

## Norfolk Flora Group News - Winter Newsletter 2019-20

### Welcome to the NFG Winter Newsletter !

**In Issue 5** ... (I can't believe we've got to Issue 5 already...) we have a series of interesting and informative articles on subjects ranging from invasive aliens to broomrapes to chickweeds. We also have a report on the conifer workshop led by Matt Parrett back in March 2019; another special-guest article; and a few more of your thoughts on how to tell whether your interest in botany has reached the point of no return. In addition, the Sedge Warbler has thoughtfully tweeted the answers to the 2018-19 crossword and we have the results of the 'Norfolk Flora Group Pub of The Year' polling.



Contributors to this edition are Suki Pryce, Janet Higgins, Mary Ghullam, Robin Stevenson, Mike Crewe, Mike Padfield, Richard Carter and myself, together with our passerine puzzle-setter, the Sedge Warbler; and our extra-special celebrity guest ... Fred Rumsey!!!!

Feedback on the content of NFG News would, as always, be very welcome. If you would like to see a different mix of articles next time, then there is nothing to stop you writing something yourself!

I would also like to say farewell to an old friend, Robin Stevenson. Robin - we will miss you.

### A Big Thankyou

Once again, I would like to thank the various landowners who allowed us access in 2019 and my particular thanks must go to staff and volunteers at Norfolk Wildlife Trust, the Norfolk Rivers Project, Mid-Norfolk Railway and the National Trust for going above and beyond the call of duty in organising and facilitating some of the meetings. I would also like to thank the Ted Ellis Trust for allowing us to use the Wheatfen study centre and Norfolk Museum and Archaeology Service for allowing us to use the herbarium collections and hosting an ID workshop.

### Jo Parmenter

The views and opinions expressed in this Newsletter are those of the individual authors, and not of the Norfolk Flora Group, nor its membership in general.



I was going to make you wait for this on the basis that you'd then have to read the whole newsletter to find out what Fred had to say, but it's so good, I couldn't bring myself to do that, even though it has left me with a mental image I shall never be able to shake. So, first up, we are truly honoured to hear our illustrious guest author's opinion on our county. JP

## THOUGHTS FROM A RARE SOUTHERN MIGRANT

It is with trepidation I approach the honour of condemning the botanical great and good of Norfolk to my prose, a challenge made frankly all the harder by the level of the bar set by Pete Stroh last year. Like him I feared my knowledge of the county is all too slight, but perhaps enthusiasm and emotion can cover any real lack of anything worthwhile .... after all it seems to have worked for certain politicians! So, after extended pondering, I have settled on offering a celebration of some of what I consider as Norfolk's more special plants, as found (or sometimes as not found) by me. If this rather feels like this is essentially a twitcher labouring for an excuse for his less than dedicated approach to recording then I may have been rumbled. I am not greatly minded to defend twitching, as all too often we just end up going back to the self-same places instead of searching further afield. I find some of those who just want to 'tick off' a species don't really have a deeper appreciation or understanding, even of what they are actually hunting for. We inevitably find what we expect to see/know to look for and it is for this reason that so often visitors to another vice-county make exciting new discoveries because they never knew to not look for something!

My first botanical (or indeed any) visit to Norfolk was as a post-grad in Manchester. I had managed to wangle my way onto the University of Sheffield Broads and Brecks field course as my mate Alistair Headley was then doing a post-doc with Bryan Wheeler and Alan Baker. This was an absolutely brilliant experience, offering up some of the county's top sites in the company of two great ecologists who were both considerable characters (and immense fun). This gave me my first real experience of a decent reed bed (although I still feel that is an oxymoron unless you are a Bittern or a Bearded Tit) and also an introduction to the pleasures of trying to explore treacherous floating rafts of swamp vegetation. It was on The Heater that I began to wonder if Alistair had been selected as much for his height as his brain, realising as we gently sank that his nose would be above water for about 5½ inches more than mine. The botanical treats and treasures came thick and fast - I particularly enjoyed seeing *Najas marina* when we visited Upton Fen. I had only ever encountered this once before as an undergraduate, on a long collecting trip to Sicily and back from Reading. I don't recall which of the northern Italian lakes it was, but on an early morning swim I recognised it and a couple of other choice macrophytes, all of which clearly needed to be collected and in quantity as we were preparing duplicates for exchange. Having run out of hands I had to resort to the "stowage in the Speedos" option ... and... perhaps uniquely I can therefore confirm it is not called Holly-leaved Naiad for nothing! I was lucky enough to be excused the coastal day so that I could help Sue Shaw count *Liparis* at Sutton and Catfield. This was doubly lucky as firstly, I was spared having to eat Whelks and secondly, I got to see



my very first *Dryopteris cristata* - the plant which has mainly been responsible for drawing me repeatedly back to the county. I still can remember the shame I felt when at Sutton I got more excited to see a somewhat bedraggled Swallowtail butterfly than the then rather poor showing of *Liparis* ... it felt so unloyal to plants.

At nearby Catfield the sun came out (doesn't that always make everything seem better?) and the *Liparis* were as glorious as they could be. The *Cladium* had been cut back hard but I still managed to stab my forehead on a stump paying my respects to the orchid close up. It was growing in what ecologists called a brown moss vegetation (because they are too sensible/lazy to try to identify the things which once you could call *Drepanocladus* and be sure of generally being right). The delight for me was to realise that much of this was actually the moss *Cinclidium stygium* which I'd become familiar with doing my never-written-up PhD work in Swedish Lapland. I knew that there were several rich-fen boreal relicts that were supposed surprisingly to be surviving in one of the lowest counties in Britain but until then most of the fens visited had been rather more reed and rather less moss. The ecologically similar *Tomentypnum nitens* has recently been refound in the county but generally I think that for various reasons we are on the brink of losing these late-glacial relicts.



*Liparis loeselii*

Enough of the Broads!! What of the Brecks, I hear you cry ...

Well I have a sort of love-hate relationship with the Brecks. My perceptions have been coloured by various encounters, usually with very shouty men rapidly disgorged from 4WD vehicles. It's not that there aren't glorious things to see in fascinating places, it's just that mostly you aren't allowed to see them! If it's not behind a huge wire fence manned by the military (and not even our military at that!), it's behind a small wire fence monitored by an irascible landowner. Even the nature reserves are verboten because you may disturb the Stone Curlews. This is of course a very jaundiced view and perhaps we can blame Suffolk for most of it, but even so... That said I have happy memories of *Corynephorus* at Wangford and *Phleum phleoides* near Icklingham. This is possibly because they were grasses that I managed to identify. Not my favourite family, I struggle with them and they make me sneeze.



My next visit to the county came with a native, Clive Jermy, then recently retired as head of ferns at the Natural History Museum, where I had ended up after doing another PhD (which this time I considered prudent to write up).

I felt a very definite kinship with Clive, he was a wealth of information and enthusiasm and even though he published little he caused much to happen. He was keen to see a decent survey of *Dryopteris cristata* done, and I was keen to see more of Norfolk and so we and a few others who would do some population genetics joined Kate Simpson to tackle this. Also helping was your Newsletter's Editor - and I can only conclude that she has a grim picture in her attic as the last 21 years seem to have had little effect. Sadly the same can't be said for a few of the sites we visited. I am thinking particularly of what was then a rather odd small rough bit of heathy grassland with some wetter furrows at Wells next the Sea. Here, rather valiantly, a single clump of *Dryopteris cristata* was tenaciously hanging on, and within ten paces was one of the biggest *Botrychium lunaria* plants I'd ever seen. As far as I can tell this would have been the last sighting of *Botrychium* in West Norfolk; the *Dryopteris* clump managed to hang on until at least 2002, but the site is now a grassy field, devoid of any botanical interest.



*Dryopteris cristata*

My next incursions into the county were largely bryological as I was helping lead some work for English Nature (as they then were) on some of the recently protected UK BAP bryophyte species with my colleague the late Gill Stevens. This took us to yet more fascinating places and in the company of some wonderful people. *Timmia megapolitana* is not the most pre-potential of mosses; it rarely fruits, its shoots look like something common and it only grows in tidal willow carr at Wheatfen surrounded, it seems, by bottomless fetid sloppy mud - but if as a consequence of going to bother this overlooked treasure, first recorded as British in 2000, you get to first meet Bob you can be very happy. We were.

Also joining us that day was Robin Stevenson, who would go on to help with the work on *Leptodontium gemmascens* (Thatch Moss) on Barnham Cross Common and the SBAL (Survey of 'Bryophytes of Arable Land') project. I still can't believe that he has gone and that wicked sense of humour and the twinkle in his eye could ever be extinguished.



I have to name check another kind friend and expert practical conservationist, Tim Pankhurst, for finally introducing me to some of the previously elusive Breckland treasures, including *Petrorhagia prolifera*. I really would love to believe this is native. I just wish it would try to look a little less happy just sitting on the building rubble and roadside ditch and turn up somewhere a bit more natural!



*Petrorhagia prolifera*

Good too to see the various Brecks Speedwells. I realised that I'd driven past the classic Thetford site while on an earlier unplanned hunt and had even made the mental note that "those banks look the most likely I've seen in this whole estate" but didn't have the confidence or opportunity to pull over and confirm my suspicion. Always go with a gut-feeling on these things! I hope that their precarious hold on life here can be safeguarded.

My most recent raid on the county was in 2019. I have reached that time in life when you begin to feel you shouldn't put off getting to see those things that have eluded you until now [Note from Editor: Fred is only a handful of years older than me, so hardly ancient, and there is an awful lot I haven't managed to see yet! JP].



