

Norfolk Flora Group News - Winter Newsletter 2017-18

Welcome to the NFG Winter Newsletter!

In Issue 3 ... we launch the NFG photographic competition and give you the chance to find out where you went wrong with the crossword. Robin has developed a carefully calibrated hierarchical assessment table setting out the different levels of botanical expertise to enable you to evaluate your skills against others - and answer a question which may have been troubling you: "Just how strange am I?" Richard takes us through 'species pairs': things we perhaps should be making more effort to separate, but for various reasons, don't. Bob Leaney and I have prepared a (hopefully simple) field key to Potamogetonaceae and related taxa; Mary tells us about her (and my) summer hols; the results of 'Norfolk Flora Group Pub of The Year' are finally made public; and much, much more.



We will look back at the serendipitous and scintillating finds of the 2017 botanising season, and give you a brief prevue of some of the extraordinary events we have planned for 2018.

Contributors to this edition are Suki Pryce, Janet Higgins, Tim Doncaster, Chris Roberts, Bob Leaney, Mary Ghullam, Robin Stevenson and myself, together with the Norfolk VCRs, Richard Carter and Bob Ellis; and our friendly feathered crossword compiler, the Sedge Warbler.

Feedback on the content of NFG News would be very welcome and if you would like to see different types of articles or an erudite piece on an obscure aspect of botanical taxonomy you can always try writing something yourself

A Big Thankyou

Our particular thanks once again go to the various landowners who allowed us access in 2017 and staff and volunteers at Broadland District Council, Norfolk Wildlife Trust, the Norfolk Rivers Project, Mid-Norfolk Railway, Natural England, RSPB and Holkham Estate for their help in organising some of the meetings. I would also like to thank the Ted Ellis Trust for allowing us to use the Wheatfen study room, 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, not of the Norfolk Flora Group, nor its membership in general.



50 SHADES OF BOTANIST

So. You like plants

Robin (with a bit of interference from the Editor) has put together this handy guide so that you can work out just how far from normal you are.

You can skip over this bit if you feel you might be happier not knowing.

My Competence level	Am I still normal?
I can tell a grass from a tree, but that's about it	Completely normal human being. <i>You have nothing to worry about.</i>
I can identify fewer than 5% of British plants with 'proper flowers'	Fairly normal human being. <i>You may have botanical leanings. You must be careful not to give in to them.</i>
I can identify up to 25% of same	Interested amateur botanist. <i>You can still pass for normal - provided you don't talk about plants.</i>
I can identify more than 50% of same, including a few grasses and sedges	Serious botanist. <i>Whatever you do, do not be tempted to purchase a copy of Stace.</i>
I am <i>serious</i> about the identification of grasses and sedges	Distinctly nerdy botanist. <i>You are probably beyond help, but it's worth getting a second opinion from a qualified medical professional.</i>
I am prepared to identify plants down to subspecies level	Deeply nerdy botanist. <i>You are beyond help.</i>
I am <u>genuinely enthusiastic</u> about micro-species such as brambles and dandelions	Über-nerdy botanist. <i>Borderline barking.</i>

Robin Stevenson

It is important to accept yourself for who you are - and if you are a bit odd - who cares? You're not alone. Who wants to be normal anyway? JP



SPECIES PAIRS AND SUBSPECIES WE DON'T USUALLY DISTINGUISH - BUT PERHAPS OUGHT TO.....

When you pull Stace 3 or Sell & Murrell from your pocket and idly flick through - as I'm sure everyone reading this does most days - it is truly astounding just how many species there are that are divided into subspecies (or varieties, but we aren't going there for now). Some of us have been wondering whether some of these could easily be added to the taxa we routinely record in Norfolk, and Bob Ellis has been busy extracting a list of all subspecies that could occur in Norfolk. The question is closely related to that of the species we sometimes record as aggregates - like *Phleum bertolonii* (Smaller Cat's-tail) and *Phleum pratense* (Timothy) where our NFG recording sheet also offers '*Phleum pratense* agg.' for the times when we just can't decide between the two.

