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Edited by Trevor James & Gwynn Ellis

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The winning photograph in the Summer category by Cathy McKirdy. ‘Hanging around’. [*Polypodium vulgare*, Polypody] Photo © 2015 (p. 5)

The winning photograph in the Spring category by Sarah Eno. ‘*Equisetum telemateia* [Great Horsetail] at Pease Dean Woods’. Photo © 2015 (p. 5)

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Cover picture: – A runner up photograph in the Spring category by Roy Sexton,'Larch (*Larix decidua*) male and female cones'. Photo © 2015 (see p. 5)

IMPORTANT NOTICES

From The President

JOHN FAULKNER, *Drumherriff Lodge, 37 Old Orchard Road, Loughgall, Armagh, BT61 8JD*; (jsf@globalnet.co.uk)

One of the privileges of being President is that you have the right to attend meetings of all of the Society's Committees, including Council and the Board of Trustees. You would be a glutton for punishment if you went to every one of them, but doing so in moderation is proving to be a good way to discover more about what is going on behind the scenes in the BSBI.

My over-riding impression is one of extraordinary dedication. There are members up and down the country putting in amazing numbers of hours and using a huge diversity of specialised skills and knowledge in pursuit of the interests of the Society and of botany. At every turn, new gems come to light. One modest but impressive example that really took my fancy was the set of three exquisite posters promoting botany and the BSBI, especially to beginners. (In case you have not come across them, they are available to download at the bottom left-hand corner of the Training page of the BSBI website.)

This webpage is worth a close look. Beginners are especially valuable to the BSBI as they are the botanists of the future. Older botanists often complain that knowledge of plants has been on the decline for many years, and 'whole plants' have almost disappeared from biology courses. Maybe this decline is now set to reverse. There are some superb training resources to help beginners outside the mainstream educational system, with a range of course types, on-line tools, and printed publications to suit most tastes. The BSBI and other organisations also offer small bursaries and grants to assist those in need.

For the more experienced, more gems are on the way in the form of new handbooks. In common with many others, I will want to be at the head of the queue for a copy of the Eyebrights handbook when it is issued later this year, but there are six more handbooks in various stages of development. Depending on your interests and where you do your botanising, there is bound to be one of interest to you. Living in an area where basket willows were once planted and biomass willows are fashionable, the revision of the willow and poplar handbook will be very useful to me.

The BSBI's publications range from the relatively informal all the way to a peer-reviewed academic journal – *New Journal of Botany* (*NJB*). Some authors might find the prospect of publishing in *NJB* intimidating. It need not be so. Some of the longer research-type articles in *BSBI News* might, with relatively little work, have merited the additional status and permanence that publication in the *NJB* would have provided. If your work is an original study, why not submit it and let the editors decide if it is suitable? They can also offer advice to help you comply with the technical specifications for manuscripts and guide you through the complexities of the electronic submission system.

As botanists, we are inevitably aware of annual cycles. As the first signs of spring appear, we are driven by cabin fever to get out and about after months of confinement – or so it used to be. The extraordinary success of the New Year Plant Hunt (p. 44) has given impetus to the idea that you can record plants at any time of year. If you have not tried it, I thoroughly recommend setting aside three hours at the beginning of next January to give it a go. It is much more than an exercise in twitching; like winter gardening, it will help you to develop a feel for the varied patterns of growth and reproduction among native and alien plants. I was perhaps a little sceptical at first, but my first attempt yielded not only an enjoyable day out, but also my first sighting of

an elusive native species in my own Vice-county.

The thought of improving our understanding of plants brings me to Atlas 2020 (p. 55). For the next four years, this is one of the Society's top priorities and many of us will have our heads down, trying to fill in gaps in the post-2000 record. It can be tempting to accumulate as many records as possible without much thought for the value of the records. Working on a rare plant register brought home to me that this can be a wasted opportunity. In the case of scarce or critical species, a bare presence/absence record with no added notes and no evidence to confirm the identity, can raise more questions than it answers. Atlas 2020 will tell us a lot about the distribution of the British and Irish flora and how it is changing, but there is much more to know than presences and absences in abstract grid squares. If you take that extra little bit of trouble to record additional notes on selected species, your records will be much more informative.

As usual, the Society has a full and varied programme of field meetings in place for 2016 and many of these will be geared towards the generation of records for Atlas 2020. Places at some of them will fill up quickly, so if you have not already done so, make sure you book as soon as possible. I am greatly looking forward to the Annual Summer Meeting in lowland Cumbria, seeing some new sites in one of my favourite English counties, and to meeting both some new plants and some 'new' botanists there.

A note on staff change – Alex Lockton

JANE HOULDSWORTH (BSBI Head of Operations) *7 Grafton Gardens, Baxenden, Accrington, Lancashire, BB5 2TY*; (07584 250070; jane.houldsworth@bsbi.org)
DAVID PEARMAN (BSBI Trustee), *'Algiers', Feock, Truro, Cornwall, TR3 6RA*

From Jane

Alex Lockton's employment with BSBI ended at the end of March. I would like to thank him for his years of service, which David Pearman describes below.

If you have any questions which you would usually take to Alex perhaps you could direct them as follows:

- For edits/ additions to the website please contact Jane Houldsworth (jane.houldsworth@bsbi.org) or Louise Marsh (louise.marsh@bsbi.org).
- For botanical data please contact your BSBI Country Officer (Scotland: jim. mcintosh@bsbi.org, Ireland: maria.long@bsbi.org, Wales: polly.spencer-vellacott@bsbi.org, England: pete.stroh@bsbi.org) or Quentin Groom (qgroom@reticule.co.uk).
- For general questions please contact Louise Marsh (louise.marsh@bsbi.org).

The recorders conference will go ahead this year on the first weekend in September in Shrewsbury. More details will be announced in due course on the BSBI website and in the monthly e-newsletter to recorders.

From David

As Jane has noted above, by the time that you read this Alex will have stepped down from his post. Alex first came to us as a contractor but more recently as an employee and has been with us for nearly 20 years. The BSBI owes him a great debt for all his enthusiasm, for his ideas and initiatives and for the contacts that he built up and fostered. My role, if there was one, was to try and meld these initiatives into the possible and ensure funding from within and from without.

His roles ranged from organising the Recorders' conference and newsletter to the Website, and the digitising of masses of our archives, but it was as our 'Co-ordinator' that many would have known him best, since he arrived not long after the first PCs and saw so many of the vice-county recorders and members through to competence. His initiatives have included the axiophyte concept, the concept and development of the Distribution Database, the development of Herbaria@Home and, of course, he has contributed a great deal of his own botanical data.

We wish him well.

BSBI Honorary Treasurer - a description of the role and its fit within the BSBI

CHRIS METHERELL, Hon. General Secretary, *Woodsia House, Main Street, Felton, Northumberland, NE65 9PT*; (01670-783401; chris@metherell.org.uk)

The Botanical Society of Britain and Ireland (BSBI) wishes to appoint an Honorary Treasurer to oversee its accounting procedures and assist with managing its finances in an efficient and sustainable manner. Following appointment, the Treasurer would usually be co-opted to sit on the BSBI Board of Trustees, which meets four times a year and is responsible for governance of the Society.

As well as working with and reporting to the BSBI Board, the Treasurer will liaise with:

- BSBI employees, including an Administrative Officer, who handles the processing of invoices and payments and the preparation of accounts using SAGE; a Head of Operations, who leads the day-to-day running of the Society, and a Head of Science who directs our research strategy.
- Other voluntary officers, including the Society's President and the Honorary General Secretary.
- Our investment managers (based in London) who handle our portfolio of *c.* £1 million, invested in bonds, shares and equities.
- The Society's members, supporters and sponsors, through the Society's publications, attendance at the Annual General Meeting and other events as appropriate.

The contributions needed can be broken down into two stages:

1. Ongoing support and input

Regular tasks that the Treasurer will undertake:

- Acting as bank signatory/approving payments.
- Regular oversight of accounts and accounting procedures.
- Production of an annual budget, with input from all relevant personnel.
- Attending trustee meetings (usually three per year plus one electronic meeting).

It is expected that this would require a maximum of one day per month.

2. Review of current processes

BSBI trustees are reviewing the Society's structures and operations, with a view to focusing spend in priority areas and exploiting new funding opportunities. Early ideas which could be explored further include options to commercialise some aspects of our activity and share back-office services with comparable organisations.

In addition, we must ensure that our financial and administrative systems are smooth, streamlined, and fully tailored to future aspirations. This includes optimal use of the most efficient software packages, enabling regular and speedy access to financial information. The Treasurer would participate in this review of operations and advise trustees on recommendations for their improvement.

The post of Hon. Treasurer is a voluntary one, but expenses incurred in meeting the requirements of the post will be reimbursed.

What we need from a Treasurer

- Someone who can commit time to both stages of input, the review of current processes and, on a longer term basis, to the continuing role of Treasurer.
- Experience of book keeping, familiarity with the finances and funding of voluntary organisations and people management.
- Commitment to the Society and its aims.

Notes from the Editors

TREVOR JAMES (Receiving Editor), *56 Back Street, Ashwell, Baldock, Herts., SG7 5PE.* (Tel.: 01462 742684) (trevorjjames@btinternet.com)
GWYNN ELLIS (General Editor), *41 Marlborough Road, Roath, Cardiff, Wales, CF23 5BU* (Tel.: 02920 332338) (gwynn.ellis@bsbi.org)

A shorter than usual issue this time with many fewer photographs submitted to complement the articles. This shortfall has given us an ideal opportunity to showcase more of the photographs submitted for the BSBI Photography Competition 2015.

The cover picture of Larch flowers we find so evocative of Spring and brings to mind the line from Alfred Lord Tennyson's, *In Memoriam Section XCI*: 'When rosy plumelets tuft the larch'

The winners of the Spring and Summer categories may be found inside the front cover with two more runners-up on the inside of the back cover. The May Election rosette I thought particularly apt for the various elections to be held this Spring.

The montage on the back cover depicts the remarkable number of plants found in flower during this year's New Year Plant Hunt in just one locality.

Correction

Tony Mundell has asked us to point out a mistaken photo credit in his note in the last issue about the discovery of Field Eryngo in Hampshire. The photo should be credited to John Stokes instead of Brian Laney. Also the text of the third paragraph should end: '... taken by John Stokes on 21st August 2015.'

ISSN changes for *BSBI News* & *BSBI Yearbook*

The ISSN UK Centre is responsible for assigning International Standard Serial Numbers (ISSN) to all serials published in the United Kingdom. As the Botanical Society of the British Isles (BSBI) changed its name to become the Botanical Society of Britain & Ireland (BSBI) in 2013, although the title of the publications has not changed, the way in which these particular ISSN records were created means that it has been necessary to assign new ISSN for *BSBI News* and *BSBI Yearbook* effective for issues since 2013.

The new ISSN assigned are:

BSBI News (Botanical Society of Britain & Ireland) ISSN 2397-8813

BSBI Yearbook (Botanical Society of Britain & Ireland) ISSN 2397-9100

List of Members on Website

As noted in the last issue of *BSBI News*, for financial reasons the *List of Members* will no longer be published as a printed list. It will instead be published as a pdf on the members only section of the BSBI website. One advantage of this method of publication is that it allows for frequent updating of the list, perhaps as often as every two months. The first *List* was placed on the website at the beginning of March and by the time you read this an updated version should be available which will date from the middle of April.

To comply with the Data Protection Act the pdf is password protected and the password is the Membership Secretary's postcode followed by his fax number, all lower case with no spaces (see the last page of *BSBI News*).

When the BSBI changed its name to the Botanical Society of Britain and Ireland, all members were asked to sign a new membership declaration form which gave them the option of opting out of having their full name and address and/or email address published in the *List of Members*. This opt-out was taken up by many members and is reflected in the published list with the phrase "Full name and address withheld" or "Email withheld". The Membership Secretary can provide details of these on request.

If you find your full name or email "withheld" and you are now prepared to allow them to be included, please contact the Membership Secretary.

***New Journal of Botany* 5(2) & 5(3)**

Spare copies of *New Journal of Botany* **5(2)** have now been received and have been posted to all members who joined the BSBI after the mailing list was sent to Maney (now Taylor and Francis) last October and before January 1st 2016.

NJB **5(3)** was published online at the end of March 2016 and printed copies should now, have been received by all members who joined before January 1st.

That, of course, will be the last printed copy members will receive unless they have paid the extra £10 (€13).

In future all members who have supplied an email address will be contacted when a new part is published online.

***Oenothera* handbook**

Copies for all prepublication orders for the the new handbook have now been posted. If anyone has not received their copy please contact the Membership Secretary.

Reminder to contributors

We would like to remind contributors that all copy needs to come initially to the Receiving Editor, Trevor James, rather than being sent to Gwynn Ellis.

Deadlines are always indicated in large bold type at the end of each previous issue. These remain as they always have done: **1st March, 1st August and 1st December in any one year.**

If you are contemplating submitting anything, please do remember a few key things:

- Produce material in Word, using simple text, without formatting, 'bold', underlined *etc.* (except for scientific names, which can be italicised). If you lay out your article with all sorts of gismos, we only have to undo it all!
- PLEASE do not embed photographs, maps or drawings in the text – send them as attached JPEGs, or put them as separate files in a Dropbox folder for us to share if they are large files (over 5Mb) (or send them on a stick *etc.*). We only have to extract them and create JPEGs out of them, via Powerpoint, which takes up unnecessary time and can lead to distorted or somewhat degraded images. If necessary, we can scan hard copy images, slides, drawings *etc.*, and (if needed) can return the originals – let us know.
- When giving species names, please insert the common name after a first use of the scientific name of a plant. Use the names as given in C.A. Stace (2010) *New flora of the British Isles* (3rd ed.). We do not need to give scientific names for animals *etc.* that might also be mentioned, unless there is a real need for clarification.
- In compiling references, it would be useful to scan the format we use first, and make sure your references comply: author's name (surname, initials); date of publication (in brackets); publication title as appearing on title page (in italics), using capital letters ONLY for place and personal names *etc.*; name of publisher, followed by place of publication. Journal articles are inserted in single quotes, with the journal title italicised, not the title of the article.
- If necessary, we can still handle hand-written material, if you really cannot get it to us electronically.

***BSBI News* or *New Journal of Botany*?**

Our President (p. 3) draws attention to the potential for scientific material to be contributed to the *NJB*. We would like to emphasise that we do not want to compete with the Society's very own scientific journal, and would also encourage people to contribute anything they consider of scientific significance to the *NJB* first. Especially, if people are considering writing up anything 'new', scientifically, then the *NJB* should be the first option.

However, we remain keen to publish interesting, topical items about plants, plant hunting, recording, identification tips, interesting finds, unusual sightings, bits about botanists, events *etc. etc.* **We would especially like to encourage new people to write**. If you think what is in the journal is dull and boring, then write something yourself. We do not often reject material (and sometimes get into trouble for not doing so!).

NOTES

The conundrum of *Limonium vulgare* (Common Sea-lavender) on rocky shores in Anglesey, v.c.52

E. IVOR S. REES, *Lahti, Mount Street, Menai Bridge, Anglesey, LL59 5BW*; (ivorerees@hotmail.com)

On part of the south-west coast of Anglesey (v.c.52) several colonies of plants appearing to be *Limonium vulgare* Mill. (Common Sea-lavender) grow above the level of high water spring tides on moderately exposed rocky shores. This is unusual, as *L. vulgare* is said to grow almost exclusively in salt marshes at levels where it is immersed regularly (Boorman, 1967). Only a few occur on sea walls and rocks, where these directly adjoin salt marshes (Preston *et al*., 2002). Records of the Anglesey rock colonies go back very many years (Griffith, 1895; Roberts, 1982). Inevitably, questions arise about their identity and origin.

Searches of the Anglesey coast in 2010, repeated in 2015, confirmed the presence of six discrete rock colonies of plants that resemble *L. vulgare* northwest of Aberffraw (Table 1). A seventh colony, listed by Roberts (1982), was on rocks near Dinas Trefri in 1964, but, with no public access, it is not known if it is still there. Including the latter, the open coast rock colonies have all been within a frontage to Caernarfon Bay of 5.5km.

Are the rocky shore sea-lavenders *L. vulgare sensu stricto*?

A species with which *L. vulgare* can hybridise, *L. humile* Mill (Lax-flowered Sea-lavender), does rarely occur on rocky shores (Preston *et al*., 2002). Distinguishing the two is sometimes difficult, as hybrids (*L. vulgare* × *L. humile* = *L.* ×*neumanni* C.E.Salmon), with intermediate spike characters, occur where the distributions overlap (Stace *et al*., 2015). In Portugal and the Mediterranean *L. vulgare s.s*. is part of a larger taxonomically complex group (Cortinhas *et al*., 2015). The rock habitat plants considered here all have short spikes with closely spaced spikelets, the most obvious field characters separating *L. vulgare* from *L. humile*. The colonies also show evidence of vegetative spread, a trait of *L. vulgare* (Boorman 1967). Microscopic examinations of pollen and stigma combinations from the six colonies showed they had the combinations of the dimorphic out-breeding *L. vulgare,* not the monomorphic self-compatible *L. humile*. For images of pollen and stigma types see Dawson (1998) and Stace (2010). F_1 hybrids have the same combination as *L. humile* (Boorman, 1967; Stace *et al*., 2015). There was, however, one apparent discrepancy: *L. vulgare* has yellow anthers, while *L. humile* has reddish brown ones (Clapham *et al*., 1957; Stace *et al*., 2015). In several of the rock colonies of the B/Pap morph, but not the A/Cob ones, anthers were reddish brown (Table 1). All anthers were yellow in *L. vulgare* from two salt marshes on the east coast of Anglesey.

The worldwide distribution of the dimorphic and monomorphic *Limonium* taxa was reviewed by Baker (1953). An hypothesis was developed from this that monomorphism evolved secondarily in the Americas from an Old World dimorphic ancestor that crossed east to west before continental drift opened the Atlantic. *L. humile* is very similar to a monomorphic species occurring on the eastern seaboard of North America. Long distance dispersal back across the North Atlantic west to east appeared to be recent. An extension of this hypothesis would suggest that, if very small numbers of an American derived taxon first began to hybridise with a much larger population of *L vulgare s.s*., tidal currents would scatter any F_1 seeds. Future generations would be likely to introgress to become more like the Old World taxon. Even if hybridisation was somewhere in the ancestry of the atypical rock colony plants rather than a minor mutation, when or where either might have taken place remains part of the conundrum.

Colony habitat, persistence and spread

The colonies on moderately exposed rocky shores (see Colour Section, Plate 1) are all at levels only reached by wave wash or splash when storm surges coincide with spring tides. The rhizomes are often in crevices on ridges of bedrock, including ones on steep rock faces. Under a current year's rosette, some rhizomes protrude by nearly 100mm. In other places shelly sand has solidified around the rhizomes, probably through carbonate concretion. Parts of some colonies are also amongst angular boulders alongside drift line species such as *Beta vulgaris* ssp. *maritima* (Sea Beet) and *Atriplex glabriuscula* (Babington's Orache).

Griffith (1895) stated that *Statice limonium* (= *L. vulgare*) occurs "on rocks near the sea under Penrhyn, Aberffraw". This description equates with a cove below Penrhyn-uchaf farm (Porth Terfyn), where there is still a colony. If so, at least one of the rock colonies may have existed for over 120 years. From Roberts (1982) and his vice-county record cards, other colonies on "wet rock" and ascribed to *L. vulgare* have been known for over 40 years. When visited several times during 2007-2015, individual colonies changed little in extent. There was also no evidence from pollen/stigma combinations that any colony comprised more than a single clone. The shortest distance between any two colonies was *c.*250m, with others more than 1km from any other. Pollen transfer between morphs seems unlikely at these distances. Some colonies currently extend for over 15m. To spread this far in a sub-optimal habitat, when growth each year of the woody rhizomes appears to be little more than the base of a new rosette of leaves, they must have persisted for very many decades, or even centuries.

Comparison of distributions around Anglesey

Based mainly on spike criteria, *L. humile* has in recent years been recorded as widespread and in places abundant in nearly all the salt marshes on the west side of Anglesey, but it is absent from apparently suitable places on the east coast (Bonner, 2006; pers. obs.). By contrast, in salt marshes, *L. vulgare* s.s. has been widespread in only one small east coast estuary (Traeth Dulas). Both pollen/stigma morphs occur sufficiently close together here for pollination to be expected. Another east coast population with both morphs in close proximity became established within the last two decades at the eastern end of Red Wharf Bay. An isolated clonal patch of *L. vulgare* is also present amongst dense *Juncus maritimus* (Sea Rush) at Porth Llongdy on the western side of Red Wharf Bay. The main populations of the *L. vulgare s.s*. and *L. humile* living in salt marshes now seem to be spatially separated.

At Bodior, on the side of the channel between Holy Island and the mainland of Anglesey, Ian Bonner found another unusual colony in 2009. It grew just above high water neap levels on a shore composed mainly of angular cobbles. The flower scapes were short, with compactly spaced spikelets; it had small spathulate leaves with very short petioles and it appeared to have spread vegetatively. Crucially, it was at a place where sheep sometimes have access to the shore. Sheep biting off the young buds in spring can rapidly lead to the disappearance of Sea-lavenders from salt marshes (Boorman, 1967; Ranwell, 1972). The vegetative spread suggests that the colony is a depauperate form of *L. vulgare s.l.* which survives because the buds are down in the spaces between the angular cobbles.

A very few isolated *L. humile* plants have been noted in recent years within *c.*100m of some of the atypical rock *L. vulgare* colonies. Such *L. humile* plants occur mainly where there is some freshwater seepage onto the rocky inter-tidal, allowing small quasi-salt marsh tussocks to develop. *L. humile* was also at Bodior, not far from that atypical *L. vulgare* colony. Suspected hybrids were noted by Griffith (1895) in the Holy Island channel, near Four Mile Bridge and by Roberts (1982) in the Crigyll estuary. Amongst plants that are clearly *L. humile* in the west coast marshes, a very few have been seen in recent years with spike characters not quite as lax as expected. Comparing photographs of some of these with images of herbarium sheets annotated by C.E. Salmon (Herbaria@home, accessed 27/1/16) suggests that there may be some *L. vulgare* genes amongst the populations of *L. humile*.