I harbour hopes of perhaps doing a Handbook on *Limonium* someday as I had illustrated most under contract when many were made BAP species. I had, however, never seen *Limonium bellidifolium* in the flesh ...

My interest had been piqued once more following work that I've been doing with colleagues in Lincs. We have material collected there by Sir Joseph Banks in the 1780s in the British & Irish herbarium, although it was last seen in the county, at Gibraltar Point, over 40 years ago. Indeed it has now gone from everywhere in the British Isles but Norfolk and so with the disingenuous offer of a "trip to the seaside", I persuaded my long-suffering wife to endure endless hours of driving to get to a bleak Brancaster beach, suffering squally rain and driven sand as the sun went down and I ran manically around looking for something far bigger than it actually was. She had to point it out to me in the end ..... well at least that made her feel good. Never has a fish and chip supper been so deserved! Then a four hour drive home again. I wish it was closer. I would love to spend more time in the county. It has good plants, interesting places and lovely people and you can't really ask for much more than that.

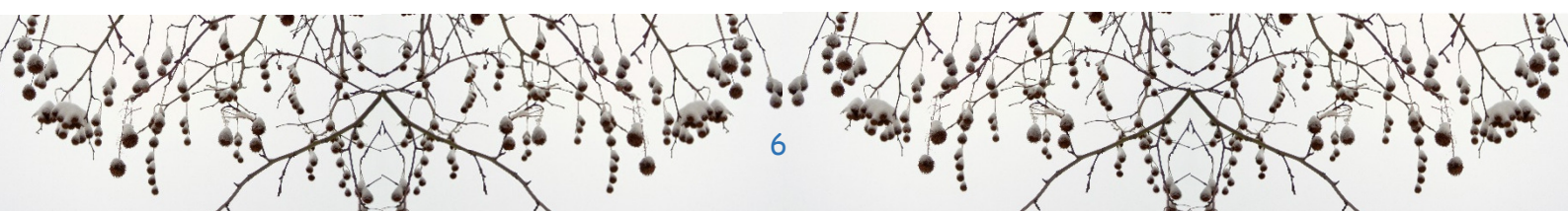


*Limonium bellidifolium*

## Fred Rumsey

Things I have learned: Fred is not just an excellent botanist and good company on, (in) and off the fen!

A big gold star there for firstly writing something both original AND Norfolk-focused (even though we would have been pathetically grateful, nay, greatly HONOURED, just to receive even a re-warmed version of 'something he'd prepared earlier'); and secondly - making it funny! JP



Last year, Robin Stevenson and I put together a list of the things you might want to look out for if you are worried you might be becoming too much of a botany-nerd. A couple of you contributed your own thoughts and concerns. If you can tick 5 or more of these then your fate is well and truly sealed. You may as well just embrace being weird ... as 'young people' say, "Own it!"

The new ones are in black: can you guess who wrote which? JP

## YOU KNOW YOU'RE A SERIOUS BOTANIST WHEN ... (Part 2)

- Other people's garden weeds are more interesting than your own
- You find wall tops and bottoms better harbingers of spring than hosts of golden daffodils
- Your office carpet is covered in bits of *Conyza*-fluff
- You are totally immune to the stares of passers-by as you kneel in the gutter
- You decide you can never have enough books on grasses
- There are more petri-dishes in your dishwasher than wine-glasses (at least during *Potamogeton* season)
- You stop the car and run back down a busy main road to check a Ragwort
- You cannot resist peering down drains (even when there are other people about)
- You carry a notebook and pencil with you wherever you go
- It drives you absolutely mad when the EDP publishes misidentified pictures of plants
- It drives you even more mad when newspapers publish wrongly identified photographs of plants, and can't even get their scientific names right (not **just** the EDP!)
- You plan family holidays around plants you haven't seen before
- Your coffee table supports a teetering pile of books, and plant specimens in various stages of decomposition
- You can't pass a ditch without dipping for *Lemna*
- You can remember at least three different names for some species whose taxonomy has been revised in the last decade
- Even your 'best' trousers have scuffed knees
- You have a hand-lens for every handbag and never lack a means of determining the grid reference
- There are bits of foliage in the bottom of the washing machine
- You can name plants, even if not in flower - and often when dead (the plant, that is)
- Your garden pond would merit designation as a SSSI
- You have an overwhelming compulsion to record any interesting plant you see
- Friends and colleagues give you dead bits of plant and blurry photos to identify
- You realise that you are inadvertently moving plant species around the county on your socks
- You can precisely draw your VC boundary on a map without having to look it up
- You have a microscope at home, and know how to use it
- You get a GPS for your birthday
- You can recite any of the DINTY rows (not just the one that reads D-I-N-T-Y)



- You give up on money-making opportunities, such as work, spending time with non-botanical friends, and indeed any semblance of a normal life, to go botanising instead
- You get a strange thrill from seeing *Stellaria pallida*
- You develop the misapprehension that 'civilians' are interested in sedges, and point them out on walks or from the train
- You always carry a small ruler about with you
- You find it disquieting to call a plant by the same Latin name for more than ten years
- You know what axiophytes are
- It irritates you deeply when novels contain glaring plant-related solecisms: "The water meadows were blue with cornflowers"; "She breathed in the heady scent of bougainvillea" and you have no tolerance whatsoever for cowslips 'blooming sweetly' in July or cow-parsley 'frothing' in September
- You are perfectly willing to botanise along trunk roads, and pay only the scantest regard to traffic hazards
- Your 'Notify the County Recorders' list spirals dangerously out of control
- You fear running out of sites to record, and thank God that Jo has started to pull together a new recording programme for next year . . .

Jo Parmenter, Robin Stevenson, Richard Carter & Suki Pryce



Take care of the little things: a truly tiny *Erophila verna*

Suki Pryce





## MYSTERIOUS BROOMRAPES



Knapweed Broomrape *Orobanche elatior* with its host plant of Greater Knapweed *Centaurea scabiosa* on a Norfolk cliff-top.

On a lawn not far from our house, we enjoy a seasonal display of the flower spikes of Purple Broomrape *Phelipanche purpurea*. Each year, the lawn is dutifully cropped within an inch of its life by the house owners, but the broomrape flowers are avoided by the mower and allowed to grow, with a little piece of me - OK, a big piece - feeling sure that the owners are sparing these plants because they think that they are orchids; hopefully they never find out the dark truth!

To most people, broomrapes are weird, even sinister, plants that appear as if from nowhere and bear no green parts, not even a sniff of anything proper like a leaf. As if by magic, they simply emerge from the ground, do their thing, then disappear again until next year. These plants, of course, have a dark secret and that is that they are parasites. Having no green parts means they have no chlorophyll and thus no way of producing their own chemical energy from sunlight. To facilitate this vital function, broomrapes tap into other plants and 'steal' from their hosts to fulfil their needs.



A typical broomrape flower in cross-section showing the long stigma with recurved tip.

When broomrape seed is dispersed, it falls relatively close to the parent plant, perhaps as a way of aiding it to find a suitable host plant. When the seed germinates in the spring, a single, root-like growth emerges and pushes downward into the soil. It is likely that chemicals emitted by the target host species are utilised by the young broomrape and guide it in its quest, but many will not find a host before the food reserves in the seed are used up and these will soon die off. Successful plantlets will come up against the root of a suitable host species and, once contact is made, a special growth called a haustorium is formed.



Outgrowths from the haustorium push into the host plant's roots and tap into the vascular system; once this has been achieved, they can begin to extract sustenance from the host and the haustorium swells into a tuber-like growth. In summer, these tubers produce the flower spikes that push upward and will, in turn, produce new seeds.

Most of our broomrapes in the UK are perennial and the tuber will survive and grow larger over a number of years, eventually producing quite showy clumps of flower spikes, but it all depends on the host and if the broomrape gets too big for its boots, the host may eventually die. Similarly, if the host is an annual then there are repercussions for the broomrape.

Our commonest broomrape by far is the well-named Common Broomrape *O. minor* and this species will parasitise a wide range of hosts, but especially plants in the Fabaceae (pea family) and Asteraceae (daisy family). The strength of the host is often reflected in the size of the broomrape and I have seen single, tiny flower spikes of Common Broomrape on roadside verges that are no more than four or five centimetres tall and probably growing on a Common Cat's-ear *Hypochaeris radicata* plant. Conversely, I have seen Common Broomrape in supermarket car parks, parasitising strong-growing and perennial Shrubby Ragwort *Brachyglottis* 'Sunshine' plants. In this instance, the broomrape flower spikes were over 70cm in height and clearly doing very well for themselves!



Like these Purple Broomrapes, flowers can vary greatly in size according to the age of the plant. They may be single spikes with just two or three flowers, to clusters of several, many-flowered spikes

Because some broomrape species attach themselves to crop species, they are viewed as pests by many people and it is unfortunate that the vast majority of information available on them comes from research into controlling their numbers. Thus, it is unclear to me just what it is that prevents our native broomrapes from being far more common than they are and I haven't as yet found any research on this. Most species are limited in their choice of host plants (often to just a single host species) and it may well be that this is because cracking through the chemical defences of the host requires special skills that don't come easily, so it's easier to stick to the one you know. But often, the host species are very common species in our countryside - such as Common Yarrow *Achillea millefolium* or Common Ivy *Hedera helix*, which leads one to wonder why broomrapes are not present on every lawn and in every churchyard in the region!

Clearly something else is at play and it may be that the host plant already needs to be stressed or not fully fit as a way of aiding entry by the broomrape and this may explain why several of our broomrape species do well in environments where the host species have other things to worry about - such as life on clifftops and roadsides where the soil may be salt-laden and/or drought-affected.

