appear to have declined in distribution post-2000 relatively more than others, with grazing problems leading to undermanagement.

Woodlands

Within the vice-county, areas of broadleaved woodland are often small, the largest area of ancient woodland being the oak woodland in Coedydd Llawr-y-Glyn SAC. Overall, the woodlands support a number of ancient woodland indicators, with rare/scarce species including *Neottia nidus-avis* (Bird's-nest Orchid), *Hordelymus europaeus* (Wood Barley), *Geum rivale* (Water Avens) and *Cardamine impatiens* (Narrow-leaved Bitter-cress), with *Osmunda regalis* (Royal Fern), rarely, in wet woodland. Locally, wood pasture (also churchyards and road verges) support *Narcissus pseudonarcissus* (Daffodil/Wild Daffodil).

Montgomery Canal and roadsides

The Montgomeryshire Canal* is a highly valued habitat with SAC status for its *Luronium natans*. Running between Llanymynech and Newtown, it is

easily accessible, with a towpath along the whole length. Highlights earlier in the year are *Cardamine amara* (Large Bitter-cress) and *Ranunculus circinatus* (Fan-leaved Water-crowfoot). *Luronium natans* is frequent, but seems to favour overshadowed sections where competition from non-native plants is less. Non-native plants to the area are a real problem, with *Elodea* species (waterweeds) and *Stratiotes aloides* (Water-soldier) often clogging up the waterway. These species appear to have adversely affected *Potamogeton* species, and rare ones such as *P. friesii* (Flat-stalked Pondweed) and *P. compressus* (Grass-wrack Pondweed) are difficult to find. The single site in the county for *Stellaria palustris* (Marsh Stitchwort) is in mire alongside the canal at Wern.

The county has some really good road verges, even along main roads. This is virtually the last habitat remaining for *Vicia orobus* (Wood Bitter-vetch) in the county; all sites for this are in the west and largely centred on the Wye Valley. Here there are minor stands along lane banks but significant stands are present along the main Aberystwyth road near Llangurig, where steep roadside banks are buffered from the actual road by a wide band of regularly mown grassland. The verges are also really important for many other species which have been grazed out elsewhere e.g. *Serratula tinctoria* (Saw-wort), *Sanguisorba officinalis* (Great Burnet), *Hieracium* species, *Lathyrus linifolius* (Bitter-vetch), *Betonica officnalis* (Betony) and *Melampyrum pratense* (Common Cow-wheat), but are, unfortunately, under threat from vehicular damage and/or nutrient enrichment. Two *Vicia orobus* sites, although within county 'Roadside Reserves', have been destroyed recently by road works and cable-laying. Hedgerows often support *Rosa mollis* agg. (Downy-rose).

Two special species

Lastly, perhaps our most interesting species, are *Cephalanthera longifolia* (Narrow-leaved Helleborine) and *Campanula patula* (Spreading Bellflower). The former is found in oak woodland in the east near Kerry; first found in the early 1970s, a second site was discovered only in 2018. The latter species is also present only in the east, but struggles to survive in a very few hedgerow and hedgebank sites near Corndon.

Sites and access

The Montgomeryshire countryside is, sadly, often not easy to access. Parking is frequently difficult for a group, and rights of way often lack any stiles or markers. Grid references and notes are provided below for the sites starred above

- Roundton Reserve/SSSI car park – SO29259462, April, UI annuals.
- Llanymynech Rock Nature Reserve/SSSI car park – SJ27072194, June, limestone flora.
- Pont Llogel/SSSI car park, Llwydiarth – SJ03231541, July, calcareous and riparian flora.
- Montgomery Castle car park – SO22159670, May, UI annuals.
- Montgomeryshire Canal SAC – several access points e.g. small car parks at Buttington (SJ24120891) and south of Welshpool (SJ21680530) or on verge of main road by Powys Castle turn (SJ22260612) July, aquatics.
- The Breiddens (forest car park at Criggion) – SJ29531496, May, to access Rodney's Pillar, U1 annuals and others.
- Llyn Gwyddior – parking on laneside around SH92030749, footpath then on open access land, July.

We have an informal Flora Group and meet several times throughout the year for outings. Contact: k.thorne@btinternet.com.

Flora Group at Llyn Ebryr. *Steve Attwood*

Thanks to John Thorne who edited the first draft.

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BEGINNER'S CORNER

How to speak fern

HAZEL METHERELL

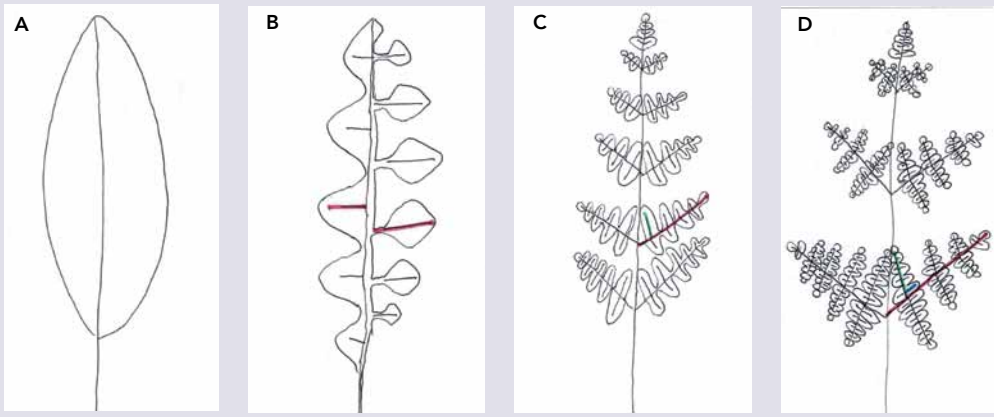
I am not good at languages. I don't speak hairdresser and my 'computerese' is shaky. As with many specialist areas of study, there are words for things that you may not have considered before. Botany has a complex language, but you do not have to learn it all at once. Looking at some plant groups, such as ferns, you can get a long way without having to carry a scientific dictionary with you.

A leaf is called a frond, and it is on a stalk called a stipe. The first thing to do when meeting a fern is to turn over the frond and look for the sporing structures (sporangia, singular: sporangium) on the underside. You may need to check several plants or try again later in the year to find them. Young fronds are misleading, so if you have only these it may be best to just walk away! The microscopic sporing structures are helpfully clustered in groups called sori (singular: sorus), which can be seen more easily. Some genera, e.g. *Blechnum* (hard-ferns), have distinctly different looking sterile fronds (without sori) and fertile (with sori) fronds, which is a useful characteristic. In a few genera, e.g. *Polypodium* (polypodies), the sori are naked, but in most species they have a flap over them, called an indusium (plural: indusia). The position and shape of the indusium is a major clue to identification. The *Asplenium* (spleenworts) genus has linear indusia, while the *Dryopteris* (male and buckler-ferns) genus has circular indusia attached in the centre and along a radial line, making them look 'c'- or kidney-shaped.

Asplenium sclopendrium (Hart's-tongue) has linear indusia, with the frond a simple, non-pinnate shape. *Andrew Branson*

Naked sori on the underside of a *Polypodium* (Polypody fern), each one containing dozens of sporangia. *WikiCommons*

C-shaped indusia on the underside of the pinnules of *Dryopteris filix-mas* (Male-fern). *Andrew Branson*



Counting pinnae

The next thing is to learn to count to three. It is not always that easy! We are talking pinnate-ness, or how sub-divided the fronds are.

A A simple frond has the stipe up the middle, and no subdivisions. Zero pinnate.

B From the stipe the frond may be divided into separate flaps to each side (red lines). The flaps are called pinnae, (singular: pinna) and the form is described as one-pinnate. Note that the pinnae can be attached to the main stem along the central edges, or by little stalks. Both count as one-pinnate.

C When there is the stipe, and pinnae off the stipe (red) and the pinnae themselves are divided into smaller flaps (green line, optional name pinnules, singular: pinnule), it is two-pinnate (each side branch looks like a one-pinnate fern).

D If there is the stipe, the frond divided into pinnae (red), which are divided again (into pinnules, green), which are divided again (blue line, into pinnulets, another optional term), it is three-pinnate (each side branch looks like a two-pinnate fern).

In all cases you need to look at a mature frond, at about midway down the frond or lower, as at the tips the pinnate-ness reduces, so it is not reliable. As I say, it is not always crystal clear whether they are subdivided or wavy edged, so you might decide it is two and a half pinnate! You would then have to check out the keys or pictures for both two- and three-pinnate ferns.

Blechnum spicant (Hard-fern) is a one-pinnate fern. Note also the central fronds with thin pinnae. They are the fertile fronds, while the broader pinnae on the outer fronds are sterile. *Hortipedia.commons*

Sometimes the keys ask you to examine the scales, particularly to separate the *Dryopteris* three-pinnate buckler-ferns. These are the papery structures on the lower stipe (stalk). Rub some from the base of the stipe off onto your fingers to make them easier to examine closely. You will be looking for a dark stripe either along the length, across the width or neither! Who said ferns were difficult?

With a look at the positions of the sori / indusia, the pinnate-ness and other simple observations e.g. colour and scale stripes, you can soon identify many ferns without having to learn too much more vocabulary. *The Fern Guide* by James Merryweather, published by the FSC in their AIDGAP series, is a very approachable book for beginners, with excellent illustrations.

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PHOTOGRAPHING WILD FLOWERS: Part 2

BOB GIBBONS

In part 1, in the previous *BSBI News*, we looked at the different ways of taking control of the camera functions, and the value of using different apertures to change the whole character of the photograph. The idea of this second part is to look at ways of using these skills to create interesting, attractive and/or useful photographs of plants.

Composition

Composition plays a big part in the final appearance of the picture, but it also interacts considerably with choosing the best subject to photograph. Normally, there is more than one possible flower to photograph, and sometimes there may be hundreds, so it makes sense to choose the ones that would make the best photographs. Apart from the obvious considerations of how good they look, whether they are past their best and so on, it is also worth looking at them from a photographer's point of view. Most cameras have a roughly rectangular image area, with approximate proportions of 3:2,

The machair of South Uist, taken with the camera at a height of about 60cm to provide a good balance between a strong foreground and a reasonable amount of landscape. *Bob Gibbons*

(and whilst nowadays, it is very easy to crop pictures later, it still makes sense to try to get them right first time), and bear in mind that you can also turn the camera vertically to obtain a picture that is taller than wide. The range of possible compositions in any photograph of nature is infinite, and no two situations are ever quite the same, but here are some guidelines:

- A single tall spike, such as of bugle or an orchid, rarely makes a particularly interesting picture, so look for two or three close together that would nicely fill a frame, or perhaps a shorter spike that has similar proportions to the final picture. The same principle applies to simple round flowers, such as a cranesbill, where often two or three flowers together look better than one central circular image. If possible, look for two or three

Two spikes of *Stachys* x *ambigua* (Hybrid Woundwort) filling the frame nicely, taken with the camera set at about the central point of the spikes. *Bob Gibbons*

Two *Geranium pratense* (Meadow Crane's-bill) flowers taken at an angle such that both are equidistant from the camera. This allows both to be in focus at a large aperture, causing the background to be pleasingly out of focus. *Bob Gibbons*

flowers that are roughly the same distance from the camera, and so will all be clearly in focus.

- Consider going in closer than normal to fill the frame with perhaps three or four flowers from a spike, or the central part of a regular flower.
- Think about varying your camera height when photographing flowers (and the tilting screens of many cameras have made it easier for older photographers to cope more easily with taking lower pictures). It is often best to get right down amongst the flowers, especially when considering vertical spikes such as a woundwort, for example. Pictures of vertically growing inflorescences taken from above look distorted, lack impact, and probably will not show all the flowers of the spike equally well. Sometimes, it can work photographing flowers from ground level, looking up at them, perhaps to give a beetle's eye view of a sward, or to allow the sky to become the background.
- Consider from which direction you take the picture. Light may be a consideration, of course, but where that is not an over-riding factor, think about which angle gives you the best selection of flowers, the best background, and the best composition possibilities. For example, if you have two nice orchid spikes close to each other, it may be a good idea to move around until they are both in the same plane, parallel to the camera back, to get both in focus whilst still allowing the background to be out of focus (see part 1).

Purpose

When you are faced with a whole field of flowers, it can be surprisingly difficult to get a picture that has an impact resembling the feelings you have when you are there. We looked in part 1 at ways of getting

Spring flowers at Mullion Cove, The Lizard, taken with a wide-angle (28mm) lens, carefully composed to show the cove in the background, using a small aperture (f22) to allow all parts to be in focus.
Bob Gibbons

more in focus, but the other major consideration is the final composition of the picture. It is worth considering first what you want from the picture – do you want to give an idea of where the flowers were growing, to impart a strong sense of place, or even of precise location? Do you want some of the species to be clearly identifiable, or do you just want to indicate a mass of colours? Before we look at ways of achieving your aims, it is worth just briefly looking at lens types, from telephoto to wide angle. A wide-angle lens takes in a greater area of picture than the standard eye view, whilst a telephoto takes in a narrower field of view, thus bringing the subject apparently closer, and there is an infinite range of possibilities between the two extremes. The wider the angle, the shorter the quoted focal length, with numbers such as 20mm, 28mm etc; and telephoto lenses have higher numbers such as 135mm, 200mm etc. As a general rule (though it is there to be broken) wide-angle lenses are best for landscape-scale views where you want mass and context to be important, whilst telephoto lenses are best for picking out single spikes and separating them from their background.

Back to our field of flowers, let us assume you have a wide-angle lens (which can include the wider end of a zoom lens), so you can fit a lot of the field into the picture. One of the characteristics of a wide-angle lens is that it makes everything look further away, such that a photograph taken at head height of a flowery meadow can look disappointing. So, think about going lower and getting closer to your main subject matter, to give the nearest flowers more detail and impact. If you go too low, you may find that you lose the landscape that provides the sense of place, and fail to convey the impression of a great mass of flowers, so it is a matter of balance that depends on the height of the flowers, the importance of the containing landscape, and whether the habitat slopes downwards or upwards away from you. The best thing is to try it out, and look at different possibilities from different heights and proximity to the nearest flowers, to see which seems to mirror your feelings best. With digital, it is easy to take more pictures, too, and decide later what works best.

There are no hard and fast rules when photographing flowers, and the possibilities are endless, but nowadays it is so much easier to practise, take more than you need, and to experiment, and, hopefully, to learn from the successes.

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ADVENTIVES AND ALIENS NEWS 17

COMPILED BY MATTHEW BERRY

I have made a concerted effort to improve regional coverage in this edition, which has been variable in the past and never more than satisfactory. While ruminating on how this might best be achieved, I was contacted by Jonathan Shanklin, the BSBI Meetings & Communications Secretary, who suggested ways in which the DDb might help. I am very grateful to Jonathan for his suggestions and will try my best to implement them, but doubt that I will completely abandon my more scatter gun approach of emailing recorders I haven't contacted for a while, if at all, as well as those I have. In fact I might be more vigorous in my pursuit of this, for a trial period at least, and can only hope I don't become a nuisance. In the meantime, I would like to thank all those who have contributed in any way for their generous assistance – without it this column would not be possible.

It seems that the DDb could also be used to obtain answers to the sort of queries and requests which I sometimes put in the preamble, including the most recent one relating to what might or might not be the rise and fall of *Bassia scoparia* (Summer-cypress). Perhaps it was long-winded of me to throw these questions open to the readership as a whole when they could just as easily be put to the DDb. If that is basically the case now, I trust members will still send their observations and summaries if they wish to. I would certainly be interested to read them, as would others I'm sure. Indeed, I have recently received some very interesting condensed accounts for a number of Norfolk aliens, courtesy of Jo Parmenter and Bob Leaney, one of which (for *Brassica juncea*, see v.c.27) I have reproduced below. I will be including others in the next Adventives & Aliens News.

If I were pressed to name a few 'trending species' I would probably choose from the following shortlist: *Carex comans* (New Zealand Hair-sedge), *Chenopodium giganteum* (Tree Spinach), *C. hybridum* (Maple-leaved Goosefoot), *C. quinoa* (Quinoa), *Cuscuta campestris* (Yellow Dodder), *Inula hookeri* (Hooker's Fleabane), *I. racemosa* (Pushkamool), *Pastinaca sativa* ssp. *urens* (Eastern Parsnip), *Senecio inaequidens* (Narrow-leaved Ragwort), *Urtica membranacea* (Mediterranean Nettle), some of which appear in the following compilation, and others of which will appear in future ones. Many thanks.