The status of *L. humile*

If hybridisation with *L. humile* was involved in the ancestry of the rock colonies, a further conundrum arises from the present day dominance of *L. humile* on the south-west side of Anglesey and the absence of *L. vulgare s.s*. This situation may be recent, as the first BSBI Atlas (Perring & Walters, 1962) showed *L. humile* in only a single Anglesey hectad, near Holyhead. Matching localities mentioned by Roberts (1982) and other suitable sites with the date class of the table in the BSBI Distribution Database map (accessed 17/2/16) implies that there were few records of *L. humile* in Anglesey before the 1970s. Notably, none seem to have been recorded from the hectad that includes the Cefni and Braint salt marshes. These form parts of Newborough Warren NNR, where there were many botanical studies in the 1950s and 1960s. It is possible that grazing by sheep and later rabbits prevented colonization before the myxomatosis epidemic noted by Ranwell (1960) decimated the huge rabbit populations in 1954 and 1955. Only a few decades relief from grazing could have allowed *L. humile* to become as frequent as it is today.

Plastic litter, identifiable as originating in North America, frequently washes ashore on west-facing coasts, so in some years natural drift might bring a few propagules across in about 6-9 months. However, experiments showed that the period *Limonium* seeds stay afloat in seawater is measured in days (Boorman, 1967). Unless there were circumstances trapping seeds amongst flotsam, assisted passage after the beginning of European voyages to North America has to be a possibility. This would perhaps link *L. humile* to the *Irish Conundrum* of Stace & Crawley (2015).

Colony establishment on open coast rocks

In salt marshes the spread of *L. vulgare* is normally by the drift of seeds, but Boorman (1967) found that small pieces of rootstock would develop shoots and roots if planted out. Fragments of plants, under rare circumstances, might survive to grow again when cast up by the sea if amongst a suitable medium. This would fit the atypical occurrences in rocky and boulder habitats alongside drift line specialists. Indeed pieces of rhizome might have more chance of establishing new colonies in high shore rock crevices than seedlings.

As the Anglesey rock colonies seem to be very old and on only a short section of coast it is appropriate to look for local events that could have washed viable fragments out of a salt marsh. Until the end of the 18th century the Cefni estuary and its marshes extended *c.*12km inland. An Act of Enclosure was passed in 1788 to reclaim almost two thirds of it. Work on the main embankment and sluices was well advanced by autumn 1789, but the embankment was destroyed by a storm that winter (Ramage, 1987). Another major breach occurred in 1796 before it was completed in 1812. The works also involved canalising the tidal river, cutting through meanders and creeks in salt marshes. This and scour through breached embankments could have washed pieces of salt marsh vegetation out to sea and along the coast. It is relevant to note that this major disruption took place 100 years before Griffith (1895) noted *L. vulgare* established on rocks at Penrhyn, Aberffraw. The flora of the Cefni salt marshes in the 18th century is unknown but Packham and Liddle (1970) surveyed remaining parts adjacent to Newborough Forest in 1965-1968. They reported that *L. vulgare* was scattered in a few places, implying that it was present but not common. No mention was made of *L. humile*.

Conclusions

The conundrum of dimorphic plants with one morph having the anther colour of a different species, with which it can hybridise and growing in an atypical habitat, is unlikely to be solved without DNA evidence. The few anomalous colonies of *L. vulgare s.l.* on rocks in Anglesey may point to needs for re-interpretation of the status of some populations in Britain and Ireland, whether or not Baker's (1953) hypothesis about the biogeography of monomorphism is valid.

Acknowledgement:

Much encouragement to follow up the ramifications of Sea-lavender distributions in Anglesey and assistance with data was given by Ian Bonner, to whom I am most grateful.

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Table 1. Locations of anomalous colonies resembling *L. vulgare* in Anglesey

Location	Grid reference	Style/pollen & anther colour	Habitat notes
Trwyn Euphrates, Llangwyfan	SH32866970	Pap/B - Red/Brown	Above EHWS. Amongst sub-angular boulders and in crevices on adjoining bedrock faces. Spread >15m.
Llangwyfan Church island	SH33546825	Cob/A - Yellow	Above EHWS. On extensive irregular rock platform with small boulders, gravel and traces of glacial till. Spread c.20m.
Between Porth Cwyfan & Trwyn y Wylan	SH33776773	Pap/B - Yellow	Above EHWS. In clefts where bedrock stands up from wide and irregular upper shore platform. Spread <4m.
Porth Terfyn	SH34336772	Pap/B - Red/Brown	Above EHWS. In clefts and crevices on top and sides of rock ridge extending into a cove. Spread c.15m.
Carreg Foel	SH34736767	Pap/B - Red/Brown	Above EHWS. In hollow in broad upper shore rock platform with some shingle. Spread c.2m.
Porth Lleidiog	SH34916782	Cob/A - Yellow	Above EHWS. On sides of rock ridge standing 3m above coarse shelly sand beach. Spread c.8m.
Dinas Trefri	SH362661	not examined	Rock. Colony recorded by R.H. Roberts in 1964, not re-visited.
Fadog, Bodior	SH29177710	not examined	MHWN - MHW. Amongst sub-angular cobbles and gravel with *Pelvetia canaliculata* at side of tidal strait. Spread c.10m.

Rapid growth of *Limonium* (Sea-lavender) populations at Marshside on the Ribble Estuary (v.c.59: South Lancashire)

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Introduction

Smith & Greenwood (2009) reported the discovery in 2008 of *Limonium vulgare* (Common Sea-lavender) and *L. humile* (Lax-flowered Sea-lavender) on the extensive salt marshes of the south Ribble Estuary at Marshside, Merseyside. *L. humile* was a new record for v.c.59, while *L. vulgare* had not been confirmed in the vice-county since the 19th century, that being on the Mersey Estuary. Ten specimens of *L. vulgare* and three of *L. humile* were found in recently formed ungrazed vegetation that had a good match to the UK National Vegetation Classification's (NVC) SM13a: *Puccinellia maritima* salt marsh, typical sub-community (Rodwell, 2000). Further searches of the saltings in 2010 increased the numbers to 61 plants of *L. vulgare* and 12 of *L. humile*, while two specimens of the hybrid *L.* ×*neumanii* were also found. The latter increased to seven individuals by 2012, while numbers of both parents changed little, there being 57 plants of *L. vulgare* and 14 of *L. humile* (Smith & Lockwood, 2013). So that rates of growth could be determined at a later date, one diameter of each plant was measured, areas being estimated from πr^2.

Methods and results

Using the methods described by Smith & Lockwood (2013), a repeat survey of the Marshside saltmarsh took place in August to early September 2015. All except two of the *Limonium vulgare* plants recorded in 2012 were re-found, indicating that mortality had been negligible, while the number of individuals of each taxon increased considerably to 133 *L. vulgare*, 79 *L. humile* and 16 *L.* ×*neumanii*. Fig. 1 shows that the distribution of plants in the saltmarsh remained similar to that reported in 2012 (Smith & Lockwood, 2013) but *L.* humile seemed to be more concentrated on the higher part of the marsh closer to the coastal road embankment, at least in the southern part of its range. As before, the community supporting most of the *Limonium* plants closely resembled the NVC's SM13a, within which *Aster tripolium* (Sea Aster) was particularly abundant. Individual plants were located using a Garmin Etrex GPS unit but it should be noted that, because of the extent of the potential habitat, it is likely that some were missed. Indeed, after the study was completed, one new plant of *L. vulgare* was found about 320m south-west of the southernmost specimen.

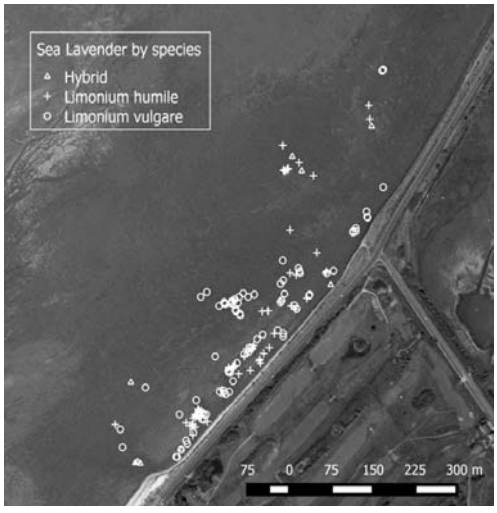

Fig. 1. Distribution map of *Limonium* (Sea-lavender) taxa at Marshside in 2015

Changes in numbers of plants over time are shown in Fig. 2 (p. 12). The trends for *L. vulgare* and *L. humile* accord with an exponential rate of increase, while that for *L.* ×*neumanii* is closer to a logarithmic growth rate. As might be expected, the estimated areas of individual plants rose between 2012 and 2015, these data being summarised in Table 1 (p. 12). *L. vulgare* showed the largest mean area increase, equivalent to 56% per annum, while plants of *L. humile* and *L.* ×*neumanii* grew by 48% and 21% *per annum* respectively.

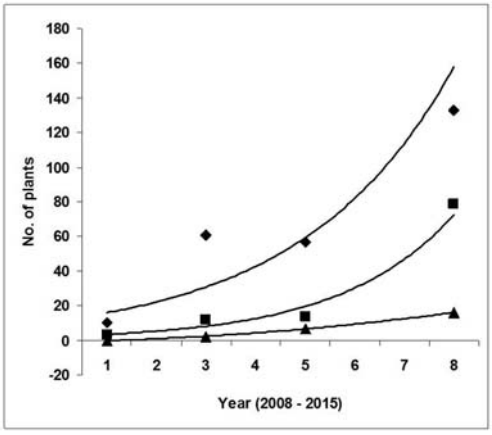

Fig. 2. Changes in the numbers of *Limonium* plants at Marshside from 2008 to 2015.
♦ = *L. vulgare*; ■ = *L. humile*; ▲ = *L.* ×*neumanii*
Fitted lines are exponentials for *L. vulgare* & *L. humile*, logarithmic for *L.* ×*neumanii*

Most of the 'new' plants of the three taxa found in 2015 were relatively small in size, suggesting that they were young individuals derived from reproduction since 2012. This conclusion is supported by an analysis of area data for the additional plants (Table 2) showing that all three taxa had much smaller mean areas than the plants known to be present in 2012.

During the current study, small individuals were often found in clusters near to large plants, suggesting that the former had arisen from propagules derived from the latter.

Discussion

As pointed out previously (Smith & Greenwood, 2009), the recent colonisation of the south Ribble salt marshes by three *Limonium* taxa is linked to the development of suitable ungrazed habitat, as these plants tend to be eliminated by livestock grazing (Boorman, 1967). The rapid rate of increase at Marshside contrasts with the position on the north Ribble, where Smith & Greenwood (2009) described a slow growth in numbers of plants, especially of *L. vulgare*. This was attributed to the fact that the latter species is self-incompatible, requiring cross-pollination to produce fertile seed, while *L. humile* is self-fertile and may produce fertile seed more readily (Boorman, 1967).

	2012			2015			
Taxon	Mean area m^2	SD	n	Mean area m^2	SD	n	% area
L. vulgare	0.315	0.065	53	0.843	0.538	51	167
L. humile	0.289	0.253	14	0.709	0.476	14	145
L. ×*neumanii*	0.326	0.137	5	0.533	0.175	5	64

Table 1. Estimated mean areas of *Limonium* plants recorded in both 2012 and 2015.
SD = standard deviation; n = number of individuals

Taxon	Mean area m^2	SD	n
L. vulgare	0.199	0.39	79
L. humile	0.091	0.358	65
L. ×*neumanii*	0.362	0.222	9

Table 2. Estimated mean areas of *Limonium* plants recorded for the first time in 2015
SD = standard deviation; n = number of individuals

Ranwell (1972) pointed out that both species are insect pollinated, especially by bumblebees (*Bombus*), and may remain un-pollinated if populations are so low that bees or other insects are not attracted to them. At Marshside, low-density populations initially grew slowly but then increased rapidly by addition of small (young) individuals, perhaps reflecting a better pollination rate. This may have been assisted by the abundance of *Aster tripolium* within the area supporting most of the *Limonium* populations, the *Aster* being particularly attractive to pollinating insects (personal observations).

Boorman (1967) reported that the longevity of individual *Limonium vulgare* plants is unknown, although large clones must be "of considerable age". At Marshside, several plants recorded in 2008 were still extant in 2015, while almost no mortality of the three taxa took place between 2012 and 2015.

Interestingly, Boorman (1967) found that the two *Limonium* spp. are usually associated with

communities of the "intermediate zone" above that dominated by *A. tripolium*. This is certainly not the case at Marshside, most plants being found in vegetation with abundant *A. tripolium*. However, the tendency for *L. humile* to be found closer to the coastal road embankment suggests a preference for a less frequently inundated habitat. As yet, *Limonium* plants are restricted to more-or-less the same area as in 2012, having not invaded the rapidly developing saltmarsh to the south-west. Here, the NVC SM8 community (Rodwell, 2000) is dominated by annual *Salicornia* spp. (glassworts) and it may be some years before accretion and vegetation changes make this area suitable for colonisation by *Limonium*.

Acknowledgements:
We are grateful to Catherine Highfield for producing the distribution map.

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Would Violets, I wonder?

When Spring arrives, each barren ditch
And hedgerow dull and glum
Now brightens up, and violets
Bring happy thoughts to some.

But in our house, for thirty years
They engender heart's unease
Since early Dublin Flora days,
When Declan Doogue's didactic gaze
On novice botanical surveys
Declared that *reich* and *riv* may faze
With hybrids that confuse!
Now I'm no longer really clear
Which one I'm looking at, I fear!

At Curragh Chase, the grassy slope
Towards the Arboretum
Is studded with – now is it *reich*?
Or *riv*? I'm almost beaten!
Such deep blue spurs! But are they notched?
Are petals flared or twisted?
Or horrors, are they intermixed -
In every intergrade betwixt
Dog and Wood Violetetum?

The humble bumble bees at work
May not discriminate
So even fastidious *Violas*
May well be forced to mate.

Next time we'll mark selected plants
With red or purple thread
So we can match the floral jizz
With capsules and with seed.
(Unfortunately, by that time
The ditch is rank with weeds
And it takes great dedication
To find the little seeds!)
For if you waited, seeds to count
The chances are quite high
That zealous ants have run away
With early capsules dry
And left behind the later ones –
(But which on earth are they?)
We'll have to try again next year
Much earlier than May!

Julian Reynolds
(julian.reynolds11@gmail.com)

Julian writes: 'For years I've enjoyed reading the *News*. I read with interest the article in the last issue, on new features for discriminating *Viola riviniana* and *reichenbachiana*, from the French Flora. It reminded me of a verse I penned for my wife Sylvia's *Flora of County Limerick* launch in 2013.'

Willows (*Salix*) on the Sefton Coast, north Merseyside (v.c.59, South Lancashire)

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The Sefton Coast in north Merseyside, including England's largest sand-dune system, has a remarkably diverse willow (*Salix*) flora. So far, 32 different taxa have been identified here, 17 being hybrids (Table 1, p. 16), although several of them were probably planted in the past, either for basket-making or as ornamentals. This compares favourably with 42 willow taxa in the whole of north Lancashire, a region considered particularly rich in this group of plants (Greenwood, 2012). Not only does the Sefton Coast have a great variety of willows, but some of the hybrids are extremely rare nationally. While *Salix* is noted for its tendency to hybridise, only a few hybrid taxa are locally frequent and widespread, the majority being relatively rare (Meikle, 1984; Stace *et al*., 2015). Recent on-line updates to the *Atlas of the British and Irish flora* by the Botanical Society of Britain & Ireland (www.BSBI.co.uk) and maps in Stace *et al*. (2015) give a much better picture of the distribution of the rarer hybrids in 10km squares (hectads) than was previously the case. Table 2 (p.18) shows that the Sefton Coast is particularly well represented in the national distributions of four rare hybrids: *Salix* ×*angusensis*, *S.* ×*doniana*, *S.* ×*friesiana* and *S.* ×*subsericea*, all of which include *S. repens* (Creeping Willow) as one of the parents. These data do not take into account actual population sizes. Often, the rare hybrids occur in low numbers, perhaps only one or two individuals at a particular location. On the Sefton Coast, however, one taxon in particular, *S.* ×*friesiana*, is known to be relatively frequent, with 414 individuals reported by Smith (2015), although this had increased to 460 by the end of 2015, including six specimens growing out of a concrete seawall at Marshside, near Southport.

A database covering four rare hybrid willows on the Sefton Coast has been compiled in recent years. This includes dates, 10-figure grid references and dimensions for all bushes found, a summary of these data being presented in Table 3 (p.18). It should be noted that identification difficulties mean that the information on *S.* ×*angusensis* and *S.* ×*subsericea* is incomplete. Indeed, despite intensive study (*e.g*. Meikle & Robinson, 2000; Michell, 2001; Wilcox, 2005), there is still disagreement on the morphological features that separate *S.* ×*angusensis* from *S.* ×*friesiana*. Also, the fact that these two taxa seem to be fertile (Michell, 2001) means back-crossing in and between these two hybrids is likely, especially crosses within forms of *S.* ×*friesiana* (given its frequency), while the possibility of back-crosses to the parents further complicates the morphological picture.

Stace *et al*. (2015) noted that *S.* ×*angusensis* apparently lacks striae on the surface of the wood and is difficult to locate in the field, having similar height and growth form to *S. repens*. However, several of the putative *S.* ×*angusensis* plants on the Sefton dunes possess obvious to sparse striae, strongly suggestive of *S. cinerea* (Grey Willow) parentage, and are invariably large, tall bushes up to 3m high. Back-crosses with *S.* ×*friesiana* could have particularly weak striae, easily confused with bud-scars (Wilcox, 2005), making identification even more difficult. The description of the type specimen of *S.* ×*angusensis* from Barry Links, Angus, by Rechinger (1950) states: "*vibices numerosiores distincti*" (numerous distinct striae), indicating the presence of *S. cinerea* in its make-up. However, examination of the original material reveals that only a few terminal shoot leaves are similar to those of *S.* ×*friesiana*, being rather small and no more than 40mm long by 10mm wide; while most leaves are 30-35 × 10mm, resembling the *S. repens* parent. All the leaves are acute, suggesting a hybrid closer to *S.* ×*friesiana*

(Wilcox, 2005). There was no peeled twig with the material to show presence of striae, while leaf shape and size make it difficult to see *S. cinerea* in its parentage. Assuming the specimen does have striae, it could be a back-cross to *S. repens*, retaining some evidence of the *S. viminalis* (Osier) parent; but there seems to be little morphological indication of *S. cinerea* in its make-up. Overall, we consider that the absence of striae should shed doubt on any individuals being thought to be *S.* ×*angusensis*.

S. ×*subsericea* can also be a difficult taxon to determine. It seems reasonable to expect that this taxon would possess striae, although neither Meikle (1984) nor Stace *et al*. (2015) mention this. Small-leaved plants of *S.* ×*angusensis* could easily be confused with this hybrid (Wilcox, 2005). We strongly support recommendations for further investigation at the genetic level to clarify the identification of these taxa (Stace *et al*., 2015; Wilcox, 2005).

In contrast, *S.* ×*doniana* is relatively easy to identify (Smith, 2014), its 34 extant bushes on the Sefton dunes representing over 90% of the known British population. Like *S.* ×*friesiana*, this hybrid shows great variation in leaf size and shape, perhaps because of the variability of one of its parents *S. repens* var. *argentea* (Fowler *et al*., 1983; Wilcox, 2005).

It is unclear why some *Salix repens* hybrids should be relatively frequent on the Sefton Coast sand-dunes when they are rare elsewhere in Britain. Smith (2015) pointed out that they are unlikely to have been overlooked by botanists, at least on the scale implied. He also drew attention to the fact that hybrids are often associated with dynamic habitats, including those disturbed by human activity (Stace *et al*., 2015; Wilcox, 2005). The Sefton Coast dune system has been strongly impacted by past anthropogenic disturbance, ranging from commercial sand-winning and military use to recreational trampling and built development (Smith, 2009).

As well as being of inherent scientific interest, the information collected on the Sefton rare hybrid willows has direct relevance to the planning of conservation management; this dune system having been adversely affected by scrub invasion in recent decades (Smith, 2009). For example, several bushes of *S.* ×*doniana* at Hightown dunes were fenced off to prevent damage during a 2011 coast-protection scheme, while some specimens of *S.* ×*friesiana* were marked for retention when a large patch of willows was removed in 2005 to restore a dune-slack at Cabin Hill National Nature Reserve (Smith & Kimpton, 2008). Accidental felling of nine *S.* ×*friesiana* bushes at Birkdale in spring 2014 was followed by coppice regrowth to a height of up to 2m in the following summer (Smith, 2015). Several Sefton duneland sites are now winter-grazed by rare breeds of sheep and cattle for conservation purposes. The cattle, in particular, have been observed browsing willows, including the rare hybrids, but no mortality resulted, the bushes in question showing vigorous regrowth during the subsequent growing season (Smith, 2014; 2015).

As would be expected, bushes recorded in the database have disappeared from time to time, apparently owing to 'natural' causes, such as ring-barking by rabbits and the effects of exposure or disease, although it is often difficult to attribute causality. Thus, a particularly fine specimen of *Salix* ×*subsericea* at Hightown (illustrated in Stace *et al*., 2015) died in 2010 for unknown reasons. Fortunately, in most cases 'new' bushes have been found to replace those lost and it is hoped that ongoing searches will reveal additional willow taxa, as well as more of the rare hybrids.

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Table 1. Willow taxa recorded on the Sefton Coast up to 2015. Nomenclature follows Stace (2010) and subsequent amendments.