One other thing that's interesting about broomrapes is that they appear to produce genetically-restricted populations and this is perhaps a way of helping them to become specialised in a suitably abundant host species. Thus, entire populations will focus on a single host species that they are eminently adapted to parasitise and it is thought that, in a more diverse species like Common Broomrape, this behaviour may drive speciation as host adaptation moves populations genetically away from each other.

But away with such turgid stuff! Whatever their technical form and function, broomrapes are marvellous plants and always a delight to find. There's little doubt that the best way to enjoy them in Norfolk is to walk a section of coastal path between Weybourne and Mundesley in early June and keep an eye on the grassland close to the clifftop (though not too close, please!!). Along this section of coast, three species of broomrape can be found cheek by jowl - Purple Broomrape on Common Yarrow, Knapweed Broomrape *O. elatior* on Greater Knapweed *Centaurea scabiosa* and the more ubiquitous Common Broomrape. Elsewhere in Norfolk, Common Broomrape is widespread, but the other species are rare and their distribution is, of course, also limited by the range of their hosts.

[Here's a quick rundown of the Norfolk species.....](#)





### **Common Broomrape *Orobancha minor***

Quite common and widespread in grassy places on a wide range of host species, mostly members of the Fabaceae, Asteraceae or Apiaceae. Very variable, 10-70cm in height, often with a dull, pinkish or slightly purplish tinge. Flowers are dense on the spike at first, but stems often elongate with age and eventually produce a very open spike with well-spaced flowers. The individual flowers are relatively straight sided, curving gradually towards the tip and not strongly curved at the base. Stigmas are usually purple in colour but may sometimes be yellowish.

Single plants may commonly be found but this species can also form extensive colonies with hundreds of spikes in favoured locations.

### **Knapweed Broomrape *Orobancha elatior***

A relatively tall and stout species, reaching to 70cm in height and being more densely flowered than Common Broomrape.

The whole flower spike is typically a rich, reddish- or yellowish-brown in colour. This species grows on Greater Knapweed which is generally a plant of chalk grassland and this is mirrored in the distribution of the broomrape, with a range mostly restricted to the North Norfolk coastal ridge and West Norfolk greensand ridge.





**Purple Broomrape *Phelipanche purpurea***

For me this is the star of the Norfolk broomrapes and indeed it has its UK stronghold in our county, with the population that spans from Sheringham to Mundesley being the largest and most stable population of the species in this country.

Elsewhere, Purple Broomrape is strangely ephemeral in its appearance, with a handful of plants popping up here and there but never persisting for long. The rich purple colour of the flowers, often with a dull yellow or ochre stem, is very distinctive and sets it apart from our other broomrape species. At all times, this species can be told from the other broomrapes by the presence of two bracteoles at the base of each flower, one on either side, in addition to a bract. All other broomrapes in Norfolk have just a single bract at the base of each flower and no bracteoles. A photo of this feature can be seen towards the end of this article.

**Greater Broomrape *Orobanche rapum-genistae***

This is the true 'broomrape', the species that grows on Broom *Cytisus scoparius* and also on gorse *Ulex* spp. and related taxa. This is a giant of a broomrape, drawing plenty of sustenance from its larger host species and sometimes reaching nearly a metre in height! It has dark, reddish flowers and yellow stigma lobes.

Sadly, this plant has become extremely rare throughout much of its UK range and is now very difficult to find. The species was last recorded in West Norfolk at Great Hockham in 1986 but then was presumed extirpated or at least lost from the County's flora. However, a mystery photo that came to my attention a few years ago proved to be of Greater Broomrape and it seems that the species still survives in East Norfolk, where it grows on Common Gorse *Ulex europaeus* on private land. Let's hope it can be encouraged to increase its number and again become a plant that we can all enjoy.





### Ivy Broomrape *Orobanche hederæ*

Despite parasitising Common Ivy *Hedera helix* which must surely be one of the most abundant plants in the UK, the Ivy Broomrape remains enigmatic in our region. It has long been known from Cambridge Botanic Gardens, where it was originally introduced and it is rumoured to have been introduced from there to Norfolk (accidentally or otherwise is unclear) but the facts are obscure and the species should be borne in mind if a broomrape is found growing near a good population of ivy in urban or suburban environments.

The flower spikes are similar in general size and shape to Common Broomrape, but the flowers are more strongly curved outward from the base and the stigma lobes are usually yellow, rarely purplish.

### Branched Broomrape *Phelipanche ramosa*

This species is quite widespread in Europe, especially in the Mediterranean region and grows on a range of host species, most often members of the Solanaceae. It is a rather small species, typically to around 20cm in height but often much shorter and with purple and white flowers.

It gets its common name from the fact that the flower spikes are often branched from low down - a feature not seen in our native species. Branched Broomrape no longer occurs in Norfolk but was inadvertently introduced and considered a pest species in the 19th Century when Indian Hemp *Cannabis sativa* was grown in the region as a crop for providing fibres for making hemp rope. For this reason, many UK references give it the vernacular name of Hemp Broomrape.

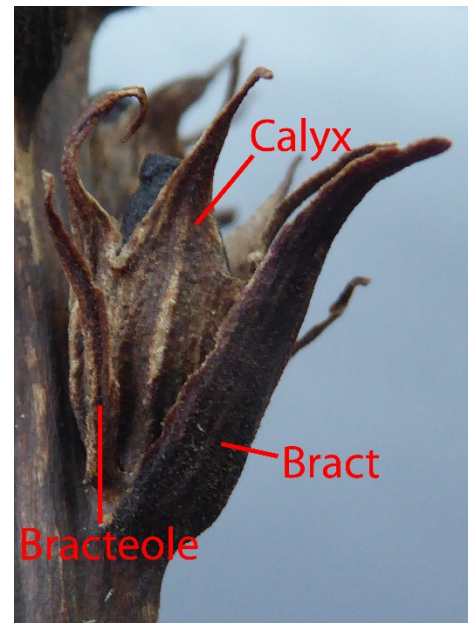


Identification features



This picture illustrates a flower of Greater Broomrape and shows the two-lobed tip of the stigma. The colour of the stigma can be useful in identifying the species and in most species is either yellow, purple or white.

This close-up of a winter stem of Purple Broomrape illustrates the presence of the extra bracteole that occurs on each side of the flower in the genus *Phelipanche* and which is absent in the *Orobanche* species. Thus, even in winter when the stem has turned woody and the flowers are long gone, this species can still be told from other Norfolk species. Note that Branched Broomrape is also a *Phelipanche* so also shares this feature, but it is unlikely to be found in Norfolk and differs in other aspects of its flower spike.



Finally, it's worth remembering that broomrape plants, like many plant species, can sometimes lack colour pigment in the flowers or in the entire plant. Occasionally, whitish, creamy or pale yellow plants appear and can be difficult to identify except by structural differences such as flower shape and the presence or absence of bracteoles. This plant is a Purple Broomrape which isn't living up to its name!

Mike Crewe



## A REPORT ON THE NFG CONIFER WORKSHOP HELD AT LYNFORD ARBORETUM, 19TH MARCH 2019

Baffled by conifers? Many of us are. But this March the Forestry Commission's conifer expert Matt Parratt flew (literally - he came down from Scotland especially) to our rescue, and conducted a most enlightening outdoor workshop at Lynford Arboretum.

A diverse assemblage of attendees from various conservation-orientated bodies, including NNNS, NFG, BSBI and FWAG, gathered together, keen to learn about this difficult group; and the calibre of many participants bears witness to how tricky even top-notch botanists find this group of plants. But no more! We have been enlightened! Using Matt's excellent but simple lateral key [[https://www.norfolkflora.org.uk/conifer\\_resources](https://www.norfolkflora.org.uk/conifer_resources)], we worked our way round the Arboretum and through the main coniferous taxa likely to be found in our region.

First, an easy decision, are the leaves needles or scales? If needles, we learned a quick route to genera: Spruce (*Picea*) needles are attached to the twigs on woody pegs and the cones hang down; Silver Firs (*Abies*) have needles attached via an 'octopus-like' sucker and the cones are erect and disintegrate on the tree; Pines (*Pinus*) needles are in clusters of 2s, 3s or 5s which are shed as a bundle.

We saw needles arranged as fishbones and hockey sticks, scales like chains of feathers or dreadlocks. We got close up and personal with cones (cones like pangolin tails, cones like roses); and with cone bracts ('exserted', 'deflexed') and cone scales (some like 'Mick Jagger lips'). We got resin on our hands, and crushed needles up our noses as we sniffed our way through grapefruity, petrolly, parsley-like and even boot-polish scents. Smell rather than form is retained in horticultural varieties so a personal association of a smell can be very useful when coming across an exotic cultivar in a park or garden.

We learned that even the greatest experts may experience some difficulty in identifying Larch hybrids, and may have to resort to '*Larix* sp'. And - of more importance than anything else - yes, we learned how to reliably distinguish *Cupressus macrocarpa* from X *Chamaecyparis* (now X *Cuprocyparis*) *leylandii*, a feat which has had even the best of us baffled up till now when an 'intermediate' specimen without mature cones presents itself. But we have cracked it, and will never misidentify another Norfolk windbreak again . . .

*With many thanks to Matt Parratt, Research Biologist, Forest Research, for generously giving us his time and expertise and to the Norfolk and Norwich Naturalists Society for funding the event*

**Suki Pryce & Janet Higgins**





## A FEW MORE COLLECTIVE NOUNS FOR BOTANISTS

You will recall that this was an idea we started at the 2017 and it has been 'evolving' ever since. I was gratified to see that the BSBI themselves explored the same theme at the 2019 Annual Exhibition Meeting (but remember - we did it first!).