V.c.2 (E. Cornwall)

Carex uncinata L.f. (Hook Sedge). St. Nectan's Glen (SX080885), 30/10/2018, I. Bennalick, T. Nightingale, D. & A. Pearman (det. D.A. Simpson/ comm. D. Pearman): several plants naturalising by path in woodland over 400m, spreading from plants in flowerbed by small café at head of glen. First British record. A native of New Zealand cultivated for its tufts of shiny dark red leaves. Formerly it was in the segregate genus *Uncinia*, as *U. uncinata* (L.f.) Kuk., a generic name which, like the specific epithet, refers to the hook-tipped rachis involved in fruit dispersal. According to the website of the New Zealand Conservation Network, this red-pigmented variant is not the typical form and has at times been sold in error as *Uncinia rubra* Colenso ex Boott, a different species which is typically red.

Allium cernuum Roth (Nodding Onion). Woodsaws Cross (SX187571), 17/5/2017, P. Hunt & D. Wilson (comm. D. Pearman): naturalised patch of 16 plants in roadside hedge bank by entrance to telephone exchange. The first British record. A North American native growing to c. 50cm. The inflorescence is a nodding umbel of pink, campanulate flowers (tepals c. 4-6mm long, pedicels up to 2.5cm long) with exserted stamens. The 3-5 leaves (1-6mm wide) sheathe the terete stem only at its very base. The bulb is elongate-oblong and often shortly rhizomatous. The European native *A. narcissiflorum* Vill. is also a garden plant and rather similar in overall appearance. It has a fewer flowered umbel and the flowers themselves are larger, more shortly stalked (tepals c. 10mm long, pedicels up to 10mm long), and of a darker almost purplish-pink with included stamens.

V.c.6 (N. Somerset)

Thalictrum speciosissimum L. (Glaucous-leaved Meadow-rue). Burrington Ham (ST48295834), 4/7/2018, H. Crouch & Cam Valley Wildlife Group: one plant in

Thalictrum speciosissimum, Burrington Ham, v.c.6. *H. Crouch*

flower by an east-west path across hillside. A remote site, Helena describes Burrington Ham as being 'the hillside above Burrington Combe, and an SSSI', so the presence of this garden plant represents quite a feat of dispersal. It has leaflets which are glaucous on both sides, only glaucous below in *T. flavum* (Common Meadow-rue). *T. flavum* ssp. *glaucum* Desf. is a synonym.

Chenopodium giganteum (Tree Spinach). Bruton (ST680349), 2/8/2018, S. Leach (comm. H. Crouch): one young plant growing in tarmac, presumably escaped from nearby garden, St. Catherine's Hill.

V.c.9 (Dorset)

Linaria alpina (L.) Miller (Alpine Toadflax). Swanage (SZ0295079401), 13/10/2018, D. Leadbetter: one plant in gutter, outside 6 Gannets Park. The cultivar 'Alba'. 'I could not see any plants in the nearby gardens, but presumably a seed must somehow have got into the gutter.' In his book, *My Rock Garden* (1908), Reginald Farrer describes it as 'a small plant' which 'flourishes everywhere in Switzerland on the high

Kalmia angustifolia, New Forest, v.c.11. *D. Leadbetter*

moraines and in cultivation is certainly the better for very poor, gravelly, rubbishy soil'. It is also of note that while Farrer is certain that it is an annual, he is not 'absolutely certain that it is only an annual'. It is probably best described as a perennial which can also grow as an annual. The 2cm corollas occur in terminal clusters and have usually straight spurs which make up more than half their total length. They are deep violet-blue to lavender with orange bosses (David informed me that the flowers of his plant, though white, retained their orange bosses). The linear fleshy glaucous leaves occur in clusters of about five and are 10-15mm long. There are only two other records in the DDb, one from 1986 for v.c.113 (Channel Islands) and from 1998 for v.c.71 (Isle of Man).

V.c.10 (Isle of Wight)

Chenopodium giganteum (Tree Spinach). Parkhurst (SZ502917), 10/2018, P. Stanley (comm. P. Stanley): on Stag Lane. The first v.c. record.

Amaranthus deflexus (Perennial Pigweed). Newport (SZ480897), 10/2018, P. Stanley (comm. P. Stanley): at Park View Nursery, with other presumed 'plant container aliens' *Solanum chenopodioides* (Tall Nightshade), *Eclipta prostrata* (False Daisy), and *Cyperus fuscus* (Brown Galingale). Also seen in v.c.11 (S. Hants) in 2018 (pers. comm. E.J. Clement).

V.c.11 (S. Hants)

Kalmia angustifolia (Sheep Laurel). New Forest (SU3326508933), 12/6/2018, D. Leadbetter (comm. D. Leadbetter): one bush just south of Ashurst Lodge. First recorded here in 2016 by A. Cross and N.

Sanderson. Clement *et al.* (2005): 123. A native of eastern North America (Ericaceae).

Oxydendrum arboreum (L.)DC. (Sourwood). Swaythling area (SU4511015394), 6/6/2018, J. Poland, D. Leadbetter & E. Pratt (comm. D. Leadbetter): one perhaps seeded from main tree, Marhill Copse. The only record in the DDb. A large deciduous shrub (Ericaceae) from North America, growing to 25m. The white, densely unicellular-hairy, urn-shaped corollas (c. 6mm) are organised in terminal panicles. The elliptic-oblong to obovate leaves with acute to acuminate apices turn a striking shade of red in the autumn. The English and generic names refer to the bitter-tasting leaves and twigs.

V.c.12 (N. Hants)

Dipsacus laciniatus (Cut-leaved Teasel). Liss (SU77842751), 14/7/2018, S. Povey & B. Lowe: six flowering plants beside path to Somersfield Terrace. A Eurasian species possibly originating in grass/wild flower seed mixtures. For a fine colour rendering see Killick *et al.* (1998), p. 233.

Ligularia przewalskii (Przewalski's Leopardplant). Bordon (SU79133611), 20/10/2018, A. Mundell (det. S. Povey): about a dozen plants scattered along 50m of Oxney stream bank in a newly excavated flood alleviation basin. *Sinacalia tangutica* (Chinese Ragwort) is rather similar (indeed these plants were initially thought to be that species). Both are garden plants which can reach c. 2m, with yellow capitula which have relatively few, widely spaced ligules. They are perhaps best distinguished by their lower leaves, which are sheathing and palmately lobed in the *Ligularia* , non-sheathing and pinnately lobed in *Sinacalia*. The inflorescence of *L. przewalskii* is also more narrowly cylindrical. There are 20 records in the DDb, 16 post-2010, most in Scotland, a fact which is perhaps consonant with its being a native of North China.

V.c.14 (E. Sussex)

Darmera peltata (Indian-rhubarb). Hampden Park (TQ5999401727), 4/6/2015, M. Berry: probably introduced but spreading through lakeside vegetation, fruiting and seeding well. See Adventives & Aliens News 1 (v.c.13).

Oxalis tetraphylla (Four-leaved Pink-sorrel). Newhaven

Oxalis tetraphylla, Newhaven, v.c.14. *M. Shaw*

(TQ4539301241), 24/8/2018, M. Berry: one plant on earth bank by new road, south of A259. The cultivar 'Iron Cross'. A garden plant, native to Mexico.

Capsicum annuum (Sweet Pepper). Newhaven (TQ4544901050), 5/10/2018, M. Berry: one plant near top of earth bank by new road, south of A259. A bird seed or food refuse alien.

Lithospermum purpureocaeruleum (Purple Gromwell). Mayfield (TQ5866526912), 29/9/2018, M. Berry & R. Wells (det. M. Berry): senescent flowering stems and non-flowering shoots on verge of pedestrian cut-through, apparently spread from an adjacent garden. Better known as an uncommon native species of western Britain. Stace (2019): 585, as *Aegonychon purpureocaeruleum* (L.) Holub.

V.c.25 (E. Suffolk)

Galtonia candicans (Baker) Decne. (Cape Hyacinth). Sutton Walks (TM298490), 14/10/2018, P. Stanley (comm. P. Stanley): one plant on verge at road junction, on a deep moist sandy soil. The first British record. A bulbous perennial (Asparagaceae) from South Africa, with its leaves all basal and racemose inflorescences. The white flowers are held away from

the inflorescence axis on longish pedicels and hang down, they are tubular at the base, flaring somewhat towards the mouth, 6-lobed (the lobes not spreading), and c. 5cm long. The bracts just exceed the pedicels. The fruit is a capsule. The plant can be very robust, growing to 120cm. It might be better classified as an *Ornithogalum*, even though the perianth segments are fused for about a third of their length rather than free. *Hyacinthus candicans* Baker is the basionym.

V.c.27 (E. Norfolk)

Brassica juncea (Chinese Mustard). R. Leaney *et al.*: 'Considering this species has for many years been used in the UK for making mustard and the long-standing presence of the Colmans Mustard factory in Norwich, it is surprising that escaped plants have been so scarce until recently, with only 3 Norfolk records in Beckett & Bull (1999). However, in 2008 a few dozen plants were recorded in central Norwich by R.M. Leaney, and over the next few years these spread around the inner ring road to a maximum of a few hundred plants which were notably short and few-fruited, and given the location in the city, likely derived from seed used by the local Bangladeshi community (the plant is grown as a pot herb). Another much taller and many-fruited form appeared briefly in 2014 on the A47 Norwich-King's Lynn road and may well have derived from spilled seed cultivated as a mustard crop. In autumn 2018 a very sizeable population of many hundreds of plants was noted at various locations along the A140 from Long Stratton to Diss.' (J.M. Parmenter)

Galium murale (L.) All. (Small Goosegrass). Norwich (TG2108), 2/1/2018, I. Senior, V. & J. Bartlett (conf. R.W. Ellis/comm. J. Parmenter): in Earlham Cemetery. The first Norfolk record. Stace (2019): 574.

V.c.35 (Mons.)

Cuscuta campestris (Yellow Dodder). Crick (ST49), 9/2018, K. Swift & B. Williams (comm. S. Tyler): noted in the recorders' garden. This is the third v.c record, the first being in 2010 (SO4617), also in a garden, and the second in 2017 at Penallt (SO5210). A native of North and tropical America, and now primarily a Niger seed alien in this country.

Pratia pedunculata (Blue Lawn-lobelia). Abergavenny (SO3014), 9/2018, V. Leisler & M. Hoult (comm. S. Tyler): on a lawn; Cobbler's Plain (SO4601), 4/8/2018, E.Wood & A.Wood. It was also recorded as naturalised in grassland at two sites (SO5008 and SO5210) in Pennalt by Stephanie Tyler in 2015 and 2014 respectively. Distinguished from *P. angulata* (Lawn Lobelia) by its hairy leaves (glabrous in *P. angulata*) and the fact that it is dioecious, a feature which is no doubt responsible for the non-production of berries in this country. Some would prefer to treat both as species of *Lobelia*, which genus in its strict sense has fruits that are a capsule. A native of Australia. See Adventives & Aliens News 5 (v.c. H39). Stace (2019): 713.

Urtica membranacea, Pensby, v.c.58. *G. Kay*

Panicum capillare (Witch-grass). Llandegfedd Reservoir (ST3399), 30/8/2017, E. Wood & S. Tyler (comm. S. Tyler): a large colony at reservoir edge, locally frequent.

V.c.58 (Cheshire)

Urtica membranacea Poir. (Mediterranean Nettle). Pensby (SJ272840), 11/6/2014, I. Wallace (det. J. Edmondson): established along foot of wall, still there in 2017. First vice-county record. A distinctive annual with unilateral male racemes at the upper nodes, less conspicuous globular female racemes at the lower nodes and connate stipules. A weed of plant containers which seems to fare well in the warmer, more sheltered parts of our towns. There are now 58 records in the DDb, from Penzance (v.c.1) to Elgin (v.c.95) and points between. Stace (2019): 305.

Potentilla indica, Northwich, v.c.58. *G. Kay*

Cuscuta campestris, Chester Zoo, v.c.58. *J. Swan*

Potentilla indica (Yellow-flowered Strawberry). Northwich (SJ656742), 1/8/2013, S.R. Hinsley: in Furey Wood. The first v.c. record; Handforth (SJ851807), 22/9/2018, G.M. Kay: four plants by footpath. Almost certainly bird-dispersed from gardens and already naturalised plants. Clement *et al.* (2005): 155.

Cuscuta campestris (Yellow Dodder). Chester Zoo (SJ406709), 20/9/2017, J. Swan: in a wild part of the site. First v.c. record.

Inula hookeri (Hooker's Fleabane). Marple (SJ965869), 24/9/2015, G.M. Kay: several clumps on canal bridge. First v.c. record.

Panicum capillare (Witch-grass). Lower Withington (SJ8169), 24/9/2013, G.M. Kay: in maize field. In early 2014, Graeme wrote that 'Cheshire has had a mini explosion of *P. capillare* in Maize fields last year with at least six sites found by Stewart (Hinsley) and myself. I suspect it had been spread by contractors' vehicles which seem to visit several farms. It was variously associated with *Setaria viridis* (Green Bristle-grass), *S. pumila* (Yellow Bristle-grass), *Echinochloa crus-galli* (Cockspur), *P. miliaceum* (Common Millet) and *Amaranthus hybridus* (Green Amaranth).'

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

Petrorhagia saxifraga (Tunic-flower). Redcar Steel Works (NZ57382546), 30/8/2017, V. Jones & D. Barlow: on a soil heap. Other interesting aliens recorded from the same site include *Chenopodium quinoa* (Quinoa) and *Carthamus tinctorius* (Safflower). A Eurasian native grown as a garden plant, it can be distinguished from certain other mat-forming caryophs by the presence of an epicalyx.

Euphorbia palustris L. (Marsh Spurge). Newburgh (SE54417650), 17/5/2018, V. Jones: a garden escape in the grounds of Newburgh Priory. The first v.c. record.

Mitella ovalis, near Harrogate, v.c.64 (see overleaf). *Kevin Walker*

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

Mitella ovalis Greene (Bishop's Cap). Near Harrogate (SE30885200), 13/5/2018, K. Walker: on the River Crimple between Pannal and Almsford Bank. Kevin found the plants while surveying naturalised populations of *Tellima* and *Tolmeia* , and 'traced the source to a small rockery garden about a mile upstream'. The fourth British record. The first was for v.c.67 (S. Northumb.) in 2012 (G. Young). For a report of the v.c.104 (N. Ebudes) record see *BSBI News* 136: 61. The remaining record is for v.c.105 (W. Ross). A native of western North America (Saxifragaceae). Stace (2019): 143.

Mazus pumilus (Burm. f.) Steenis (Japanese Mazus). Baildon (SE163403), 18/7/2002, M. Wilcox & B. Tregale (det. E.J. Clement from photo/comm. D. Broughton): plant found in the Tong Park area. Although not recent, it is worth publishing here because the genus will probably be unknown to most. The c. 35 species of this genus, native to Australia and East Asia, have inflorescences consisting of one-sided racemes and two-lipped corollas, the upper lip 2-lobed, the lower lip 3-lobed (and projecting well beyond the upper in *M. pumilus*, at least), the overall effect being of an unspurred *Cymbalaria* or *Chaenorhinum*. The genus has been caught up in the recent taxonomic flux, with different parties variously placing it in Scrophulariaceae, Phrymaceae (with *Mimulus*, now *Erythranthe*), and Mazaceae. *M. pumilus* is a native of East Asia, a glabrous, rather variable annual (the *Flora of China* recognises four varieties). The bell-shaped, 5-lobed calyces are c. 5mm long, the corollas are c. 1cm long and purple or blue in colour. The leaves can be more or less entire, irregularly toothed or even deeply divided into lobules, anything from obovate to oblanceolate and 2-5cm long. This is the only record in the DDb, although there are two for *M. radicans* from the late 1960s. It has been seen as a bonsai container weed in Belgium, and occurred as a casual alien on the gravel banks of the River Maas. It has been observed as a street weed in Frankfurt, Germany, and looked semi-established on a cobbled street in Verona, Italy, as recently as 2013. At least one species, the perennial stoloniferous *M. reptans*, is sold as a garden plant.