Taxon	English name	Notes
Salix acutifolia	Siberian Violet-willow	Rare. About six bushes known (all male); probably planted.
Salix alba	White Willow	Fairly frequent. Many have been planted.
Salix aurita	Eared Willow	One male bush on Larkhill Heath, Formby.
Salix caprea	Goat Willow	Widespread and fairly common.
Salix cinerea ssp. *cinerea*	Grey Willow	Rare; a few specimens, mainly on Birkdale Green Beach.
Salix cinerea ssp. *oleifolia*	Grey Willow	Abundant everywhere and very variable. Some males have red-tinged catkins. This may suggest a past hybridisation with *S. purpurea*, characters being subsequently diluted by introgression with *S. cinerea*.
Salix daphnoides	European Violet-willow	Planted quite widely on the coast. Most specimens are female. A particularly fine male near Oxford Road, Southport.
Salix elaeagnos	Olive Willow	Rare. Not seen for many years.
Salix euxina (formerly *S. fragilis)*	Crack Willow	As *S. fragilis* var. *decipiens* has not yet been recorded, its status is unknown; Taxonomy may still require some clarification (Stace, 2015); all (or most?) specimens here may be hybrids in *S. ×fragilis*.
Salix pentandra	Bay Willow	Scarce; only about five bushes known.
Salix purpurea	Purple Willow	Rather scarce, except on Hightown dunes, giving the impression of being planted in most places. Males and females well represented.
Salix purpurea ssp. *lambertiana*	Purple Willow	Rare. Four bushes known, all being female.
Salix repens var. *argentea*	Creeping Willow	Abundant and remarkably variable in leaf shape and size and in stature, some bushes being over 3m tall.
Salix repens var. *repens*	Creeping Willow	Probably rather uncommon but true status obscure.
Salix triandra	Almond Willow	Rare. A planted bush reported but we have not seen it. One young specimen of var. *hoffmanniana* found on Birkdale New Green Beach in summer 2010 but not subsequently.

Taxon	English name	Notes
Salix viminalis	Osier	Very common, perhaps often planted. Females much commoner than males.
Salix ×angusensis		Probably rare but difficulty in differentiating this taxon from *S. ×friesiana* obscures its true status. Both sexes recorded. Endemic; Nationally Rare.
Salix ×calodendron	Holme Willow	Rare; several putative specimens at Hesketh Golf Course justify further study. All are female. Probably planted.
Salix ×capreola		Recorded by Payne (1982) for Ainsdale NNR as "cultivated land, rare, planted". Not seen since. (Extinct?)
Salix ×doniana	Don's Willow	Nationally rare. Currently, 34 bushes known, females being about three times as frequent as males. Some recorded in recent past have died but young bushes have appeared. Very variable in leaf size and shape, stem colour and catkin size.
Salix ×forbyana	Fine Osier	Very common basket willow but misidentified as *S. purpurea* until quite recently; not mapped for Sefton in Preston *et al.* (2002). All specimens examined are female; therefore recent appearance of young plants at Devil's Hole, Ravenmeols, is puzzling. Parentage of this taxon needs further clarification at the molecular level.
Salix ×fragilis (formerly *S. ×rubens*)	Hybrid Crack-willow	Rather frequent; mainly planted, although seedlings also often appear, for example on Birkdale Green Beach and in a young slack at Devil's Hole, Ravenmeols. Forma *basfordiana* is occasional. At least var. *russelliana* may be frequent but var. *fragilis* and var. *furcata* have not been satisfactorily identified.
Salix ×friesiana		Nationally rare. Fairly common with 460 bushes mapped by 2015. Both male and female are well represented. Young bushes are still being regularly found.
Salix ×holosericea	Silky-leaved Osier	Occasional; rather few individuals convincingly identified and perhaps confused with *S. × smithiana*.
Salix ×mollissima nothovar. *undulata*	Sharp-stipuled Willow	Several planted bushes at Victoria Park, Southport.
Salix ×multinervis		Recorded by Payne (1982) for Ainsdale NNR as "local, planted". Not seen subsequently. Possibly extinct.
Salix ×pontederiana		This rare hybrid was recorded for Ainsdale NNR by Payne in his 1982 list. Given as "local (planted) in dunes, slacks and cultivated land". Not seen since. (Extinct?)
Salix purpurea × S. viminalis × S. repens		According to Stace *et al.* (2015), this hybrid was collected by D. Wrench on the Sefton Coast dunes in 2000. There is, however, some doubt about the determination and the bush has been lost.
Salix ×reichardtii		Infrequent; possibly overlooked or confused with *S. caprea*.
Salix ×rubra	Green-leaved Willow	Rare. We have seen it twice only, most recently a well-grown specimen on Birkdale Green Beach in 2014.
Salix ×sepulcralis	Weeping Willow	Rare. Not seen by us.
Salix ×smithiana	Broad-leaved Osier	Fairly common, although mostly planted and female. Probably confused with *S. × holosericea*.
Salix ×subsericea		Occasional; a few bushes have been reliably determined, mainly at Queen's Jubilee Nature Trail, but this taxon can be hard to find and identify. All are female. Nationally Scarce.

Table 2. Distribution of rare hybrid willows according to BSBI Vascular Plant Atlas Update Project (2015)

Taxon	Parentage	No. of hectads in Br. Isles	No. of Sefton Coast hectads
S. ×*angusensis*	*S. viminalis* × *S. cinerea* × *S. repens*	8	3
S. ×*doniana*	*S. purpurea* × *S. repens*	6	2
S. ×*friesiana*	*S. viminalis* × *S. repens*	13	4
S. ×*subsericea*	*S. cinerea* × *S. repens*	56	2

Table 3. Summary of information on four rare hybrid willows on the Sefton Coast

Taxon	No. of extant bushes	National status
S. ×*angusensis*	3 (?)	Nationally rare
S. ×*doniana*	34	Nationally rare
S. ×*friesiana*	460	Nationally rare
S. ×*subsericea*	16 (?)	Nationally scarce

Note: identification difficulties mean that numbers of *S.* ×*angusensis* and *S.* ×*subsericea* bushes are incompletely known. Several bushes recorded as *S.* ×*friesiana* may be one of the other two taxa. It is likely that there are more plants of *S.* ×*angusensis* and fewer of *S.* ×*subsericea* than indicated.

Taxonomic changes to British cinquefoils

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The publication of volume 2 of the late Peter Sell's *Flora of Great Britain and Ireland* (Sell & Murrell, 2014), as with preceding volumes, threw up many nomenclatural novelties and challenges to the taxonomic orthodoxy that has prevailed since Stace hit our shelves 25 years ago (Stace, 1991), not least in his treatment of species in the genus *Potentilla*. As with other apomictic groups, Peter's wholly logical and consistent application of species rank for every discernibly discrete entity has led to a considerable increase in the number of species recognised. As with our other apomictic genera the British flora also contains related sexual taxa and these too have seen a degree of splitting in this account. The conventionally accepted taxa involved: the sexual *P. argentea* L. (Hoary Cinquefoil), and the polyploid apomictics *P. tabernaemontani* Asch. (Spring Cinquefoil) (= *P. verna* L. - see below) and *P. crantzii* (Crantz) Beck ex Fritsch (Alpine Cinquefoil) are thus regarded by Sell as belonging to 13 species, four of which are considered to be endemic. He also fails to recognise either Linnean name, or *P. tabernaemontani*. Many of the segregates thus recognised are, if accepted, likely to be of conservation concern and accordingly have come under the scrutiny of the Species Status Assessment (SSA) group.

Two of the endemic taxa, and in many ways the easiest to consider, are *P. cryeri* Druce ex P.D. Sell and *P. scotica* P.D. Sell, both apomicts of hybrid derivation, the former *P. crantzii* × *P. verna* L. *sensu lato*, the latter a hybrid of *P. crantzii* with an unknown parent, but again possibly *P. verna* L. *sensu lato*. Both are restricted to single sites, or restricted areas – *P. scotica* to the extremely arctic-alpine-rich cliffs of Little Craigindal, v.c.92, *P. cryeri* to the Grassington area in Wharfedale, v.c.64. Both have long been recognised and much discussed, *e.g.* Cryer *et al*. (1911); Smith, Bozman & Walters (1971), their intermediacy between *P. crantzii* and *P. verna* initially

helping to blur early views of those taxa. Generally they can be discriminated from each other and from *P. crantzii,* although the range of variation shown by the hybrids and plasticity through environmental conditions *etc*. means that some specimens taken out of geographical context are harder to ascribe to the correct taxon. While similar hybrids exist elsewhere in these species' areas of sympatry, *e.g*. Uppland, Sweden (Müntzing,1958), they have discrete origins, chromosome numbers and subtle differences in morphology and they are in my opinion worthy of (micro-) specific recognition. Their restricted ranges and probably small population sizes will undoubtedly qualify them as threatened under IUCN D criteria but a full evaluation is not possible until detailed re-surveys have been carried out and they should now be regarded as Data Deficient.

More challenging are the segregates recognised by Sell within the *P. verna* L. agg. He regards *P. tabernaemontani*, as used with reservation by Stace, as a *nomen illegitimum*, preferring *P. neumanniana* Rchb. As noted by Stace (2010), a proposal to conserve the Linnean *P. verna* with a new type (all original material actually being *P. crantzii*) has been accepted (Brummitt, 2011) and we should thus be (re-) using this name. Clearly much of the basis behind the segregation has been the detailed cytological and experimental work performed by Smith in the 1960s (*e.g*. Smith, 1963; Smith, Bozman & Walters, 1971) where 6×, 7×, 8×, 9× and 10× cytotypes were identified in the British Isles. Three of the five species recognised by Sell are pseudogamous apomictic heptaploids (2n = 7× = 49): the novel *P. paucidentata* P.D. Sell, which he (rather unhelpfully) just says is "scattered in Britain", *P. longifrons* (Focke) Poeverl., known from a single site in Northumberland but elsewhere in France (and also previously considered as intermediate between *crantzii* and *verna* – see Swan, 1993) and *P. billotii* Boulay from dry basic grasslands in Cambridgeshire and the adjacent Breck of Suffolk but described from central Europe. Of these, the last is perhaps most easily distinguished, by virtue of its possession of a single obvious character, the numerous spreading, not adpressed eglandular hairs on the flowering shoots. Sell & Murrell (2014) fail to mention the octoploid cytotype reported by Smith, Bozman & Walters (1971) from the Great Orme, v.c.49. They regard *P. neumanniana* as an aneuploid (2n=41) from the hexaploid level, although, from the distribution given: "local in Wales and central and northern England", this must encompass many of the 2n = 42 populations cited by Smith, Bozman & Walters (1971) even if this information has unaccountably been omitted. This geographic circumscription leaves us to ponder the fate and identity in their minds of the hexaploids from the Mendips and Avon Gorge (v.cc.6 & 34). The final segregate, another novel taxon, *P. brevifoliolata* P.D. Sell, suggested to be endemic, is represented by nonaploid (2n = 9× = 63) and decaploid (2n = 10× = 70) plants from limestone sea cliffs around Morecambe Bay, v.c.69. Whether the more recently discovered second Cumbrian *locus* for *P. verna sensu lato* (see the map in Halliday,1997) on the Great Scar limestones around Crosby Ravensworth also support this cytotype remains to be established. Plants outside Britain of similar ploidy are clearly rare but do exist in south-east France (see Dobeš, 1999) and their relationship to the British material needs clarification.

So – should we believe in these novel species and if so can we tell them apart? These taxa clearly have a degree of distinction through their cytology, together with geography and ecological preferences, although all to some extent overlap and, as might be expected, given the genetic similarity (all are probably multiples of the same genomes with some unique characters captured through hybridisation and introgression with other *Potentilla* species), have a largely overlapping morphological range. This is reflected in the Sell & Murrell (2014) key, which, with all due respect, is best described as unusable. We are therefore left with entities which we currently at least cannot for the most part discriminate in the field but which would seem to have some basis. Whether sites/populations support multiple cytotypes

may influence how we regard them. The relationships and origins of the cytotypes and whether morphological discriminants can be teased out given this knowledge clearly needs far more work. Until such time these taxa should be added to the GB and England Red Lists' waiting lists. It would seem likely that only *P. longifrons*, if still extant in its sole site near Spindlestone (v.c.68), where it was last recorded in 1992, would qualify as threatened.

A similar story exists with *P. argentea* L. Sell & Murrell (2014) split this into five species, all originally described by Jordan and thus presumably all also extra-British in distribution. None of these is explicitly linked with the Linnean *P. argentea* L. and, unlike the accounts for the apomictic species, no cytological information is given. This is perhaps surprising as one of the key critical issues with this group relates to ploidy level and the effect that that has on their breeding system and how we capture the consequences of that taxonomically. In their *Flora Europaea* account, Ball, Pawłowski & Walters (1968) split sexual diploids – *P. argentea* L. from apomictic hexaploids - *P. neglecta* Baumg. More recently Paule *et al*. (2011) have upheld this distinction and shown that the likely origin of the hexaploid is through hybridisation involving *P. argentea* and the southern European *P. calabra* Ten. and subsequent polyploidisation, although tetraploid, pentaploid and octoploid lineages are also known and introgressive hybridisation with other taxa is also implicated. Unusually the hexaploid has a more southerly distribution than the diploid, presumably reflecting its area of origin. The only chromosome count for British material on the BSBI database is for plants from near Wool, v.c.9, which were diploid, 2n=14.

For the reasons already outlined for the *P. verna* group above, the morphological overlap renders discrimination of possible different cytotypes problematic. Indeed the extent to which the taxa given by Sell may represent different cytotypes is, as yet, unclear. Obviously far less experimental work has previously been attempted with this aggregate and accordingly there is less information to fall back on. Initial attempts to understand and verify these segregates have foundered. As before, the key presented in Sell & Murrell (2014) is completely unworkable, *e.g.* with contrasting couplets exclusively using size ranges that overlap entirely. While certain recurring morphologies did appear when our full herbarium holdings were laid out it did not prove possible to equate these with Sell's taxa. I would hesitate to dismiss them completely but far more work and a lot more material (and ideally common garden experimentation) is needed. However, it was clear that an obvious question had not been asked or addressed by any of our current flora writers, namely: did the oft overlooked *P. neglecta* occur in the British Isles?

With the assistance of a group of attendees on the Natural History Museum hosted NERC postgraduate taxonomy short course, an attempt was made to test the key presented in the recent *Flora Gallica* (Tison & Foucault, 2014) (see below) on the **BM** British herbarium holdings.

Mid- and lower stem leaves with middle segment cuneiform, with 5-7(-9) teeth; upper leaf surface and margin glabrous, or with bristles <0.5mm long; stipules on largest stem leaves adnate to the petiole for less than 2.0mm; pedicel and calyx with epidermis not hidden by indumentum: *P. argentea* L.

Plants demonstrating at least one of the characters below: mid- and lower stem leaves with middle segment expanded in its apical half, or trifurcate, with 9 or more teeth; upper leaf surface and margin with bristles >0.5mm long; stipules on largest stem leaves adnate to the petiole for more than 2.0mm; pedicel and calyx with indumentum hiding the epidermis: *P. neglecta* Baumg.

The group felt that the indumentum character did not appear to be useful, the stipules were often impossible to measure or see adequately on the herbarium specimens, and the bristle character was clearly very variable and not always correlated with the level of foliar division. That said, it was considered, following comparison with continental material identified as *P. neglecta*, that examples from a number of British v.cc., including 12, 13, 16, 17, 22, 23, 29, 37, 41, 58, 69 (see appendix) were almost certainly hexaploids. Confirmation of this by cytology or flow cytometry is required.

The status of these plants, *i.e*. whether native, as diploids unquestionably are, or neophyte, is open to question. Many would seem to be from more ruderal or brown-field sites.

Polyploid plants in this group are expected to show greater vigour, be more erect and are consistently perennial and thus better able to exist and persist in coarser vegetation. They reproduce predominantly by apomictic means. Hybrids are to be expected where cytotypes exist in sympatry, as they regularly do in the Scandes and continental Europe (Paule *et al*., 2011).

Appendix

Putative specimens of *Potentilla neglecta* Baumg. at **BM**

v.c.12 roadside between E. Worldham and Kingsley, Hants., 11 June 1885, E. Vaughan.

v.c.13 Saddlecombe, Sussex, 10 July 1930, T.J. Foggitt.

v.c.16 Woolwich Arsenal, 23/5/1894 (grown on until 21/7), E. S. Marshall. A note states "Wolley-Dod considers this *argentea* but it looked quite distinct when growing".
Bexleyheath, Kent, June 1866, H.E. Fox.
side of sandy road near Bexley, Kent, 24 June 1871, F.J. Hanbury.
Roadside, Erith, Kent, 22/6/1861, H. Trimen.

v.c..17 "luxuriant", near Thursley, Surrey, 25/6/1898, E.S. Marshall.

v.c..22 Hedgebank near Ashmore Green, Berks., 24/5/1893, A.B. Jackson.
by the roadside between Ashmore Green and Newbury, Berks., 16 June 1907, A.B. Jackson.
Didcot, Berks., July 1896, G.C. Druce.

v.c.23 Field near Foxbury Wood, Oxon., n.d., W. Godley.

v.c.28 near East Dereham, Norfolk, 24 June 1948, J.B. Evans.

v.c.29 Hildersham, n.d., G.S. Gibson.
Hildersham Furze Hills, June 1861, F.A. Hanbury.

v.c..37 Malvern Hills, Worcs., July 1843, H. Ibbotson.

v.c.41 Railway bank, near Cadoxton, Glams., 14/8/[19]24, R. Melville.

v.c.69 Dry cindery ground between Salthouse Pool and the old mills on the north side, Barrow-in-Furness, 22/6/1984, G. Halliday.

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Ophioglossum azoricum near Ardgour, Westerness (v.c.97)

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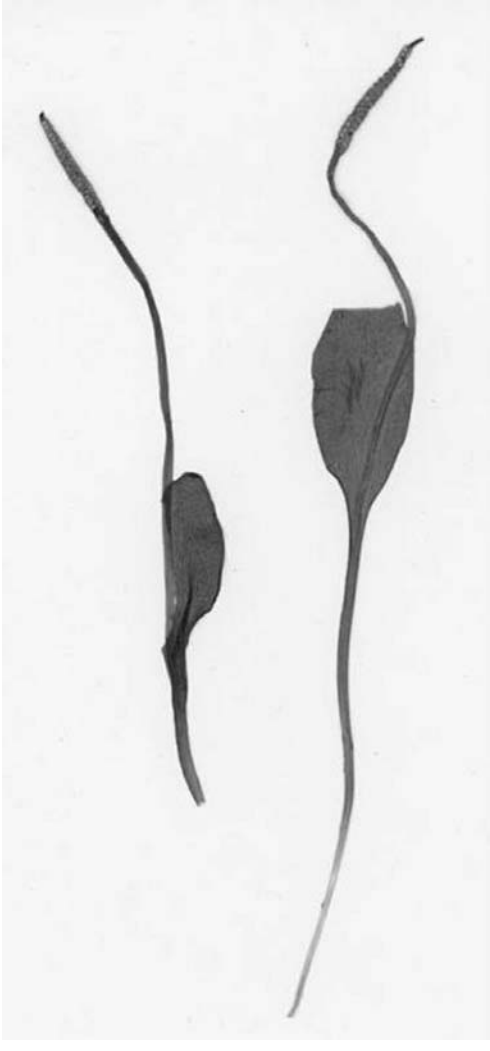
On my way to start a recording week at Kingairloch, Morvern, in June 2014, I found myself across the Corran Ferry with time to spare. So I headed north up the A861 for about 3km to a place where a stream crosses the road and enters Loch Linnhe, near Torr Dearg (NN0266). Following a stony seepage through the bracken I noticed several small (4cm high) Adder's-tongue ferns growing just a few metres above the shore. A couple of plants were collected on 20th June. The fronds were not obviously deflexed, nor did they appear to be in pairs. The sporangia were between 10-12 in number, in the overlapping zone between *O. azoricum* and *O. vulgatum* (Jermy & Camus, 1991) and I assumed they were probably the latter. However, remembering having read somewhere about an offer to check material, I posted my two specimens to Mike Wilcox.

Mike replied very promptly, pointing out that the spores were really too immature to be sure, but he suspected *O. azoricum* and had forwarded the specimens to Markus Ruhsam at the Royal Botanic Garden, Edinburgh for DNA analysis. Having returned to Anglesey by then I contacted Liz Macdonald at Ardslignish, Ardnamurchan and, armed with an eight-figure grid reference, Liz revisited the Torr Dearg site on 17th July and, after some difficulty, as sheep had grazed the open seepage pretty bare, found a few fronds under the adjacent bracken. These were taller (12-15cm high) and three were posted to Mike Wilcox who confirmed them as being likely to be *O. azoricum*, based on examination of the mature spores as described by Alison Paul (Paul, 1987). Mike also forwarded these to Markus Rusham.

Markus was able to confirm that DNA analysis showed both the plants collected in June and July were *O. azoricum*. He explained in an email that "*Ophioglossum vulgatum* and *O. azoricum* differ in five base pairs (SNPs, single nucleotide polymorphism) along a 600 base pair long stretch of the large subunit of the ribulose-bisphosphate carboxylase gene (rbcL) in the plastid genome. Extracting DNA of collected samples and sequencing the rbcl gene allow therefore the unambiguous identification of specimens."



Ophioglossum azoricum, near Ardgour (v.c.97). Scan by Hugh Knott of pressed specimens from the 17th July 2015 visit.

The purpose of this note is therefore to reinforce what you probably already know – that *O. azoricum* and *O. vulgatum* cannot necessarily be easily separated in the field and that *O. azoricum* may well occur more widely on the Scottish mainland.

Mike Wilcox is happy to look at fronds with mature spores, although this test may not be totally reliable. To get a better picture of the distribution pattern of the two species Markus is willing to run a DNA analysis on samples sent to him. However, as processing each sample costs around £7, excluding staff time, and is not funded this should be restricted to a limited number of specimens from potentially atypical locations.

I am very grateful to Mike Wilcox and Markus Ruhsam for their time and expertise and to Liz Macdonald for finding and collecting the mature fronds in July.