The top 5 last year were as follows:

- A family
- A twitch
- An indetermination (or a determination, if you prefer!)
- An aggregate
- A bumble

A number of you emailed me to give your preferences, and an '**indetermination/determination of botanists**', closely followed by 'a bumble of botanists' came out on top (curiously, the latter tended to be preferred by non-botanists - we clearly need to polish up our image and let our swift-moving, rapier-sharp, highly-organised true selves shine through!) and then 'an aggregate of botanists'.

Thank you to all those who took part.

### Jo Parmenter



A small but perfectly formed *Myosotis* growing on a walltop in Cromer

Suki Pryce

... and just when you started to feel fairly safe with *Stellaria*.... You will notice that Richard starts off fairly gently here, as if to lull you back into that false sense of security ... but then raises a horrifying prospect.... JP

## IF IT LOOKS LIKE A CHICKWEED .... *Stellaria media* look-alikes

The familiar - gardeners might say all too familiar - Common Chickweed (*Stellaria media*) is a variable species growing on a wide range of substrates. Seldom, though, will we see it and wonder what it is, except perhaps very occasionally on wall-tops where dainty and upright forms (normally it sprawls) can look like members of other genera in the Caryophyllaceae, e.g. Thyme-leaved Sandwort (*Arenaria serpyllifolia*). On those occasions, the fact that *Stellaria media* has lower-stem hairs concentrated into a single distinct line is enough to dispel any doubts.

There are, however, several members of the genus *Stellaria* that look sufficiently like *Stellaria media* to be overlooked for it. So, what are they?

The two large-flowered species that we call Stitchworts - Greater Stitchwort (*Stellaria holostea*) and Lesser Stitchwort (*Stellaria graminea*) both have non-petiolate (i.e. unstalked) leaves that are linear-lanceolate, so there is little chance of confusing them with *Stellaria media*. The same applies to the much rarer Marsh Stitchwort, which usually has a bluish-green appearance. These three are so different from the other *Stellaria* species that in the fourth edition of Stace's Flora it says they are likely to be separated into a new genus before much longer (presumably pending DNA work).

Two other species tend to have distinctly larger flowers than *Stellaria media* but otherwise resemble it in the architecture of the flower and in the shape and general look of the leaves. Water Chickweed (*Stellaria aquaticum*) - this is the one we used to know as *Myosoton aquaticum* but now it has moved to *Stellaria* it seems strange that we didn't always wonder why it wasn't there, seeing that it looks so very much like a *Stellaria*. But it has five styles in the flower instead of three, which quickly and easily distinguishes it from all other *Stellaria* species including *Stellaria media*. When not flowering it will usually be given away by its large size and waterside location, and it can be checked by the hairless base of the stem, which lacks the line of hairs characteristic of *Stellaria media* (though there are glandular hairs in the upper parts of the plant). Wood Stitchwort is unlikely in Norfolk being a more northern species of watersides in woods. It is a strikingly graceful plant that you would never confuse with *Stellaria media* - a sort of aristocratic relative.

The delicate Bog Stitchwort (*Stellaria alsine*) - a plant common in Norfolk in wet grassland generally - is easily distinguished from other *Stellaria* species by being completely hairless. Its leaves are somewhat parallel sided and do not look at all like those of *Stellaria media*.

Which pretty much leaves us with the two (or tantalisingly perhaps three) *Stellaria* species that you can easily overlook in error for *Stellaria media*. First, on paths or on free-draining and nutrient-poor substrates in very early spring we sometimes find sprawling yellow-green patches of what looks like small *Stellaria media* with unopened or malformed flowers. Often that is exactly what it is. But often too it is *Stellaria pallida*, which is distinguished from *Stellaria media* by usually lacking petals, by having sepals less than 3 mm (versus more than 3 mm) and by having 1-3 stamens versus 3-8 - easy, except of course that it's like Schrodinger's Cat. The two theoretical states '3 or less stamens' or '3 or more stamens' are both true until your act of taking the trouble to look collapses them into the



observed state '3 stamens', at least in plants that look as if they might be *Stellaria pallida*. But usually with a bit of persistence we can find enough evidence to decide between the two species. Records of *Stellaria pallida* become steadily less plausible as the spring advances. By April the plant is usually dying off but still identifiable. If you are puzzling about a plant in May, it's probably *Stellaria media* - but beware of Breckland forestry rides where *Stellaria pallida* seems to persist longer than elsewhere and can just survive through to June.

Even more easily overlooked is Greater Chickweed (*Stellaria neglecta*) which is very much like *Stellaria media* in general appearance but bigger - sepals 5-6.5 mm (versus less than 5 mm in *Stellaria media*), stamens 8 or more, and seeds 1.3 mm in diameter or more (1.3 mm less in *Stellaria media*). Plants in the 'overlap zone' are common and when dealing with 'gradient-of-size-or-number' characters like this we are generally reluctant to go for a record of the less common *Stellaria neglecta*. It may well be one of the most under-recorded plants in Norfolk. According to Stace's Flora it may have a preference for shady and damp places, but it is worth looking for more widely.

And now there is a third possibility drawn to the attention of BSBI members a few weeks ago by Fred Rumsey at the England Group AGM - a new species described last year from central Europe where it is spreading. It isn't in Stace 4 (post-dating it) and it has not yet been recorded from the UK but could account for some of our puzzle plants on the fringes between *Stellaria media* and both *Stellaria pallida* on the one hand and *Stellaria neglecta* on the other.

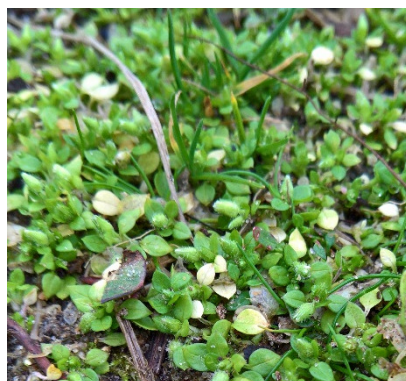
The new *Stellaria ruderalia* is an allotetraploid species derived from the hybrid between *Stellaria pallida* and *Stellaria neglecta*. Since we have just seen that these two species span *Stellaria media* in terms of size, we might guess what this new species might look very like! Actually it isn't that easily confused with *Stellaria pallida* but rather is intermediate between *Stellaria media* and *Stellaria neglecta*. It seems that the jizz-character to look out for is reflexed branches in the inflorescence (a bit like *Cerastium semidecandrum* I presume) - in this it differs from both *Stellaria media* and *Stellaria neglecta*. Otherwise it differs from *Stellaria neglecta* in having fewer stamens (3-5 versus 8-10), a more condensed inflorescence with stouter branches, shorter petals, a pale yellow-green colour, and paler seeds with fewer papillae. And it differs from *Stellaria media* in its upright habit (to 80 cm) and longer, more conical tubercles on the seeds. So over to you - can you be the first to find this plant in Norfolk?

**Richard Carter**



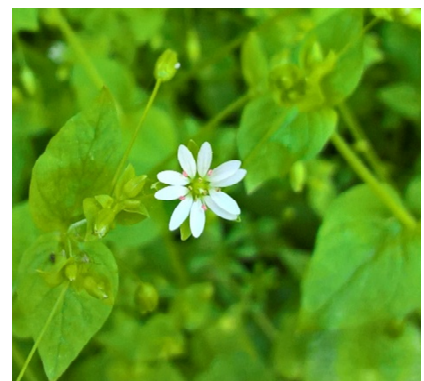
*Stellaria media*

Mark Hows



*Stellaria pallida*

Jo Parmenter



*Stellaria neglecta*

Jo Parmenter

## NEWS FROM THE NORTH WALSHAM AND DILHAM CANAL 2019

**A Rapidly Changing Site** I only started surveying the North Walsham & Dilham Canal a year ago, but it's amazing how much the vegetation of a 'labile' site like this can change from year to year. The lability comes partly from continuing substrate change, as some banks continue to be built up to the heights required for navigation, spoil heaps disappear, car parks are levelled and so on. Some species such as *Brassica nigra* Black Mustard - which dominated along the banks last year - have disappeared almost completely and been replaced by a range of other Brassicas (see below). *Chenopodium rubrum*, *Melilotus albus*, *Senecio inaequidens* and *Verbena bonariensis*, which were plentiful last year, have all but gone too. And alas the fascinating *Ambrosia artemisiifolia* - far from being a potential new weed threat - has vanished totally. But to make up for this, I've seen many new faces this season - particularly probable garden taxa brought in on spoil. These include *Allium trifoliatum* Pink Garlic, *Anemone blanda* Balkan Anemone, *Bistorta officinalis* Common Bistort, *Calandrinia ciliata* Red-maids, *Limnanthes douglasii* Poached Egg Plant, and *Meconopsis cambrica* Welsh Poppy. New natives include plentiful *Atriplex littoralis* which has suddenly appeared along some paths.

**Brassica Puzzles** Ooh - head-scratchers! The Canal bank sides and tops have been populated by all sizes and shapes and stages of Brassicaceae this year, with identification not helped by swingeing Flea Beetle attacks on their leaves. *Sinapis arvensis* Charlock, *Hirschfeldia incana* Hoary Mustard, remnant *Brassica nigra* Black Mustard . . . You think you have them cracked, go back a few weeks later - and they all look different and you're back to square one trying to make sense of withered, nibbled foliage and uncharacteristic growth habits. Needless to say, peering at pods with the help of NFG members has usually been the only way forward. (And - as a reward for trying so hard - among all these *doppelgangers* and imposters I found a fine species new to me, the excellently named Bastard Cabbage *Rupistrum rugosum* with its unexpected spherical pods).