V.c.69 (Westmorland)

Syringa meyeri C.K. Schneid. (Korean Lilac). Kendal

Persicaria sagittata, Castle Cove, v.c.H1. *Paul Green*

Chenopodium hybridum, Gortnalogh, v.c.H2. *Paul Green*

Trifolium pannonicum, Tarbert, v.c.H2. *Paul Green*

(SD528916), 2017, A. Boucher (det. E.J. Clement/ comm. A. Boucher): in woodland behind Littledale, Valley Drive and railway line. The cultivar 'Palibin'. The first British record. Herb. AMB. 'Could not be refound in 2018, probably rehomed in another garden.' Distinguished from *S. vulgaris* (Common Lilac) and *S. pubescens* (Manchurian Lilac) by its palmately 5-veined leaves (pinnately-veined in *S. vulgaris/ pubescens*). A deciduous, richly branched shrub to 1.5m, with 4-angled, minutely pubescent branchlets, elliptic-obovate to ovate or almost orbicular leaves and lax or congested inflorescences of purple, pinkish or white flowers (c. 2cm long), with dark purple calyces (c. 2mm long). The fruit is a 1-2cm capsule. A dwarf lilac which might have originated in cultivation.

Inula hookeri (Hooker's Fleabane). Kendal (SD512946), 2017, A. Boucher (comm. A. Boucher): established in hedge, Burneside Road. First recorded from this general area, if not from this very site in 2007. There are 7 records for v.c.69 in the DDb, the earliest for Whitbarrow in 1995. There are 27 records all told, 22 post-2000. See Adventives & Aliens News 11, v.c.2.

V.c.H1 (S. Kerry)

Persicaria sagittata (American Tear-thumb). Castle Cove (V5892961235), 13/9/2018, P. Green (comm. Paul Green): three patches in ditch with *Eleogiton fluitans* (Floating Club-rush), damp field on the side of the Kerry Way. 'First found at Castle Cove in 1889. Became rare by 1972-73, and said to have died out in 1993. Last reported by Ian Denholm in 1992.' A native of East Asia and North America. A very important re-find of what is generally thought of as an alien, although a few botanists believe it to be native at this site, and a part of the amphi-Atlantic component of the indigenous Irish flora. Clement *et al.* (2005): 82. Stace (2019): 465.

V.c.H2 (N. Kerry)

Chenopodium hybridum (Maple-leaved Goosefoot). Gortnalogh (Q8916404784), 25/7/2018, P. Green (comm. Paul Green): one on margin of cattle-grazed field. New for the county, only the third Irish record and the first since 1846. With *Amaranthus hybridus* (Green Amaranth) and *Echinochloa crus-galli* (Cockspur), both also new for N. Kerry.

Trifolium pannonicum (Hungarian Clover). Tarbert (R0761348785), 10/7/2018, P. Green (comm. Paul Green): lots on road verge. New for county. Probably introduced with grass seed. Apart from two records for v.c.53 (S. Lincs) and one for v.c.40 (Salop), most recent records have been for Irish vice-counties.

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Thladiantha dubia in Newhaven, a neophyte previously unrecorded in Britain and Ireland?

MATTHEW BERRY

The east Asian native *Thladiantha dubia* Bunge (Manchu Tubergourd) (Cucurbitaceae) has been found on wasteground in Newhaven (v.c.14) in 2018. This would also seem to be the first record of the species (and indeed genus) in Britain and Ireland.

Thladiantha dubia Bunge (Manchu Tubergourd). Newhaven (TQ4537201325), 14/8/2018, M. Berry (det. M. Berry/conf. E.J. Clement): one plant growing c. 1.5m to the east of an earth bank, between a newly made road and the River Ouse, on a brownfield site south of the A259. (Herb. MCB and EJC). The closest associates were *Chenopodium album* (Fat Hen), *Cirsium arvense* (Creeping Thistle), and *Sonchus oleraceus* (Smooth Sow-thistle). A second plant was found on

Thladiantha dubia on wasteground at Newhaven, v.c.14. *M. Shaw*

virtually bare ground by the author on a subsequent visit to the site (24/8/2018), at TQ4538501297. The species is dioecious (as are the other c. 22 species belonging to this genus) and both of the Newhaven plants were male. The *Flora of China* (eflora) lists ten provinces of that country in which it is regarded as native, and where its typical habitats are forest margins and valleys. Plants of the World Online (Kew Science) lists the following as places where it occurs as a native: Bangladesh, China North-Central, Khabarovsk (South-eastern Russia on the Amur River), Primorye (far eastern Russia) and Sakhalin; and the following as places where it has been introduced: Altay, Austria, Canada (Manitoba, Ontario, Quebec), Central European Russia, the former Czechoslovakia, Hungary, Japan, Kazakhstan, Kyrgyzstan, Korea, Romania, Ukraine, USA (Illinois, Massachusetts, New Hampshire, New York, Wisconsin), and West Siberia.

Description of the Newhaven plants

A trailing/climbing herb; leaves alternating, cordate-ovate, with pronounced sinuses, both surfaces rough, net-veined, somewhat rugose and with very small blisters or swellings on the upper surfaces, with microscopic hooked hairs particularly on the lower surfaces, far more sparsely on the upper surfaces, the leaf margins irregularly denticulate, up to c. 7cm × 6cm; tendrils unbranched, very delicate, tightly coiled at the tips; stems and petioles long, spreading-hairy; flowers solitary, axillary, pedicellate, campanulate, c. 5cm across when fully spread; petals five, yellow, free to the base, with three impressed veins on upper surfaces, glandular-ciliate, with short yellow glandular hairs on the upper surfaces (mainly on the broader outer ribs rather than the two narrower, inner ribs), the lower surfaces with rather sparse, long, white, septate, eglandular, flexuous hairs; with a glandular-hairy, obtuse-oblong flap at the centre of the corollas; five stamens, four paired, the fifth somewhat set apart, the filaments minutely glandular pubescent; the calyx lobes linear-lanceolate and strongly reflexed at anthesis.

The 'glandular-hairy, obtuse-oblong flap' referred to above might equate to the 'horizontal scale' mentioned in the species description in *Flora Europaea*, the '"gland-like" rudimentary ovary' referred to in the generic description in the *Flora of China*, or the 'elaiophores (glands which reward pollinating insects with oil rather than nectar) attractive to bees' mentioned in Mabberley (2008). The last interpretation of this feature is probably the most informative. There were also at least two flowers which seemed to lack reproductive structures entirely, and which had greenish-white, more or less hemispherical swellings at their centres.

The entire plant is described as being 'softly hairy' in *Flora Europaea*, while the leaves are described as 'scabrous' in the *Flora of China*, and as 'hirsutulous' in

the *Flora of North America*. The leaves of the Newhaven plants adhered to themselves and each other like Velcro, and would even cling to fingers when handled. At magnifications of greater than ×15, this turned out to be due to the presence of very short hairs with strongly hooked tips, particularly on the lower surfaces, far more sparsely on the upper surfaces, as mentioned in the description above. This would seem to be a character it shares with species belonging to the African genus *Peponium* (Cucurbitaceae).

The illustration of *Thladiantha dubia* found in the *Flora of North America* (eflora), shows the lateral leaf veins closing before they reach the lamina margin, to form a sub-marginal vein. Is this a piece of carelessness on the part of the artist, or an accurate depiction of what is found in the North American plant? Either way, no such character is mentioned in the descriptions, nor was it evident in the Newhaven plants, or in photos of Belgian and Croatian plants. The painting by an unknown artist taken from *La Belgique horticole, journal de jardins et des verges*, vol. 22, 1872 (plate 6) and archived in Wikimedia Commons, would seem to be a fine example of the botanical illustrator's art. Much the same could be said of Walter Hood Fitch's painting, plate 5469 in *Curtis's Botanical Magazine*, published in 1864, possibly the same year it was first cultivated in this country. The description that accompanies that painting fits the Newhaven plant quite well, but is not very detailed

It is possible then, that the plant described in *Flora Europaea* and the plant described in the *Flora of China* are not the same species. I am as confident as I can be, under the circumstances, that the Newhaven plant and the plant described and keyed in the *Flora of China* as *Thladiantha dubia*, are one and the same.

Habitat and associates

Thladiantha dubia has been recorded once in Belgium in 2010 'at one of the decantation basins of the sugar refinery at Tienen' (*The Manual of the Alien Plants of Belgium*), where it was initially misidentified as *Cucumis melo* (Melon). It was also recorded for the first time in Croatia in 2010. Alegro *et al.* (2010) describe it as being established over an area of c. 100 square metres in 'nitrophilous ruderal' habitat in 'an area of old backwaters of the River Sava', where there are willow and poplar forests which have been much disturbed and degraded by human activity, in Savica, an area of Zagreb. The population included at least some female (pistillate) plants, although the authors point out that most European plants are male. In this paper there is a useful summary of the history of the species from its discovery in the vicinity of Peking (now Beijing) in 1831 by the Russian botanist Alexander Georg von Bunge, and subsequent introduction to Moscow, through to its initial cultivation in Berlin, and its subsequent appearances in more and more countries of central and south-eastern Europe.

Associates at the Savica site included *Chelidonium majus* (Greater Celandine), *Urtica dioica* (Stinging Nettle), *Chenopodium album* (Fat Hen), *Echinocystis lobata* (Wild Cucumber; also Cucurbitaceae, and a native of North America), *Impatiens parviflora* (Small Balsam) and *Solidago gigantea* (Early Goldenrod). At the time of its discovery in 2010, it was not regarded as a garden plant in Croatia. The nearest 'wild' site was in Slovenia, c. 175km away. The locations are not directly

Thladiantha dubia on wasteground at Newhaven, v.c.14, showing the habitat and associated species. *M. Shaw*

connected by the River Sava, so the arrival of seed or tubers by that means was rejected as the most likely source of the Savica population. Rather the authors favoured (if marginally) tubers and a terrestrial vector, and cited the presence of soil heaps of unknown origin adjacent to a nearby carriageway in support of this explanation.

The literature has so far treated it as being of casual occurrence in European countries, whereas it is viewed as invasive in Japan, a country which is much closer to the species' native range. The *Flora of North America*

(eflora) cautions that 'even staminate (male) plants are potentially invasive because of the spread by tubers'.

Alegro *et al.* list typical European habitats for the species as including scrubby ground, railways, river banks, maize fields and vineyards.

It also seems likely that the Newhaven plants arrived as tubers or tuber fragments with imported soil. The site in question has produced a sequence of unusual alien records in 2017/18, with most of the interest in 2018 being concentrated on or about an earth bank which runs parallel with a newly constructed road, c. 250m in length (see Adventives & Aliens News 16). Great quantities of soil have been brought onto the site and variously dumped into heaps or moulded and flattened by JCBs. Much of it contains chalk rubble and is probably of local origin. At least some will have come from gardens, local or not. The aliens seem to fall broadly into two categories: garden plants and bird seed aliens. Some might have been 'imported', others might have arisen on site from long-buried seed.

A comprehensive explanation of the origins of this site's adventive flora will probably not be possible, but it is likely that the appearance of *Thladiantha dubia* there will have had something to do with its availability as a garden plant. It is currently being sold by four suppliers in the country, two of which happen to be in Sussex – at Brighton and Great Dixter. It has already acquired a number of English names, with Manchu Tubergourd the one most redolent of an exotic Orient. Another, Red Hailstone, seems distinctly fanciful if a reference to the fruit, which is painted as greenish (unripe?) and described as orange-yellow (*Flora of China*) rather than red (although photographs purporting to show this species bearing red fruits are viewable on line), and c. 4-5cm × 3cm. Perhaps it is a translation of a vernacular Siberian name for the plant, where hailstones of such a shape and size might be not infrequent!

In China the fruit and roots are used medicinally. Elsewhere it is probably chiefly grown for ornament, although the fruits are edible.

Plants, whether male or female, would most likely be spread vegetatively by means of tubers. If it turns up elsewhere, I would be very grateful if the finder or finders would send me full details.

Acknowledgements

I would like to thank Eric Clement for his always astute feedback, Mike Shaw for taking and allowing me to use his superb photographs of the Newhaven *Thladiantha* (and other Newhaven aliens), and Janice Reynolds for spotting the potential of this site and making sure that it was thoroughly worked.

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Back to the future
Asarum europaeum returns to the North

HOWARD M. BECK

In July 2017 I called at the historic manor of Austwick Hall, in the south-western corner of the Yorkshire Dales, to enquire of the owner Michael Pearson whether, as I had been led to believe, *Lilium martagon* (Martagon Lily) grew in the adjoining woodland. His answer was in the affirmative. However, during our botanical exchange he revealed that in his 'wild wood' there also grew another, very rare plant. He was not sure but thought it was called Asarum something-or-other.

The woodland, which is situated on a gently sloping hillside complete with limestone outcrops

The kidney-shaped leaves of *Asarum europaeum* at Austwick Hall growing amongst *Mercularis perennis*. Inset: Close-up of the flower. *Howard Beck*

and pavements, comprised predominantly of *Fraxinus excelsior* (Ash), *Fagus sylvatica* (Beech), *Ilex aquifolium* (Holly) and *Taxus baccata* (Yew), with a seasonal ground cover, I was informed, of *Mercurialis perennis* (Dog's Mercury), *Hyacinthoides non-scripta* (Bluebell), *Paris quadrifolia* (Herb-Paris), *Narcissus pseudonarcissus* (Daffodil) and *Galianthus nivalis* (Snowdrop), as well as several fine stands of *L. martagon*.

The woods are about ten acres in extent and traversed by a few paths made for the owner's own enjoyment and that of his B&B guests. At length I was shown the plants and saw amongst the *M. perennis* areas of kidney-shaped glossy leaves forming two widely-separated patches, the largest of which was about 1.5 square metres in extent.

Once home I looked up the plant and determined that it was probably *Asarum europaeum* (Asarabacca), a species I believed not recorded anywhere north of Coventry since at least World War One. I shall return to this shortly. Growing excitement notwithstanding, it was necessary to await the 2018 season to obtain photographic evidence, if, indeed, the plant flowered.

Throughout May and well into June I maintained regular contact with Mr Pearson who kindly offered to monitor the plants and let me know if they showed signs of flowering. On 19th June I could contain myself no longer so I called at the Hall and together Mr Pearson and I entered the wood and took a look at the plants. With no sign of blooms I came away disappointed but conscious that ours had been a somewhat cursory examination in light of the miniscule stature of the perianth. I determined to return.

I was back two days later and carried out a lone 20-minute, finger-tip search, initially finding three withered flowers. Thinking I had missed them for a second season, I was crestfallen. However, after searching a further five minutes I was overjoyed when my diligence revealed a solitary surviving bloom. *Voila*! Although the species is certainly not the most flamboyant of woodland species, its timely appearance made my day. I now had my photographic evidence.

Back at base, the record together with my photographs was sent to David Broughton (Recorder for v.c.64 Mid-W. Yorks) and he confirmed my findings. However, you could have knocked me over with thistle-down when he informed me that certainly in terms of the v.c. records it was the first since 1881 (1839 in that specific 10km square).

Mr Pearson subsequently carried out some research, which revealed that *Asarum* was recorded growing in an old hedge and deep ditch somewhere between Grain House and Fieldgate, some two miles west of the market town of Settle (Baines, 1840). However, a supplement to this publication dated 1854 stated that the plant 'had been eradicated at the latter location'. But just in case I paid a site visit, he also

pointed out that all signs of ditches or ancient hedges had indeed long vanished, along with any plants that may have once been there.

As a medicinal plant *A. europaeum* was introduced into Britain during the Middle Ages. Culpeper tells us that the plant's virtues, dependent on which part of the plant is employed and how gullible the patient, included the curing of headaches and improving memory, treatment of ulcers, cancer, and was even effective against the biting of serpents!

It transpired that a certain Richard Clapham, a former owner of Austwick Hall, had previously resided in the sleepy hamlet of Feizor one mile to the south-east, and here maintained an apothecary's garden from which he supplied plants to a Settle herbalist.

Mr Pearson's research went on to add that Riley says of *Asarum* on page 11 of his work that 'Here grows the royal and holly fern ... and the extremely rare *Asarum europaeum*. The last named plant John found growing wild in 1894, this discovery being regarded by leading botanists as a great "find".'

Adding further grist to the mill, David Broughton later told me that the original record (1839) pre-dated Richard Clapham's ownership of Austwick Hall. It seems almost certain that he or persons unknown must have removed the plants from their original location then transferred them to the garden in Feizor, and subsequently the woods at Austwick Hall at the time they were planted (1847), or some time afterwards, along with the several fine stands of *Lilium martagon*.

Whatever the perambulatory history of this species, it appears to be well established in this Yorkshire wood, its confirmed status furthermore constituting a highlight of my botanical year. Although I have not yet had the opportunity to visit the original garden in Feizor, I remain hopeful that even after all this time there may in some untended shady nook still survive a trace of the original plants Richard Clapham tended for his apothecary clients.