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An unusual *Artemisia* (Mugwort) from the Sefton Coast, north Merseyside (v.c.59: South Lancashire)

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In 2010, Phil Smith drew my attention to a large patch of a variegated *Artemisia* on dunes near to houses at Falklands Way, Ainsdale, Sefton Coast (SD3011) (Fig. 1, Colour Section plate 3). It was thought to be a form of *A. vulgaris* (Mugwort). However, having visited the site and examined material, I realised that there were several important differences from *A. vulgaris*. First, the plant flowers late in the season, in October/ November, while *A. vulgaris* is usually finished by July. There are about six variegated *A. vulgaris* cultivars listed on the RHS website. It could be one of these but I was not able to confirm this.

Secondly, the Sefton plant has completely different hairs from *A. vulgaris* and other similar *Artemisia* taxa found wild in Britain. Stems of *A. vulgaris* have long, simple arachnoid hairs that are more-or-less appressed (Fig. 2, Colour Section plate 3). In addition to some appressed arachnoid simple hairs, the Sefton plant has dense, thick multicellular beaded hairs that are not appressed to the stem (Fig. 3a; 3b, Colour Section plate 3). It is also a neater, more compact plant than the usually well-branched *A. vulgaris*.

B.A. Tregale showed me another variegated *Artemisia* in a Bradford garden, which also had the multicellular (beaded) hairs. I suspect that such plants are being imported through the horticultural trade from China and then (at least some) are being sold incorrectly labelled as *A. vulgaris*.

The Chinese literature and keys (see e-flora of China) on the genus *Artemisia* are difficult to interpret. The keys include Section Viscidipubes, this being the only one with multicellular hairs. However, the Section is also said to possess glands, which the Sefton plant appears to lack. Therefore, it is not readily placed in that Section.

As yet, it has not been possible to name this taxon, which evidently merits further study. It is not likely to be a hybrid, as the pollen I checked is fertile. Anyone finding a variegated *Artemisia* as a garden escape or throw-out would be advised to check its hairs, rather than to assume that it is a form of *A. vulgaris*.

Acknowledgement:
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Simethis planifolia Kunth (Kerry Lily) in Britain and Ireland

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Simethis planifolia (Kerry Lily) is a rhizomatous member of the Asphodel family (Xanthorrhoeaceae), found from Brittany south through north and north-west Spain, down to the Algarve in Portugal, with outliers in north-west Africa, the south of France and Corsica, as well as Tuscany in Italy. In Brittany, it is a local plant, found around Erquy in Côtes d'Armor, in south-west Finistère, becoming more frequent in Morbihan and to the south (Fig. 1).

Fig 1. Distribution of *Simethis planifolia*, from Dupont (1962)

It was discovered in Dorset in 1847 and survived there until *c.*1925 (Good, 1948) or 1914 (Bowen, 2000). It was found in County Kerry in 1848, where it apparently survives in tolerable quantity. It was also recorded from Hampshire (although probably transplanted from the Dorset site) in 1877, last seen in 1915, but at a different site towards Mudeford. We review these early records of a plant whose claim to be native in Britain & Ireland is debatable.

History in England

Gardeners' Chronicle, Saturday, July 17th, 1847, p.467:

"A very curious discovery has lately been made by Miss Wilkins, of Westbury, of a new British plant belonging to the genus *Simethis* of Kunth. This lady, while botanising at Bournemouth, in Hampshire, met with a considerable quantity of it, amongst Heath and Furze, in a lonely spot more than two miles from Bourne. 'When in perfection the petals are quite expanded and of a snowy whiteness, so that an inexperienced observer might almost mistake it for an Ornithogalum; but the filaments are very different, being so woolly.'

It is evidently allied to the plants collected by Professor Kunth under the name of *Simethis bicolor*, hitherto observed in Portugal, the Pyrenees, Sardinia and the Barbary coast; but whether it is identical to any of them, or a new species, the specimens that we have received do not enable us to determine. It should be compared with the *Anthericum ericetorum* of Bergerac." (unsigned)

Gardeners' Chronicle, Saturday, July 31st, 1847, p.509:

"*Simethis bicolor* ... As Bournemouth is ... a small watering place, it may be frequented by foreigners, or foreign vessels may even call there and discharge some of their ballast; and in this way the introduction of the plant may be accounted for. But it is not improbable, from the introduction of so many foreign seeds, and the large excavations caused by the railways, that frequent additions will now be made to our list of flowering plants .... (*continues*) ... *Lepidium draba* last year ... *Tetraganolobus siliquosus* at Sandridge Park ... *Arum dracunculus* this spring in a garden, brought from a wood 22 years ago ...

I have mentioned these facts to prove the necessity for continued researches on the part of all those botanists who wish to make any additions to the British flora." Wm. Holt, Bromley, Kent, July 27.

Gardeners' Chronicle, Saturday, August 14th, 1847, p.542 [indexed wrongly as p.548]:

"I have now obtained, through the kindness of Miss Wilkins, specimens of the plant in flower and seed, and see no reason to doubt it being the true plant of Kunth, the *Anthericum bicolor* or *A. planilifolia* [*sic.*] of authors. It is an inhabitant of the coast of France, nearly opposite to Dorsetshire (see Lloyd's "*Flore de la Loire Inferieur*", p. 267) and thus is not an unlikely plant to inhabit the south of England. I learn from Miss Wilkins that she saw 30 or 40 plants of it growing in a Fir plantation among Heath and Furze, which entirely concealed all but their bunches of flowers. The Bournemouth specimens accord well with my herbarium from France [the part not stated], the Pyrenees, Sardinia and Barbary. I trust, therefore, that we have a good addition to our list of native plants, for I can hardly suspect its introduction with ballast, as suggested by a correspondent in last week's *Chronicle*. I would take this opportunity to warn young collectors not to add ballast plants to our list, as by that means they only injure the British flora instead of benefitting it. If ballast plants establish themselves they ought to be recorded but not acknowledged as natives. I feel the necessity of this caution the more for having fallen into an error of that kind recently myself, as is recorded in the last Chronicle*. Miss Wilkins deserves great credit for her discrimination and acuteness of observation in detecting the *Simethis*." Charles C.Babington.

(* This refers to a note by Babington in the July 31st issue, p. 509. "*Linaria supina* (Dev.) not a British plant".)

Mansel-Pleydell (1895):

"First record, J. Woods*, 1848. Denizen? Heathy ground, very rare. Near Bournemouth, among firs, Miss Charlotte Wilson [*sic.*]." (*J. Woods is presumably the author of the *The Tourist's Flora*, 1850.)

Townsend (1883) (under excluded species):

"Dr Trimen informed me, May 31, 1877, that this species certainly grows within the Hants. boundary, as well as on the Dorset side of it; but the following communication, dated April 29, 1876, from Mr Charles Packe (the former owner of the estate on which *Simethis* was discovered) will explain. Speaking of both *Simethis* and *Erica vagans*, he says: 'I believe both exist only within the Dorset boundary, *i.e*., W of the Branksome tower … some *Simethis* was transplanted by me into the mausoleum ground, which is in Hants.; but of course this is not indigenous; and the plants in Dorset, as also the *Erica*, must I think have come with young trees brought from the Landes [Les Landes, S. of Bordeaux] …. It was reported to Mr H.M. Wilkinson that *Simethis* had been found a mile E. of Bournemouth towards Christchurch, in the spring of 1879 (H.M. Wilkinson, *in litt*., Jan., 1880); the report requires confirmation'."

Townsend (1904). This has the same text as the 1883 edition, but the last sentence is deleted, and adds, in brackets:

"(I conclude that Mr Packe, who lived at Branksome Tower, spoke with some knowledge that young Pinaster [*Pinus maritimus*] plants were imported from the Landes. Mr Marshall's [E.S. Marshall] belief is that these were practically always raised by nurserymen from seed)." *N.B*. under *Erica vagans* (Cornish Heath) Townsend again notes Packe's views as to the origins and suggests that the same might apply to *Gladiolus illyricus* (Wild Gladiolus).

History in Ireland

Harvey (1848):

" … has been found by Mr Thaddeus O'Mahony, growing in a perfectly wild situation on hills near Derrynane Abbey … The hills where this plant grows have

probably never been turned up, and the plant has certainly never been cultivated in a neighbouring garden."

Scully (1890):

"I was glad to find that this plant has a wider range than had hitherto been supposed. I found the *Simethis* in many spots between Darrynane, its recorded locality, and Reenronee, a small point in Kenmare Bay, some eight miles further east; it also occurred more than a mile inland, about half way between these points; while about Darrynane it extends from Lamb's Head on the south, to Sheehan's Point on the north, with many intermediate localities." "the plant seems to love exposed cracks in the rocky knolls … on the west side of the Abbey Island … pushing its way through a dense prostrate undergrowth of *Ulex* and *Erica* …"

Scully (1916):

"Very rare, but rather frequent locally. … in many places near the shore of Kenmare Bay for a distance of eight or nine miles east of Darrynane, extending inland for about a mile east of Caherdaniel. This is, perhaps, the most interesting member of that small group of plants whose range in Ireland does not extend beyond the borders of Kerry, a group which includes, as at the present known, only three other species in the Irish flora – *Sibthorpia europaea*, *Polygonum sagittatum* [now treated as an alien] and *Nitella confervacea*'.

Curtis & McGough (1988):

"… It is recorded from a 20 kilometre square of rocky terrain, over most of which it has been seen recently. The population is apparently stable ... It has recently been recorded from the Bears peninsula [West Cork, H3, on the opposite side of the Kenmare river estuary]."

Both Ro FitzGerald and David Holyoak have surveyed the sites in relatively recent years and found it widespread within the known limits.

There the matter rests! In the 130 years since Townsend's *Flora*, none of the subsequent floras of Dorset or Hampshire do other than relate the barest outline of the matter, ignoring Townsend's careful weighing of the possibilities, and all follow the line that it was probably introduced. Conversely, but in a similar fashion, none of the Irish national floras have suggested anything other than native status, despite the note by Harvey being a delightful piece of pleading for a record from "a perfectly wild situation", where it "has never been cultivated".

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How many plants are local relicts?

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Re-visiting our flora records for the Atlas 2020 Project, I came to ask myself a question about the status of many of our established plants: just how many of our species are actually capable of regenerating or spreading into 'new' sites? That is: how many native or long-established plants in Hertfordshire are really relicts of past landscapes and therefore likely to disappear with current approaches to landscape management and increasing pressures otherwise on the environment?

This is not a trivial question, because it is pretty self-evident, to me at least, and I dare say to a lot of others, that quite a few of our 'local' plants are pretty-well limited to a handful of sites. Even if they are more widespread, though, how many species are now apparently in a position where they seem to be incapable of 'spreading'? In terms of conservation, of course, we tend to focus on where species grow now – not so much, perhaps, on their continued survival into the future. If species really are relicts, then are we seriously under-estimating the problems for long-term conservation of much of our flora?

What might be a relict species?

The reasons why any particular species is not more widespread, or capable of spreading, will be different for different species. It is vital, of course, to know: a) does the species reproduce effectively (often difficult to tell without a lot of work!); b) is the species limited by habitat availability rather than inability to regenerate?; c) is the plant's ability to regenerate, even if apparent habitat seems to be available, being limited by other factors, such as nutrient enrichment, changes in hydrology, or climate change?

A Hertfordshire analysis

To move towards an answer to some of these questions, and to tease out some of the differences, I have carried out a (very rough) analysis of the 'native' and 'archaeophyte' species in the Hertfordshire flora. I examined each species (except for the main critical taxa: *Rubus, Hieracium* and *Taraxacum*) and asked a question: does this species appear to be limited in terms of its reproductive capability or current inability to spread to 'new' sites, or even within its current sites?

The answers were quite illuminating, if sometimes tricky to give. Some species might appear to be pretty widespread and not in any particular trouble, but if we ask ourselves, honestly, is the species effectively capable of spreading, the answer might surprisingly be 'no', even if tentatively. The reasons why, though, can be varied.

I analysed the results by allocating species, very roughly, to one of a number of principal 'habitat' types:

- woodland/scrub,
- wetland and aquatic (of all sorts, including fen and mire),
- calcareous grasslands,
- neutral grasslands (a bit of a ragbag),
- acid grasslands and 'heath' (including scrubby heathland, but not bog),
- arable/disturbed ground (*i.e.* open colonising ground of various sorts).

I also distinguished between species that were a) pretty definitely not capable of spreading in our modern landscapes (*i.e.* were either not appearing to regenerate at all, or were highly limited to particular patches within sites and not increasing), b) species that seemed to be very limited in their site/habitat occupancy but which might still self-seed effectively within these, and c) species that were probably, but not certainly, limited as to their capacity to spread locally (*i.e.*, species we do not find colonising new places, but which otherwise do seem to be fertile).

A summary of the results is given in Table 1.

Table 1. Results of analysis of potential 'relict' species in Hertfordshire

Habitat type	No. of spp. identified as apparently not capable of spreading beyond known sites	No of spp. in column 2 which may not be capable of spreading, but for which there is some doubt.	No. of spp. in column 2 that seem clearly incapable of spreading even within apparently suitable sites
Woodland/scrub	31	10	12
Wetland/aquatic	57	21	14
Calcareous grassland	41	12	17
Neutral grassland	15	6	6
Acid grassland/heath	36	14	15
Arable/disturbed ground	22	7	0
All habitats	202	70	64

The important headline figure here is that the overall total of species reckoned to be actually or potentially 'relict' is over 10% of the entire recorded flora of the County, and around 20% of the all-time native and archaeophyte flora!

The figures for apparently genuinely relict species are specially interesting. Two groups might be as expected – calcareous grassland species (17 out of 41 species, 42%) and acid grassland/heathland species (15 out of 36 species, 42%). These are both habitats of generally low fertility, and it is certainly recognised of calcareous grasslands at least that many species seem to have limited ability to spread, even into disturbed areas, very quickly. The same may well, therefore, be true of heathland/acid grassland species, if for different reasons. For both groups, the number of species involved comprises a considerable proportion of the native/archaeophyte species in Hertfordshire associated with either habitat group.

More surprisingly, perhaps, for woodlands (of all types), the figures are in a similar range (12 out of 31, 39%). We tend to think of woodlands as being reasonably resilient to 'pressures', at least compared with grasslands. However, these figures might show that many individual woodland species may be getting to the position where they are just 'hanging on in there', rather than being robust, regenerating members of a plant community. The numbers of species identified here, though, are at the moment comparatively lower in relation to the total number of species we might associate with woodlands.

It is with the aquatic and wetland cohort, though, that there appear to be some stark figures, and these parallel figures for local extinction that I summarised in my flora (James, 2009). Here, the total number of species that I have tentatively identified as 'hanging on' is 57, of which some 20 we might give the benefit of the doubt to, but out of which 14 seem pretty well unable to spread, for whatever reason. These include a recent 'newcomer' to the County (and UK) list, *Carex cespitosa* (Small Tussock-sedge) (James, 2012), which, despite being apparently in fairly rude health at its one site, shows no sign of wanting to spread locally, and which in some years seems to fail altogether to set seed. Compared with grassland groups, these 14 only represent 25% of the total identified as potentially in trouble, but they represent a far higher proportion of the total native and archaeophyte flora of Hertfordshire wetlands in general. The list includes several other sedges, as well as pondweed (*Potamogeton*) species, bladderworts (*Utricularia*) and so on.

Interestingly, though, there was no species in the 'arable/disturbed ground' category that could definitively be categorised as being unable to regenerate at least locally, presumably because, by definition, most of these plants are

opportunist colonisers. If they do not regenerate, they very rapidly vanish altogether!

Table 2 lists all the species identified, in my assessment at least for Hertfordshire, as being pretty-well incapable of spreading and therefore genuinely relicts locally. We do not know, often, how long a population like this can 'hang on', either through vegetative growth, or the occasional lucky seeding event. A classic case is that of *Pulsatilla vulgaris* (Pasqueflower), which can occasionally have a superb seed year, and has definitely shown some signs in the last 30 years of local increase at its one remaining Hertfordshire site through careful habitat management, but which in many years fails to set much seed, and for which, most of the time, it is impossible to find new seedling growth. As this is our 'County flower', and ours is one of, if not the largest remaining UK colony, this is concerning.

People may note that this analysis omits any of the ferns. I did consider these in the process, but came to the conclusion that no genuinely native species of fern (there are no 'archaeophytes' in this group) showed any real sign of being incapable of regenerating and spreading, given half the chance. This might strike as odd, given that Hertfordshire is a dry area, in a part of the country where climate warming is becoming very obvious. However, the *Flora of Hertfordshire* data clearly indicate that most, if not all of our ferns are quite capable of regenerating. The only one that might not is *Thelypteris limbosperma* (Lemon-scented Fern), but that has 're-appeared' at an apparently 'lost' site, so cannot be included. I can only attribute this situation to the fact that Hertfordshire's environment is more congenial to this group now than it was in the earlier 20th century.

Table 2. Species regarded as being clearly 'relict' in the Hertfordshire flora, analysed according to broad habitat occupancy. (*species marked with an asterisk may now be extinct in the County, although they were extant during the recording period for the *Flora of Hertfordshire* (James, 2009)).

Species	Woodland/ scrub	Wetland/ aquatic	Calcareous grasslands	Neutral grasslands	Acid grass-land/ heath	Arable/ disturbed
Juniperus communis (Juniper)						
Pulsatilla vulgaris (Pasqueflower)						
Cerastium arvense (Field Mouse-ear)						
Sagina nodosa (Knotted Pearlwort)						
Persicaria bistorta (Bistort) (as native)						
Helianthemum nummularium (Common Rockrose)						
Viola palustris (Marsh Violet)						
Populus nigra (Black Poplar)						
Salix aurita (Eared Willow)						
Salix repens (Creeping Willow)						
Iberis amara (Candytuft)						
Erica tetralix (Cross-leaved Heath)						
Pyrola minor (Common Wintergreen)*						
Primula elatior (Oxlip)						
Samolus valerandi (Brookweed)*						
Geum rivale (Water Avens)						
Agrimonia procera (Fragrant Agrimony)						
Sanguisorba officinalis (Great Burrnet)						
Alchemilla xanthochlora (Pale Lady's-mantle)						
Rosa sherrardii (Sherrard's Downy-rose)						
Astragalus danicus (Purple Milk-vetch)						
Astragalus glycyphyllos (Wild Liquorice)						
Onobrychis viciifolia (Sainfoin) (as native)						

Species	Woodland/ scrub	Wetland/ aquatic	Calcareous grasslands	Neutral grasslands	Acid grass-land/ heath	Arable/ disturbed
Vicia sylvatica (Wood Vetch)						
Vicia parviflora (Slender Tare)						
Ononis spinosa (Spiny Restharrow)						
Trifolium ochroleucon (Sulphur Clover)						
Genista tinctoria (Dyer's Greenweed)						
Genista anglica (Petty Whin)						
Ulex gallii (Western Gorse)						
Ulex minor (Dwarf Gorse)						
Thesium humifusum (Bastard Toadflax)						
Frangula alnus (Alder Buckthorn)						
Linum perenne (Perennial Flax)						
Polygala serpyllifolia (Heath Milkwort)						
Bunium bulbocastanum (Great Pignut)						
Oenanthe fistulosa (Tubular Water-dropwort)						
Oenanthe lachenalii (Parsley Water-dropwort)						
Oenanthe aquatica (Fine-leaved Water-dropwort)						
Clinopodium calamintha (Lesser Calamint)						
Thymus pulegioides (Large Thyme)						
Thymus polytrichus (Wild Thyme)						
Melampyrum cristatum (Crested Cow-wheat)						
Pedicularis sylvatica (Lousewort)						
Lathraea squamaria (Toothwort)						
Orobanche rapum-genistae (Greater Broomrape)*						
Serratula tinctoria (Saw-wort)						
Hypochaeris maculata (Spotted Cat's-ear)*						
Gnaphalium sylvaticum (Heath Cudweed)*						
Solidago virgaurea (Goldenrod)						
Juncus squarrosus (Heath Rush)						
Eriophorum angustifolium (Common Cottongrass)						
Scirpus sylvaticus (Wood Club-rush)*						
Blysmus compressus (Flat-sedge)						
Carex cespitosa (Small Tussock-sedge)						
Carex caryophyllea (Spring Sedge)						
Aira caryophyllea (Silver Hair-grass)						
Phleum phleoides (Purple-stem Cat's-tail)						
Bromopsis benekenii (Lesser Hairy-brome)						
Paris quadrifolia (Herb-Paris)						
Epipactis palustris (Marsh Helleborine)						
Epipactis leptochila (Narrow-lipped Helleborine)						
Neotinea ustulata (Burnt Orchid)*						
Totals	**12**	**14**	**17**	**6**	**15**	**0**

Main photo. Site of colony resembling *Limonium vulgare* on rock ridge at Porth Terfyn, Anglesey (v.c.52) with part of colony amongst boulders inset. Photos I. Rees © 2015 (p. 7)

A runner-up photograph in the Spring category by Keith Jones. 'Pasque Flower [*Pulsatilla vulgaris*], Barnack, Northamptonshire'. Photo © 2015 (p. 5)

Orobanche hederae (Ivy Broomrape) at Sand Point, Weston-super-Mare (v.c.5). Photographed by Helena Crouch on the 1st of January 2016 (p. 44)

Fig. 1 Variegated Mugwort (*Artemisia* sp.) on Falklands Way, Ainsdale, SD3011.
Photo P. Smith © 2010 (p. 23)

Fig. 2 Mugwort (*Artemisia vulgaris*) showing appressed, arachnoid, simple hairs.

Fig. 3a Unknown *Artemisia* sp. showing more or less patent, dense, multicellular, beaded hairs.

Fig. 3b Multicellular, beaded hairs of unknown *Artemisia* sp.

Three lower photos by M. Wilcox © 2013 (p. 23)

South London Botanical Institute (SLBI) Garden showing themed beds.