Now the first thing to be said is that superficially it might seem that any extra taxa would require lots of expertise and lots of difficult examination of specimens. Taxonomists are often thought of as people sitting in herbaria endlessly measuring things to the nearest 0.1 mm and dreaming up ever more arcane distinctions between members of a species group expressly to make things difficult for ordinary field botanists, but in reality - well - yes, it's all completely true - *but* none of it sticks unless the things the taxonomists are describing actually look different when you see them. In other words, going back to aggregates and subspecies, they really will each have a different 'jizz'. It is of course testimony to the reality of the distinction between many subspecies that they regularly and annoyingly switch between recognition at the subspecies level and the species level as the pendulum of taxonomic opinion swings to and fro - we now distinguish *Aphanes arvensis* (Parsley-piert) and *Aphanes australis* (Slender Parsley-piert) as species, but they were subspecies in many twentieth-century Floras, and the same with *Arenaria serpyllifolia* (Thyme-leaved Sandwort) and *Arenaria leptoclados* (Slender Sandwort) and many other species pairs.

When you look at the keys in the Floras, it often seems that the distinctions between difficult species pairs or subspecies hinge on precise measurements (usually ones that will be awkward to make) or else on subjective characters like 'peduncles swollen below the inflorescence' that will be hard to apply. But people who record these difficult species pairs or subspecies are not actually relying on such key characters to find the plants - they are spotting the plants from their 'jizz' and only then using the key characters to confirm their identifications - at least that's true most of the time (obviously sometimes it really is all more difficult but more often it isn't). And on top of that the different taxa often have distinctive habitat preferences, *e.g.* *Aphanes arvensis* in arable (often calcareous) habitats and *Aphanes australis* on trampled free-draining nutrient-poor (often acidic) soils.

Take as an example a subspecies pair that we aren't currently recording in Norfolk but I think very easily might - the common *Plantago major* ssp. *major* (Greater Plantain) and the less common (but not rare) *Plantago major* ssp. *intermedia*. Here the key characters are veins in the leaf 5-9 in *Plantago major* ssp. *major* and 3 (-5) in *Plantago major* ssp. *intermedia*; leaves rounded (sometimes even cordate) at the base and blunt at the tip in *Plantago major* ssp. *major* and more cuneate at the base and pointed at the tip in *Plantago major* ssp. *intermedia*; and inflorescences long in *Plantago major* ssp. *major* and short in *Plantago major* ssp. *intermedia*.



It sounds technical but look at the photographs below – do these not *look* different? And actually from experience I would add two 'jizz' characters for *Plantago major* ssp. *intermedia* – firstly, the very conspicuous hairs – obvious in the photograph; and secondly, a purple tinge, just noticeable on the edge of one leaf in the photograph but often much more pronounced. The *Plantago major* ssp. *intermedia* in the photograph was growing in the draw-down zone of a Breckland mere, but more generally it grows in slightly wet places that dry out a bit in summer, such as non-trampled path-sides with carpets of the moss *Calliergonella cuspidata* plus plants like *Juncus articulatus* (Jointed Rush), *Juncus bufonius* (Toad Rush) and often (for some reason) *Potentilla reptans* (Creeping Cinquefoil). It's well worth looking out for.



Plantago major ssp. *major* – note 7-ish veins and long spikes



Plantago major ssp. *intermedia* – note 3 veins and short spikes

Of course there is no guarantee that every plant of *Plantago major* will be readily assignable to one of the subspecies. So the question arises as to whether the NFG recording sheet would need an equivalent of an aggregate – a plain *Plantago major* 'tick-box' for those occasions where we cannot determine the subspecies. If the two subspecies were equally common and intermediates frequent then it might indeed be necessary. But where – as in this case – one subspecies is overwhelmingly the more common, there may be a case for simply recording all plants as if they were *Plantago major* ssp. *major* unless there is a good reason for thinking that



a particular specimen isn't that. We would be recording *Plantago major* ssp. *major* as simple *Plantago major* at tetrad level while gridding anything we think is *Plantago major* ssp. *intermedia*, and therefore in effect believing that our *Plantago major* records are nearly all *Plantago major* ssp. *major* except for a very much smaller ragbag comprised of vague intermediates and overlooked ssp. *intermedia*, the details of which are not worth troubling about given that ssp. *intermedia* is so much less common. Whether that is acceptable depends on what we believe about the two taxa. The point can perhaps be appreciated better if we think about hawthorns.