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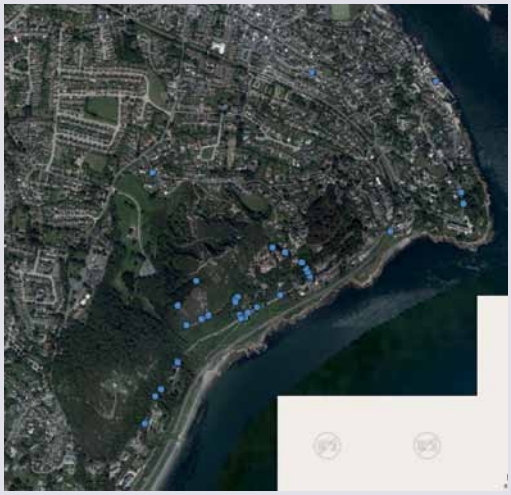
Senecio minimus (Toothed Fireweed) becoming naturalised in Killiney/Dalkey, south Co. Dublin

ALEXIS FITZGERALD

FitzGerald (2018) noted the occurrence of the neophyte *Senecio minimus* Poir. (Toothed Fireweed) as a weed in a garden border at Coliemore Apartments, Dalkey, south Co. Dublin (v.c.H21) on 9th August 2017 (Stace 2019). The author noted at the time that this species may be more liable to spread and naturalise than previous casual wool alien populations that had been discovered in Britain in previous decades. Indeed, this now appears to be the case. A whole series of naturalised populations were subsequently discovered on 26th December 2018 on the north-eastern side of Killiney Hill. From 18-19th February 2019, plants were searched for throughout the whole Killiney Hill area and in many parts of the wider Killiney/Dalkey area, and grid references were recorded for each plant found and were later mapped (Fig. 1). *S. minimus* appears to be spreading profusely in the general area of both Dalkey and Killiney, with particular abundance observed on the north-eastern side of Killiney Hill. This is probably the most likely area of origin for this neophyte, perhaps as a contaminant with a garden plant in an ornamental border.

The species appears to be remarkably well-adapted to a number of ruderal habitats, particularly the bases of walls (see opposite), path edges, garden borders (it still persists in the garden border where it was originally found in 2017, even after being weeded



Senecio minimus plants observed in the wider Dalkey/ Killiney area, south Co. Dublin (v.c.H21), 18-19th February 2019 – map background © Bing Maps

Senecio minimus plant growing on the top of an old wall by steps on the northeastern side of Killiney Hill, 18th February 2019. *Alexis FitzGerald*

Senecio minimus plant (with previous year's inflorescences) growing out of a granite outcrop by a path on the northeastern side of Killiney Hill, 18th February 2019 *Alexis FitzGerald*

Senecio minimus plants growing at the base of an old wall on Killiney Hill, 18th February 2019. *Alexis FitzGerald*

out comprehensively in that year!) and on rubbly/ rocky roadside verges, generally occurring where there is little competition from other species. One plant was even observed growly directly out of a granite outcrop on the north-eastern side of Killiney Hill (see above) and yet another was found growing on the top of an old wall (see above). Its perennial rooting system and somewhat woody stem base is sturdy and allows the plant to become established in such challenging habitats. These largely perennial populations also clearly show considerable resistance to local winter frosts. Furthermore, the small, pappus-adorned achenes are easily carried in the wind over long distances and deposited in new suitable sites. *S. minimus* has been found in both open areas (roadsides,

path margins, etc.), where it occurs with such species as *Taraxacum* agg. (dandelions) and *Buddleja davidii* (Butterfly-bush), and in relatively shaded areas, where it occurs with such species as *Hedera helix* agg. (Ivy) and *Smyrnium olusatrum* (Alexanders). It has not been observed on the edges of the nearby railway tracks. However, the species may well become established in this habitat also with time, thus allowing suitable transport to other areas of Dublin and beyond.

A few other prominent neophytes were also noted as becoming increasingly naturalised in the Dalkey/Killiney area, including *Anemanthele lessoniana* (Pheasant's-tail) (e.g. Irish Grid reference O26969 26761), *Solanum laciniatum* (Kangaroo-apple) (e.g. Irish Grid reference O27276 26381) and *Echium pininana* (Giant Viper's-bugloss) (e.g. Irish Grid reference O26153 26331). All three of these species are clear garden escapes and all are self-sowing profusely, particularly the latter two species.

Further populations of *Senecio minimus* surely occur elsewhere in the vicinity of Dalkey and Killiney and possibly farther afield and the species is clearly more widespread than previously thought. This species is rapidly becoming established as a new neophyte member of the south Dublin flora and, with time, perhaps beyond.

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Eradication of *Impatiens glandulifera* (Indian Balsam) – a personal view

DAVE TRUDGILL

The following is a personal view of efforts to eradicate *Impatiens glandulifera* (Indian or Himalayan Balsam) from part of the catchment of the Lunan Burn to the west of Blairgowrie in eastern Scotland. I live close to the Lunan Burn, mid-way between lochs Clunie and Marlee. These are the last two lochs in a chain of five lochs – the 'Dunkeld – Blairgowrie Lochs' – and, together with the stretch of the Lunan Burn between them, they are classified as an EU Special Area of Conservation (SAC). The name 'Lunan Burn' is misleading as it is more accurately described as a small river, c. 5m across.

In 2010 I became aware of *I. glandulifera* (hereafter called 'balsam') flowering in an area that was our millpond, but is now filled with sediment and covered mainly with *Phalaris arundinacea* (Reed Canary-grass). There were dozens of balsam plants, indicating that the infestation had been developing over more than one year. On discovering the balsam I contacted Scottish Natural Heritage (SNH) and asked what they could do about it. At that time, invasive alien species were not so high on the agenda, and they responded regretting that they were not in a position to do anything, but they gave me permission to apply a herbicide (glyphosate). There followed a period of discussion with SNH in which I urged them to be more proactive, but it was clear that they needed to go through the process of obtaining funding before they could implement any control measures.

The following year I started to explore the extent of the infestation and was appalled to find occasional groups of plants both below and above us up to Loch Clunie (c. 1.5km of river). I then discovered that the infestation extended along the shore of Loch Clunie (c. 3km), and upstream there were very dense stands of plants on the riverbanks above Loch Clunie (c. 3km). However, the infestation appeared still to be confined to only a part of the catchment, with just occasional plants at its down-stream end. Although a lowland river, both the Lunan Burn and Loch Clunie are mostly bordered by a strip of rough, uncultivated land, often with trees, varying from 10m to 100m deep. It was my initial impression that it was too late to consider eradication, especially as I believed

(wrongly) that SNH would not contemplate the use of a herbicide. In fact, unknown to me SNH had started to seek funding and in the following year (2012) were in a position to start a control/eradication programme. They undertook a survey in July 2012 and this revealed that the source of the infestation was along a feeder stream (the Drouthy Burn) in woods above the village of Forneth where there was a dense stand of balsam the size of a football pitch, plus many other smaller infestations. The more we learned, the worse it got!

Contractors, herbicides and volunteers

In total the balsam was spread along c. 9km of river bank, 3km of loch shore, and many hectares of adjacent 'rough' land and woodland. Much of the infestation comprised scattered groups of plants, some many metres away from other areas of infestation. It seemed that the seed had been spread quite widely, probably on the hooves of deer. Despite the extent of the infestation (which we still had not fully appreciated) SNH were not discouraged and employed contractors to spray the dense stands of balsam with glyphosate (as ProBiactive 450 formulation), including those on the riverbank. A small group of volunteers were also organised to help by hand-pulling the many single and small groups of plants not sprayed by the contractors.

Now, in September 2018, we are close to the complete eradication of the balsam from the Lunan Burn catchment. This year we have found no plants in many of the areas that initially had many hundreds, and sometimes thousands of plants. From my perspective this would not have been possible without the collaboration between SNH, the contractors, and the volunteers. The Tayside and Grampian Team from SNH were crucial in arranging funding, access and permissions, they organised an 'event' in a local village hall to raise awareness and this led to one localised infestation being reported that was c. 1.5km further up the Lunan Burn than previously we had been aware. They helped when large areas were being 'swept' and on one occasion found a remote group of plants.

The contractors played a crucial role in almost eliminating the balsam from large areas by spraying them with glyphosate. The glyphosate was very effective at killing plants at all stages of growth, including the smaller, late germinating plants that would probably have been missed by people hand-pulling or cutting the balsam. It also killed the vegetation that cloaked and concealed the smaller

Impatiens glandulifera. Bob Gibbons

balsam plants, making them much easier to find and remove in subsequent years. The contractors had only limited time (initially 18, decreasing to nine man-days, per summer) to carry out their work, but they found several out-lying areas of infestation. However, once the main areas of infestation had been suppressed I believe the eradication of the balsam would not have been possible without the contribution of the small group of dedicated volunteers (maximum five, but mostly three people). They came to know the area intimately and identified many of the areas requiring glyphosate treatment. As the numbers of balsam plants decreased and they became more scattered, they had a crucial role in searching every 'nook and cranny' to find the occasional plant.

Our ability to find balsam improved with experience. Where there is one plant there are often others, but better hidden or not yet in flower. We learned to stop and look back, to look behind trees and along the hidden parts of the riverbank. And, crucially, we did this frequently (every 2 to 3 weeks, depending on temperatures) and for a long enough period (mid-July to mid-October) to prevent seed being shed. For example, in 2015, the volunteers made more than 30 searches over a 15 week period (2nd July to 17th October). We divided the infested area into six sections, each of which took 2-3 hours to search. Often three or more people were involved. Plants were missed by even the most experienced volunteer, so we found it was essential to repeat visits frequently

enough to have at least two chances of finding a plant before its seed had matured. On several occasions I was confronted with a large plant covered in flowers and developing seed capsules that I must have walked past on the previous occasion. Initially, the volunteers, and contractor, focused of the riverbanks, but in later years they searched more widely, finding many small, isolated groups of plants.

Lessons learnt

In summary, eradication of limited infestations of balsam is possible, but it is essential to be well organised. We made mistakes, e.g. not realising that balsam plants have an amazing capacity to survive and the flowers to develop and produce seed even when the plant had been pulled up and 'hung out to dry' on a tree branch (our usual practice). Now we ensure the root ball is cleaned of soil, and we pull off the flowers and small seed capsules. Larger capsules are bagged with great care and removed (but take care the bags do not become torn, allowing seed to escape). Our initial survey was not sufficiently all-encompassing so our approach was piecemeal. From the very start the aim should be to kill every plant before it can shed seed. It is very helpful to try to identify the initial source of the infestation (ours was probably a garden) and consider patterns of spread. This is especially so where watercourses are involved, so that control measures can be targeted to prevent down-stream spread of any seed that is produced (some plants will be missed!).

I strongly believe a pragmatic approach involving a herbicide, as adopted by SNH, is highly desirable, but recognise that other approaches (e.g. cutting plants below the first node) may be more appropriate e.g. if rarer plant communities need to be preserved. We can attest that grazing by sheep can be very effective. The process of eradication is helped by the high visibility of the flowering plants and the relative short life of the seed once shed (2 to 3 years). However, during the summer flowering plants can continue to appear over approximately three months, requiring repeated visits to the same areas. Also, re-infestation sometime in the future is possible, even likely, so continued vigilance is required. This has already happened. In 2018, four balsam plants were found where soil from ground-works had been dumped close to the Lunan Burn. The area the soil came from, and where it was dumped were entirely free of balsam, so the seed must have come from contamination of the machinery used from an earlier job at a balsam-infested site.

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X*Glebianthemum*, a new intergeneric hybrid

JOHN WATSON & ANITA FLORES

The Mediterranean species *Glebionis coronaria* (L.) Cass. ex Spach (Crown Daisy) and the Canary Island endemic *Argyranthemum frutescens* (L.) Sch. Bip. are recognised cultivated plants in the British Isles as recorded in The Royal Horticultural Society (RHS) Dictionary (Brickell, 1996), the latter more commonly so than the former.

Glebionis is also grown for culinary use of its foliage in various parts of the world, particularly East Asia. For these reasons and others it has frequently escaped into the wild (e.g. Greuter 2006+), and is recognised as a weed in various countries, including in Chile (Matthei, 1995), where we live.

Similarly, *A. frutescens* has become a popular plant of horticulture globally, including in parks and municipal planting schemes. It has been bred fairly intensively in Japan, and to a lesser extent elsewhere, as a number of named cultivars, some of them potential hybrids. As a consequence it too has become naturalised, although more locally and to a far lesser extent (e.g. BNAP, 2014) than *G. coronaria*.

The origin and possible parentage of the very diverse *A. frutescens* cultivars has never been recorded, but this aspect recently caught the attention of Dr Julian Shaw, an Orchidaceae specialist affiliatiated with the Royal Horticultural Society, who has an interest in intergeneric hybridization, *inter alia*. Last year he drafted an article for *The Plantsman* clarifying

the probable hybrid origin of some of these cultivars, proposing nothogeneric names where appropriate. It so happened that the editor of *The Plantsman* had been informed by the present authors of just such a hybrid which they had discovered in the wild in Chile. It occurred where both *G. coronaria* and *A. frutescens* grew together as naturalised escapes. He therefore invited us to contribute as co-authors, and we duly described our plant as ×*Glebianthemum valiniaum* (Flores, Shaw & Watson 2018).

Argyranthemum frutescens and *Glebionis coronaria* are grown as ornamentals in Britain, possibly even in proximity at times, and the latter is known to be naturalised there. RHS botanist James Armitage, editor of *The Plantsman*, therefore suggested to us that our hybrid would be worth bringing to the attention of the BSBI readership to arouse awareness that potentially it might or could occur in British Isles.

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Argyranthemum frutescens (white flowers), with its pale yellow hybrid X*Glebianthemum valiniaum*.
John Watson & Anita Flores

COUNTRY ROUNDUPS – ENGLAND

PETE STROH

This note begins by directing you to other notes. Each February, Vice-county Recorders write a short report detailing botanical highlights of the past year for their respective counties. They are an informative and inspiring read, and can be found on the BSBI website under the 'England' banner https://bsbi.org/england. This section of the website is also the place to go to if you want information about botanical meetings and events taking place in your area.

By the time this edition of *BSBI News* drops through your letterbox it will be spring, always an exciting time of the year and, traditionally, the start of field recording proper. Or is it? In recent years the trend seems to be for botanists to go out and record higher plants in every season, and it can be surprising to discover just how much can be found outside in late autumn and winter. For example, Anne Sankey has related news of *Chenopodium suecicum* (Swedish Goosefoot) and *C. acerifolium*, both new to Surrey at Rotherhithe, close to the Thames and no doubt liking the mild climate of the inner-city, and Ian Bennallick and David Pearman, in preparation for the new Cornish flora, added many thousands of records to monad lists, including arable highlights such as giant specimens of *Euphorbia exigua* (Dwarf Spurge), easily a foot across and as high. Cornwall is fortunate in that much of the stubble is left over winter, allowing plenty of scope for spotting arable weeds, but even if winter crops have been planted, many margins can yield autumn-germinating species that are most likely not destined to survive harvesting in the spring, or the sowing of the next crop. Botanising in the winter is also a good time to improve your conifer identification skills, using the excellent online multi-access key developed by Matt Parratt https://conifers.fscbiodiversity.uk/, and your vegetative identification skills, using 'double-Poland' (veg key and winter twigs).

Viscum album, showing a male plant in the foreground and female with flowers and berries behind. *Bob Gibbons*

The prize winter find was made by bryologists at Stanner Rocks, in Radnorshire, who discovered *Gagea bohemica* (Early Star-of-Bethlehem) in full flower. It has only ever been found here since it was correctly identified as new to the British flora in the 1970s. Although the plant is clearly in Wales, and I am England Officer, I had half a mind to 'jump the border' to visit the site in February (incognito, obviously). Ultimately, I ended up working, not twitching, but contact with Peter Garner, VCR for Herefordshire, about the best time to see the species did result in an anecdote worth repeating here. I was wondering out loud whether it was worth driving for eight hours in one day to see one plant, when Peter casually told me that he and Heather Davies, co-recorder for the county, had done just that the previous day. They had driven the back roads from Ross-on-Wye to the Black Mountains, searching for and recording *Viscum album* (Mistletoe) in every monad they passed through,

compiling evidence of its current distribution. I think this was a quite heroic thing to do. Peter and Heather could have easily assumed that the species was still present in each monad; it is a common species in the county, after all. The fact that they chose to spend a day confirming what they knew to be almost certainly correct speaks volumes for the dedication of BSBI Recorders and neatly encapsulates the ethos of the Atlas project, which, now I mention it, is in its final year of field recording, in case you didn't know!