South London Botanical Institute herbarium cabinets open with specimens on display.
Both photos © SLBI (see p. 43)

1. *Strobilanthes atropurpurea,* habit

2. *Strobilanthes atropurpurea,* close-up of flowers.
Both photos taken at St Lawrence, Isle of Wight (v.c.10), by D. Trevan © 2015 (p. 32)

Tulipa tarda, Nairn, Easterness (v.c.96). Photo I. Green 2015 (p. 33)

Senecio pterophorus in Ventnor Botanic Gardens car park, Isle of Wight (v.c.10). Photo Colin Pope © 2015 (p. 39)

Reasons for relict status

These analyses only aim to highlight the overall position across the board. They do not identify specific reasons for the situation with different plants. The inclusion in the list of some species may be surprising to many, such as *Helianthemum nummularium* (Common Rockrose), which might be thought of as pretty widespread and secure. It was this species, though, which drew my attention to the question. In Hertfordshire, it is only found in discrete localities, and in all of these it has been present for a very long time. It also seems not to colonise new ground, even when habitat management is carried out locally, and so these colonies are apparently self-limited. Whether it can reproduce by seed locally needs to be tested, but it would generally appear, with us at least, that existing colonies only survive through vegetative growth of existing patches. With other species, limitations may be because of different factors. *Phleum phleoides* (Purple-stem Cat's-tail) has very precise habitat and climatic requirements, and therefore is unlikely to occur more widely, even if it were capable of spreading. It does seem to self-seed, but the open, nutrient-poor, friable, sandy/chalky soils it needs are only available very locally, and therefore it seems not to be able to spread. The two *Thymus* species are interesting, in that most people would not usually consider these to be specially limited. However, in our area, they seem to behave very similarly to *Helianthemum*, although they may regenerate from seed very locally if the right open, chalky ground is available. In their case, the limitations are probably not climatic, but edaphic, although pollination problems could also be becoming an issue. Other species are evidently relicts because climatic conditions and associated hydrological conditions are changed from earlier times. One such species might be *Sagina nodosa* (Knotted Pearlwort), which once grew on flushed ground in river valley pastures. Not only have habitat conditions changed generally through neglect, but reduced ground-water levels and loss of nutrient-poor flushes over a century seems to have almost destroyed its capacity to regenerate, even where the site could otherwise appear unchanged. *Pedicularis sylvatica* (Lousewort) is limited by similar considerations, but in this case more by the effects of winter and spring droughts on the damp heathy ground where it occurs.

All these issues may well be already documented through analyses at a national level, but the effects of these factors at the local level are what are probably causing a wide range of conservation problems. Some are likely to be intractable, and losses will inevitably occur as a result, but others might be ameliorated if we understand the mechanisms behind the problems before the situation gets too dire. For example, *Paris quadrifolia* (Herb-Paris) may be suffering locally from damage by deer grazing (although other issues could also be a problem), and so control of deer by more concerted activity might help.

Conclusion

I thought this little exercise might be of interest to look at the issue of 'localisation' from a different perspective – that of the long-term viability of species within plant communities, and understanding the different drivers that may be involved. This piece has also been intended as a call for others in different areas of Britain to take a look at their own local floras more critically and ask the same kinds of questions. For montane areas, obviously, there may now be examples driven by climate warming, while the effects of nutrient enrichment are generally well-documented, even if their impact at a local scale may not be as yet self-evident. However, there are other issues that we need to be aware of, such as the loss of insect pollinators across the board – how is this affecting the ability of different plant species to regenerate? Have we the data to show these effects at the local scale? Have we also got the data we might need to demonstrate the real viability of seed in the environment? Has seed viability changed over time with changing environmental factors? I feel that all these questions are quite urgently needed to be answered if the next generation is to inherit a viable natural flora.

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Adventives & Aliens News, 8

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There is only a short preamble this time, giving an opportunity for me to thank members for their continuing support of this section. Records sent from vice-counties lying outside the south-east of England have gone a long way towards ensuring a more equal coverage of the British Isles in what follows, although I would like it to be more equal still! I am also grateful for the feedback concerning *Euphorbia oblongata* (Balkan Spurge). Not unexpectedly it seems to be doing well in at least three other vice-counties. The two v.c.6 records (and the single v.c.5 record) represent only a small fraction of the total sent to me by Helena Crouch, who described it as "one of the plants of the year". Are there hidden affinities between the Balkans and North Somerset? Lastly, the circumstances of two *Descurainia sophia* (Flixweed) records (see v.cc.13 and 14), suggest that it is being spread with top soil and/or sand used in landscaping around new housing developments. Hence, it could turn up in vice-counties, or in parts of vice-counties, where it has hitherto had little or no history. You have been forewarned!

V.c.5 (South Somerset)

Euphorbia oblongata (Balkan Spurge). Chilton Cantelo (ST5721), 6/6/2015, J. Poingdestre (comm.: H. Crouch).

Linaria dalmatica (Balkan Toadflax). Langport (ST407273), 29/1/1998, I. Green & P. Green (comm.: H. Crouch): plants just coming up. Even if this proves to be the last sighting, the species would still have been known in this general area for at least 82 years.

V.c.6 (North Somerset)

Euphorbia oblongata (Balkan Spurge). Westonzoyland (ST364342), 12/6/2010, J. Poingdestre: six plants; Pilton (ST59144066), H. Crouch & F. Rumsey: one plant.

Agrostis scabra (Rough Bent). Winford (ST54086478), 1/8/2015, M. Webster (det.: H. Crouch; conf.: T. Cope): weed in a plant container. The first v.c.6 record, it could also be the first British record to involve this particular vector, having been known in the past mainly as a wool, grain and ballast alien.

V.c.10 (Isle of Wight)

Haloragis erecta (Murray) Schindl. (Upright Raspwort). Freshwater (SZ330868), 9/2015, P. Stanley (det.: E.J. Clement): in derelict area, Summers Court; still flowering in December! The plant had bronze-suffused leaves, betraying its probable garden origin ('Wellington Bronze'). A native of New Zealand.

Strobilanthes atropurpurea Nees (Kashmir Acanthus). St. Lawrence (SZ527762), 9/2015, D. Trevan (comm.: C. Pope): established in Charles Wood. The second British record; a perennial native to the Himalayas belonging to the Acanthaceae; one of three rather similar species increasingly being cultivated. See Colour Section, Plate 4.

V.c.13 (West Sussex)

Descurainia sophia (Flixweed). Midhurst (SU88502159), 6/7/2015, D.Nelson (det.: T. Rich): one large flowering plant on wall, south side of June Lane, where houses are being rebuilt. With *Amsinckia micrantha* (Common Fiddleneck).

Bromopsis inermis (Hungarian Brome). Chilgrove (SU82941487), 29/7/2015, N. & E. Sturt (conf.: T. Cope): spontaneous and established in cottage garden managed as a meadow. A possibly quite frequent impurity of commercial grass seed and/or relic of cultivation that is overlooked due to mowing and the surprisingly cryptic character of its culms. The first v.c.13 record. Clement *et al.* (2005): 398.

V.c.14 (East Sussex)

Descurainia sophia (Flixweed). Eastbourne (TQ6005900624), 28/6/2015, M. Berry: verge off King's Drive, opposite Bovis housing development, also with *Amsinckia micrantha* as an associate. A rare casual in Sussex.

Diplotaxis erucoides (White Wall-rocket). Eastbourne Old Town (TV5997499438), 18/9/2015, M. Berry (conf.: E.J. Clement): weed in flower bed by steps leading up to Manor Gardens. Quite variable with respect to leaf shape and pubescence, it can have petals that are pure white, or white petals that quickly become lilac-tinged.

Oenothera speciosa Nutt. (Mexican Evening-primrose). Eastbourne sea front (TV61394 98346), 21/6/2014, M. Berry (conf.: E.J. Clement): one plant on shingle at foot of promenade. Not seen in 2015. Probably a short-lived perennial; on the shingle at Eastbourne it formed a low, branched, glabrous sub-shrub with dull, grey-green irregularly-toothed to entire leaves and relatively long petioles. The flowers, up to 7cm across, are white, variously flushed pink and yellow-eyed. Be wary of a cultivar being sold as 'Rosea' with more uniformly pink petals. It could be mistaken for *O. rosea* (Pink Evening-primrose), but that has flowers small enough (1.5cm across) to make it more closely resemble an *Epilobium*.

Conyza bonariensis (Argentine Fleabane). Hastings (TQ82601955), 10/2015, J. Rose: one plant in trough of planted flowers at edge of pub forecourt, later thrown out and replaced. Outside of a few well monitored haunts in Brighton and Hove, this is a very rare and impermanent alien in Sussex.

Salvia sclarea (Clary). Southease area (TQ4236305159), 8/2010, P. Smith: established on road side. A garden plant, native to the Mediterranean region. The north African *S. aethiopis* (Woolly Clary) is rather similar and could conceivably occur. The following couplet should successfully distinguish these taxa in most cases:

(1) *S. sclarea* - corollas whitish to pale violet; plant glandular hairy, at least above; bracts white often pink-flushed; leaves with powerful fruity aroma, canescent; lower leaves sometimes with shallow teeth/lobes.

(2) *S. aethiopis* - corollas white; entire (?) plant non-glandular; bracts usually greenish; leaves with weak or no aroma, silvery, white-woolly when young; lower leaves often coarsely toothed/lobed.

For a drawing of *S. sclarea* by G.M.S. Easy see *BSBI News*, **95**:1.

V.c.24 (Bucks)

Lathyrus vernus (Spring Pea). Great Missenden (SU883994), 30/4/2015, T. Marshall: at Peterley Manor Farm. It has paripinnate leaves composed of very distinctive, broad-based, acuminate leaflets.

Euphorbia oblongata (Balkan Spurge). Great Missenden (SU875998), 6/7/2004, T. Marshall: at Lawrence Grove, Prestwood.

V.c.63 (South-west Yorks)

Chenopodium foliosum (Moench) Asch. (Strawberry Goosefoot). Bradford (SE17146 32469), 20/9/2013, M. Wilcox & B.A. Tregale (det. & comm.: E.J. Clement): back of Francis/Heaton Street. Very like *C. capitatum* (Strawberry-blite), the fruiting perianth is not quite as succulent and the flowering stem is leafy more or less to the apex; leafy more or less to base of inflorescence in *C. capitatum*. Both species have been grown as a leaf vegetable, indeed one of them (from the photo it is not clear which but probably *C. foliosum*) is being offered on p. 62 of the 2016 Plant World Seed (Newton Abbot) catalogue, as "Strawberry Spinach".

V.c.95 (Moray)

Euphorbia stricta (Upright Spurge). Flores (NJ02616002), 9/8/2015, I.Bailey (comm.: I. Green): seven plants at side of path. The first vice-county record, and possibly only the second for Scotland.

V.c.96 (Easterness)

Tulipa tarda Stapf (Late Tulip). Nairn (NH88595630), 22/4/2015, I. Green & A. Amphlett: four clumps, bank of River Nairn (east side). Possibly only the third British record. See Colour Section, Plate 4.

Reference:

CLEMENT, E.J., SMITH, D.P.J. & THIRLWELL, I.R. (2005). *Illustrations of alien plants of the British Isles*. BSBI, London.

Lonicera nitida (Wilson's Honeysuckle) and *L. pileata* (Box-leaved Honeysuckle)

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Sometimes there is confusion over the two species of honeysuckle, *Lonicera nitida* (Wilson's Honeysuckle) and *L. pileata* (Box-leaved Honeysuckle) given in Stace (2010). However, in the country of origin, China, they are recognised as one variable species, *L. ligustrina*, which includes three variants: var. *pileata*, var. *yunnanensis* and var. *ligustrina*. Var. *pileata* is mainly separated from the other two varieties in having a raised vein on the upper surface of the leaf. This, and the illustration in the *e-flora of China, fits the narrow-leaved plants we consider to be *L. pileata*, but there is potentially much variation in leaf shape if the raised vein is the main character of separation. The variation in the latter (variable intermediates) could also relate to the possibility of putative (fertile) hybrids. Although *L. nitida* (or even as var. *nitida*) is not mentioned, compared with the description in Stace (2010), it is almost certainly a match with var. *yunnanensis* rather than var. *ligustrina*.

The main leaves of *L. nitida*, in my experience, are usually not more than 12(-17) × 10(-12) mm, and are mostly slightly cordate, to broadly rounded-truncate, at the base, making the petiole more or less distinct, and never with a raised vein on the upper surface. Its corolla is given as *c.*4-7 mm. Based on information from the e-flora of China, problems arise for var. *ligustrina*, with leaves being (0.5-)10-40(-80) mm, and with a much larger corolla (7.5-12 mm). The illustration in the e-flora shows a reasonably different leaf type for var. *ligustrina*. Personally, I have not seen plants with the size or leaf shape given for var. *ligustrina* in Britain. All plants seen, apart from one with other leaf variations, that I have seen have a raised vein on the upper surface of the leaf, which seems to discount var. *ligustrina* so far, although it could occur, at least as planted. If truly without a raised vein, this taxon could be a different species altogether. Although narrower, I have seen one variant that does look intermediate, which has similarities to var. *ligustrina* in leaf shape, but again the leaves have the raised vein (see Fig. 4, 5th image, p. 38). From limited material (*i.e*. it could vary), narrow-leaved plants called *L. pileata* have the main leaves approximately 30(-35) × 8(-10) mm. There is no specific size for the corolla of *L. pileata* in the e-flora (suggesting a generic range of 4-12 mm) but Stace (2010) gives 6-8 mm. As above, some of the variants have leaves similar to *L. nitida* and/or larger in size and general shape (usually darker green), while others are closer to *L. pileata* (*L. ligustrina* var. *pileata*) or more variable (intermediates). All these types have a cuneate base and a raised or partially raised vein adaxially (except one, as above). These could be part of a range in a variable *L. pileata* (or *L. ligustrina* var. *pileata*, depending on one's taxonomic point of view), but could be putative hybrids.

The text description in the e-flora of China also states that the crisped hairs (hairs curved at their tips) for all the variants, on young branches, are "stiff and upwardly curved". However, from my limited observations, I have seen some *L. nitida* (as described here) with short crisped hairs, where the curved tip of the hair faced downwards, so it may be a slightly variable character. From looking at the two taxa here (if one is strict with *L. nitida*), there seem to be enough differences to retain them as species. The variation in plants with mixed characters, while most likely part of the variation in *L. pileata*, perhaps relating to natural and/or horticultural variation, is perhaps less likely to represent putative hybrids. See comparative features of the two perceived species below in Table 1.

Table 1. Perceived differences between *Lonicera nitida* and narrow-leaved *L. pileata*. Features with an asterisk * may be features in common with intermediates/putative hybrids.

Lonicera nitida	*Lonicera pileata*
Leaves: not much longer than wide, very small, more oval in shape, not more than *c.* 1.5 × as long as wide, obtuse.	Leaves: distinctly longer than wide (larger than *L. nitida*) up to (possibly more than) 3.5 × as long as wide (others variable in size and shape*)
Leaves: never with a raised vein adaxially.	Leaves: with a raised vein, ± distinct adaxially*
Leaves (new growth): patent to angled down (still in horizontal plane), leaf base ± cordate	Leaves: often directed forwards, (or variable*) leaf base broadly to narrowly cuneate*
Petiole: relatively distinct for most of its length (best seen from the underside of leaf).	Petiole: semi-winged for part or half its length* (best seen from the underside of leaf).
Hairs: dense short crisped ones on the present year's twigs with curved tip ± facing upward (occasionally downward*)	Hairs: dense short crisped ones on the present year's twigs with curved tip ± facing upward (if variable maybe an intermediate*)
Calyx: with very short, semi-circular lobes (i.e. with a distinctly round apex)	Calyx: with much deeper lobes, longer than wide (an obtuse triangle); (or mixed/confused, suggesting intermediates*)

Those considered to be *L. nitida* here have short, semi-circular calyx lobes (Fig. 1a) and those of *L. pileata* have obtuse, triangular lobes, longer than wide (Fig. 2a). Intermediates seem to have many calyx lobes of one or the other kind or mixed-confused lobes (Fig. 3a). All lobes have short-stalked glands around the edges, Figs. 1b and 2b. Calyx lobe-shape could be another character that varies even within the species.

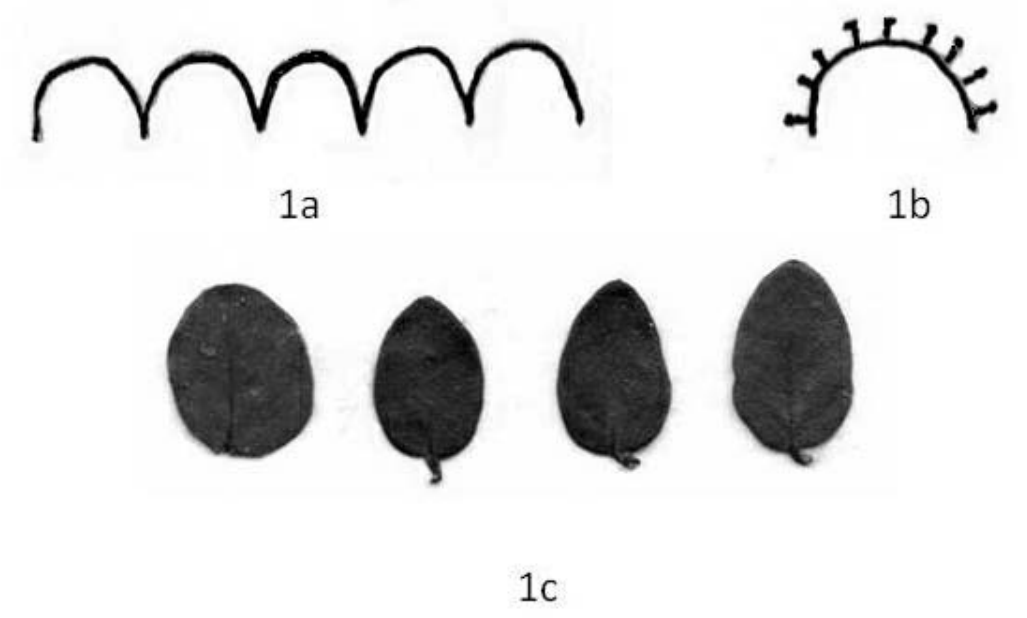
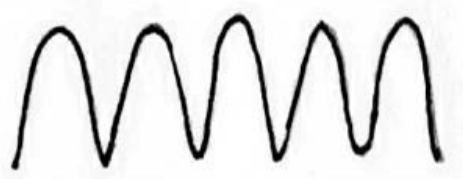
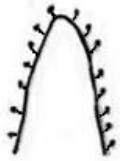


Fig. 1a. *L. nitida* (stylised) calyx lobes; 1b. individual lobe showing glands; 1c. leaves (weakly cordate-truncate base, not obvious in pressed leaves).



2a



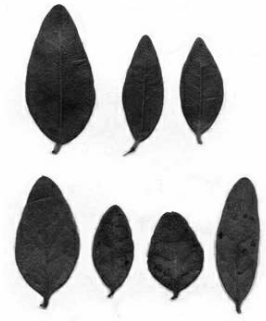
2b

2c

Fig. 2a. *L. pileata* (stylised) calyx lobes; 2b. individual lobe showing glands; 2c. leaf, with a raised vein on upper surface and many in the present year's growth longer than wide, with more narrowly-cuneate base (making the petiole semi-winged).

Intermediates (variants or putative hybrids?) have been found by the author (*e.g.* Chellow Dene Woods, Bradford, v.c.63; Apperley Bridge marina, v.c.63 side of the canal; and possibly elsewhere). The first is probably a throw-out survivor, which is robust and has intermediate characters (Fig. 3a-c.). For the Apperley Bridge plants, at least four are of the 'variable intermediate' forms and are self-seeded on the wall of the marina near the water, with at least one being the perceived narrow-leaved *L. pileata*. All have been self-seeded there since *c.*2010, but not recorded due to difficulties in placing them in one or the other at the time (they are rather small plants). At the marina, there is an array of planted variants (rather than one type) near the self-seeded ones. Some variegated cultivars, such as Lemon Beauty, fall closer to *L. pileata* in characters but could also be putative hybrids or part of a variable taxon, as they have a raised vein on the upper surface of the leaf and cuneate leaf bases, and some have confused calyx lobes.

3a



3b

3c

Fig. 3a. Intermediate calyx lobes (often confused, from a single flower); 3b seven leaves of Chellow Dene putative hybrid plant (note such plants are often dark green, and robust in this case); 3c. leaves with more rhomboid shape of a planted form around Leeds Bus Station, v.c.64 (which suggests another intermediate form. **N.B.** this compares with that given in Poland & Clement (2009), p. 179 and illustration p. 180, rather than the perceived typical narrow-leaved form).

L. pileata is called Box-leaved Honeysuckle, a rather generic name, as there are about 70 species of Box (*Buxus*) and its leaves are not like our native Box (*B. sempervirens*). However, for the narrow-leaved plant considered *L. pileata* here, it could refer to its similarity to Himalayan Box (*B. wallichiana*). Confusion can occur, as *L. nitida* bears a resemblance to *B. sempervirens* and is sometimes referred to as Box Honeysuckle. Cultivars of the *Lonicera* taxa discussed here, labelled only with an English name, may cause further difficulties in identification.

Planted or self-seeded plants of *L. nitida* (China's *L. ligustrina* var. *yunnanensis*) should pose no difficulties, with their small, oval leaves, a distinct petiole, weakly cordate to broadly rounded-truncate at the base and no raised vein on the upper surface of the leaves. Strangely, apart from variegated forms (*e.g.* Baggesen's Gold) there seems to be little variation in this taxon, which makes the variation in those with a raised vein all the more confusing. Narrow-leaved forms of *L. pileata* (leaves much longer than wide), with the raised vein on the upper surface, should be identifiable. They are generally a mid- to paler green in colour. More or less all other leaf variations ('intermediates'), with a raised or partially raised vein on the upper surface, might be difficult to place. However, given that *L. nitida* has no raised vein (even in the e-flora of China) the other variants (which maybe putative hybrids) might best be described as forms of *L. pileata* (China's *L. ligustrina* var. *pileata*) for the time being. There may be the odd plant of an intermediate type which has no raised vein, and these need further investigation (as above I have only seen one). *L. ligustrina* var. *ligustrina* needs more study, as it seems to be an enigma at the present time (see Fig. 4 p. 38).