A classic *Watsonia* paper by Byatt (1975) on *Crataegus monogyna* (Hawthorn) and *Crataegus laevigata* (Midland Hawthorn) pretty much concluded that these species are extensively hybridised in Britain. The study only managed to find completely pure *Crataegus monogyna* on a few Welsh hillsides, and didn't find pure *Crataegus laevigata* (Midland Hawthorn) at all (though acknowledging that it may occur in a few woods in the east of England - personally I would try the fen-edge just north of Huntingdon). Hedgerow thorns in lowland Britain are close to *Crataegus monogyna* and some woodland shrubs are close to *Crataegus laevigata*, which of course is less common; but if you search you can get all degrees of intermediate along a gradient between the two. What we call *Crataegus* × *media* is probably not a primary hybrid between the two (since neither exists in pure form to give rise to such a hybrid), but something half way along the gradient. And there is no way of saying for sure what at what point along the gradient you should start calling *Crataegus monogyna*-like plants *Crataegus* × *media* (and the same for *Crataegus laevigata*-like plants further along the spectrum). Different experts and recorders will inevitably make slightly different decisions. Our recording practice cannot make this situation anything other than what it is. We wouldn't gain any extra useful information or avoid any misidentifications by setting up a '*Crataegus monogyna* agg.' tick-box. In practice we record anything that looks like *Crataegus monogyna* (Hawthorn) as that, and - since it is overwhelmingly the commonest thing - we record it only at tetrad level; and anything that isn't it we record as *Crataegus* × *media* or *Crataegus laevigata* and take a grid reference.

So in the case of *Plantago major* ssp. *major*, managing without an 'uncertainty' tick-box may be less dilatory than it might at first appear. That doesn't mean that there aren't cases where the aggregate tick-box is very necessary - *Galeopsis tetrahit* (Common Hemp-nettle) and *Galeopsis bifida* (Bifid Hemp-nettle) for example are very distinct, but you simply can't tell which is which without flowers, so we have to record '*Galeopsis tetrahit* agg.' Similarly *Polygonum aviculare* (Knotgrass) and *Polygonum arenastrum* (Equal-leaved Knotgrass) are equally common and some plants are difficult to assign, especially without flowers, so it doesn't make sense to lump uncertain records into one rather than the other, and we must be able to record '*Polygonum aviculare* agg.'

A case where we might consider changing what we record is that of the '*Centaurea nigra* aggregate'. Before Clapham, Tutin & Warburg (CTW), which came out in 1953, British Floras treated all these plants as *Centaurea nigra* (Common Knapweed) as did Stace 1 and Stace 2 much later. Many of us I think felt uncomfortable when Stace 3 not only elevated a segregate of the '*Centaurea nigra* aggregate' to species status as *Centaurea debeauxii* (Chalk Knapweed), but also gave key characters that appeared to make almost no Norfolk plants *Centaurea nigra* (Common Knapweed). But Sell & Murrell's Flora completely agrees, and uses exactly the same characters to distinguish the two species. So what is going on here?



In fact this is less new than most people think. At around the time the first edition of CTW was in preparation, a Kew team lead by E.M. Marsden-Jones and W.B. Turrill carried out an amazingly detailed study of the *Centaurea nigra* group, which was published as a monograph by the Ray Society (still easily to be found second-hand) and I think (I don't have a copy to hand) summarised in the New Naturalist book by Turrill *British Plant Life*. The study not only looked at hundreds (thousands?) of plants from all over Britain, but grew them at Kew and conducted extensive crossing experiments. The taxonomic treatment they recommended as a result is pretty much identical to that of Stace 3 except that they used the name *Centaurea nemoralis* rather than *Centaurea debeauxii*. Early editions of CTW pretty much followed the same treatment (except at subspecies level) but confidence in it waned and it was dropped in Stace 1.

As it happens, Marsden-Jones and Turrill collected extensively in West Norfolk, and found - as we would expect from the Stace 3 key - that almost everything back then was *Centaurea nemoralis* or the *C. nigra*-*C. nemoralis* intermediate. The characters they used are still described in the modern Floras, and have to do with the thickening of the stem below the inflorescence, and with the width and overlap of the terminal appendages of the involucre bracts (the dark-brown bits with spines in a comb on each edge) in the second spiral up from the base of the flower head, *i.e.* discount the bracts in the spiral at the very bottom and look at those in the one above (about a fifth of the way up the round 'head' of a knapweed), but not any higher where they all become broad (as Bob Leaney correctly notes in one of his articles in *BSBI News*). I am going to gloss over all this, because though these are useful characters, you can agonise over them without getting anywhere, and both Stace 3 and Sell & Murrell cut to the chase by substituting an easy character not used until recently. It's very simple; if the 'head' is up to 14 mm in width then it's *Centaurea debeauxii*; if it's over 15 mm then it's *Centaurea nigra*, and - although nobody actually says this - if it's between 14 and 15 mm we might call it intermediate. Leaving aside the weight of authority in both Stace 3 and Sell & Murrell's Floras, why does this work? Again we have a case where there is no dispute that there is an unbroken gradient of intermediates between clear *Centaurea debeauxii* and clear *Centaurea nigra* (this was why the distinction regrettably got dropped). In the past we believed *Centaurea nigra* was the common species, and placed the 'flag' for distinguishing the two species close to the *Centaurea debeauxii* end of the gradient. What the new Stace 3 and Sell & Murrell Floras must be understood to be saying is this: firstly, that flower-head width wraps up all the other slightly confusing key characters and gives you an easy and reliable indication of where you are along the gradient (*i.e.* one that's as good as you are going to get given that it is a gradient); and secondly that the 'flag' we mentioned belongs nearer the *Centaurea nigra* end of the gradient than we thought, so the common plant in lowland Britain is *Centaurea debeauxii*.