With that in mind, there are loads of events happening the length and breadth of the country to ensure that we have covered as much ground as possible, and there is the added bonus that the Annual Summer Meeting this year is based in the glorious setting of Malham Tarn. Forthcoming field meetings for 2019 are listed on the BSBI website at https://bsbi.org/meetings-diary. It's also worth bearing in mind that many additional field events are being organised by local Flora Groups. You can find out more at https://bsbi.org/local-botany. Such groups are a really enjoyable way of getting to know your local area and meeting like-minded folk, who range from botanical gurus to complete beginners. Whatever you are up to, I hope you have an excellent spring and summer out in the field.

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COUNTRY ROUNDUPS – SCOTLAND

STEPHEN BUNGARD & JIM MCINTOSH

For the past five years we have been asking Scottish Recorders to draft a brief Annual Report summarising the most interesting and exciting news in their vice-counties. The reports are collated and published on the BSBI Scotland webpage and in the *Scottish Newsletter*. They make a fascinating account of botanical endeavour by BSBI recorders and members across Scotland. I recommend you read them. To whet your appetite, some of the most notable finds and achievements are reported here.

Philip Sansum reports the first find of *Tofieldia pusilla* (Scottish Asphodel) since 1877 near Drymen. There is also a great first ever record of *Cirsium dissectum* (Meadow Thistle) on Colonsay – the most northerly site for the species globally. In Angus, surveying grouse moors led to the discovery of several new populations of *Betula nana* (Dwarf Birch) in areas of blanket bog. A second site for the invasive aquatic *Lagarosiphon major* (Curly Waterweed) was found in Kirkcudbrightshire, the only previous record being from 1978.

Hybrid sedges feature in last year's records e.g. the Lagafater Lodge Recording Week resulted in a record for *Carex* x *turfosa* (*C. elata* x *C. nigra*) at Elrig Loch, the second record of this hybrid in Scotland. Luke Gaskell found *C.* x *involuta (C. rostrata* x *C. vesicaria)* at Muirhouselaw Tile Works and, needing confirmation this year, probable *C. x subgracilis* (*C. acuta* x C. *acutiformis)* was found by Liz Lavery growing in Kincardine village.

We reported in the Scottish Country Roundup in *BSBI News* 139 that bladderworts showed an unusual propensity to flower in 2018, perhaps triggered by the long dry spell in spring. More evidence of this is provided in the Annual Reports. It would seem that in June and July *Utricularia stygia* (Nordic Bladderwort), usually a very rare bloomer, flowered extensively all the way from Wigtownshire to Sutherland and remarkably, John Crossley also found *U. australis* (Bladderwort) flowering in Orkney.

More evidence has also come to light that *Hammarbya paludosa* (Bog Orchid) had a good flowering season with four populations found in Mid-Perthshire (in addition to those previously reported in Skye and Westerness). Other orchid finds of note included *Gymnadenia borealis* (Heath Fragrant-orchid), new in the south of Peeblesshire, *Goodyera repens* (Creeping Lady's-tresses) growing in the middle of the Flow Country, where it was discovered by Francis and Margaret Higgins and *Corallorhiza trifida* (Coralroot

Utricularia stygia flowering on Little Assynt. *Ian Strachan*

Orchid) which was found in Wigtownshire during the Lagafater Lodge Recording Week.

We also reported Duncan Donald's discovery of *Asplenium septentrionale* (Forked Spleenwort) in a new hectad. Other new fern records of interest in 2018 include Dumfries Botany Group's *Hymenophyllum tunbrigense* (Tunbridge Filmy-fern) near Langholm, after a gap of 56 years, and only the second vide-county record of *Cryptogramma crispa* (Parsley Fern) in the Lomonds by the Dundee Naturalists.

New county records of aliens are too numerous to list – well into double figures in several vice-counties and some are new to Scotland e.g. *Lotus dorycnium* (Badassia) near the River Almond at Newbridge and *Cynoglossum amabile* (Chinese Hound's-tongue) and *Gypsophila elegans* (Annual Baby's-breath) in Banffshire. *Epilobium pedunculare* (Rockery Willowherb) on Beinn Mhor, the highest point of South Uist, deserves a special mention. *Leycesteria formosa* (Himalayan Honeysuckle or Pheasant Berry) seems to be increasing rapidly on Skye and the adjacent Scottish mainland, including Westerness, where there has been a huge expansion beside Loch Linnhe.

One of the most under-recorded groups for Atlas 2020 is conifers so it is good to see the arrival of BSBI Conifer referee Matt Parratt boosting the recording of non-native trees in Roxburghshire e.g. *Juglans regia* (Walnut) and Selkirkshire e.g. *Wollemia nobilis* (Wollemi Pine).

Interestingly, as Atlas 2020 fieldwork comes to an end, more VC recorders are thinking about publishing their work. Floras were mentioned by Rod Corner (Selkirk & Roxburghshire), Angus Hannah (for Bute), Ian Green (Moray), Duncan Donald (West Ross), Paul Smith (Outer Hebrides) and Mick Crawley who has just updated his online flora for East Sutherland. There are also a couple of Checklists in draft (Perthshire & Westerness), one draft Rare Plant Register (Stirling) and one RPR update (East Perthshire).

Recorders and members have also been busy variously giving talks, organising field meetings, setting up and running local botany groups, organising workshops for beginners, for intermediates and on more advanced topics and also in taking part in wider biodiversity initiatives. Thanks are due to the Recorders who drafted the 2018 Annual Reports and to everyone who contributed to this amazing diversity of botanical work in Scotland.

Nearly 240,000 Scottish records were made in 2018 with no doubt a few more to come, representing another magnificent effort. But one final push is needed for Atlas 2020. Members can help by signing up with their local group (contact details on the BSBI Scotland page), by booking on excursions in the main field meeting programme, or by offering to help Recorders in remote vice-counties such as Shetland, Caithness, Sutherland, West Ross, East- and Westerness and Argyll – any of which could be a great place for a botanical holiday. Help is also needed in the more remote or mountainous bits of some more southerly vice-counties such as Dunbartonshire and Kirkcudbrightshire. As always, please contact the relevant recorder before setting out. Happy botanising!

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COUNTRY ROUNDUPS – WALES CYMRU

BARBARA BROWN

Records for Wales in 2019 commenced with the New Year Plant Hunt which attracted great participation across the country, including 871 records and several notable species such as *Erodium maritinum* (Sea Stork's-bill) in Usk (v.c.35) and a first record in Brecks (v.c.42) for *Polypogon viridis* (Water Bent).

John Crellin organised a trip to Stanner Rocks, Radnor (v.c.43), on 6th February, especially to see the *Gagea bohemica* (Early Star-of-Bethlehem). Andy Shaw had scouted the area prior to the trip and was able to lead the group directly to some flowering plants which were lit up by some early spring sunshine. He also showed us the tiny whorls of *Scleranthus perennis* (Perennial Knawel) leaves which were just apparent amongst the turf. A further trip to Stanner Rocks will take place on 1st June to see some of the site's early summer specialities. Booking is essential for trips to Stanner Rocks, and more information is available in the BSBI Yearbook and on the website about this.

Andy Jones led an enthusiastic Conifer training day at Plas Gorgerddan on Saturday 16th of February. Ten people came along, including new members and beginner botanists. Plas Gorgerddan has a good range of pines, firs and spruces which Andy introduced the group to, leading us through a wide range of features, including foliage sniffing! The deciduous *Metasequoia glyptostroboides* (Dawn Redwood) made a particular impression with its sculptural, almost buttressed trunk. This species was first described in China in 1941 and is endangered in the wild, though it has come to be quite well represented in arboretums.

Gagea bohemica in flower on 6th February at Stanner Rocks. *Barbara Brown*

Atlas recording continued well into the late autumn with notable records including *Atriplex* x *tashereaui* (Taschereau's Orache) at the Point of Ayr in September. This was a new county record for Flintshire and was found by Jonathan Shanklin. Richard Birch found the hybrid between *Carex otrubae* (False Fox-sedge) and *C. remota* (Remote Sedge), *C.* x

pseudoaxillaris, near the mouth of the Afon Lleiniog in October, and *Rorippa islandica* (Northern Yellow-cress) was reconfirmed for Anglesey in September, near Llyn Alaw on the track to Penworthy.

The Merionydd Naturalist Group held a recording day on 22nd November near Llan Ffestiniog, which I joined as one of my first field days since taking up the Wales Officer post. This day contributed to a post-2000 refind rate for the tetrad of 79%. Further east, additions to the Montgomeryshire rare plant register in the last quarter of 2018 included *Lycopodium clavatum* (Stag's-horn Clubmoss) near Craig y Llyn, and county firsts included *Atriplex glabriuscula* (Babington's Orache) and *Spergularia media* (Greater Sea-spurry) from the Dyfi junction.

Brecknock also ran field visits into November, with a successful outing to refind a location for *Equisetum hyemale* (Rough Horsetail) within walking distance from Hay-on-Wye.

An exciting find from Pembrokeshire missed from earlier 2018 round-ups was the identification of and confirmation of *Ophioglossum azoricum* (Small Adder's-tongue) on Skokholm, where it was found by Fiona Gomersall while re-recording permanent quadrats in May. It had been tentatively identified from neighbouring Skomer Island in the 1960s but never confirmed.

In Monmouthshire in September some neophytes in a maize field near Clytha were of interest. *Chenopodium hybridum* (Maple-leaved Goosefoot) was the first vice-county record away from two established garden populations since 2000. Other maize associates here were *Datura stramonium* (Thorn-apple), *Digitaria sanguinalis* (Hairy Finger-grass) and *Amaranthus hybridus* (Green Amaranth).

Glamorgan had a successful field day in Blaenrhondda on 15th September with the find of the day being *Epilobium lanceolatum* (Spear-leaved Willowherb). Their last field trip of the year was a hunt for *Arum italicum* ssp. *neglectum* (Italian Lords-and-ladies) on a Woodland Trust reserve near Dinas, Powys. This was scheduled for 1st December before the leaves of the commoner *A. maculatum* (Lords-and-ladies) appeared to confuse everyone; over 200 plants were found. Finally, to finish off where we began, Glamorgan also beat their own record for the New Year Plant Hunt, finding 94 species in flower in Cardiff Bay.

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COUNTRY ROUNDUPS – IRELAND

MARIA LONG

By the time you read this the 2019 Irish BSBI Conference will have taken place. This now-annual event has grown to be a staple in the conference calendar in Ireland and attracts a steady crowd. Each year we are delighted to welcome an approximately equal mix of BSBI vice-county recorders, BSBI members and newcomers. To see some photos, and many of the presentations, visit the Irish conference page: https://bsbi.org/irish-conference. This year we have a focus on aquatics, and also a contribution from the EPA on the state of the Irish environment, along with flash talks, a quiz, ID workshops and more. You can also see some conference chatter on Twitter: #IrishBSBIConference.

Thinking about the reach of the conference set me wondering about other events we hold or part-take in, and I decided to itemise those that I could remember from 2018. I had to estimate numbers, but tended to be cautious in my estimates. I was quite surprised with the number of events, number of participants, and the overall potential. See what you think!

For the purposes of this article I coined a new phrase: 'botanist days'. This is broadly equivalent to the phrase '(wo)man days' that might be used when planning surveys or other work.

1. **Field meetings.** In our core field meetings schedule in

Attendees at an aquatic plants workshop in Kilkenny in 2018. *Maria Long*

2018 we had ten trips, dipping our toes into 11 vice-counties, and held over a total of 21 days. Working with an average of eight attendees on any given day, this gives a total of 168 'botanist days' in the field.

2. **Recording weeks/weekends.** In 2018 our main long recording event was held in Mayo. It covered two vice-counties, took place over five days and there were 26 people in total. Taking an average of 18 per day, this gives 90 'botanist days'.
3. **Local group trips.** There are now six local groups in Ireland. Some have only a handful of outings, and others have monthly outings at least. Taking an average of five trips in a year, with an average of six attendees, gives 180 'botanist days'.
4. **Rough crew.** In 2018 the rough crew had nine outings held across 17 days. With an average of four attendees, this gives 68 'botanist days'.
5. **Conferences/indoor meetings.** We had three in 2018: conference in March; autumn meeting and AGM; vice-county recorder day on validation. With approximately 70, 25 and 45 attendees respectively, this gives another 140 'botanist days'.
6. **Training.** We held two two-day charophyte workshops, and jointly held two 'using ID keys' workshops and one aquatic plants workshop. There were 17, 18, 10, 10 and 25 people attending respectively, giving a total of 80 'botanist days'.
7. **Other.** We attended BallyNature day in Ballynure, Co. Antrim in February 2018 – an event for conservation organisations that gets 1,000+ visitors. I won't count all of those though!

So… adding up items one to six gives 726 'botanist days'. Not bad! And I'm not even 100% certain that I have included all the events!

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OBITUARIES

JOSEPH KENNETH BUTLER (1939–2017)

Ken Butler, as he was known to all, was one of the select number of BSBI members who have served as Vice-County Recorder for two areas, East Sutherland (v.c.107) and Caithness (v.c.109); he also recorded extensively in the eastern parts of West Sutherland (v.c.108).

Ken was born on 14th May 1939 in Warrington, the second child of Joseph and Elizabeth, but a month later the family moved to Crewe, where his father worked for Rolls Royce. They returned to Warrington six years later, where Ken later attended Boteler Grammar School. He was an attentive pupil who, out of school, enjoyed cricket and football, played clarinet and trumpet (latterly in the local brass band) and showed an early aptitude for electronics, building a two valve amplifier/record player.

After leaving school, he joined the Atomic Energy Authority at Dounreay in 1957 as an Assistant Experimental Officer, later acquiring an HNC at Robert Gordon's Technical College in Aberdeen and an Honours degree in Applied Physics at the City University in London. He enjoyed outdoor pursuits such as mountaineering and climbing (he was one of three who made the first climb of the Great Stack at Duncansby in 1958), and developed what became a life-long interest in higher plants.

Ken met Sheila Sutherland, who was also employed at Dounreay, in 1958, at a dance in Thurso Town Hall and they were married in 1960. Son Kevin was born in 1961 and daughter Karen in 1964. In 1983 they bought a ruin at Thurso East, later restored as Seaside Cottage, where they maintained complementary gardens. Here Sheila developed her skills as a flower arranger and painter and they entertained family (including, eventually, four grandchildren), friends and colleagues from all over the world.

Ken worked his way up at Dounreay to the level of Assistant Director, retiring in 2001. He was held in high regard by his colleagues, having earned a reputation for team working, measured calm and unflappability, with modesty balanced by underlying determination. More can be found on his distinguished career in a tribute by Bill Mowat on the Caithness website (http://community.caithness.org/article.php?id=5875). In his scarce spare time, he served for some 25 years as an Auxiliary Coastguard at Scrabster and was a popular speaker with local branches of the Scottish Women's Rural Institute and other organisations; he was also an accomplished cook.

Ken's interest in the natural world was encouraged by membership, in his teens, of the Warrington Field Club. He started seriously recording higher plants in the late 1960s and developed his skills and interests in the 1970s, using a customised computer programme.

He served as Vice-County Recorder for East Sutherland (v.c.107) 1980–1996, much of the time in partnership with Morven Murray of Rogart, after they had met at a Golspie field meeting in 1983. The BSBI database (DDb) has some 8,600 records from East Sutherland made or compiled by him. In 1996 he took over from Neil Batchelor as Vice-County Recorder for Caithness (v.c.109), and the DDb has some 13,800 records from that area made or compiled by him. In all, he recorded Caithness for over 40 years and, in recognition of this exceptional service, the BSBI awarded him, on his retirement in 2014, the title of Recorder Emeritus. Sheila and he also made many recording trips west along the north coast of West Sutherland (v.c.108) over the years and the DDb has some 3,800 records of theirs from that area.

It is difficult to summarise Ken's huge contribution to knowledge of the plant-life of the North Highlands, the more so since he did not publish a huge amount in hard copy (but see below). There are brief notes in *Watsonia* on East Sutherland plants (1984a, 1984b), a paper with John Trist on *Puccinellia distans* ssp. *borealis* (1995), one on *Saxifraga hirculus* (2004) and another with Chris Page and Heather McHaffie on a new *Equisetum* hybrid (2007). He also contributed a chapter, with Morven Murray and Viv Halcrow, to the *Wildlife of Rogart* (2007).