It is clear that there are questions which need to be answered. This may require a molecular analysis. Are the two main taxa described above distinct species? Are the intermediates/variants, with a raised vein on the upper surface of the leaf, some form of hybrid or just part of a variable taxon? Could there be more than two species involved? Does var. *ligustrina* occur in Britain? Is it possible that var. *ligustrina* is involved in any putative hybrids? If they are distinct or even only part of one variable taxon, what is the appropriate taxonomy, given that *L. nitida* is not recognised in China? No doubt there are more aspects that need to be studied. See Fig. 4 for a range of leaf types.

Acknowledgements:
Thanks to: Eric J. Clement (the Chellow Dene specimen was sent EJC and he agreed that it might belong to a hybrid, based on the understanding of the two species); Alan Leslie, who initially mentioned these taxa being lumped under *L. ligustrina* in China (also that a hybrid has been noted in the past in gardens by P. Yeo, although I have been unable to trace this reference); and to James Armitage, who tells me that these taxa may be a potential target of a future study.

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*E-FLORA OF CHINA (http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=200022331).

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Fig. 4. Left to right: 1: *L. nitida* (*L. ligustrina* var. *yunnanensis*); 2: What is thought to be the main form of *L. pileata* (*L. ligustrina* var. *pileata*); 3: One variant with intermediate qualities; 4: A variant closer to *L. nitida*; 5: Planted intermediate with similarities in some leaves to var. *ligustrina* but seemingly much narrower (its leaves still with a raised vein and cuneate leaf bases). It may just be a variant of *L. pileata* or, being fairly intermediate, it could be a good candidate for a putative hybrid. Images 2-5 all have a raised vein on the upper surface of the leaves. Scale: largest leaf 33×12 mm (5th image).

Naturalising *Senecio* spp. in Ventnor Botanic Gardens, Isle of Wight (v.c.10)

COLIN POPE, *14 High Park Road, Ryde, Isle of Wight, PO33 1BP*; (Colin.pope@botanic.co.uk)

Four species of *Senecio* have recently started to naturalise in the mild, relatively frost-free Ventnor Botanic Gardens on the Isle of Wight. Two of these are grown for their showy display; the other two have been accidentally introduced with other plant material. Brief descriptions of three of them can be found in Stace (2010), where they are also keyed out. The fourth species remains unidentified.

In 2009, Paul Stanley discovered a very few plants of *Senecio minimus* (Toothed Fireweed) in the grove of tree ferns (*Dicksonia antarctica*) in the Australian garden. A native of Australia and New Zealand, it was considered that they were accidentally brought in with the tree ferns in 2005. *S. minimus* is a tall but rather drab plant, growing to at least a metre tall, with branching heads of small, yellow, tubular florets, followed by masses of small, fluffy seeding heads. The stems are ridged and leaves strongly toothed along the edges. After a slow start, by 2015 the plant had become well established and spreading in the Gardens. However, there is no evidence that it has spread beyond the Gardens, where the plant is widespread, but present at a low density. In contrast, *S. minimus* has become an invasive plant on the Isles of Scilly, spreading rapidly through dunes and woodland on Tresco, and by 2008 had spread to St Mary's and Bryher and the uninhabited island of Samson in 2009.

The very showy South African *Senecio glastifolius* (Woad-leaved Ragwort) is grown in several locations in the Gardens. It has large, daisy-like flower heads, borne in dense, flat-topped clusters at the tips of the branches, each with 12-22 pink ray florets. It was first introduced into cultivation in Britain in 1866 (Preston *et al.*, 2002). It is cultivated at Tresco Abbey Gardens on the Isles of Scilly, but has become naturalised and invasive in the islands. It was first recorded naturalised on Tresco in 1993 by Rosemary Parslow and it has since invaded the islands of St Mary's and St Martin's, where it is mostly found in sand dunes. It is also listed as naturalised on rough ground in Guernsey. In 2011, material was brought in to Ventnor Botanic Gardens from Tresco and now seedlings are appearing in scattered sites, although always in the vicinity of mother plants. A favoured location for young plants is on the tops of old walls, where conditions are presumably slightly warmer and drier. It is an invasive species in parts of New Zealand and Western Australia.

Perhaps the most interesting of the new colonists is *Senecio pterophorus* (Shoddy Ragwort), a native of Eastern Cape Province, South Africa. This was originally received as *S. ilicifolius* from Silverhill Seeds (Cape Town) in 2010, from wild-collected seeds, and grown in the South African garden, but was subsequently re-determined by Eric Clement. It grows as a small bushy shrub, up to 2m high, if the stems are not cut to the ground in winter. It has toothed, lanceolate leaves, glossy green above and whitish beneath. The stems are winged. Very showy, yellow daisy flower heads are borne in large, spreading clusters throughout the summer. Each capitulum has both ray and tubular florets enclosed in 18-22 involucral bracts. Each plant produces copious seeds, which seem to germinate freely and quickly. It is now spreading throughout the Garden and plants are appearing in the car park and by the roadside (see Colour Section plate 4). Efforts are now being made in the Gardens to control it. A plant has been seen growing in a pavement crack at the base of a wall in Lugley Street, Newport, 11km to the north (Chris Kidd, pers. comm.). It seems very likely that this plant is on the verge of becoming naturalised on the Island.

Senecio pterophorus is otherwise known in the British Isles as a casual arising from wool shoddy. It was first recorded in the wild in 1913 in Selkirk, but there are only a handful of records in the BSBI Distribution Database, most recently in 1983 (Himley, Staffordshire).

Senecio pterophorus has become an invasive species on the Cote d'Azur in France (Tison & Foucault, 2014). It also grows in north-east Spain and is a serious weed in South Australia, where it was originally introduced in ship ballast about 1930. In South Australia it causes heavy productivity losses in agricultural areas and is a strong competitor that excludes native species in natural communities (Cano *et al.*, 2008).

There is a fourth, as yet unidentified species of *Senecio* that is beginning to naturalise in the Gardens. In its early stages, it looks similar to young plants of *S. pterophorus*, but by the time it reaches flowering size, it somewhat resembles *S. minimus*. The older shoots have linear leaves and looser, more open flower heads, with tubular florets only. Unlike the other two species, this one appears to be highly susceptible to Colt's-foot rust (*Puccinia poarum*). The genus *Senecio* comprises some 1000 species and is cosmopolitan, making identification difficult. This one presumably originated from Australia (Eric Clement, pers. comm.).

All these species are known to escape from cultivation and have become naturalised in areas with a Mediterranean climate outside their native range, such as in parts of Australia, New Zealand, California and Spain. It would appear that at Ventnor some of these plants are finding current climatic conditions favourable for their tentative spread into the wider countryside.

Acknowledgement:
I would like to thank Eric Clement for his encouragement and invaluable contributions. I am also grateful to Chris Kidd, Curator at Ventnor Botanic Gardens, for information and observations.

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NEWS OF MEMBERS

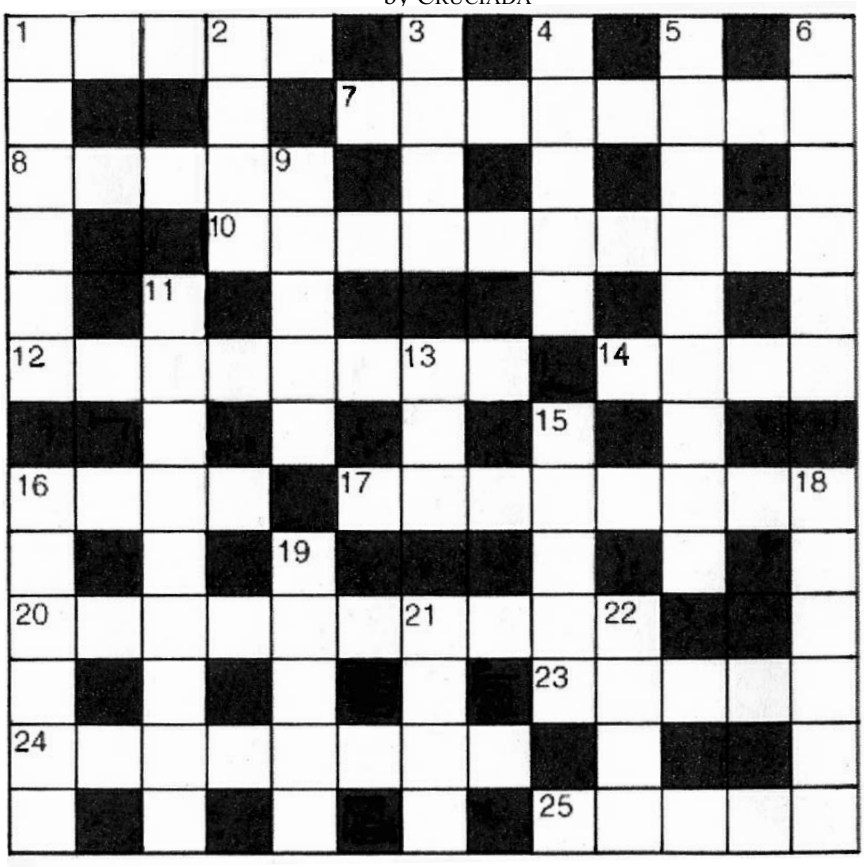
CHRIS METHERELL, *Woodsia House, Main Street, Felton, Northumberland, NE65 9PT*; (01670 783401; chris@metherell.org.uk)

We would like to offer our congratulations to the following people who have been members for 60 or 61* years.

Mr P.W. Ball* of Mississauga, Canada; Mr A.O. Chater* of Aberystwyth, v.c.46; Mrs G. Crompton of Swaffham Bulbeck, v.c.29; Prof J.H. Dickson* of Milngavie, v.c.77; Mr M. Edmunds of Otley, v.c.64; Dr G. Halliday of Burton-in-Kendal, v.c.69; Dr J.A. Rogers* of Peebles, v.c.78; Mr W. Scott* of Scalloway, v.c.112; Mr P.G. Sheasby of Banbury, v.c.23; Mr P.W. Strachan* of Brooke, v.c.27; Mr D.T. Streeter* of Brighton, v.c.14; Mr A.H. Vaughan of Builth Wells, v.c.43 and Dr F. Wrigley of Hardwick, v.c.29.

BOTANICAL CROSSWORD 28

by CRUCIADA



ACROSS

1. Cherry, for example, said to hang down (5)
7. Heroic lay about unknown whorl of bracts (8)
8. Fashion to look after in garden, say, round initial roots (5)
10. Profitable skills are unable to serve early botanist (10)
12. Tease learner pickpocket we object to (8)
14. Saint reported to cut down some daisies (4)
16. Fruit used in combination with fish (4)
17. How a botanist may get stuck looking for an asphodel, rush or myrtle? (8)
20. Often poisonous family is a restless Hades thing (10)
23. Tree genus having deformed axils (5)
24. Fairy disappeared into floral envelope (8)
25. A packed inch could be composed of daisies (5)

DOWN

1. *Punctata*'s the line to sign on (6)
2. Confined to having prefix of five (4)
3. This pudding contains relative of 20 (4)
4. Help announced with a resting feature of 11 (1,4)
5. A *Carex* that puts limit on parasites (4,5)
6. Alien's possibly toxic at end of capsule (6)
9. Ironic publicity for wood nymph? (5)
11. Pray go, sir, and gather some water-silk (9)
13. German town has cut down trees wych may be English (3)
15. Aquatic habitats show presence of nitrogen in legume husks (5)
16. Tinwork you originally discovered at treetop level (6)
18. Perish, they say, with farm animal in spread of herbicide (6)
19. *Hosta* gets arrested in this part of process (5)
21. Asian nomad takes time to go on New Year plant expedition, perhaps (4)
22. Everyone to take top off Chinese *Prunus* (4)

REQUESTS

Arctium and *Echinops*

MICHAEL WILCOX, *43 Roundwood Glen, Greengates, Bradford, BD10 0HW*; (michaelpw22@hotmail.com)

The first of these two genera, *Arctium* (burdocks) is often recorded as *Arctium minus* agg. There are four native taxa, with variable taxonomies, and occasionally the distinctive *A. tomentosum* (Woolly Burdock), but for the purposes of this note it presently follows Stace (2010).

I am looking into certain characters of *Arctium* and would welcome specimens. Either a main branch of fully flowering heads and/or later a fruiting main branch with mature seeds (leaves are not necessary). It might be possible to just send some heads removed from each plant but only if they have mature seeds in them, which would save on postage. If sending just the heads, then please select about five of the largest only from each plant (although a photo of a main branch would still be useful).

The second of these two genera, *Echinops* (globe-thistles), has three taxa in Britain (Stace, 2010). The dwarf *E. ritro* (Southern Globe-thistle) could start to be found as a throw out, as there are several cultivars of it being sold from horticultural sources. The taxonomy of *Echinops* is quite complex and they are quite similar in most of their characters. I have seen convincing material of the three main taxa, which are more or less naturalised as throw outs in various parts of the British Isles. *E. sphaerocephalus* (Glandular Globe-thistle), as its name suggests, is distinct from the other two, *E. bannaticus* (Blue Globe-thistle) and *E. exaltatus* (Globe-thistle), and it is possibly over recorded for these latter two taxa (Stace, 2010). However, some plants of the last two taxa are difficult to place into one or the other based on a character relating to the achenes, which may suggest there is another species involved, or there are interfertile hybrids, but more information is needed.

Often *Echinops* (like *Arctium*) are not collected, as they are bulky, large plants. However, it does not have to be the whole plant. For *Echinops* heads can be photographed for flower colour (which may not be a reliable diagnostic character); leaves can be stripped off easily and if the plant is in fruit the individual capitula with achenes can be peeled off (check the achenes are mature), so that they can be sent more easily with two or three leaves in an A4 envelope.

While notes in *BSBI News* rarely generate more than one or two replies (if any), if you have *Arctium* or *Echinops* I would be grateful for any material to look at and, preferably, for both taxa, those with mature seeds would be the most useful. Do not hesitate to get in touch for further information.

Reference:

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Brachypodium pinnatum/*rupestre*

MICHAEL WILCOX, *43 Roundwood Glen, Greengates, Bradford, BD10 0HW*; (michaelpw22@hotmail.com)

Specimens wanted of *Brachypodium pinnatum* (Heath False-brome) and *B. rupestre* (Tor-grass); preferably fresh in a plastic bag. Hopefully this will help to improve knowledge of their distributions and confirm their characters. Any suspected hybrids with *B. sylvaticum* (False Brome) welcome.

NOTICES

Secretary to Council – Vacancy

HELENA J. CROUCH, *Bronwen, Farrington Road, Paulton, Bristol, BS39 7LP*; (Tel.; 01761 410731; helenacrouch@sky.com)

The position of Secretary to Council is still vacant, although I am continuing in post until a new volunteer is found. It is an interesting job and not particularly arduous, as the Council only meets twice a year. However, as a Vice-county Recorder working towards Atlas 2020 and a Rare Plant Register, I feel overloaded and need to give something up.

The duties of Secretary are simply to send out reminders and papers before a meeting and take the minutes during the meeting, in London. Travel expenses are reimbursed. If any member might be interested please do not hesitate to contact me or the Honorary General Secretary for a chat.

South London Botanical Institute wins Heritage Lottery Fund grant of £99,600 for 'Plant Recording for All Ages' project

CAROLINE PANKHURST, *Education & Project Manager, South London Botanical Institute, 323 Norwood Road, London, SE24 9AQ*; (caroline@slbi.org.uk)

The South London Botanical Institute (SLBI) has just received £99,600 towards the restoration of their historic herbarium. The Institute, based in Tulse Hill, has been awarded the grant for an exciting project, 'Plant recording for all ages', which will bring the herbarium up-to-date, make it accessible to all and enable visitors to use it for a range of activities. The project will start in May 2016 and will take place over the next two years.

The herbarium at the Institute contains around 100,000 pressed plant specimens, some of them about 200 years old. They are all housed in the original cabinets designed by the Institute's founder over 100 years ago (see Colour Section plate 3). The new project will help to conserve these fragile specimens and install digital interpretation facilities so that visitors can view them online. The Institute will also widen its range of already popular educational activities for school children, adults and young people to complement the refurbishments (see Colour Section plate 3).

Commenting on the award, Marlowe Russell, SLBI Trustee, said: "We are delighted to have received further support from the Heritage Lottery Fund. We have already made huge developments at the Institute using their last grant and are looking forward to updating our herbarium so that visitors have even more to enjoy and learn about when they come here."

Stuart Hobley, Head of Heritage Lottery Fund London, said: "Rare flowers, strange fungi, not to mention thistles and moss… the historic plant collections of the South London Botanical Institute are home to fascinating examples of our botanical heritage. Our grant will use digital technology to help many more people access and enjoy these remarkable plant specimens."

New Year Plant Hunt 2016: twice as many species as last year and three times as many botanists!

LOUISE MARSH, *234 London Road, Leicester LE2 1RH*; (louise.marsh@bsbi.org)

BSBI's fifth New Year Plant Hunt was held between 1st and 4th January 2016 and both the number of species recorded in bloom, and the number of participants, surpassed all expectations.

A total of 653 different species was recorded in flower, compared to 308 last year; 865 people took part in the Hunt across Britain and Ireland compared to *c.*300 last year, and they submitted 432 lists comprising 9,256 records. They spent up to three hours hunting for wild plants blooming at New Year and we would like to say a huge thank you to everyone, member and non-member alike, who contributed to these amazing results.

Analysing the records

As in 2015, the New Year Plant Hunt (NYPH) was coordinated by a small team of volunteers, with Ryan Clark once again handling incoming records, assisted by Ian Denholm, Co-Chair of BSBI Meetings & Communications Committee and, until November 2015, BSBI President. This year we also welcomed Kevin Walker, BSBI Head of Science, to the team. Kevin checked that plant identifications were accurate, analysed the data, produced the Tables below and presented a clear overview of findings to our media contacts.

Kevin told them: "There does not seem to be any real indication of an early spring. Although spring-flowering specialists, such as Lesser Celandine, Cow Parsley and Sweet Violet, were widely recorded, they make up less than a fifth of the total (Table 1).

Table 1: The most frequently recorded species flowering early

Latin name	Common name	Lists	%lists	Months early
Ulex europaeus	Gorse	193	48.3	-3
Ficaria verna	Lesser Celandine	157	39.3	-3
Corylus avellana	Hazel	126	31.5	-1
Petasites fragrans	Winter Heliotrope	96	24	-1
Anthriscus sylvestris	Cow Parsley	90	22.5	-4
Pentaglottis sempervirens	Green Alkanet	75	18.8	-5
Vinca major	Greater Periwinkle	70	17.5	-4
Mercurialis perennis	Dog's Mercury	49	12.3	-1
Viola odorata	Sweet Violet	36	9	-2
Galanthus nivalis	Snowdrop	33	8.3	-1
Smyrnium olusatrum	Alexanders	30	7.5	-4
Erophila verna	Common Whitlowgrass	29	7.3	-3
Fragaria vesca	Wild Strawberry	29	7.3	-4
Potentilla sterilis	Barren Strawberry	27	6.8	-2
Allium triquetrum	Three-cornered Garlic	23	5.8	-4
Prunus laurocerasus	Cherry Laurel	21	5.3	-4
Ranunculus bulbosus	Bulbous Buttercup	20	5	-3
Prunus spinosa	Blackthorn	20	5	-3
Crataegus monogyna	Hawthorn	17	4.3	-5
Vinca minor	Lesser Periwinkle	15	3.8	-3
Primula veris	Cowslip	15	3.8	-4

At least three quarters of the plants recorded were 'Autumn Stragglers' like Yarrow, Red Campion and Red Dead-nettle that had carried on flowering in the absence of a hard frost (Table 2). The two most commonly recorded plants were Daisy and Dandelion – which we would expect to be flowering at this time of year (Table 3 p. 46).

Table 2: The most frequently recorded species flowering late

Latin name	**Common name**	**Lists**	**%lists**	**Months late**
Lamium purpureum	Red Dead-nettle	163	40.8	2
Geranium robertianum	Herb-Robert	159	39.8	3
Senecio jacobaea	Common Ragwort	159	39.8	2
Euphorbia peplus	Petty Spurge	158	39.5	1
Heracleum sphondylium	Hogweed	157	39.3	3
Achillea millefolium	Yarrow	141	35.3	4
Lapsana communis	Nipplewort	127	31.8	3
Ranunculus repens	Creeping Buttercup	121	30.3	2
Silene dioica	Red Campion	118	29.5	3
Rubus fruticosus agg.	Bramble	115	28.8	3
Cymbalaria muralis	Ivy-leaved Toadflax	114	28.5	3
Cardamine hirsuta	Hairy Bitter-cress	111	27.8	4
Geum urbanum	Wood Avens	111	27.8	4
Dactylis glomerata	Cock's-foot	104	26	3
Hedera helix	Common Ivy	98	24.5	1
Cerastium fontanum	Common Mouse-ear	96	24	3
Tripleurospermum inodorum	Scentless Mayweed	75	18.8	2
Crepis capillaris	Smooth Hawk's-beard	73	18.3	3
Leucanthemum vulgare	Oxeye Daisy	69	17.3	4
Arrhenatherum elatius	False Oat-grass	67	16.8	1
Sonchus asper	Prickly Sow-thistle	62	15.5	2
Hypochaeris radicata	Cat's-ear	60	15	3
Trifolium pratense	Red Clover	59	14.8	3
Centranthus ruber	Red Valerian	59	14.8	4
Cardamine flexuosa	Wavy Bitter-cress	58	14.5	3
Ilex aquifolium	Holly	56	14	4
Ranunculus acris	Meadow Buttercup	51	12.8	2
Mercurialis annua	Annual Mercury	51	12.8	2
Tanacetum parthenium	Feverfew	50	12.5	4
Conyza canadensis	Canadian Fleabane	48	12	3
Euphorbia helioscopia	Sun Spurge	45	11.3	2
Geranium molle	Dove's-foot Crane's-bill	43	10.8	3
Matricaria discoidea	Pineappleweed	42	10.5	5

Table 3: 19 species recorded that are expected to flower on New Year's Day

Latin name	**Common name**	**Lists**	**%lists**
Bellis perennis	Daisy	296	74
Taraxacum	Dandelion	261	65.3
Senecio vulgaris	Groundsel	223	55.8
Poa annua	Annual Meadow-grass	217	54.3
Sonchus oleraceus	Smooth Sow-thistle	171	42.8
Lamium album	White Dead-nettle	164	41
Capsella bursa-pastoris	Shepherd's-purse	157	39.3
Veronica persica	Common Field-speedwell	113	28.3
Primula vulgaris	Primrose	109	27.3
Stellaria media	Common Chickweed	96	24
Sisymbrium officinale	Hedge Mustard	54	13.5
Arabidopsis thaliana	Thale Cress	51	12.8
Senecio squalidus	Oxford Ragwort	31	7.8
Campanula portenschlagiana	Adria Bellflower	29	7.3
Sinapis arvensis	Charlock	21	5.3
Veronica polita	Grey Field-speedwell	7	1.8
Sisymbrium orientale	Eastern-rocket	4	1
Veronica agrestis	Green Field-speedwell	4	1
Arbutus unedo	Strawberry Tree	3	0.8

653 species in flower represents about a quarter of the species that occur regularly in Britain and Ireland. Around a third of these 653 species are alien plants from warmer climates that may have escaped from gardens or cultivation and are able to continue flowering until winter frosts knock them back. As in previous years, urban areas tended to have more species in flower than rural areas. This is to be expected: there are more sheltered and disturbed areas with warm microclimates where both native and alien plants can thrive.