**Stable Areas** Meanwhile, some undisturbed areas along the Canal have grown in species richness - notably along the watered pound at Ebridge. Last year, the canal-side banks were mainly colonised by competitive marginal species such as Greater Pond-sedge *Carex riparia*, Reed Sweet-grass *Glyceria maxima*, Reed Canary-grass *Phalaris arundinacea*, Common Reed *Phragmites australis*, and Greater Reedmace *Typha latifolia*. However, this year, plenty of attractive or less common species have started to flourish amongst this grosser vegetation along the inner banks, and on their shoulders and adjacent 'buffer zone' (a less-frequently-cut strip bordering the shoulders). These include Angelica *Angelica sylvestris*, Hemp Agrimony *Eupatorium cannabinum*, Meadowsweet *Filipendula ulmaria*, Yellow Iris *Iris pseudacorus*, Gypsywort *Lycopus europaeus*, Purple Loosestrife *Lythrum salicaria*, Water Mint *Mentha aquatica*, Water Forget-me-not *Myosotis scorpioides*, Water Chickweed *Myosoton aquaticum*, Celery-leaved Buttercup *Ranunculus sceleratus*, Water Figwort *Scrophularia auriculata*, Bittersweet *Solanum dulcamara*, Tansy *Tanacetum vulgare*, and Brooklime *Veronica beccabunga*. There is also thriving Whorl Grass *Catabrosa aquatica* along a disputed and hence unmanaged part of the east bank, which has become gently shelving; and this also supports plenty of Water Forget-me-not and Celery-leaved Buttercup, plus some Water Starwort *Callitriche* agg. This increasing diversity is promising, and bodes well for the future species-richness of the other sections of the Canal when they in turn are watered and become more stable.

I also stumbled upon a novel method of collecting aquatic plants in this stretch when I asked the Model Boat Club if I could rootle through the impeding 'weeds' which they were removing from their boats' propellers. Remarkably - among all the *Sparganium erecta* Branched Bur-reed floating leaves - I found



fragments of previously not-found *Elodea canadensis* Canadian Pondweed (we hope it remains a very minor resident), and *Lemna trisulca* Ivy-leaved Duckweed.

**Sandy Cliffs and Dry Meadow** Just to the north-east of Bacton Wood Lock is a special habitat not found elsewhere along the Canal. Here is a steep area of sandy substrates which has developed an attractive heath-type flora, and which I hadn't seen before at its best. There are sand 'mini-cliffs' with the dry grassland form of Common Vetch *Vicia sativa nigra*, and *Erigeron acer* Blue Fleabane. And of particular value is a delightful small species-rich meadow with abundant *Agrostis stolonifera* and *A. capillaris* Creeping and Common Bent, plus *Centurea nigra* agg Knapweed, *Anthoxanthum odoratum* Sweet Vernal-grass, *Lathyrus pratensis* Meadow Vetchling, *Stellaria graminea* Lesser Stitchwort, and *Veronica chamaedrys* Germander Speedwell - several of which aren't found elsewhere on site.



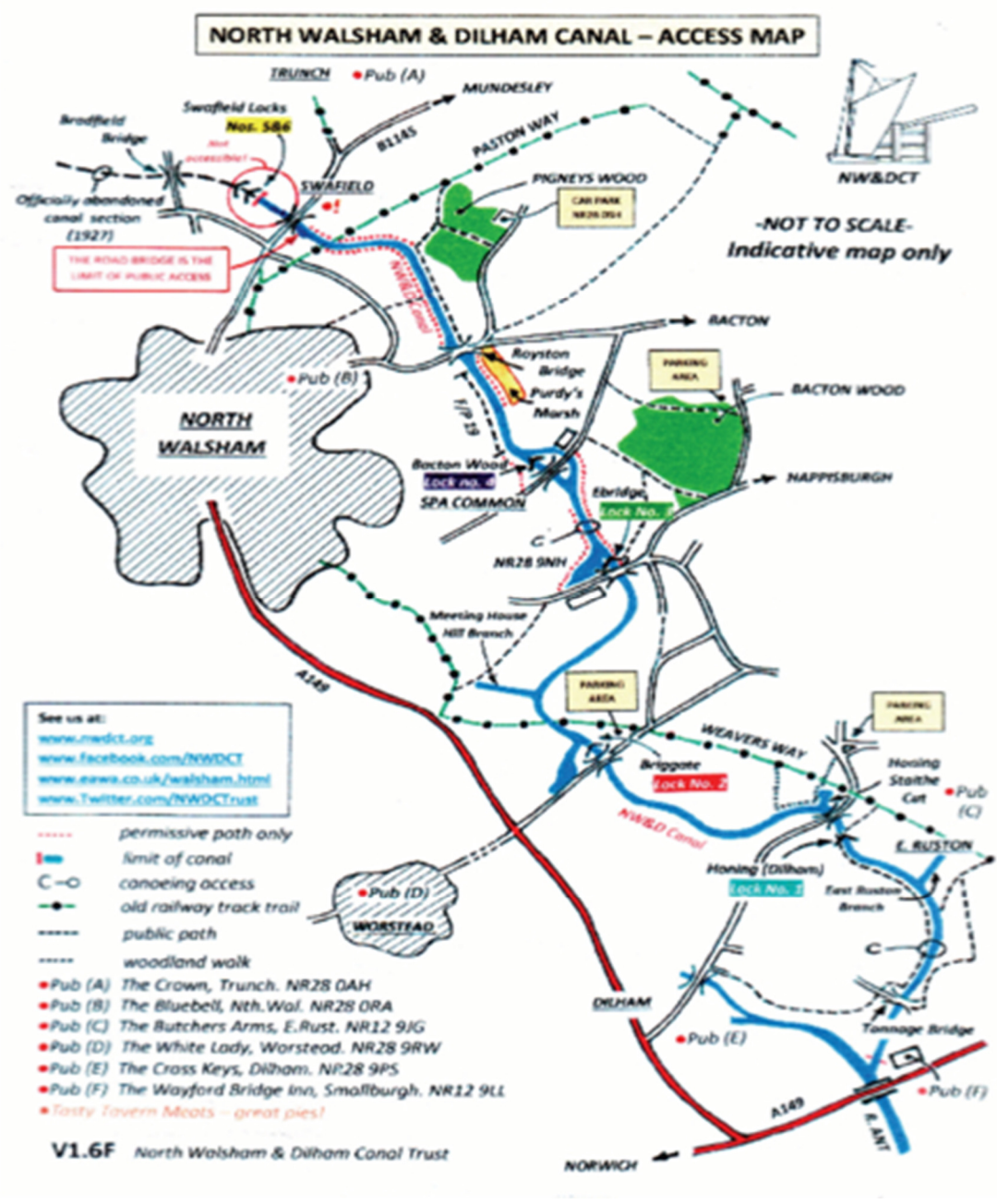
The 'sand-cliffs'

**Canal a B-Line?** I continue to moot the idea of the whole Canal corridor being made a CWS, but there's now a newer idea - that of making it a Buglife B-Line, and the Trust may find this designation easier to support. B-Lines are conceived of as a series of 'insect motorways' running through countryside and towns, along which local groups aim to restore/create a series of wildflower-rich habitat stepping stones in order to link existing wildlife areas together <https://www.buglife.org.uk/our-work/b-lines/>

Not really a new idea, but in a slightly different guise this wildlife corridor concept may perhaps find a new lease of life? And if so, it would be nice for the NW&DC to be on board.



**Total Plant Species Count** At the end of November 2019, this was **375**.



**Suki Pryce**

Has anyone else noticed that Suki seems to have more energy than the rest of us put together? JP



### BEST-DRESSED BOTANIST OF THE YEAR, 2019-20

To my mind, it is easy for a single botanist to dress well, although some do seem to struggle at times.... For three of them to coordinate not only with one another, but also the background foliage, and on the same day, is really quite extraordinary!



Mary, Suki and Tim, March 2019

Jo Parmenter



## SCHEDULE 9 PLANTS IN NORFOLK

### Introduction

Currently there are >40 plant species (plus marine species) listed under the Wildlife & Countryside Act 1981 Section 14 Schedule 9 (Part II) in England and Wales. Schedule 9 lists invasive non-native species that are already established in the wild, but which continue to pose a conservation threat to native biodiversity and habitats, such that further releases should be regulated. "If any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9, he shall be guilty of an offence". There is some interpretation involved in what constitutes an offence so worth reading the full government guidance document if you have lots of free time. <https://www.gov.uk/government/publications/preventing-the-release-into-the-wild-of-certain-plants-and-animals-guidance>.

In Norfolk, whilst some of these species do not pose a conservation threat at present and are unlikely to anytime soon, others are particularly aggressive and may threaten important habitats, such as sand-dunes, rivers and wetlands. The purpose of this article is to provide a list of species present and their Norfolk status, future 'possibles' to look out for and some identification tips to avoid confusion with other similar species. There are many other non-native species that are potentially invasive and could pose a conservation threat that not on the list, which could be looked at another time, not to mention many native species that could be called invasive.



New Zealand pigmyweed

*Crassula helmsii*



## The Schedule 9 species

A summary table of all the terrestrial and aquatic species is given below in Table 1, with their current status in Norfolk, whether they are increasing in distribution across the County and some habitat details. This excludes all the marine species that includes laver seaweeds *Porphyra* spp., other seaweeds, red algae *Grateloupia luxurians* and kelp *Macrocystis* spp. Where some confusion on identification may arise with selected species, additional text is given to help identify them, based on Stace (2019) New Flora of the British Isles, 4<sup>th</sup> edition and Poland (2009) The Vegetative Key to the British Flora.