The following records illustrate the scope of his many discoveries in the three vice-counties he botanised: *Polypodium* × *mantoniae* (Hybrid Polypody, Latheron, 1984) *Ranunculus flammula* ssp. *minimus* (Lesser Spearwort, Holborn Hill, 2001); *Stellaria palustris* (Marsh

Stitchwort, west of Halkirk, 2009) and *Scutellaria minor* (Lesser Skullcap, Melvich, 2013). He monitored the Caithness populations of two rare grasses *Calamagrostis scotica* (Scottish Small-reed) and *C. stricta* (Narrow Small-reed), the rare sedge *Carex recta* (Estuarine Sedge) and also *Juniperus communis* (Juniper) across the county.

In 2008, he was working on an ambitious Rare Plant Register for Caithness, and had at that time completed the entries for first 100 species. Although illness intervened, he was, happily, able to complete this work, which was published online by the BSBI in 2015, under the title *The Rare and Scarce Plants of Caithness*. It runs to 185 pages and encapsulates most of what he had learned about the botany of the county.

The first 16 pages provide a detailed introduction to Geology and Soils, Climate, History of the Land, Vegetation and Places. The last section is what he describes as 'my personal review' of the main sites of botanical interest, in four major habitat categories, with monad grid references and lists of important species. Detailed accounts for some 159 taxa follow, in systematic order, with historical and current records and much other information. Included are some species now thought to be extinct in the county, such as *Oxytropis halleri* (Purple Oxytropis), happily still locally abundant further west on the north coast of Sutherland.

A couple of years previously Ken had completed a complementary catalogue on *The axiophytes and habitats in Caithness*, published on-line by the BSBI in 2013. With these two works and records from the DDb, future generations of botanists in Caithness have all the information they need to take his work forward.

Ken deployed widely in Caithness the botanical expertise and knowledge of wildlife habitats derived from his fieldwork. He was a founder member of the Caithness Field Club, contributed extensively to its online *Bulletin* from 1984 onwards and was later its Editor. Examples of his output are notes on *The vegetation of the Isle of Stroma* (1979), *Biological Recording in Caithness* (2002) and a *Plants in Caithness Index*. He also represented the Club on the working group for the *Caithness Biodiversity Action Plan* (2003) and made a major contribution to the habitat descriptions and recommendations contained in that document.

As one of the few Plantlife members in Caithness, Ken was an obvious candidate for the local management

Ken Butler.

group set up in 1999 to oversee the development of that organisation's peatland reserve at Munsary. 'Ken contributed hugely to our work at Munsary,' recollects Michael Scott, who chairs the management group. 'Not only did he bring huge botanical expertise, but also lots of valuable local contacts. He was full of ideas for the future of the reserve, but also contributed expertise from his time as Assistant Director at Dounreay; so, for example, he ensured that we had the "Rolls-Royce" of biannual risk assessment systems for the reserve.'

'Ken was particularly excited when a survey team from the University of East London discovered *Saxifraga hirculus* (Marsh Saxifrage) in the reserve in 2002. The following year, he meticulously counted more than 1,000 flowering shoots of the plant and set up transects for ongoing monitoring of the colony. From then on, he made regular return visits to check on the health of the colony (which appears to be thriving), until his own ill health finally prevented him making the long tramp across the peatland. Today his work is continued by local volunteers, inspired and trained by Ken. For

his help at the reserve, Ken received the Plantlife Field Volunteer of the Year award in 2012.'

He was also a prime mover in the establishment of the Coronation Meadow at Dunnet, which was opened by HRH Prince Charles in August 2013.

He was a founder member of the Caithness Biodiversity Group. Mary Legg, who worked with him, describes him as being 'a major player in the Group' and 'very thorough', having 'a wonderful knowledge of the county' and being 'good at painting the bigger picture'. She also relates how he embraced technology, being the first person she saw armed with a lap-top at a meeting. She remembers 'meeting him in the Dunnet Forest with his grandchildren, who were young at the time … playing a navigational game using GPS not long after they became available.' One of his major contributions to the work of the Group, in 2010, was the computerised mapping of biodiversity 'hot spots' in Caithness, overlaying distributional data for habitats of interest and seven plant and animal groups.

However, his crowning achievement in fostering and encouraging interest in the natural world was his book on the *Wild Flowers of the North Highlands of Scotland*, published by Birlinn in 2009. It is illustrated with a magnificent series of photographs by Ken Crossan, and has a foreword by HRH Prince Charles. It covers not only Caithness, but also the whole of Sutherland and parts of Easter Ross. It has a really useful chapter on the geographical, geological, climatic and historical context of this large area, followed by ones on five categories of habitat, the sea coast, peatlands, woodlands, grasslands and uplands, waysides and farmland. These habitat chapters are lavishly illustrated with photographs of landscapes, vegetation, and both characteristic and unusual species. There are notes on the identification of some 'difficult' taxa, such as *Carex recta* (Estuarine Sedge), *C. aquatilis* (Water Sedge) and their hybrid, but the book does not neglect the commonest wild flowers. Ken's text is a very happy mix of the general and the specific, based on his lifetime's experience and love of the area and its flowers. It was reprinted with some minor revisions in 2013 and it is to be hoped that it will be kept in print, since it is without equal as an introduction to the flora of the north of Scotland.

Ken made a remarkable recovery from the debilitating effects of a stroke in 2011, but was diagnosed some three years later with cancer and died at Thurso on 5th October 2017.

This attempt to summarise Ken's botanical achievements, just part of a life so richly lived, is at best fragmentary. However, those interested in the wildlife of Caithness and its conservation will be for ever grateful that he was able, in his 'retirement', to put so much of the fruits of his experience into the public domain.

It is fitting to conclude with a personal tribute from his friend and co-worker in East Sutherland, Morven Murray. She says 'Ken taught me all the field botany I know and all I have forgotten. He was patient, kind, never the least bit ruffled and had lots of helpful hints – who could ever forget Molly-with-the-hairy-knees [*Holcus mollis*]. Amongst other trips, I remember a very, very wet walk through a wood near Scourie for a reported *Calypso* (we didn't find it) and an August jaunt to Glenfinnan hunting *Diapensia*. We found that, in spite of driving sleet and being on top of the wrong part of the hill to begin with … a kind fellow with a fishing rod put us right. Ken is a huge loss to us all, both for what he knew and what he was.'

I would like to thank members of Ken's family, friends, and Andy Amphlett and Jim McIntosh of the BSBI, who have helped me to put together these notes; any mistakes or omissions are mine alone.

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Ian M. Evans

GILLIAN MARGARET GENT (1927–2018)

I first met Gill when a mutual friend suggested that I get in touch with her. I had just finished my evening class studies in chemistry, and I wanted to pick up my botanical interests again. Unannounced I knocked on her door one evening, and I was welcomed in. We talked botany non-stop for the next three hours. Gill told me about local societies which I ought to join, and we exchanged information on many wildlife sites in Northants and farther afield. She was very helpful to a novice botanist, and very friendly. It did not take long to realise that this was her abiding nature. Many mutual friends have borne testament to this aspect of Gill's nature.

Born on 7th July 1927, Gill was the elder of the two daughters of Mr & Mrs Ekins who lived in Croyland Road, Wellingborough, Northants. Her father worked in the boot and shoe trade. She lived in Wellingborough for all of her life. She attended Wellingborough High School and developed her interest in natural history in general, and wild flowers in particular, while she was still at school. She met up with Peter Gent during the Second World War. Peter admired some of her paintings and drawings of flowers etc., and while he was on active service they exchanged letters about them. The family still treasure much of Gill's artwork.

Gill did her bit for the war effort as a land girl. She and Peter got engaged officially on VE day with a family tea party in the bluebell woods in Odell, Bedfordshire. They married in May 1948. They had their reception the night before so that straight after the ceremony they could catch a train to Scotland, complete with their bicycles, so that they could get out into the countryside and in amongst the natural history. Their entire married life was spent at their home in Irthlingborough Road. Over the next eight years Gill gave birth to Andrew, Rosemary, Caroline and Nicholas. The family spent most of their holidays camping in the New Forest and in Wales. They were keen apiculturists, supplementing the family's diets and finances with the honey they produced. One unusual family practice was eschewing 'The Box'. Gill only got a television set late in life. Gill and Peter's shared interest in wildlife lasted throughout their years together until Peter died in August 1998. They both nurtured this interest in their four children, grandchildren and great-grandchildren. And in anyone else they met!

Gill Gent in woods near Pancrasweek, Devon, on 31st May 2013, the last time that she was able to walk through a bluebell wood. *Rosie Beat (née Gent).*

Gill joined the BSBI in 1947, and remained in membership to the end; over 71 years. Her botanical expertise grew so that, in 1965, the BSBI appointed her as Vice-County Recorder for Northants, v.c.32. She held this post for 46 years, sharing the last few years with Rob Wilson who then took over the post completely. During this time she, of course, reported county news of plants to the BSBI journals, and kept voucher specimens of many of them.

When the Northamptonshire Naturalists' Trust was formed in 1963, Gill and Peter were founder members. They were active supporters for the rest of their lives, serving on the Trust's Council, the Conservation and Research Committee, leading walks and giving talks, and joining in the mediaeval fairs and many other fund-raising activities. Gill and Peter were both also members of the Northamptonshire Natural History Society, and each served a term as President. They were

also members of the Kettering and District Natural History Society. They each gave numerous talks to both societies. These were not confined to natural history, as they also shared interests in archaeology, and were both active members of the Wellingborough Archaeology Society. Gill was also a member of the Wildflower Society for many years. In her early life, Gill found the time and skill to play the violin in the Wellingborough Orchestra.

Gill was instrumental in leading the Kettering and District Natural History Society in producing *The Flora of Northamptonshire and the Soke of Peterborough* (1995), with Rob Wilson and numerous other members. They went on to produce a much extended second edition in 2012. She also published numerous articles on botanical topics with various other societies.

Gill led several wildlife holidays in the West Country in the 1970s, often with Peter; and also in Turkey and the Mediterranean for Gullivers Travels. These were not the only times they botanised in foreign climes; they also enjoyed trips through the desert in Kuwait, while visiting their daughter Caroline and her family. Gill also taught Botany at several Wildflower Weekend Courses at Knuston Hall Education Centre.

Gill's mobility decreased with age, but her mind remained sharp almost to the end, when she eventually succumbed to the passing years, dying at 91 years old on 15th October 2018. Her funeral service was a non-religious ceremony held in the new Nene Valley Crematorium in Wellingborough. On leaving we were invited to take some packets of wildflower seeds to spread around (in places where they would not confuse the issue for future recorders!). Then we gathered again at the nearby Miller public house to share memories of Gill and to stoke up for the journey home. As we came out from Gill's funeral service we were looking out over a part of the Nene Valley where Gill had done much botanical recording throughout her life. We were joined by a Red Kite which was soaring low around those who were celebrating her life for some time. Gill would have loved that.

Seán Karley

RODERICK CARTER STERN (1928–2019)

With the publication of the *Sussex Plant Atlas* in 1980 the purpose of the Sussex Flora Society (SFS) had been fulfilled, and there were many members who assumed that disbandment of that body would logically follow. Others thought differently, among them Rod Stern. He had met the leading light of the society, Mary Briggs, at a BSBI conference, The British Oak, at the University of Sussex and they were both firmly of the opinion that there was more recording work to do and more enjoyment to be had. A Steering Committee was formed with others keen to continue the co-ordinated botanical activity in the county and the SFS was reincarnated as the Sussex Botanical Recording Society (SBRS). With Mary appointed President and Rod re-elected annually to the Chair from 1985, until stepping down in 2012, the SBRS flourished under their inspiring direction and went on to become recognised as the lead botanical body in the county. During this time the SBRS produced two major publications, *Sussex Plant Atlas: Selected Supplement* (1990) and *The Sussex Rare Plant Register of Scarce and Threatened Vascular plants, Charophytes, Bryophytes and Lichens* (2001); and it was under the auspices of Rod and Mary that concerted work began in 2004 on the *Flora of Sussex* (2018).

Roderick Carter Stern was born to Cyril Edmund and Vera Frances Stern on 21st March 1928 in Farnborough, Kent. Cyril was a company director with sufficient income to maintain a large house in leafy Wimbledon and Rod was educated privately, at Rokeby and Ashdown House, King's College School, Wimbledon (KCS) and Radley College, before securing admission to Oxford. His mother encouraged her son to take an interest in natural history on walks across Wimbledon Common and during stays on the Isle of Wight – where their two maids and the silver canteen of cutlery provided some of the necessary Stern household comforts. A holiday in 1938 brought the enchantment of Braunton Burrows, and a war-time break from the bombing snatched in Killin, Perth, in 1943 presented the young Rod with two memorable plants, *Parnassia palustris* (Grass-of-Parnassus) and *Saxifraga aizoides* (Yellow Saxifrage). The KCS biology master 'Bolly' Barker had provided additional encouragement to

Rod Stern (centre) at a *Hieracium* meeting on Portland in the mid 1980s, with Jim Bevan (left) and Howard Matcham (right).

study biology and, moving on to Radley, Rod found that the sciences were indeed his forte; and in his last years he fondly recalled exeats spent exploring the flora of the countryside around Radley by bicycle in the company of like-minded friends. Going up to Worcester College, he read Forestry (1946–50) and his career path was settled.

There were two years of National Service to be undertaken and during his posting to the eastern end of the Mediterranean, Rod took the opportunity to add exotic specimens to his herbarium and birds to the lifetime list he had begun at the age of 14. At the end of his Service, Rod settled into work with the Forestry Commission in Wales, moving to the London headquarters in 1968. Key papers on *Acer pseudoplatanus* (Sycamore) – a species generally unsung in the literature of British Forestry – seem to have been responsible, at least in part, for his election to Fellow of the Institute of Chartered Foresters in 1982. It is fair to comment that, although Rod was entirely successful in his various administrative roles, his natural habitat was woodland and towards the end of his career he was able to combine his professional interest in the growing of timber trees with his private love of the natural world as Conservation Advisor for East England.

When he was transferred to London, Rod soon joined both the London Natural History Society and the Surrey Flora Committee. In some shock after the collapse of his marriage and with two young sons to bring up, he was taken in hand by Joyce Smith, Jack Gardiner and Ted Wallace who felt that bryophytes would provide a distraction and source of solace. Thus Rod began to form the important bryophyte herbarium which is now in the care of the Natural

History Museum, London. Among a number of his publications in bryology were *Atlas of Sussex Mosses, Liverworts and Lichens* (1991), 'A bryophyte Flora of South Wiltshire' in *Journal of Bryology* (2001) and *An Atlas of South Hampshire Bryophytes* (2010: his last work). The Sussex work was produced by Rod in conjunction with Francis Rose, Brian Coppins and Howard Matcham. In Howard Matcham we have a prime example of Rod's willingness to foster and teach others: a particularly apt pupil, he has since gone on to become a bryologist and microscopist of international standing. Rod was a member of the British Bryological Society until his death and had served as Conservation Officer for 12 years and Member of Council for 14 years.

Rod was in fact very much an old-fashioned all-round naturalist and had a superb ear for birdsong. Equally, his eminence in bryology should not lead one to overlook his detailed knowledge of the vascular flora of the British Isles, and in a lifetime of botany he had seen a very large percentage of it. In his botanical studies he was always ready for a challenge, something which is well illustrated by the special interest which he took in hawkweeds. His work on *Hieracium* and his herbarium specimens have proved invaluable to Mike Shaw who is currently preparing a study of the genus in south-east England.

We have seen that Rod was generous with his input into the running of both the SBRS and the BBS. He had a genuine sense of service as well as quiet but dynamic enthusiasm. The Sussex Trust for Nature Conservation, now the Sussex Wildlife Trust, also benefited from his time: he was elected to the Council, served on the Scientific Committee and then the Conservation Committee. His guidance in the early stages of the setting up of the Sussex Biodiversity Record Centre is still valued and protocols and systems which he helped develop are still in use today.

There was also Plantlife. Having been a member of the Conservation Association of Botanical Societies – as Chairman in 1989–90 – he was an enthusiastic Founder Member of Plantlife and was elected to the Board from 1992 until 1995. In 1999 he was presented with a Plantlife Award for 'Outstanding Contribution to Plant Conservation' by the President, David Bellamy. Latterly, a photograph of the occasion hung on the wall of Rod's room in his nursing home in Fishbourne where he spent his last five or so years. Here he kept up to date with the worlds of forestry, bryophytes and vascular plants through the relevant journals, and enjoyed hearing first-hand about the activities of the societies dear to his heart, as well as reminiscing about field trips, meetings and figures of the past. Among a number of botanical visitors Howard Matcham was the most regular, along with several friends from school days. Rod died peacefully on 4th January 2019.