One species which made its first appearance on Plant Hunt lists this year is Orobanche hederae, spotted blooming in Cambs. (v.c.29), Richmond-upon-Thames (v.c.17), Hants, (v.c.12) Isle of Wight (v.c.10), Bexley (v.c.16), Swanage (v.c.9) and Weston-super-Mare (v.c.6) (see Colour Section, Plate 1.

According to textbooks and keys which indicate likely flowering times, there "should" only be 20-30 species in bloom at New Year (Table 4 p. 47). Kevin said "Conventional wisdom on what should flower when is clearly out of date, and for many alien plants we simply don't have good data on peak flowering times. The New Year Plant Hunt results will help us build up a clearer, up-to-date picture of what's going on".

Record-breaking number of participants

We had almost three times as many participants (Table 5 p. 47) this year (865) as last (*c.*300). They submitted more than 400 lists and ranged from eminent botanists such as Dr Sandy Knapp of the Natural History Museum (who recently joined BSBI) and Prof. Mick Crawley (who had the longest list, with 154 species recorded in bloom at Ascot, v.c.22), to children who went out plant hunting with parents and grand-parents. Our youngest participant was just three years old! Three past BSBI Presidents joined in the Plant Hunt (David Pearman in Cornwall, Michael Braithwaite in Berwickshire and Ian Denholm in Herts.) and current president John Faulkner was out hunting in Armagh.

Table 4: Deviation from peak flowering time

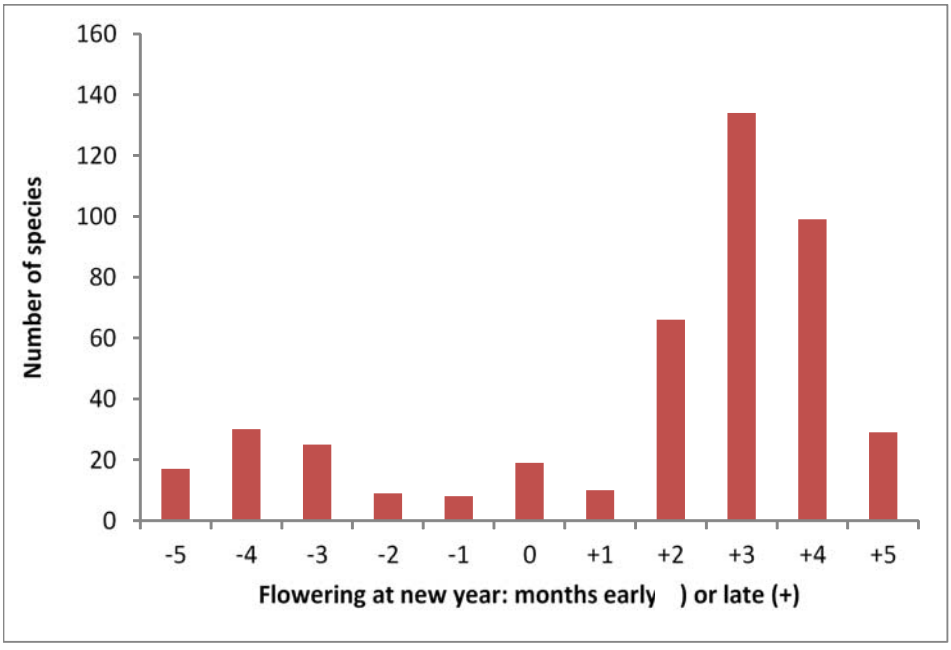

Table 5: How participation in the New Year Plant Hunt has increased over time and status of plants recorded.

	2012	2013	2014	2015	2016
lists	1	7	48	143	432
records	63	224	1180	2908	9265
species	63	105	222	368	653
Vice-counties	1	7	34	68	108
No. of botanists	2	35	70	*c.*300	865
% alien taxa	20.60%	29.50%	27%	33%	49%
% spring flowers (native)	3%	8.50%	3.60%	5%	<20%

Plant hunters were out across Britain and Ireland – from West Cork to Norfolk, the Channel Islands to Shetland and Kent to Donegal. As expected, the milder south and west of Britain had the highest numbers of species in flower, but we also had more than 60 species reported blooming in Edinburgh, where an organised Hunt was augmented by multiple lists from individuals or groups of friends and families. Gus from Edinburgh, who received his first wildflower ID key on Christmas Day 2015, enjoyed his first Hunt on New Year's Day 2016 so much that he went out four more times! Ecologist James, travelling over the New Year holiday from Devon up to his Lincolnshire home, also sent us five lists from stopping points across the country (see back cover and next page). Both were awarded the "prize" of a chance to write up their experiences of the New Year Plant Hunt for the BSBI News & Views blog, where you can read twelve different posts about the Hunt.

NYPH 2016 in the media

Coverage of the Plant Hunt appeared in national broadsheets including T*he Telegraph*, *The Observer*, *The Independent* and *The Daily Mail*; we were mentioned on BBC Radio 4's Today programme and only a last-minute change of schedule prevented a planned feature on BBC Television's 'The One Show'. An interview about the Plant Hunt for BBC Radio Scotland's 'Out for the Weekend' programme led to an offer of a regular BSBI 'Wildflower of the Month' slot. The first took place in March and featured Sweet Violets. Bluebells (Scottish, English, Spanish and hybrids) and Bird's-foot Trefoil are planned for future months. If you have any suggestions for wildflowers that you think we should be telling listeners in Scotland about, please email me at the address above.

List of species for the Grantham hunt (back cover)

Have fun working out which name goes with which photo.:

Daisy (*Bellis perennis*)
Annual Meadow-grass (*Poa annua*)
Lesser Celandine (*Ficaria verna*)
Cock's-foot (*Dactylis glomerata*)
Winter Heliotrope (*Petasites fragrans*)
Primrose (*Primula vulgaris*)
Petty Spurge (*Euphorbia peplus*)
Groundsel (*Senecio vulgaris*)
Ivy-leaved Toadflax (*Cymbalaria muralis*)
Nipplewort (*Lapsana communis*)
Prickly Sow-thistle (*Sonchus asper*)
Canadian Fleabane (*Conyza canadensis*)
Yarrow (*Achillea millefolium*)
Dandelion (*Taraxacum officinale* agg.)
Herb-Robert (*Geranium robertianum*)
Hazel (*Corylus avellana*)
Hogweed (*Heracleum sphondylium*)
Ox-eye Daisy (*Leucanthemum vulgare*)
Red Campion (*Silene dioica*)
Greater Periwinkle (*Vinca major*)
Bramble (*Rubus fruticosus agg.*)
White Dead-nettle (*Lamium album*)
Oregon-grape (*Mahonia* spp.)
Common Ragwort (*Senecio jacobaea*)
Dove's-foot Crane's-bill (*Geranium mollis*)
Common Mouse-ear (*Cerastium fontanum*)
Perennial Sowthistle (*Sonchus arvensis*)
Common Field-speedwell (*Veronica persica*)
Wood Avens (*Geum urbanum*)
Shepherd's-purse (*Capsella bursa-pastoris*)
Green Alkanet (*Pentaglottis sempervirens*)
Red Dead-nettle (*Lamium purpureum*)
Feverfew (*Tanacetum parthenium*)
Pineappleweed (*Matricaria discoidea*)
White Campion (*Silene latifolia*)
Cow Parsley (*Anthriscus sylvestris*)
Blackthorn (*Prunus spinosa*)
Wall Barley (*Hordeum murinum*)
Holly (*Ilex aquifolium*)
Wavy Bitter-cress (*Cardamine flexuosa*)
Wood Spurge (*Euphorbia amygdaloides*)
Gorse (*Ulex europaeus*)
Dogwood (*Cornus sanguinea*)
Smooth Hawk's-beard (*Crepis capillaris*)

BSBI/BSS Scottish Annual Meeting

JIM MCINTOSH, *BSBI Scottish Officer, Royal Botanic Garden Edinburgh, 20A Inverleith Row, Edinburgh, EH3 5LR*; (jim.mcintosh@bsbi.org)

The 2016 BSBI/BSS Scottish Annual Meeting will be held on Saturday 5th November at Scottish Natural Heritage's Battleby Conference Centre, Perth. This is a lovely venue in beautiful Perthshire countryside, just off the A9 and with easy parking. It is also just five miles from Perth's bus and intercity railway stations, by taxi. Around the comfortable main auditorium there is lots of circulation space that is ideally suited to displaying botanical exhibits and a number of small break-out rooms where we plan to hold a series of mini-workshops. There will be a varied programme of interesting short talks and, following on from Ken Thompson's excellent main talk on Aliens in the British Flora in 2015, we will have another great speaker, Professor Mick Crawley, who will give a very different talk on the same subject.

Put the date in your diary now and watch out for the flier in the next *BSBI News*.

BSBI Photography Competition 2016

JIM MCINTOSH, *Scottish Officer, BSBI, Royal Botanic Garden Edinburgh, 20A Inverleith Row, Edinburgh, EH3 5LR*; (jim.mcintosh@bsbi.org)
NATALIE HARMSWORTH, *BSBI Photographic Competition Organiser.*

After the success of the 2015 BSBI Photography Competition, which attracted a record 220 images (see report on page 58 of *BSBI News* 131), we plan to repeat the competition again in 2016, but with new categories and rules.

The 2016 BSBI Photographic Competition will have just two simple and very broad categories: 1) Rare species and 2) Common species. Photographs should have been taken in Britain or Ireland and be of flowering plants, conifers, ferns, horsetails, club-mosses or stoneworts. But the photographs do not have to be taken during 2016 and you do not have to enter both categories. Individuals may enter up to two images per category. Due to space constraints, we may also appoint judges to select a smaller number of the very best to put to a popular vote by those attending the Scottish Annual Meeting at Battleby, Perth on 5th November 2016. This will also make voting and vote counting simpler and give us more time to prepare the prizewinning announcement.

1. Send your entries to Natalie Harmsworth (natann29@freeuk.com) by Friday 21st October 2016.
2. Please submit the largest possible files sizes. Note that files over 10 MB should be submitted via Dropbox.
3. Photograph file names should comprise the entrant's name, competition category and photograph title *e.g*. John Smith_Rare Species_ Maiden Pink, Girrick.
4. Copyright of images will remain with the photographer.
5. The BSBI claims the right to exhibit the entries, to use them to further its aims generally and to promote the BSBI and its photography competition.

The BSBI also claims the right to edit or use images in combination with others.

Full details of the competition will appear on the BSBI website shortly, but in the meantime get snapping!

BOOK NOTES

JOHN EDMONDSON, Book Reviews Editor. *243 Pensby Road, Heswall, Wirral, CH61 5UA*; (a.books@mac.com)

The following titles are to be reviewed in current or future issues of *New Journal of Botany*. Also included are notes on books that are not being given a full review (marked *). Unsigned reviews are by the editor.

*Fitzpatrick, U., Weekes, L. & Wright, M. *Identification guide to Ireland's grasses.* 2nd edition. National Biodiversity Data Centre, Carriganore, 2016. 163 pp. €15. ISBN 978 1 911172 02 4, comb-bound with stiff covers.

This handy pocket guide is one of a series produced by Ireland's NBDC under the general title "Ireland's biodiversity". In effect the whole book is a set of two keys, as the accounts are arranged in order of inflorescence type (in the case of the flowering key) or leaf and ligule features (for the vegetative key). In the former, each pair of facing pages has photographs of a typical member of a genus on the verso, together with features diagnostic of the genus, with the species given brief descriptions on the recto side. In the latter, the key is in the form of a table. It produces some strange bedfellows, such as *Phragmites*, *Spartina*, *Molinia* and *Danthonia*. The nomenclature is up-to-date, with three fescues having been transferred to *Schedonorus*. In some cases, such as *Poa*, one page is devoted to the

common species and another to the rare ones. The mystique of grasses being 'difficult' will largely be dispelled if a less experienced botanist has this book to hand.

C.A. Stace & M.J. Crawley. *Alien plants*. Collins New Naturalist series no. 129. Harper Collins, London, 2015. xiii, 626 pp. £65 h/b.: ISBN 978 0 00 750215 8; £35 p/b: ISBN 978 0 00 750214 1.

*Strid, A. *Atlas of the Aegean flora*. BGBM (Englera vol. 33, parts 1 & 2), Berlin, 2016. 2 vols. €120 h/b: ISBN 978 3 921800 98 0.

The pioneering work of K.H. Rechinger in publishing his *Flora Aegaea* during the second world war has been followed by a number of floras covering part or all of the Aegean region, but never before has the flora been comprehensively mapped. This Herculean task was achieved by drawing on information from a large data set (the 'Flora Hellenica Database'), which is constantly updated in line with the latest taxonomic treatments. Both literature records and herbarium specimen data have been incorporated. The method of mapping uses dots showing actual positions, rather than being based on a grid and, in order to avoid congestion, an arbitrary thinning process has been applied, so that individual dots are not merged with others. The text volume presents brief keys and descriptions, and a bibliography. The atlas maps contain habitat, altitudinal range, flowering time and wider distributional data in boxes, which conveniently overlay the Turkish islands of the north-east Aegean. The Turkish coastline has been 'disappeared'. Weighing in at over 6kg, this is not a work to take in the field, but is a valuable resource for botanists working in the East Mediterranean region.

Botany where you are, by John L. Presland – a correction

JOHN PRESLAND, *175c Ashley Lane, Winsley, Bradford-on-Avon, Wiltshire, BA15 2HR*; (johnpresland2@tiscali.co.uk)

It was good to see the note on my book in *BSBI News*, 131. Unfortunately it is incorrect, which is my fault. I did not say where the book could be obtained and then did not notice in the proof that there was an insert that it was available from booksellers. The supplier is in fact Amazon. Booksellers would have to buy it at full price from Amazon, which would not be worth their while.

Sorry about this. I can use only my advanced age (now 80) as an excuse.

Pocket guide to wildflower families

FAITH ANSTEY, *The Old Smithy, Dalguise, Dunkeld, PH8 0JX*; (faithanstey@gmail.com)

Members who saw the recent piece in *BSBI News* about the success of our Plant Families Workshops may be interested to know that the new *Pocket guide to wildflower families* is now on sale.

This is a sturdy, spiral-bound A6 booklet, with introductory notes, a flowchart to 50 plant families (excluding graminoids for the present) and more detailed descriptions of 24 of the families. The aim is to help beginners and improvers to narrow down the identification possibilities by locating a specimen in its family. Once they have this head start, they can follow the page references given to the family keys in Rose's *Wild flower key* and Collins' *Flower guide* to complete their identification for the majority of common species.

The booklet has 36 weatherproof pages – ideal for taking out in the field – and is filled with 80 colour photos and 80 explanatory line drawings, plus a glossary on the back cover. It has been tested and refined in use by around 150 students on the workshops, so we know that it is very useful in filling an identification gap. Comments from members who received

copies of last year's booklet were all very enthusiastic.

So if you would like to buy this expanded version, whether for yourself or for a less experienced or beginner botanist, you can order it from www.wildflowerstudy.co.uk for £6.99, including p. & p. It may also be obtainable from Summerfield Books and probably, by the time you read this, on Amazon. Members who want four or more copies can get a 15% discount by contacting my email address, above.

County floras and their availability

DAVID PEARMAN, *'Algiers', Feock, Truro, Cornwall, TR3 6RA*; (dpearman@aol.com)
KEVIN WALKER, *Suite 14, Bridge House, 1-2 Station Bridge, Harrogate, HG1 1SS*

For some years we have been mulling over producing a list of all the floras that have been published for Britain and Ireland that cover either a vice-county or a substantial part of one. There have been summaries before, the latest being that of David McCosh (1988), which also lists the lists of all of his predecessors, but nothing that can be downloaded and sorted.

It has been enormously difficult to draw the line. Thus, for instance, the floras of Liverpool are included because most cover a decent area of both South Lancashire and of Cheshire, yet most of those of Manchester are not, as they cover only a smaller area around Manchester. We have tended to bend the rules to include local floras for the underworked areas (such as Aberdeen and some islands), but have omitted most of the myriad local floras, such as those of Croydon, Christchurch, Huddersfield and scores if not hundreds of others. We are certain that anomalies remain!

Similarly, we had intended to restrict the list to published books, but, again, for some counties, or areas within those counties, the main or a considerable source of data is in a journal. Indeed a few of the floras listed have supplements that appeared in a local journal and perhaps we might have listed more of these. Full details of all local works up to the late 1950s are contained in Simpson (1960), which is available as a download on the BSBI website at http://archive.bsbi.org.uk/SimpsonsIndex.pdf.

The spreadsheet is available at: http://www.bsbi.org.uk/resources.html#floras. There are undoubtedly omissions, particularly pre 1800, but there the floras, or rather lists, are so rudimentary that they are barely worth itemising. For those interested, Martyn (1763) and Pulteney (1790) both contain useful details of these, as of course does Simpson. But by and large it was only with H.C. Watson's works from the 1830s and culminating in his *Topographical botany* (1873), that anything approaching comprehensiveness for any county was approached. For Ireland, the early coverage was even more rudimentary until Praeger (1901). Of course the works above, supplemented or replaced by Druce (1932), Stace *et al*. (2003) (for Britain) and Scannell & Synott (1972) (for Ireland) provide quasi-check-lists for each country, as, in a different way, does Ellis (1983) for Wales.

The spreadsheet contains three columns, which give details of potential access to these floras – whether they are available new, or as a download from the web, or as a print-on-demand or the like. Just a word about downloads from the web – some of those available five or six years ago have disappeared or are now only on pay-to-access sites. Conversely, some new downloads have appeared. Of course it is possible to buy many of the floras second-hand from booksellers and prices here seem to be more modest than they were a few years ago.

The spreadsheet also contains a separate worksheet of County Rare Plant Registers – perhaps more difficult to summarise, as many are only on-line, are work-in-progress, and are regularly updated. For the most recent position it might be best to look on the BSBI website and, if it is not downloadable or otherwise available, to contact the Vice-county Recorder - or the country officer.

We hope the spreadsheet is self-explanatory and would welcome comment on any entries, omissions or errors, as well as any difficulties in finding downloads.

The help of Chris Preston in making available his work and commenting on this list is gratefully acknowledged. Please comment, in the first instance, to David Pearman (email above).

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Diary for 2016

CHRIS METHERELL, *Woodsia House, Main Street, Felton, Northumberland, NE65 9PT*; (01670-783401; chris@metherell.org.uk)

Date	**Committee, *etc*.**	**Location**
2016		
Wednesday 13 April	Council	London
Wednesday 27 April	Board of Trustees	London
Saturday 14 May	Committee for Ireland	Dublin
Thursday 19 to Monday 23 May	Annual Spring Meeting	Blencathra
Saturday 11 June	Committee for Scotland	Tbc
Tuesday 12 to Friday 15 July	Welsh AGM	Brecon
Saturday 27 August	Committee for Ireland	Dublin
Friday 2 to Sunday 4 September	Recorders' Conference	Shrewsbury
Saturday 10 September	Committee for Scotland	Tbc
Saturday 17 September	Irish AGM	Dublin
Wednesday 28 September	Meetings and Communications	London
Wednesday 12 October (p)	Records and Research	London
Thursday 13 October	Publications	London
Wednesday 26 October	Training & Education	Shrewsbury
Saturday 29 October	Committee for Wales	Newtown
Wednesday 2 November	Council	London
Saturday 5 November (p)	Scottish AGM	Battleby, Perth
Wednesday 23 November (p)	Board of Trustees	London
Saturday 26 November	BSBI AGM/AEM	Wallingford
2017		
Wednesday 1 February (p)	Training & Education	Tbc
(p = provisional dates)		

RECORDERS AND RECORDING

Panel of Referees and Specialists

JEREMY ISON, *40 Willeys Avenue, Exeter, Devon, EX2 8ES*; (Tel.: 01392 272600; Jeremy_ison@blueyonder.co.uk)

The following changes have been made since the 2016 Yearbook:

Clare O'Reilly has resigned as a Beginners' Referee. The Beginners' Referees are now **John O'Reilly** for specimens and **Quentin Groom** for photographs.

Martin Godfrey will take on responsibility for Urticaceae, which appears not to have had a referee previously. His contact details are: Sqn Ld M F Godfrey, 6 Darnford Close, Parkside, Stafford, ST16 1LR; (martinandrosie @aol.com).

Martin writes "I have a particular interest in *Urtica galeopsifolia.* As these plants tend to be very big, if you want to send a specimen then about the last foot or so of the shoot plus a note of the lowest flowering node, counting from the bottom, should be sufficient. Alternatively send a photo of the whole plant with a good close-up of the stem and leaves (both sides) and a note of the lowest flowering node. For other species in the family a similar set of photographs should be sufficient, although I would appreciate a pressed specimen of any plants that you think might be alien."