**Table 1 - The Schedule 9 List**

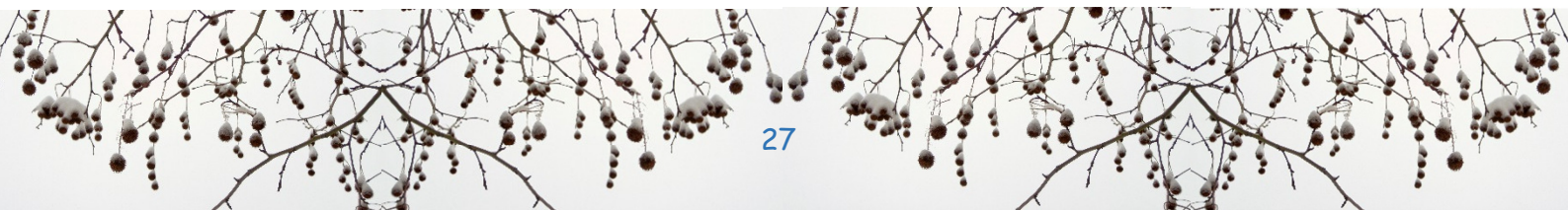
Common name	Scientific name (Stace 2019)	Present in Norfolk?	Increasing in Norfolk?	Details - location/habitat
Alexanders, Perfoliate	<i>Smyrniun perfoliatum</i>	Yes, rare	Yes?	Four tetrad locations - Mundford, Hethersett, Stanhoe and new "outbreak" in Norwich 2019 (Jo Parmenter <i>pers.com</i> ). Not as much of an issue than alexanders <i>Smyrniun olusatum</i> in Norfolk at present.
Archangel, Variegated Yellow	<i>Lamiastrum galeobdolon</i> subsp. <i>Argentatum</i>	Yes, frequent	Yes	Woodlands, banks.
Azalea, Yellow	<i>Rhododendron luteum</i>	Yes, rare	No	Three tetrad locations - Wood Norton, Felthorpe, Fritton Lake.
Balsam, Himalayan	<i>Impatiens glandulifera</i>	Yes, frequent	Yes	River margins, ditches, ponds.
Cotoneaster	<i>Cotoneaster horizontalis</i>	Yes, frequent	Yes	Walls, waste ground, chalk grassland.
Cotoneaster, Entire-leaved	<i>Cotoneaster integrifolius</i>	Yes, rare	No	Sand dunes at Burnham Overy, usually grown as <i>C.microphyllus</i> .
Cotoneaster, Himalayan	<i>Cotoneaster simonsii</i>	Yes, occasional	No?	Walls, waste ground.
Cotoneaster, Hollyberry	<i>Cotoneaster bullatus</i>	Not present	No	All specimens found in Norfolk so far are the similar <i>C.rehderi</i> .(Mike Crewe <i>pers.com</i> )
Cotoneaster, Small-leaved	<i>Cotoneaster microphyllus</i>	Not present?	No	Possible record from Beccles 1990-9? most material determined is <i>C.integrifolius</i> .
Creeper, False Virginia	<i>Parthenocissus inserta</i>	Yes, rare	No	Five tetrad records, waste ground Norwich and King's Lynn.
Creeper, Virginia	<i>Parthenocissus quinquefolia</i>	Yes, occasional	Yes	Shingle banks, road side and waste ground.
Dewplant, Purple	<i>Disphyma crassifolium</i>	Not present	No	Nearest record Felixstowe, Suffolk.
False-acacia	<i>Robinia pseudoacacia</i>	Yes, frequent	Yes	Woodlands, banks, waste ground.
Fanwort (otherwise known as Carolina Water-Shield)	<i>Cabomba caroliniana</i>	Not present	No	Very local, wetlands near Basingstoke and Guildford.
Fern, Water	<i>Azolla filiculoides</i>	Yes, occasional	No	Wetlands, mainly in Norfolk Broads and the Fens, probably not spreading
Fig, Hottentot	<i>Carpobrotus edulis</i>	Not present	No	Nearest record coast near Felixstowe, Suffolk.
Garlic, Three-cornered	<i>Allium triquetrum</i>	Yes, frequent	Yes	Coastal grassland, A47 roadside.
Hogweed, Giant	<i>Heracleum mantegazzianum</i>	Yes, frequent	Yes	Close to water, waste ground.
Hyacinth, water	<i>Eichhornia crassipes</i>	Not present	No	Nearest record, Stowmarket, Suffolk.
Knotweed, Giant	<i>Reynoutria sachalinensis</i>	Yes, rare	No	See note, southrepps and a few sites in Broadland.

<i>Common name</i>	<i>Scientific name (Stace 2019)</i>	<i>Present in Norfolk?</i>	<i>Increasing in Norfolk?</i>	<i>Details - location/habitat</i>
Knotweed, Bohemian	<i>Reynoutria x bohemica</i>	Yes, rare	No	A record post 1970 but unknown location. Post 2000 record, but not in the wild. Possible where both parents occur or introduced.
Knotweed, Japanese	<i>Reynoutria japonica</i>	Yes, frequent	Yes	Roadsides, waste ground, railways, urban, wetlands
Leek, Few-flowered	<i>Allium paradoxum</i>	Yes, occasional	Yes	Roadsides, hedgerbanks
Lettuce, Water	<i>Pistia stratiotes</i>	Yes, rare	Yes	One location near Trowse and one in Gaywood King's Lynn 2000-9.
Montbretia	<i>Crococsmia x crocosmiiflora</i>	Yes, occasional	Yes	Damp places, woodlands, urban.
Parrot's Feather	<i>Myriophyllum aquaticum</i>	Yes, occasional	Yes	Ponds and dykes.
Pennywort, Floating	<i>Hydrocotyle ranunculoides</i>	Yes, rare	Yes	Wetlands, 6 scattered tetrad records not present before 2000.
Potato, Duck	<i>Sagittaria latifolia</i>	Not present	No	Spreading around London, one to look for in the future maybe.
Primrose, Floating Water	<i>Ludwigia peploides</i>	Not present	No	Very scattered few records nearest London area.
Primrose, Water	<i>Ludwigia grandiflora</i>	Yes, rare	No	Two records in Norfolk: from a pond at Paston in 2019 and an earlier record from Watton.
Primrose, Water	<i>Ludwigia uruguayensis</i>	Not present	No	Scattered nearest record Stowmarket, Suffolk.
Rhododendron	<i>Rhododendron ponticum</i>	Yes, common	Yes	Throughout county in woodland, particularly to the north of Norwich.
Rhododendron	<i>R. ponticum x R. maximum (or R. x superponticum?)</i>	Unknown	No?	Confusion due to introgressed variants of <i>R.ponticum</i> .
Rhubarb, Giant	<i>Gunnera tinctoria</i>	Yes, rare	No	Five records, damp places/ponds, since 1996 at Hingham.
Rose, Japanese	<i>Rosa rugosa</i>	Yes, frequent	Yes	Scattered throughout, including planted on cliffs by Sheringham Horticultural Society in Sheringham! Lots of hybrids to be aware of but these are rare and not yet recorded in Norfolk.
Salvinia, Giant	<i>Salvinia molesta</i>	?	No	Possible record from a dyke in Eaton within last few years but not identified and didn't survive the winter. Not in Stace (2019), from Brazil, related to <i>Azolla filiculoides</i> and a distinctive Genus (see plate 1) but taxonomy not straight-forward.
Shallon	<i>Gaultheria shallon</i>	Yes, rare	No	Naturalised on the Catfield Hall estate and Felbrigg Hall estate in 2015. Spreading around London and north-west, historic record 1990s from Mildenhall, Suffolk.
Stonecrop, Australian Swamp (otherwise known as New Zealand Pygmyweed)	<i>Crassula helmsii</i>	Yes, frequent	Yes	Ponds/lake margins. big increase in last 20 years from 30 tetrads to >75
Waterweed, Curly	<i>Lagarosiphon major</i>	Yes, rare	Yes?	Ponds, first record 1982 small increase from 5 tetrads to 8 but not recorded since 2011. Big increase rest of England and Wales, particularly around London.
Waterweeds	<i>All species of the genus Elodea.</i>	Yes, common	Yes	Throughout the Broads, Fens and other wetlands, only <i>Elodea canadensis</i> or <i>E.nuttallii</i> in Norfolk.

**Cotoneasters Cotoneaster spp.**

Schedule 9 includes five species, of which three are confirmed in Norfolk; wall cotoneaster *Cotoneaster horizontalis*, entire-leaved cotoneaster *C. integrifolius* and Himalayan cotoneaster *C. simonsii*. Note that the other Schedule 9 species small-leaved cotoneaster *C. microphyllus* (not present in Norfolk) is easily confused with *C. integrifolius*, and Sch.9 hollyberry cotoneaster *C. bullatus* (not present in Norfolk) is similar to bullate cotoneaster *C. rehderi* (and was sold as *C. bullatus* in nurseries) (Mike Crewe *pers.com*). See Mike Crewe's article on Norfolk Cotoneasters for identification features of all Norfolk Cotoneasters in the 2018 Flora Group newsletter.