Rod's contribution to botany and conservation has been considerable. His driving interest in these areas was innate but it was his second marriage, to Vanessa, in 1979, which arguably enabled him to achieve so much, for Vanessa's efficiency as willing in-house PA was a great advantage to Rod and to the bodies which he served. Together they enjoyed botanising at home and abroad, as far afield as Australia and the USA. Rod was by nature thoughtful and there were often long silences; rather than give a quick off-the-cuff answer, typically he would prefer to weigh up pros and cons, to consider at length. One could also observe that Rod enjoyed company without feeling any urgency about initiating conversation – something which can be a positive recommendation in a companion in the field. On the other hand, he asserted his presence altogether more forcefully on the field of sport: he enjoyed rugby and cricket at school, gained cups for athletics as a young man, sailed, was a more than competent golfer (best handicap 10), played squash and competed fiercely on the tennis court well into his retirement. But perhaps it was in swimming more than in any other physical activity that Rod took delight, and whenever a field meeting was within striking distance of the sea or fresh water his regular companions became accustomed to noticing over the lunch break Rod quietly rejoining the group with hair tousled and damp, and a beatific smile on his face.

N.J.H. Sturt

GEOFFREY THOMAS DUERDEN WILMORE (1941–2018)

Geoffrey Wilmore died on 3rd November 2018. He was a husband, father, botanist, ecologist, cricket lover and Yorkshireman.

Geoffrey was BSBI Vice-County Recorder for South-west Yorkshire (v.c.63) between 1993 and 2015 and in that time he published two County Floras. He will be remembered for his enthusiasm and his love of the company of people wanting to learn more about plants. Geoffrey's professional life and his role as Vice-County Recorder both involved training new generations of field ecologists and botanists. He always encouraged and valued the recording work of volunteers in providing the data required to ensure that some of the best botanical sites in South-west Yorkshire are now afforded protection. The highlight of his career was, for him, election to Fellowship of the Linnean Society in 1996.

Geoffrey's route into the ecological profession was not straightforward. He was born on 2nd January 1941 in the old Keighley Victoria Hospital and lived all his life in the Keighley area, apart from a brief period in Bradford in the 1980s. His interest in natural history was sparked by the gift of two books as birthday presents at the age of ten. One was T.A. Coward's pocket-sized *Birds of the British Isles* and the other was *Wandering with Nomad* by the naturalist and BBC Home Service radio broadcaster Norman Ellison, alongside whom Geoffrey's father had fought at Ypres Salient in the First World War. Geoffrey's first interest was in birds. He would take birdwatching walks along the Leeds-Liverpool Canal, the River Aire, and into the local woodlands, but he did not join any local society. His interest in wildlife continued intermittently throughout his school years. He enjoyed studying literature at school and developed a love of poetry which stayed with him throughout his life, and which he passed on to his own children and grandchildren.

At the age of 14 Geoffrey left Bradford Grammar School to work in the family business 'Wimsol', manufacturing bleaches and detergents and later, after the business was bought by Jeyes Group in the 1960s, as a junior executive in Jeyes. During this time, extended periods at night school and on day release gaining business qualifications (studying for an Ordinary National Certificate in Business Studies from 1963 to 1965) left little time for him to develop his natural history interests. Geoffrey stayed with Jeyes for four years until he realised (in his own words) that he was 'a square peg in a round hole', and unsuited to big business. So he left Jeyes to become a mature student reading Geography at Leeds University in 1970. He had a young family to support at this time and this was a challenging decision, but one that he did not regret.

He recalled his interview with the Admissions Tutor who asked why he wanted to study Geography. Despite having only studied the subject for one year as an eleven year old, his answer was 'Because I like maps!' The Admissions Tutor was apparently not impressed by this answer (or his lack of even an O level or A level in Geography) but he was able to demonstrate his academic credentials with his Certificate in Business Management. He was probably the only freshman in that year at Leeds to be studying Geography virtually from scratch, with no prior exam qualifications, and he was easily the oldest member of the 70-strong intake. His interest was particularly fired by a course entitled 'Vegetation and Soils' – under Dr Robert Eyre – and this was a powerful stimulus in his decision to try and eventually work in the field of ecology.

Having developed a good rapport with staff at Cliffe Castle Museum in Keighley whilst researching his final year thesis 'The urban development and growth of Keighley since the Enclosure Award in 1780', Geoffrey left University in July 1973 to work at the Museum on a voluntary basis whilst looking for permanent employment. This work involved learning how to put on displays effectively, writing captions and labels, and cataloguing all the books and other literature in the Cliffe Castle library. Eventually, Geoffrey became a 'lowly member of staff' as a temporary Museum Assistant.

Local Government reorganisation in the Spring of 1974 created the new Bradford Metropolitan District. A Biological Recording and Environmental facility and Database covering this area, based at Cliffe Castle Museum, came into being on 1st April that year. This facility became known as the Biological Data Bank, one of the very first such units in local government in England. Geoffrey became the unofficial Assistant Ecologist to Jack Lavin, the unit's first Field Officer,

Geoffrey Wilmore at home. On the table there is an OS 1: 50 000 map, with the monads in South Yorkshire from which more than 100 species have been recorded highlighted in pink.

carrying out the first surveys. He had been in the right place, fortuitously, at the right time. The first major task was a habitat survey of all land parcels in Bradford Metropolitan District, applying the broad Phase 1 Survey technique using English Nature's colour coded system on 1: 10 560 Ordnance Survey maps. Geoffrey recalled that 'we went through phenomenal amounts of coloured pencils'. Surveying on a broad-brush scale was far more efficiently carried out from suitable vantage points, thus high points of the moors were excellent in viewing the surrounding landscape. The views were 'Fantastic. You could see half the world from up there – or more correctly, almost all of a 6 inch map!'

Very soon after the Biological Data Bank came into being, a state-of-the-art computer was delivered, 'occupying around 18 feet of the 20 foot length of the office wall, and jutting out probably three or four feet into the room. This was truly a behemoth of 1970s technology! We all stared aghast at the sheer size and apparent complexity of the contraption.'

The role of the Unit expanded to cover all five districts of West Yorkshire and it became quickly apparent that reinforcements would be required to assist with future Phase 1 Surveys. Geoffrey's role evolved to being virtually wholly involved with fieldwork and ecological evaluation and it fell to him to take the young ecological appointees out and train them in the basic aspects of plant survey and ecological principles, and, importantly, to ensure so far as possible that they all followed and adhered to a prescribed and standardised survey technique – that, as Geoffrey often said, we were all singing from the same hymn sheet. His teaching was no less effective for the stammer which affected him throughout his life. He recalled taking one particular trainee out on Haworth Moor in November 1990, an unlikely and unpropitious time of year for field work. This was 'to show him the most relentless and unforgiving habitat assemblages possible – to really indoctrinate him into the exigencies of extreme ecological survey. We tramped through mire and bog, heathland and tussocky *Molinia* sward (and it rained cats-and-dogs into the bargain), but none of this fazed him in the least.' That trainee took over as Head of the Unit until the Service was closed down later in the 1990s.

Many areas identified in the Phase 1 Survey work as being of good quality and requiring more detailed survey and evaluation eventually became Local Wildlife Sites and several were subsequently recommended by the Unit to English Nature as potential SSSIs, which, in due course, they became.

During the 1970s and 1980s, the Biological Data Bank (later known as The West Yorkshire Ecological Advisory Service) formed valuable associations with many actively recording botanists who were instrumental in adding to the database. In the mid-1980s, when the plant database had swelled to a considerable extent, Jack Lavin and Geoffrey took the decision to produce a Flora or Plant Atlas of West Yorkshire. *The West Yorkshire Plant Atlas* was produced eventually by Bradford Council in 1994. This contained references to over 1,400 species, with numerous distribution maps at the 1km square level.

Dr John Rodwell of Lancaster University visited Keighley on several occasions to discuss the input of suitably structured vegetational data into the National Vegetation Classification (NVC) system. Over several years, Geoffrey and his team made important contributions in respect of woodland, grassland

and wetland communities, in particular. Geoffrey devised and led numerous training courses in plant identification and NVC survey techniques.

Geoffrey remained for over 20 years at Cliffe Castle. Undertaking field survey can sometimes present the surveyor with difficult, challenging, frightening or simply humorous situations and encounters. In Geoffrey's memoirs, *Flowers of Spring to Leaves of Autumn*, published serially in the Annual review of the Bradford Botany Group, a couple of incidents stand out: 'happily walking along the towpath and writing species information on the clipboard, when, not looking, stepping into thin air and descending feet first into the muddy waters of the Leeds-Liverpool Canal', or, on the towpath of the same canal, diving to the ground as a huge swarm of bees passed noisily overhead.

In 1994, soon after Geoffrey became BSBI Recorder for v.c.63, he took over as Yorkshire Naturalists' Union (YNU) Alien Plant Recorder. He had developed a personal interest in the 'shoddy weeds' common at one time in a particular district of West Yorkshire. Shoddy (a mixture of shredded wool waste) from all over Europe, or further afield, was spread onto vegetable crop fields as a fertiliser. Strange and exotic plants were brought in as seed with the imported waste.

Following voluntary redundancy caused by staff cutbacks in Local Government in 1995, Geoffrey began a new phase of his career working as a freelance ecological consultant. He also sat on several local government Local Biodiversity and Nature Conservation Steering Groups. Geoffrey was President of the YNU, 2009–2010 (Wilmore 2010) and gave his Presidential Address on the Alien Plants – An Ecological Perspective on 20th November 2010 at Bingley (Wilmore 2011).

Consultancy work included Local Wildlife Site Surveys for local councils and surveys for various government agencies, including English Nature (now Natural England). Jeff Lunn was Regional Manager for the Yorkshire and Humber Region of English Nature; he and John Rodwell collaborated with Geoffrey in the production of *The South Yorkshire Plant Atlas*, published in 2011. This was launched at a gathering in Doncaster Museum, with a huge attendance of local naturalists. The initial stages of this County Flora project had not run smoothly and Geoffrey personally re-launched it with the editorial contributors, assembled a reliable group of field recorders and arranged regular field meetings to target under-recorded areas. The resulting *Atlas* was widely praised in botanical circles. The sustained organisation, dedication and drive required to produce two County Floras in the space of 17 years is testimony to Geoffrey's perseverance and leadership skills.

In 2002, Geoffrey began to produce annual lists of additions to the British and Irish flora, incorporating many casual aliens which were not covered by Clement & Foster's *Alien plants of the British Isles* (1994). The last of these lists, the 17th list, was completed in January 2018. He also produced periodical master lists, and in his last years he devised a plan to produce an updated checklist of our flora. Despite the diagnosis of pulmonary fibrosis in May 2018 and the need for supplementary oxygen, he kept busy with his alphabetical checklist. He knew that it was a mammoth undertaking but it was something he thought was worthwhile – and it was a task he could do without much physical effort. The work was still underway at the time of his death. It is his family's wish that someone will take over Geoffrey's work and bring it to fruition.

Geoffrey had been the Chairman of Bradford Botany Group and was Recorder for the Group for 30 years, retiring in 2017. He first joined the Group in 1987, shortly after he had given a talk about his work including his Plant Atlas Project for West Yorkshire. Members of the group who knew Geoffrey for many years describe him as kind and helpful (especially to complete beginners), sensitive, understanding and respectful, but with ability to be (legitimately) furious when circumstances required a stern response. He was a very good teacher, always supportive and a good source of sound advice. His energy and enthusiasm for the subject have been described as both stimulating and infectious. His organisational skills and attention to detail were some of his admired qualities, together with his reliability; if he said he would do something, he did it, and in double quick time. Even in the field, his handwriting was immaculate. Geoffrey has also been described as stubborn! When weeks of work on his Plant Checklist were lost owing to a computer glitch he just knuckled down to rebuild it from scratch. This didn't happen just once; he lost his database through computer glitches on three occasions and his response was always the same. He was a man with ambition,

but not for himself (he was somewhat self-effacing), but for his interest, his love and his main passion – botany! One of his other passions was cricket. Lunchtimes on field meetings were often spent with Geoffrey deep in conversation with fellow cricket-loving botanists about the latest England cricket team debacle.

Geoffrey was a 'larger than life' character, both in physical and mental stature (he was over 6ft 4in tall). Many who knew Geoffrey comment on his sense of humour and also on his love of 'stirring things up'. He is reported to have said many times that he had worked hard at being an eccentric. He had a sweatshirt with the words 'This is a difficult group', the words he often used when on field trips when someone asked him to identify a particular species. He said, jokingly, that it could refer to Bradford Botany Group also! One of Geoffrey's favourite anecdotes was of once being asked to say grace in a monastery. He found himself as the guest at the top table in a room full of monks. Imagining that everything here was conducted in Latin and the only Latin he claimed he knew was plant names; he stood up, reeled off a few Latin plant names, and ending with amen, he sat down, at which point everyone started eating.

It is difficult to imagine a future without Geoffrey's huge presence somewhere in the background. He will be regarded by future generations of naturalists as a giant of Yorkshire botany.

I am grateful to Dr Colin Howes and to members of the Bradford Botany Group for their help in compiling this obituary.

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Louise Hill

ROBERT WILSON (1943–2018)

With the sad death of Rob Wilson, Northamptonshire has not only lost its Vice-County Recorder but also a talented artist and photographer who was instrumental, with Gill Gent, in producing the first flora of the county since the work of G.C. Druce.

Robert (Rob) Wilson was born in Kettering on 22nd March 1943 and went to Kettering Grammar School and Nene College, Northampton. He trained as an architect, but his career developed in the area of graphic design.

Rob always had a strong interest in wild flowers, but before he fully developed this, his area of research was canals, narrowboats and, most of all, the canal people. He made many lasting friendships with the people who lived and worked along the canals, and was the author of several books. He also enjoyed creating activities for the children. His own boat was called Speedwell, an appropriate name for a botanist! He was also keen on the sport of motor-racing.

As Rob's botanical interests began to blossom, he joined a class on wild flowers given by Seán Karley, and through this he met Gill Gent. Gill encouraged Rob to persevere with his botanical studies and supported him when he joined her as joint Vice-County Recorder for Northamptonshire in 2004. He became the sole Recorder when Gill retired from the post in 2013.

Rob was a long-time member and President of the Kettering and District Natural History Society (the 'Nats'), and collaborated with Gill Gent in the production in 1995 of *The Flora of Northamptonshire and the Soke of Peterborough*, which together make up v.c.32. This was the first Flora to have been attempted since George Claridge Druce's *The Flora of Northamptonshire* in 1930, and the gathering of records by Rob, Gill and other Nats members took place over nearly 25 years. I think he must have enjoyed this, because 2012 saw the publication of a new edition of the Flora. It was originally intended as an update of the 1995 Flora, but grew into a whole new project. Records from the BSBI *New Atlas* (2002) were included, and volunteers collected new records over five years. I count myself

privileged to have been included among the volunteers as a very inexperienced botanist!

Close botanical friends of Rob included Jeff Best and Cliff Christie, as well as Gill Gent and her husband Peter. I first met Rob in 2010, and his gentle encouragement and patience were invaluable as I developed my own passion for plants. He organised meetings for botanists throughout Northamptonshire, and produced an excellent newsletter called *Wild Thyme*. In recent years this updated us all on progress with recording for the 2020 BSBI Atlas, and he was very active in recording for this until his illness. He made a number of first records for the county and his contributions to the BSBI Database go back to 1987 – some 35,000 records!

He was a man of many passions, including his wife of 40 years, Anna, and together they gave a home to a succession of much-loved rescue dogs. One of Rob's pleasures was to go on holiday, usually in May. He loved mountains and alpine regions in France, Italy, Crete and Northern Cyprus, and got to know several areas well – he acted as leader for some specialist group holidays. Rob's artistic side was given expression in the Christmas cards he designed and made for his friends and family. His appreciation of music was mainly in the genre of modern jazz and he loved the work of John Coltrane. He always supported Anna, taking an interest in her own pursuits such as her Shakespeare group, singing and the John Clare Society. He began keeping journals in 1986, and the numerous volumes record holidays and botanical adventures in meticulous detail, illustrated with his drawings and photographs.