By the way, when Marsden-Jones and Turrill were looking at this, the main complication in the *Centaurea nigra* group was hybridisation with *Centaurea jacea* (Brown Knapweed), which seems to have been a common contaminant of seed-mixes before about 1930. Since then, it has become increasingly rare and is probably no longer a source of variation in the *Centaurea nigra* aggregate, and therefore no longer an issue. But what we are finding today is that Norfolk plants with heads over 14 mm often don't look like the typical *Centaurea nigra* from northern and western Britain, and the suspicion must be that they are alien genotypes of uncertain identity introduced in wild-flower seed-mixtures. Though, that said, there may be true *Centaurea nigra* on the heavier clays, perhaps in southern East Norfolk?



Until now, we have in Norfolk been recording *Centaurea debeauxii* at monad level ('dottable') and '*Centaurea nigra* agg.' at tetrad level, but it seems that *Centaurea debeauxii* sensu Stace 3 (defined on flower-head size) is overwhelmingly the commonest taxon, and our recording isn't telling us where the interesting plants that might *not* be *Centaurea debeauxii* are. So the question is, would we not be better recording *Centaurea debeauxii* at tetrad level, and gridding anything with heads over 14 mm - as *Centaurea nigra* if they are over 15 mm and as intermediates if between 14 and 15? Of course, we might still need something like a '*Centaurea debeauxii* agg.' tickbox for purely vegetative plants (though the dead flower heads are very persistent and often sufficient for identification).

Anyway you may hear talk of routinely recording some additional subspecies in Norfolk. It will be kept to what is practicable in the field, and any cases that are too difficult for whatever reason will not be attempted. We can't for example have everybody falling in the water trying to get hold of seeds of *Sparganium erectum* (Branched Bur-reed) which are the only way of distinguishing the four (!) subspecies. But there are some not-so-difficult ones, and anyway who knows whether some of them won't be full species in the next standard British Flora when Stace 3 gets out-of-date?

Richard Carter

For anyone wanting to learn more, and notwithstanding the 'Shades of Botanist' article (it is already too late for many of us, I fear), there will be a workshop in the spring to look at some of the subspecies and aggregate recording possibilities. In the meantime, keep an eye on the website (see below). JP

A NEW WEBSITE FOR NORFOLK FLORA GROUP

<http://www.norfolkflora.org.uk/>

The website is currently under development - please take a look. Things to explore at the moment include: species to look for in winter and spring; Bob Leaney's visual keys; Atlas 2020 progress; past newsletters; local species of conservation concern etc.

Comments and ideas are welcome. Feedback can be given by sending an email to Admin from the "contact us" tab.

Janet Higgins & Bob Ellis



A FEW OF MY FAVORITE THINGS: FAVOURITE NFG FINDS 2017

These are all entirely personal opinion and the approach completely and utterly unscientific.....

Tim Doncaster:

Stachys arvensis Field Woundwort **NT**, Lodge Hill Farm, Oct 7th. A personal favourite (a "dinky" late-flowerer) -

For rarity and interest (and it lives on nettles! though perhaps not exclusively?), Richard's find of *Cuscuta europea*, Greater Dodder, Welney, Sept 16th.