<p>Cotoneaster <i>Cotoneaster horizontalis</i></p>	<p>Himalayan Cotoneaster, <i>Cotoneaster simonsii</i></p>	<p>Entire-leaved Cotoneaster, <i>Cotoneaster integrifolius</i></p>
	 <p>(photo MC)</p>	
<p>Arching, deciduous shrub to 1m high, (occ.2m)  <b>Flowers:</b> 2-3 together, erect pedicels to 3mm, 7-13 stamens  <b>Leaves:</b> 6 to 10mm, obtuse to rounded or mucronate at apex, deciduous, hairy/sparsely hairy underside  <b>Fruits:</b> 6-8mm, orange-red  <b>Branches:</b> regular herringbone pattern.</p>	<p>Deciduous erect shrub to 3-4m  <b>Flowers:</b> 1-4 per inflorescences, white anthers  <b>Leaves:</b> 15-25mm. shiny and flat on upperside, sparsely hairy below, deciduous  <b>Fruits:</b> 8-11mm, orange-red, globose to broadly obovoid with 3-4 stones.</p>	<p>Arching, evergreen shrub to 1m  <b>Flowers:</b> 1 flowered, 11mm across, petals patent &gt;10 flowers per inflorescences  <b>Leaves:</b> 7-15 x 3-6mm, 2x long as wide. Dark green shiny, evergreen  <b>Fruits:</b> 7-10mm, crimson</p>
		



### Virginia creeper *Parthenocissus quinquefolia* and False Virginia creeper *P. inserta*

These woody vines are occasionally found in Norfolk with *P. quinquefolia* the more likely species. A possible hybrid has been reported in Kent but is unconfirmed. They are easy to separate based on their tendrils. *P. quinquefolia* has tendrils with 5-8 branches from a strong central axis each with an adhesive disk, whereas *P. inserta* has tendrils with 3-5 branches, not from a strong central axis and without an adhesive disk.



Virginia creeper *Parthenocissus quinquefolia*

### Three-cornered garlic *Allium triquetrum* and few-flowered leek *Allium paradoxum*

In Norfolk only likely to be confused with wild onion *Allium vineale*, which has much narrower leaves 1-3mm and by far the commonest narrow leaved *Allium*. *A. triquetrum* has wider 4-12mm leaves with an inflorescence of flowers only (no bulbils) 10-18mm tepals that are white with a green line. The leaves of *A. paradoxum* are usually much wider 5-25mm, with an inflorescence of bulbils and up to 1 flower, with 10-12mm white tepals.



Three-cornered garlic *Allium triquetrum* (left) and Few-flowered leek *A. paradoxum* (right) (photo MC)

**Giant knotweed *Reynoutria sachalinensis* and Japanese knotweed *Reynoutria japonica***

*R. sachalinensis* is rare in Norfolk and the only confusion likely is between the more widespread Japanese knotweed *R. japonica* and the hybrid between the two: Bohemian knotweed *R. x bohemica* species (not recorded in the wild in Norfolk). They are readily separated by leaf characteristics (see below). The hybrid can be present without the parents. A colony of *R. sachalinensis* on a private estate in Southrepps has not spread much in 20 years and seems to be contained within the woodland.

**Table 2 Identification of Reynoutria based on leaf characters**

Giant knotweed <i>Reynoutria sachalinensis</i>	Bohemian knotweed <i>R. x bohemica</i>	Japanese knotweed <i>R. japonica</i>
Leaves >20cm long	16 to 23cm	<16cm
Long flexuous hairs on lowerside of	Short stout hairs on lowerside	Glabrous on lower side
Cordate at base	Weakly cordate to subtruncate	Truncate at base, cuspidate at apex



Giant knotweed *Reynoutria sachalinensis*

**Duck potato *Sagittaria latifolia***

What a great name! This is possibly an overlooked species when not in flower, as it is similar to the native (and often introduced) Arrowhead *S. sagittifolia*. Presumably the name duck potato comes from the tubers which look like small potatoes, but this feature is equally applicable to arrowhead. The duck potato (or Katniss) is often sold as arrowhead and a quick online image search highlights incorrect identification in many cases. Not yet recorded in Norfolk, it is one to look out for, but flowers and fruits are probably needed for identification as the leaves are quite similar to those of Arrowhead. A comparison is given below:



Table 3 - *Sagittaria* identification

ID feature	Duck potato <i>Sagittaria latifolia</i>	Arrowhead <i>S. sagittifolia</i>
Achene length (fruit)	4-6mm	2.5-4mm
Beak of achene	Apical <1mm	Subapical >1mm
Petals	White <u>without purple</u> blotch at base	White <u>with purple</u> blotch at base
Anthers	Yellow	Purple
Petiole	Purple-black spotted base	Without purple-black spotted base
Leaves	Distinct veins	Obscure veins

Duck potato *Sagittaria latifolia* (photo MC)

### Rhododendrons *Rhododendron* spp

*Rhododendron ponticum* is widespread throughout woodlands and heaths in Norfolk and a vector for the spread of *Phytophthora ramorum* into forestry plantations. The Schedule 9 list only includes the one hybrid *R. ponticum* x *R. maximum*, but neither BSBI nor Stace (2019) recognise this hybrid. Instead all potential hybrids with *R. ponticum* are lumped together and called *R. x superponticum*. Presumably, then, we need to consider *R. x superponticum* as a Schedule 9 species rather than just the one (possible) hybrid listed. This comprises introgressed variants of *R. ponticum* arising from hybridization in cultivation in the 18<sup>th</sup>/19<sup>th</sup> century between one or more North American species (*R. maximum*, *R. catawbiense*, *R. macrophyllum*) and an Asian species *R. arboreum* none of which themselves have naturalised. *R. x superponticum* is probably within the same range as *R. ponticum* and frequency of *R. x superponticum* range from 10-25%, although details are unknown in Norfolk. *R. x superponticum* is similar to *Rhododendron ponticum* but often more vigorous and has hairy leaf undersides as opposed to glabrous, sometime with dark spots on the corolla.

Not everyone agrees with the classification or *R. superponticum* though... See a long article on the subject here, again if you have a lot of spare time <https://www.glendoick.com/Why-so-called-Rhododendron-x-superponticum-is-nonsense>



**Waterweeds *Elodea* spp and *Lagarosiphon major***

Both Canadian waterweed *Elodea canadensis* and Nuttall's waterweed *E. nuttallii* are widespread in Norfolk. *E. canadensis* is still perhaps the most common in Norfolk, although *E. nuttallii* maybe increasing faster, as it is nationally. They can often out-compete all other species, with the possible exception of some stoneworts *Chara* spp in very deep open lakes, based on surveys undertaken in lakes around Heathrow airport (*pers.obs*). A third species South American waterweed *E. callitrichoides* is present in the south of England with one record near the River Waveney in Suffolk. Curly waterweed *Lagarosiphon major* has been recorded in Norfolk in a few locations, but not since 2011. They can be differentiated mainly by leaf characteristics as shown below.

**Table 4 -Waterweed identification**

Canadian waterweed <i>Elodea canadensis</i>	Nuttall's waterweed <i>Elodea nuttallii</i>	South American waterweed <i>Elodea callitrichoides</i>	Curly waterweed <i>Lagarosiphon major</i>
Leaf apices obtuse to subacute, in whorls lowest opposite.	Leaf apices acute to acuminate, in whorls lowest opposite.	Leaf apices acute to acuminate , in whorls lowest opposite.	Leaf apices narrowly acute to acuminate, variously whorled to spiral <b>not opposite</b>
0.8 to 2.3mm wide 0.5mm behind apex, key separation from other species.	0.2 to 0.7mm wide 0.5mm behind apex	0.2 to 0.7mm wide 0.5mm behind apex	0.2 to 0.5mm wide behind apex
leaves 4.5 to 17 x 1.4-5.6mm	leaves 5.5 to 35 x 0.8-3mm - generally longer and narrower than <i>E. canadensis</i> .	leaves 9 to 25 x 0.7-2.2mm	6 to 30 x 1-3mm wide
Not strongly recurved or twisted	Strongly recurved or twisted	Not strongly recurved or twisted	Strongly recurved
	Root tips white to greyish green	Root tips red	
	Sepals 1.6 to 2.5mm	Sepals 3 to 4.3mm	
9 stamens	9 stamens	9 stamens	3 stamens



Curly waterweed *Lagarosiphon major* (photo MC)



## Summary

If I had to pick my top Schedule 9 problem plants in Norfolk (in terms of potential impact on habitats) it would be New Zealand Pygmyweed *Crassula helmsii* which is an increasing problem particularly around lake margins, for example taking over important aquatic habitats/lake margins, e.g. former quarry pits with round-leaved sundew (*Drosera rotundifolia*) around Leziate. The waterweeds *Elodea canadensis* and *nuttalli* which outcompete almost everything else, choking ponds and some waterways and can cause significant nutrient problems when they decay, and the infamous Japanese knotweed *Reynoutria japonica*, which although is not as much of a problem as in other parts of the UK, seems to be popping up more frequently all over the place, along railways, roadsides, woodlands and even a few churchyards.

There are also many other non-native invasive plant species not on the Schedule 9 list which could be an issue for nature conservation, if they aren't already. These include (but are certainly not limited to!); alexanders *Smyrniolum olusatrum*, which seems to now be out-competing woodland ground flora in North Norfolk as well as on all the road verges and some coastal grassland vegetation; winter heliotrope *Petasites pyrenaicus* along roadsides, Himalayan bramble *Rubus armeniacus* along railways/roads and American skunk-cabbage *Lysichiton americanus* in wetlands.

Whilst Schedule 9 and other invasive species are here to stay, perhaps we shouldn't get complacent even though often they are likely to be beyond our control, we can record their location and stand sizes so changes in distribution can be monitored, and if inclined to do so report it to the local authority if you suspect they have been planted or allowed to spread in the wild. Happy hunting for these species and any not yet recorded, and hopefully you won't get a first for Norfolk!