Rob sadly passed away at home on 9th May 2018 after a battle with cancer. Rob will be greatly missed in Northamptonshire, and I hope that Brian Laney and I can live up to his splendid example as Recorders for Northamptonshire.

Alyson Freeman

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 all their families and friends. An obituary of Rod Stern is included in this issue and we hope to publish an obituary of Bill Thompson in the future.

Ms C. Date of Baltonsborough, Somerset, a member for four years.

Professor G. Dunn of Sedbergh, Cumbria, a member for four years.

Dr S. M. Eden of Dorchester, a member for 59 years.

Mrs D. Hardy of Newcastle-upon-Tyne, a member for 42 years.

Mr D.A.J. Hunford of Benfleet, Essex, a member for 60 years.

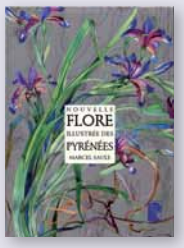
Mr R.C. Stern of Chichester, a member between 1974 and 2014.

Mr W.A. Thompson of York, a member for 39 years.

Mr B. Wrightson of Llanfairpwllgwyngyll, Anglesey, a member for 13 years.

Chris D. Preston, Obituaries Editor
19 Green's Road, Cambridge CB4 3EF
cdpr@ceh.ac.uk
assisted by the Membership Secretary, Gwynn Ellis

REVIEWS



Nouvelle Flore Illustrée des Pyrenées

Marcel Saule
Éditions du Pin à Crochets, 2018
1,380pp., with 521pp. of line-drawings covering all the species, plus 16 full-page plant portraits in watercolour. €95 pbk
ISBN 2-911715-53-5

Marcel Saule's illustrated Flora of the Pyrenees is very much a manifestation of the philosophy of the author, now in his 90th year; his influence and his love of the Pyrenees shine through on nearly every page. He wrote all of the keys and descriptions, and executed all of the line-drawings. In addition, there are 16 full-page (A4) water-colours painted by Hélène Saule-Sorbé (the author's daughter), a selection of colourful plants ranging from commoners like *Digitalis purpurea* to endemics such as *Ramonda myconi*.

A book like this will either be considered, as by me, a breath of fresh air, or an annoying self-indulgence that does not conform to normal parameters. In the former view, the unique and almost quirky features will be welcomed as a reason for enjoyable bibliophilic explorations; in the latter, as an inconvenient divergence from the hackneyed norm. A famous English taxonomist told my publisher in 1992 that my *New Flora of the British Isles* did 'not sit easily on the bookshelf'. Answer: it is not meant to be on the shelf, and the present work is not meant to be a clone of previous Floras.

It should be stressed that the *Flore Illustrée* covers all the vascular plants of the Pyrenees (estimated at 3,650), on both the French and Spanish sides, including the foothills and coasts, and that all the species are illustrated, but that the 71 pages of keys takes one down to only the generic level. Thereafter one has to rely on the excellent drawings and short descriptions (which are in prose, not Flora-shorthand). This can cause problems in some genera (*Carex*, *Festuca*), described by the author as 'difficile et rebutante', but species keys in these examples would not always make life easier. Moreover, all naturalised aliens (e.g. *Agave*, *Tagetes*, *Liriodendron* and *Taxodium*) are included. It is clear that this is the best and most authoritative account of the Pyrenean flora.

But what are these quirky features? I will mention just three, and they will quite reasonably attract criticism from some readers. Firstly, the Flora is arranged in the Emberger system of classification, now long-abandoned, whereby about half of the dicots appear before the monocots and the other half after them. This is not new to French works – it was used in Guinochet & Vilmorin's *Flore de France* (1973–1984). The author has been constrained by the arrangements of his pages of drawings, which were started for earlier books about the time of Emberger's brief reign and which have led to some strange bed-fellows (e.g. *Ricinus* and *Hibiscus* on the same page). There is no reference to modern molecular systems.

Secondly, vernacular names take precedence over Latin ones throughout, although the index covers both equally (N.B. index entries refer to plate, not page, numbers). The illustrations are labelled solely by the French name, which also heads each species and generic key entry. The French names used are usually not the available French folk-names, but are straight translations from the Latin. For example, *Veronica beccabunga* is 'Veronique beccabunga', not 'Cresson de cheval', and *Stellaria media* is 'Stellaire intermédiare' rather than 'Mouron des oiseaux' or 'Morgeline'. For the foreigner, this does render the French names less obscure, and this book is the only French Flora I know where all species are given a common name; probably many were coined by Saule. In addition, vernacular names from four other Pyrenean languages are included where they exist – Basque, Occitan, Catalan and Aragonais (but strangely not Castilian).

Thirdly, the author has been at great pains to ensure that each species entry has its illustration on the facing page. Hence, in cases where the species entries corresponding to the drawings opposite exceed a page in length, the former are continued on the next pair of pages and the whole page plate is repeated facing it. A good number of

plates are thus duplicated, adding to the bulk (A4, 5cm thick) and weight (2.7 kg) of the book.

Marcel Saule's Pyrenean *magnum opus* is not just another Flora laid out in a predictable and well-worn style, but a one-off masterpiece that should be enjoyed and admired beyond its frequent consultation as the definitive Pyrenean plant identification manual. Despite its bulk and cost, it will be essential for those of us who regularly visit the area. And how many Floras have both the author (Saule, willow) and publisher (Pin à crochets, *Pinus uncinata*) named after plants?

Clive A. Stace
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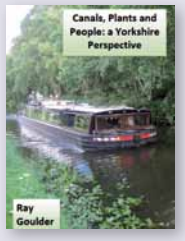

Canals, plants and people: a Yorkshire perspective

R. Goulder
PLACE, York, 2019
228pp. £10.50 pbk
ISBN 867-1-906604-65-3

Our canals are a rich source of aquatic plant records, and this book highlights the ways in which recreational use of canals impacts on their distribution and abundance. Written by a freshwater biologist and volunteer with the Canal & River Trust (successor to the British Waterways Board), it presents a detailed examination of the flora of Yorkshire's canals. There are no fewer than 18 appendices, the last of which lists the occasions on which the Yorkshire Naturalists Union members have visited canals on their excursions since the 1950s (a valuable aspect of social history). There is a chapter on 'out of range native plants' and alien plants, and another on 'plants, canals and leisure'. The book contains a great deal of useful advice on canal maintenance and restoration from the point of view of the retention and increase of biodiversity, and a map on p.13 shows the large number of canals to be seen in Yorkshire, many of them linked. This forms an extraordinary network of biodiversity corridors, especially when one also considers the land alongside the canal. As with our railways, where a vigorous debate is taking place on the level of tree clearance that is appropriate along normal and scenic routes, the flora of canals is vulnerable to inappropriate actions, fluctuations caused by outside influences, and the gradual increase in the use of leisure craft as more canals are brought back into full use and facilities are improved.

This book should be read not only by botanists and naturalists, but by all those responsible for working with canals. It sets a high standard for future books on the flora of canals in other parts of Britain and Ireland.

John Edmondson
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BOOK NOTES

A naturalist's guide to the wild flowers of Britain and Northern Europe 2nd edition
Andrew Cleave
John Beaufoy Books, Oxford, 2019
160pp. £7.99 pbk
ISBN 978-1-91208-114-1

Although not yet published at the time of writing, this is my last chance to mention it as I am retiring as Book Reviews editor. With 300 colour plates of 280 species it should meet the needs of most 'amateur naturalists', as the publisher's blurb indicates.

A field guide to the woodland and scrub of the Ballyhoura mountains [Co. Limerick]
R. Lynch Self-published, 2019
118pp. £10 (UK) pbk
ISBN 9781527226333

This book, although limited in both geographical and ecological scope, aims to provide an NVC-style catalogue of upland woodland species assemblages of this region of Co. Limerick and is thus of much wider potential value. A related 'woodland key' app is also under development (but only for Android phones).

John Edmondson
a.books@mac.com

A big thank you to John for all his hard work and excellent contributions over the years he has been Book Reviews Editor.
Andrew Branson

NOTES

FROM THE BOARD OF TRUSTEES

Just a few words to introduce myself as the new Chair of the Board of Trustees and an update on an important piece of work that the Board is undertaking over the next year to improve the Society's readiness for facing the future. Firstly, though, a big thanks is due to Ian Denholm from whom I took over on 1st January. Ian has filled this role since the Board was set up in 2014, following his stint as President, so has given sterling service to BSBI and I am pleased to say he continues to do so in various roles, including continuing as a Trustee.

Various things are coming together to make this a good time to take stock of the way we plan and organise the Society's business.

- We now have a Board of Trustees;
- We undertook the review 'A society like no other' in 2016;
- We are currently working on our focus post Atlas 2020;
- We are developing a Policy on Conservation;
- Our Strategic Plan needs renewing, and needs a more detailed business plan to pull all this together.

The Heritage Lottery Fund provides 100% funding for organisations wishing to ensure their sustainability and the Board has seized on this opportunity, securing the funds to bring in expertise to work with us to look at our resilience. We have appointed experts from the Cass Charity Business School and Foundation for Social Improvement. They will work with us over the next year to look at BSBI's governance, our income generation, recommend best practice and develop with us a new five-year strategy and a more detailed business plan. We will keep you posted on progress.

Finally, a quick word about Brexit. By the time you read this, all may be clearer! Obviously, as a society, we operate across the national border with Ireland. We are keeping abreast of what information is available from government and charity media/ best practice sources. We may have to make adjustments depending on what arrangements are in place, but we do not think they will be insurmountable at this stage.

Chris Miles
Chair of the Board of Trustees

MEETINGS AND COMMUNICATIONS COMMITTEE

The Meetings & Communications Committee is responsible for promoting the BSBI through meetings and other events and media in order to increase awareness of the Society and to help sustain its membership.

- It arranges or oversees the Recorders' Conference, the Annual Summer Meeting, the Annual Exhibition Meeting, the Annual General Meeting (which is usually held during the AEM), and other conferences and workshops as the need arises.
- It arranges field meetings in England and maintains contact with the Field Secretaries of the Irish, Scottish and Welsh National Committees. It collates the complete programme across the BSBI for publication in the *Yearbook*.
- It works closely with the Communications Officer to help deliver the Society's publicity and outreach programmes (e.g. the New Year Plant Hunt) and to ensure that the website meets the needs of all users.
- It liaises with other Committees, for example on field meetings with a training element and on the Recorders' Conference.
- The Committee usually meets in February and September and welcomes suggestions on venues or topics for field meetings, workshops, conferences, outreach events and general meetings.

Fom the Hon Field Meetings Secretary

As Hon. Field Meetings Secretary, I am a member of the Meetings and Communications Committee (M&C). The Committee provides me with valuable advice in reviewing the Guidance to participants and Guidance for leaders of field meetings. These documents are reviewed at each February meeting of M&C, and then any amendments are incorporated. The updates are posted on the meetings web page and are available for the benefit of members.

Details for a few field meetings were too late to get into the *Yearbook*, but are advertised on the meetings web page. The top of the page tells you which meetings are additional, which have additional information and which are full. Several of the meetings

booked up very quickly this year, so I must apologise to those who were too late to be included on the meetings that they wished to join. Some of these meetings may be easy to repeat, so do contact the organisers and ask if they would be willing to run them again next year.

Field meetings in future are likely to have a different emphasis as recording for Atlas 2020 will be over. There will be meetings though, and I am sure that many will involve recording, as the composition of our flora is always changing. As I write, temperatures are more like May and it will be very interesting to see how the season progresses. What new species will be recorded in the wild this year? The only way to find out is to get outside and record them!

Jonathan Shanklin
jdsh@bas.ac.uk

PANEL OF VICE-COUNTY RECORDERS

PETE STROH

Alan Leslie, joint VCR for **Cambridgeshire** (v.c.29) alongside Jonathan Shanklin, has stepped down from the role after 17 years of outstanding service. This means that Jonathan is now sole Recorder for the county. By the time this note is published, Alan's *Flora of Cambridgeshire* will be close to publication. Without wishing to turn this into a book review (mainly because it would be rather premature), I am greatly looking forward to reading it, as it will doubtless reflect Alan's qualities of diligence and precision, combined with his deep knowledge of our native and alien flora. We are fortunate to have such exemplary field botanists as members of the Society.

Pam Murdoch, VCR for Dunbartonshire (v.c.99), has retired after almost eight years in post. Pam has made a fantastic contribution in a diverse vice-county that includes urban and suburban areas of Glasgow, right up to 3,000-foot mountains in the north. Thanks very much to Pam for all her help with Atlas recording.

There are VCR **vacancies** for nine vice-counties: East/West Sussex; South Hampshire (alongside Martin Rand); Argyll (alongside Gordon Rothero), Banffshire, Berwickshire; Dunbartonshire; Co. Longford; and Co. Louth. If you are interested in more details about what is involved, please do get in touch with the relevant Country Officer.

Pete Stroh
peter.stroh@bsbi.org

PANEL OF REFEREES AND SPECIALISTS

JEREMY ISON

Following the inclusion of *Conyza* in *Erigeron* in Stace 4 (Stace, 2019), **Martin Rand** has offered to referee the whole of the genus *Erigeron*, including species that were previously in *Conyza*.

John Edmondson has relinquished the post of joint Referee for Maritime Drift Seeds, leaving **Declan Quigley** as the sole referee.

Please note the following changes of addresses:

John Day (*Utricularia*): 3 Avon Close, South Brent, Devon TQ10 9PR.

Nick Stewart (**Charophyta**): 4 Hexton Road, Glastonbury, Somerset BA6 8HL.

Reference

Stace, C.A. 2019. *New Flora of the British Isles*. 4th edition. C & M Floristics, Suffolk.

Jeremy Ison
40 Willeys Avenue, Exeter, Devon EX2 8ES;
tel. 01392 272600
jeremyjison@gmail.com

BSBI PHOTOGRAPHY COMPETITION 2019

JIM MCINTOSH

This year's competition categories are simply 1) Native and 2) Alien plants, which should give you plenty scope! So, remember to take your camera out with you whenever you are in the field this spring and summer and be ready to take photographs that you can enter into the 2019 competition.

Normal BSBI recording rules apply: the species may be of any native or alien flowering plants, conifers, ferns, horsetails, clubmosses or stoneworts growing in the wild (anywhere outside private gardens) and photographs must be taken in Britain or Ireland.

Full details are on the BSBI website and a summary appeared in January's *BSBI News*. The closing date for the competition is the 18th October. Happy snapping!

Jim McIntosh
jim.mcintosh@bsbi.org

BSBI PRIZE-WINNERS

One BSBI member had a pleasant surprise earlier this month! BSBI's Finance Manager, Julie, has been encouraging members to pay their annual BSBI subscription via Direct Debit mandate – you may have seen a notice in the September issue of *BSBI News*. Direct Debit is a great way to pay your subscription as it is quicker and easier for you and more cost-effective for BSBI. Julie set up a prize draw, whereby everyone who completed a mandate would be automatically entered into a competition and two names were selected at random to win a prize.

Our first prize-winner has just received a £100 book token from Summerfield Books and has authorised us to say a few words about him.

Terry has been a plant hunter since he was first armed with an *I-spy Wild Flowers* book in the 1960s. He was a BSBI member in the 1980s and 1990s, ticking off the species in 'Clapham Tutin & Warburg', and travelling the world in search of interesting mountain plants. He recently rejoined the BSBI with the intention of getting more involved in recording when he eventually retires from his job as a patent attorney. He has already been out on recording days in Cheshire and Denbighshire and plans to spend part of his prize on the the new BSBI eyebrights handbook.

We wish Terry all the best in his future plant-hunting and hope he enjoys his prize.

Terry photographing *Gymnadenia* orchids in the Bernese Oberland.

The second prize winner is Dr Caroline Mhic Daeid, joint Vice-county Recorder for Co. Kerry, a post she has held since the 1970s. Congratuations to her.

We encourage you all to consider paying your BSBI membership subscription by Direct Debit.

Did you know you can now pay by Direct Debit either in £ or €? Go to https://bsbi.org/subscriptions now to set up yours. You can even do it now for your 2020 subscription.

Julie Etherington, BSBI Finance Officer

CONGRATULATIONS

Congratulations to Dr John Faulkner, BSBI Trustee, former BSBI President, VC Recorder for H37 County Armagh, and member of the BSBI Committee for Ireland, on his receipt of a British Empire Medal in the 2019 New Year's Honours list. This was for services to conservation and grass breeding in Northern Ireland. How gratifying to note that botanical work is being recognised.

Delyth Williams

John Faulkner at home in Armagh. *G. Faulkner*

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