Tim Rayner has kindly agreed to take on *Carduus* and *Cirsium*, as well as *Bidens*. His contact details are: Dr T.G.C.Rayner, Chequer Trees House, Whitehouse Lane, Waldron, Heathfield, East Sussex, TN21 0NG; (Tel.: 07954012870; timgjrayner@live.co.uk).

Tim writes that some specimens can be identified from reasonable photographs, whereas others can be problematic, even with flowering and fruiting material. Email communication is best in the first instance, preferably with photographs if available. Following that he can provide better information about the material needing to be submitted for identification.

Martin Rand has provided the following notes for the submission of/requirements for *Conyza* specimens:

"Instructions for submitting *Conyza* specimens for identification:

Many features of *Conyza* are lost in dried specimens, especially as they often go completely to seed in transit. Also it can be awkward to present complete specimens of large plants. Please accompany any pressed material with notes covering the following features:

- Leaf / stem colour;
- Overall form of inflorescence, *e.g*: cylindrical, rhomboid, domed, complex with extensive low branching;
- Shape of capitulum and width at broadest point, observed on flower heads just into flower;
- Shape, maximum width and colouring of involucral bracts;
- Number of corolla lobes on tube florets, observed on a number of freshly opened flowers (beware of damage splits);
- Length and colour of ligule on ray florets.

Photographs are very acceptable for any of these features, provided they are clear and at a scale and resolution to show sufficient detail. I would rather receive photos via links to shared repositories like Dropbox or Hightail, or social networking sites, than as attachments to emails.

Comments from several observers, and my own observations, suggest that we are seeing an increasing number of plants that are very difficult to name. Whether these represent hybridisation or some manifestation of great plasticity within a species, I am not in a position to judge. Sometimes they do not conform to the UK published descriptions, while the foreign literature often does not help much because of naming and circumscription inconsistencies. Please be understanding if I cannot always provide a name."

A plea for the more consistent use of referees

BSBI membership allows access to the Panel of Referees and Specialists, who have unrivalled knowledge of their respective groups. Many are recognised as national and in some cases international experts. However, it is clear that in a number of cases, records are being submitted to Vice-county Recorders and to the national database that should have been confirmed by someone apart from the original recorder. It may be that there are cases where records have been confirmed or verified, but this information has not been appended. Knowing that a record has been confirmed by someone more experienced than the original recorder adds considerably to the value of the record. Whenever a referee has been consulted, please say so when submitting the record.

The Beginners' Referees (see above for changes and details) are particularly under-used. Members are urged to make more use of this service. This will develop confidence in the preparation and submission of specimens, which will be invaluable for using the more specialist referees later. The *Yearbook* provides the necessary instructions.

Panel of Vice-county Recorders

PETER STROH, *c/o Cambridge University Botanic Gardens, 1 Brookside, Cambridge CB2 1JE*; (peter.stroh@bsbi.org)

There are two retirements to report:

Pat Lenihan has stepped down as Recorder for County Monaghan (v.c.H32) after a period of six years. The CFI (Committee for Ireland) especially wish to pass on their thanks to Pat, and I am assured he will continue to attend field meetings (particularly mountainous ones), be excellent company and take great photos of the species and landscapes encountered. **Alexis FitzGerald** becomes sole Recorder for the county.

Phil Sansum is now sole Recorder for Stirlingshire (v.c.86) after the resignation of **Ruth McGuire**, co-Recorder since 2013. I am pleased to say that East Donegal (v.c.H34) now has not one but two Recorders, **Oisín Duffy and Mairéad Crawford**. Oisín, who writes an excellent blog (see https://oisinduffy.wordpress.com), can be reached at Fairview, Gortireagh, Ballindrait, Lifford, Co Donegal, Ireland or at oisinsduffy@gmail.com.

In Shropshire (v.c.40), **Alex Lockton** is now co-Recorder with **Sarah Whild**, officially recognising the huge efforts he has given to the county, culminating in the recently published *Flora*.

Carl Farmer, Recorder for Argyll (v.c.98), has recently changed address to Cloister Flat, Ardchattan Priory, Connel, Oban, PA37 1RQ. Carl's email address – cf@vc98.co.uk – remains unchanged. I must also mention his excellent website detailing the west Highland flora, which is packed full of first rate photos and text: see: http://www.plant-identification.co.uk/skye.

There are still vacancies for Recorders in the following vice-counties: East Gloucestershire (v.c.33), Lanarkshire (v.c.77), Berwickshire (v.c.81), Caithness (v.c.109), Shetland (v.c.112), Mid Cork (v.c.H4), East Cork (v.c.H5) and County Longford (v.c.H24). If you feel you have the time and enthusiasm to take on the role of Vice-county Recorder, please do contact your country officer to have a chat about what is involved.

As ever, thank you to all VCRs, past and present, for your dedication, help and expertise.

Coordinator's Corner

PETER STROH, *c/o Cambridge University Botanic Garden, 1 Brookside, Cambridge, CB2 1JE*; (peter.stroh@bsbi.org)

I thought it would be nice at this point in the Atlas project to share some summary stats with you – not always the most scintillating of topics, I know, but I think the figures below (produced at the time of writing in late February, and excluding duplicate records) amply demonstrate just how fantastic, generous and busy you all are – it is really very inspiring.

- 13.4 million – the total number of records collected across Great Britain and Ireland since 2000.
- 873,343: the total number of records collected and submitted to the DDb across Great Britain and Ireland in 2015.
- 6,590: the number of nationally rare and scarce records submitted in 2015.
- 3,153: the number of GB threatened (CR, EN and VU) species records submitted in 2015.

If that was not enough, there is a substantial backlog of field data for numerous counties still to be sent or loaded onto the DDb – by my reckoning the figure for 2015 will easily top one million records. Back down to earth a bit, there is still plenty to do, so keep up the good work, and thank you!

Andy Amphlett, Vice-county Recorder for Banffshire and all-round GIS whizz has produced excellent coverage maps for GB and Ireland, showing the number of records contained in the DDb for each tetrad within each vice-county since 2000. Inevitably the maps do not quite reveal the true picture for many counties that have still to update the DDb with recently hard-won records, but they are none-the-less extremely useful as we start the final four years. Rather than pick out an example map to show you (no favouritism here), I would strongly encourage you to get in touch with your local VCR (or one that is based where you plan to holiday this year!) to ask where there are gaps in coverage.

We are making great strides with finalising how we assemble and report the results from the Atlas survey, and thanks to those of you who provided comments on our Atlas note in January *BSBI News* (Stroh & Walker, 2016). There are likely to be changes from the initial ideas set out in the January article following your input, and by September I should be in a position to set out in more detail how your data will be presented.

The Wild Flower Society has been very generous in providing funds to help us in our recording efforts for locations in Ireland and north-west Scotland that are under-populated or contain difficult, remote terrain and are consequently under-recorded, for which the BSBI is extremely grateful. We are currently pursuing options for further funding for all aspects of the project, led by our Head of Operations, Jane Houldsworth.

On a slight tangent from specific Atlas-related matters, the county web pages on the BSBI website, if you did not know about them already, are really first rate and very useful, with many having annual botanical reports, detailed species accounts for local specialities, updated county floras and unpublished regional floras, local surveys, axiophyte lists

and rare plant registers, as well as field meeting programmes for 2016 and much more! Again, I am trying not to risk alienating the majority by giving an example of my favourite ones…but I cannot help but mention the Kent page and in particular the link to the 2015 Newsletter that distracted me from urgent tasks to be done and gave me an excuse for a very enjoyable (extended) coffee break!

Under-recorded/overlooked species nos.4 and 5.

Stellaria pallida (Lesser Chickweed) and *S. neglecta* (Greater Chickweed)

S. pallida, a short-lived annual, has more or less dried up by mid-May so hopefully you get this in time! Colour is helpful – look out for a yellowish-green plant, often prostrate, that resembles a small, slightly ill version of *S. media*. It is present in tracksides and very short amenity grassland, as well as sandy waste ground and dunes. A closer inspection will reveal an absence of petals, tiny sepals (2-3mm), and anthers (1-3) that are a rather pleasing grey-violet colour. Fruiting pedicels are short and straight.

S. neglecta is trickier to identify from a distance and can bear a very close resemblance to *S. media*, which is everywhere! It is a generally larger species (the clue is in the common name), but *S. media* is morphologically extremely variable, so do not be fooled. Look for it in woodland, hedgebanks or shady places. The larger flowers (about 12mm across) can catch the eye, as can the larger sepals (5-6.5mm, in contrast to *S. media*, when they are usually 3-5mm), although I find this feature tricky due to some overlap of sepal size between the two species. The petals should certainly at least equal, if not exceed, the sepals. The easiest character to look out for is the number of stamens – *S. neglecta* regularly has 10 stamens, whereas *S. media* has (almost always) less than eight. When in fruit, the seeds of *S. neglecta*, with the use of a hand lens, display conical as opposed to rounded or indistinct tubercles (wart-like projections) and the pedicels are abruptly bend down and then rise up to become erect, whereas *S. media* has lazier pedicels that curve downwards without standing to attention. Rich & Jermy (1998) has a very useful summary of the differences between all three species. If you do not have the book, then details are on the BSBI website: http:// www.bsbi.org.uk/Stellaria_Crib.pdf.

References:

RICH, T.C.G. & JERMY, A.C. (1998). *Plant crib*. BSBI, London.

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OBITUARY NOTES

CHRIS D. PRESTON, Obituaries Editor, *19 Green's Road, Cambridge, CB4 3EF* (cdpr@ceh.ac.uk); assisted by the General Editor GWYNN ELLIS

Since the publication of *BSBI News* **131**, we regret to report that the news of the deaths of the following members has reached us. We send regrets and sympathies to all the families.

Mr L.P. Alder of Dursley, Gloucestershire, a member since 2007.

Mr A.A. Butcher of Sudbury, Suffolk, a member since 1984.

Miss M.G. Fraser of Culloden, Inverness, a member since 2001.

Mr C.R.F. Hedley of Lee-on-the-Solent, Hampshire, a member since 2003.

Mrs R. Hemsley of Ditching, East Sussex, a member since 1995. We hope to publish an obituary in the next *Yearbook*.

As we go to press we have just heard the sad news of the death of **Alan Newton**. Alan resigned from BSBI in 2014 for health reasons but was for many years our *Rubus* referee and published many papers in *Watsonia*. He was also co-author, with Eric Edees, of the standard text on the genus *Brambles of the British Isles* and with Rob Randall, the BSBI publication *Atlas of British & Irish Brambles*

NOTES FROM THE OFFICERS

From the Hon. General Secretary – *CHRIS METHERELL*

Woodsia House, Main Street, Felton, Northumberland, NE65 9PT;
(01670-783401; chris@metherell.org.uk)

As some of you may have heard, unfortunately Antony Timmins decided that he was unable to return as our Honorary Treasurer and so, in the absence of a treasurer, some of this report touches on matters on which he or she would normally write.

Three years into our plans to develop our Science and Training activities, we have identified both the need for some rationalisation and also suggestions for improvements to our services to members and to our committee structure. Many members will know that we have been intentionally running a deficit budget for several years to pump-prime our science side. Falling interest rates and some unwillingness of users of our data to fund us to a satisfactory level have focused our attention on this aspect of our finances. Although we were in no way in a crisis position we felt that we were duty bound as responsible Trustees to gain more control over the reduction in our financial resources.

We are satisfied that a robust plan is now in place to achieve this. However, the Trustees were, at the same time, anxious to ensure that there was no reduction in either the services received by the members, nor our scientific work, training and publishing, which are cornerstones of the BSBI. In fact the Board considered that by careful reorganisation of our structures and processes we should, in time, be able to increase not only our current activities but substantially develop others, particularly our training, education and publishing services.

To that end the Board have approved a root and branch review of our structures and services to ensure that we are in the best position to achieve these exciting goals. Jane Houldsworth is devising a consultation process, through which we can capture a widespread cross-section of views on how we can best shape that reorganisation. This will inevitably take some time, particularly as the recording season will soon be upon us, but members can be reassured that they will be kept informed as the process progresses.

Turning to wider Board issues: at present we have seven Trustees, the minimum set out in our Articles of Association. **In particular we lack a Treasurer and would invite volunteers to come forward**. A job specification is on page 4. We also have the opportunity to elect further Trustees in due course and again would invite members to consider whether they might serve as a Trustee or to make informal suggestions for suitable candidates. Please contact the Honorary General Secretary at chris@metherell.org.uk.

From the Scottish Officer – *JIM MCINTOSH*

c/o Royal Botanic Garden, Inverleith Row, Edinburgh, EH3 5LR;
(Tel: 0131 2482894; jim.mcintosh@bsbi.org)

If you would like to know more about what the Scottish Officer is up to, a detailed Annual Report will appear in the 2016 BSBI Scottish Newsletter and on the BSBI Scotland webpage. By the way, if you are a member living outside Scotland you can sign up to receive the annual Scottish Newsletter. Details are given on page 8 of the *BSBI Yearbook 2016*.

From the Scientific Officer – *PETER STROH*

c/o Cambridge University Botanic Garden, 1 Brookside, Cambridge, CB2 1JE;
(peter.stroh@bsbi.org)

I am fortunate in having a cloakroom full of BSBI attire and this brief summary concerning some of the things I have been up to over the winter months is written with my 'Scientific Officer' hat on. The majority of my time has been spent writing up the Threatened Plants Project species accounts, following a detailed analysis by Bob Ellis, Kevin Walker and myself. It has been a very interesting exercise and has provided me with yet another insight into how BSBI members and others supply such excellent field data that helps to drill down into the reasons for species decline (and in at least one case, possible spread!). At the time of writing, 40 of the 50 accounts have been drafted, so we are well on the way to finishing the text with a view to publishing later this year. A few members have been very generous in providing comments on the draft accounts and thanks are especially due to Oli Pescott, Owen Mountford and David Pearman for substantially improving the text. I have also been writing species accounts, funded by the National Trust, Natural England, Scottish Natural Heritage and Natural Resources Wales (formerly CCW) on *Dianthus gratianopolitanus* (Cheddar Pink), with the help of Helena Crouch; *Helianthemum apenninum* (White Rock-rose), with the assistance of Michael Proctor; *Herminium monorchis* (Musk Orchid), *Iberis amara* (Wild Candytuft) co-authored with David Pearman, *Orchis militaris* (Military Orchid) with help from Richard Bateman and Lynne Farrell, *Persicaria mitis* (Tasteless Water-pepper) (including an enjoyable day in the field with Lynne Farrell and correspondence with John Akeroyd concerning identification tips – I needed them!), *Seseli libanotis* (Moon Carrot), *Tephroseris integrifolia* (Field Fleawort), with support from Sharon Pilkington; *Tuberaria guttata* (Spotted Rock-rose), co-authored with Polly Spencer-Vellacott; and *Vicia parviflora* (Slender Tare). There are plenty still to write before the end of March (it is still February at the time of writing) and they will all eventually be added to the species accounts web page: (http://www.bsbi.org.uk/species_accounts.html), which you are, I trust, finding useful.

Natural England are currently reviewing the selection criteria guidelines for SSSIs in England and Wales and, as part of the Memorandum of Understanding between NE and the BSBI, I have been testing out the guidelines by applying the draft criteria to a National Character Area using data held in the DDb. It was a very interesting exercise, particularly so as the draft criteria recognise rare, scarce and threatened species at both country (*e.g.* England) and GB level. Discussions finalising the SSSI selection criteria are currently ongoing between the statutory agencies. I have also been marginally involved in a manuscript written by Kevin Walker and others concerning the distribution of nationally rare, scarce and threatened species within and outside of SSSIs in England, due to be submitted to a peer-reviewed journal soon.

Last but certainly not least, I have been working with Walter Scott (recently retired VCR for Shetland) on attempting to unravel the status of *Angelica archangelica* in Shetland. In Britain and Ireland it is an introduced-naturalised species of riverbanks, roadsides and waste ground, but in recent years Walter has published records for *A. archangelica* at three coastal locations. Could these plants have derived from material carried on tidal currents from the Faroes? Herbarium specimens have recently been checked by Mark Watson, Umbellifer Referee for the BSBI, and are now in the hands of Lars Fröberg at Lund University in Sweden, who some of you may know as the author of the Apiaceae accounts in the marvellous *Flora Nordica* (volume 6). Walter and I hope to have enough information to be able to publish an article with our views on its status in Shetland in time for September *BSBI News*.

Solutions to Botanical Crossword 28

ACROSS
1. DRUPE **7**. EPICALYX **8**. TREND
10. TRADESCANT **12**. DIPSACUS
14. LEUC **16**. CARP **17**. EMBOGGED
20. NIGHTSHADE **23**. SALIX
24. PERIGONE **25**. CHAIN

DOWN
1. DOTTED **2**. PENT **3**. SPUD **4**. A CYST **5**. FLEA SEDGE **6**. EXOTIC
9. DRYAD **11**. SPIROGYRA **13**. ULM
15. PONDS **16**. CANOPY **18**. DIOXIN
19. STAGE **21**. HUNT **22**. EACH

Crib to Botanical Crossword 28

ACROSS
1. sounds like droop **7**. EPIC/anagram LAY/X
8. T<R>END **10**. TRADES/CAN'T
12. Admittedly a tricky one! TEASE + L gives the definition, though somewhat cryptically. A dip is a pickpocket, but also a sac is a pocket. 'us' is the object (accusative) form of 'we'.
14. sounds like Luke **16**. double definition
17. elf-explanatory, I think
20. anagram HADES THING
23. anag AXILS **24**. charade
25. A in anag INCH

DOWN
1. dd **2**. dd **3**. thiS PUDding (Solanaceae)
4. assist **5**. FLEAS/EDGE
6. E (last letter of capsule) + anag TOXIC
9. charade **11**. anag PRAY GO SIR
13. wych & English Elms **15**. PO<N>DS
16. CAN/OP/Y **18**. die/OX/IN
19. hoSTA GEts **21**. HUN/T
22. (P)EACH

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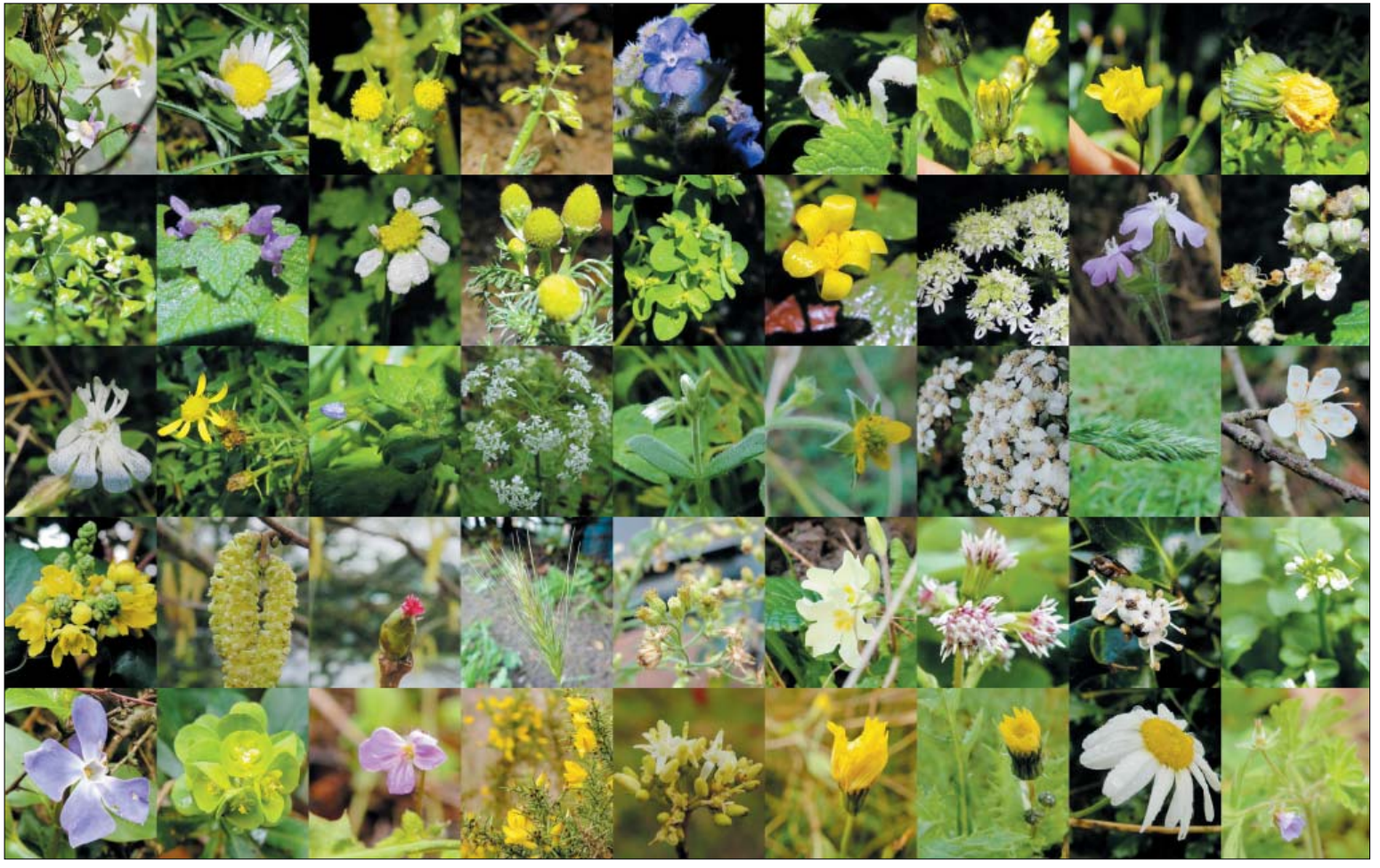
A runner-up photograph in the Spring category by Anne Reid, ‘A May Election Rosette?’. Photo © 2015 (see p. 5)

A runner-up photograph in the Spring category by Falgunee Sarker. ‘A rare view of female *Petasites hybridus* [Butterbur] welcoming spring’. Photo © 2015 (p. 5)



A composite image of the 44 species recorded in flower on a 3-hour New Year Plant Hunt in Grantham, Lincolnshire.
Photos James Faulconbridge © 2016 (p. 44)