Giant Salvinia *Salvinia molesta* (photo Jim Conrad)

## Acknowledgments

Thanks to Mike Crewe for selected photos (those marked with MC) from his [www.webidguides.com](http://www.webidguides.com) website. Other photos are either from the author, acknowledged with permission from the author as named or are not copyrighted.

## Mike Padfield



## NORFOLK FLORA GROUP PUB OF THE YEAR, 2019!!!!

... and now it's time to reveal the NFG Pub of the Year for 2019!!!! (I know you've all been on tenterhooks).

The survey scored pubs on a total of 10 categories, with a maximum score of 5 and a minimum score of 0 available for each of these. The total was divided by the number of categories given a score (we didn't often eat, and if staying indoors were not able to fairly assess the quality of the garden etc.). My idea of giving pubs an automatic score of 5 if they were CAMRA members fell a bit flat as most were not, and I kept forgetting to ask anyway. Having looked it up online, none of them were members, so its probably a fairly pointless category. This year, we again substituted the 'would Bob come back' category for 'comfort', but one of them has been making a massive effort to go to the pub as much as possible, and indeed even when not strictly necessary, and so I think we can risk bringing this category back in 2020.

On several occasions we ended up in a different pub to the one we'd planned to be in, so you will find that the final list of pubs visited doesn't entirely match the programme. I also completely forgot to do the scoring on a number of occasions, but in my defence, nobody reminded me... Despite these problems, we managed to successfully score 24 pubs this year and once again noted a stark division between the really good ones and the 'also-rans'.

**In third place**, we have the **The Railway**, in **Worthing**.

**In second place**, we have the **The Gunton Arms**, **Gunton**, which was just fractionally ahead of The Railway, so this really is excitingly neck-and-neck stuff!

The Gunton Arms I think scored well in part because of a high class of snack (mini-baskets of rather good chips) and possibly partly because of the art work in the men's toilets. I have not seen it myself, but there are rumours. Certainly I had no problem in persuading the men in the group to go and check out the loos. It was also awarded the prestigious Good Food Award for Gastro Pubs 2019.

However, the Gunton Arms was just pipped at the post, again by the tiniest of margins .....and ...

**In first place**, the winner of the NFG Pub of the Year Award for 2019 is ...

### \*\*\*\*\* THE BELL INN, BRISLEY \*\*\*\*\*

The Bell Inn was the winner of the 'Eat Norfolk' Food and Drink Awards in 2019 AND the 'Muddy Stiletto Award' 2019. I don't think you have to wear stilettos, or even mud, to go there though.

Thank you all for taking part and for being so willing to visit the toilets even when you didn't really need to go.

The scores are given below.

**Jo Parmenter**



### A NORFOLK FLORA GROUP CROSSWORD 2019-2020

Here is the latest from Sedge Warbler, who I am told is currently sunning himself in warmer climes and sipping Harvey Warble-bangers. We have a brand new crossword to amuse ourselves with and the answers from the last one, which I am sure you will all have got right! Answers in the 2020-21 Edition, assuming he's still going then - the oldest recorded sedge warbler was a bird ringed in Finland which reached the ripe old age of 10 years. The typical lifespan is just 2 years though, so our crossword compiler is doing rather well! JP

#### THE CROSSWORD

1		2				3		4		5		6		
													7	
8								9						
10				11										
		12				13				14				
15						16				17				18
19				20				21				22		
23								24		25				
	26							27						

#### HANDY SPACE FOR SCRIBBLINGS (because we think of everything)



**THE CLUES.....****Across**

1. Passport returned, with poetry, makes for a variety (7)
4. A wall-lover (6)
8. Night-time, where Jeanne comes from (4)
9. Where leaves arise on a stem (5)
10. Initially, end of new age (3)
11. They do the sorting. (11)
12. Incarcerated vehicle (3)
13. Bonzer trees! (9)
15. Pause, when unconsciousness envelops the first of March (5)
16. Holder of seeds (3)
17. About beginning again (5)
19. Tree business, finer if mixed up (7)
21. King of Begonias (3)
22. Might not flower frequently (3)
23. Beloved by the Duke of Argyll (3)
24. Princess of Wales and artist make a smaller tussock.
26. Lady hugging the French goat with regrets (7)
27. Awestruck grain produces marine alga (7)

**Down**

1. How an unsteady plant moves? (7)
2. The woodland dentist says 'Mix the novocaine, matron, quickly' (8,7)
3. She loves the heath (5)
4. Smallest amount by uphill road (5)
5. Haws, poppies and polls (3)
6. Red gloss deepens by the waterside (6,4,5)
7. What a leaf does on *Potamogeton perfoliatus* (6)
11. Now it's *canescens* (5)
13. Semi-parasitic axiophyte (9)
14. Turn right after big US city, number 9, to reach this tree (5)
15. Not beloved by bovines (6)
18. Alleged home of the Babes (7)
20. Mixed brief in the stem, for example (5)
21. She trots her horse through the wood (5)
25. She was quite a gardener (3)



**ANSWERS TO THE NORFOLK FLORA GROUP CROSSWORD 2018-19**

1	T	A	2	P	R	3	O	O	4	T		5	F	L	6	U	F	7	F	Y	
	A		R		A		A					L		L		I		8		O	
9	S	T	I	N	K	E	R					10	U	N	M	A	T	E	D		
	S		M				E					M		U		T					E
11	E	M	U			12	P	A	S	T	M	A	S	T	E	R	S				
	L		L			I						O					R				S
13	S	H	A	R	P			14	B	O	X			15	J	A	F	F	A		
			V		I				U		E			U		I					
16	B	L	U	E	T	O	N	E	D					17	D	U	T	C	H	18	
	L		L											A			T				O
19	A	N	G	I	O	S	P	E	R	M	S							23	E	O	N
	M		A		L		E					U						R			E
24	E	A	R	W	I	G	S					25	B	A	26	L	S	A			S
	Y		I		V		T					U		E				N			T
		27	O	S	I	E	R	S				28	S	P	I	N	D	L			Y

So... who got them all right then?? (I didn't...)

**Sedge Warbler**

NB -Due to fear of persecution from grumpy botanists unable to complete the crossword or disputing the answers from last time round, Sedge Warbler wishes to maintain his (or her - I can't tell the difference myself) anonymity. I have asked, but there you go. They are shy and retiring creatures. JP



## ..... LOOKING FORWARD TO THE 2020 FIELD SEASON

Highlights for the coming field season (along with the usual beer, crisps and cake) include.....

**A mystery destination in the Marlingford area** - which would be exciting enough in itself, but on this occasion we also have an invite to go and loll about in Tom Williamson's orchard afterwards and he will give us beer while we take it in turns to pelt him with fruit (or something like that).

**BSBI event** - BobE and I have organised a 2-day BSBI meeting to Yarmouth North Denes and Catfield Fen. All NFG members are welcome to attend.

**County Wildlife Site surveys** - Sam B is putting together a series of fantastic sites for us to look at.

**Gooderstone Water Gardens, fen and meadows** - a day out and about at various locations on the River Gadder and environs, courtesy of Ernest Hoyos, Chris Knights and Sam Roberts.

**Gunton Park part 2** - as always, I underestimated how much ground we might cover in a day, so we're going back to finish it off.

**Joint meeting with Lowestoft Field Club** - This time, Arthur has invited us to come and play 'dodge the golf ball' with him on Outney Common and thence to Broome Pits in the afternoon. Or possibly vice versa...

**Long Dam Level** - one of those sites that I didn't think we'd ever manage to get into, but having come up with a long list of persuasive arguments, the lovely landowner said 'yes' as soon as I opened my mouth.

**Poplars** - A group I periodically feel confident about but soon realise the error of my ways...hopefully Mike Crewe and BobL between them will turn us all into instant experts ... Or not. We'll have fun trying though.

**Pubs** - Lots more we've not been to and some old favourites!

**River Bure** - Emily, the NT's wonderful project officer is arranging access to a couple more sections of the upper Bure.

**Roses** - Another workshop, this time led by Alex P and BobL. This one lends itself rather nicely to themed cake ....

**Scintillating Scrophulariaceae** (I think I spelt it right). This year's Herbarium workshop, led by Bob Leaney.

**Scary Swamps** - A terrible fate, including, but perhaps not limited to, wet socks awaits us at NWTs Alderfen reserve, where we are going to play 'hunt the obscure yet exciting plant'. It'll be fun!

**Spine-tingling Taraxacums, Awe-inspiring Elms and Breathtaking Brambles** - Alex Prendergast has nobly volunteered to teach us about some of the trickiest taxa in the country, and has also cajoled Brian Eversham into coming along to help us with our Elm ID.

**Stonehouse Farm** - we bumped into the owner last summer and, having found out who we were, he kindly (amazingly?) invited us back, precisely 10 years after the NFG last visited his landholding.

**Watermill Farm and Cranwich Heath** - a return visit to Watermill to see how my all-time favourite wetland creation project is faring.

**Wells Spring Thing** - We're off to the seaside again - well... more mud than sand, but you can't have everything. There will also be sun and sparkling seas. At least one of these may not happen so don't shoot me if I've got the weather wrong.

**Wild Flowers Revealed** - BobL is going to take us to not one, but two exciting sites: Dersingham Bog and Ashwellthorpe Wood this year, and promises to reveal something interesting. The format will change to a more learning-focused event for budding botanists in the morning and then those who wish to stay on for recording in the afternoon can do so.

**Wondrous woody places** (metaphorically scraping my alliterative barrel a bit now) - We're going to have a wander around NWT's new reserve: Brett Wood.

Jo