Suki Pryce:

Geum x intermedium Hybrid Geum, Wayland Wood 7th May - ntm, charming

Blysmus compressus Flat-sedge **V**- ntm

Campanula trachelium Nettle-leaved Bellflower, Little Dunham 28th May - v. attractive

Ballota nigra the White-flowered form of Black Horehound, Burn Valley 4th July - ntm

Danthonia decumbens Heath-grass, and *Nardus stricta* Mat Grass, Marsham & Cawston Heaths, 30th July - ntm

Lotus tenuis Narrow-leaved Bird's-foot trefoil and *Trifolium fragiferum* Strawberry Clover, Berney Reserve 3rd Aug - ntm

Sarcocornia perennis Perennial Glasswort **NS**, and *Solanum physalifolium* Green Nightshade, Snettisham RSPB Reserve, 29th Aug - ntm

Kickxia elatine Sharp-leaved Fluellen, Mid-Norfolk Railway 12th Sep - ntm, sbm, **mfoty**

Rumex palustris Marsh Dock, Haddiscoe Island 5th Oct - rare, ntm, sbm

Jo Parmenter:

Trifolium fragiferum Strawberry Clover **V**, Berney Reserve 3rd Aug; Holkham 12th Aug sbm

Alisma lanceolatum Narrow-leaved water-plantain Halvergate Marshes 15th July **mfoty**

Rumex maritimus Golden Dock Holkham 12th Aug sbm

Parentucellia viscosa Yellow Bartsia Thompson-Caston 13th July sbm

Legousia hybrida Venus' Looking Glass Necton 8th July 2017

Janet Higgins:

Torilis nodosa, Knotted hedge-parsley Fenland Flora: Methwold Hythe 17th June - the fruits were just starting to develop. sbm

Alisma lanceolatum Narrow-leaved water-plantain Fenland Flora: Methwold Hythe 17th June - only the basal cuneate leaves were present. ntm

Sium latifolium, Greater water-parsnip Halvergate Marshes 15th July - looking magnificent growing along the edge of the ditches.

Chaenorhinum minus, Small toadflax Mid Norfolk Railway 2: Dereham to Thuxton 12th September - growing in one of its typical habitats alongside the railway track ntm **mfoty**

'Key':

NR = Nationally Rare

NS = Nationally Scarce

NT = Near Threatened

V = Vulnerable

ntm = new to me;

sbm = spotted by me;

mfoty = my flower of the year



Lotus tenuis



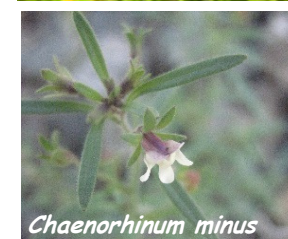
Torilis nodosa



Parentucellia viscosa



Legousia hybrida



Chaenorhinum minus



Sium latifolium

A SPECIAL 2017

It's not often, these days that I get to see new vascular plant species that I haven't come across before, either here in Norfolk or in Scotland. This year, however, has been an exception. 2017 has been **special**.

First it involved a trip to the Isle of Jura with a few other members of the NFG, to help Jo's friend Simon with recording for the 2020 Atlas. Jura is an amazing place, with seemingly its own special microclimate, quite unlike its neighbour Islay.

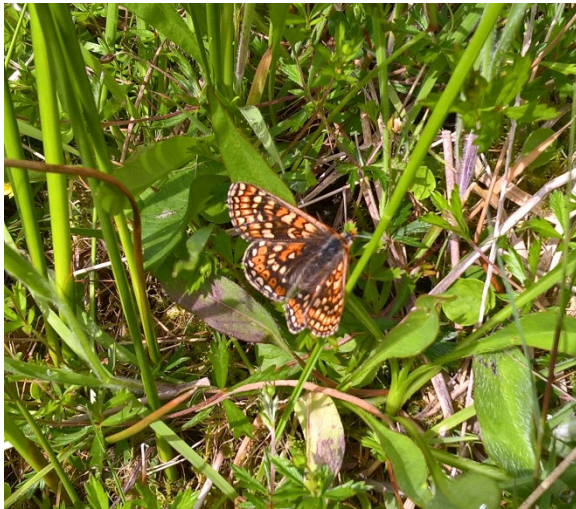
We were privileged to stay in the north of the island on the Ardlussa estate, in a former shooting lodge, previously owned by the Rothschilds.



Surrounded by stunning sea views, mature gardens, as well as a selection of livestock - dogs, cats, chickens and ducks that demanded feeding each morning at the kitchen door - and Red Deer that were incredibly tame, it was, indeed, a special place.



The plants were special as well. We had only recently seen Flat-sedge, *Blysmus compressus*, at the Wild Flowers Revealed meeting at Flordon Common and here was the other species - Saltmarsh Flat-sedge, *Blysmus rufus* living up to its name, flowering in profusion along the edges of the maritime turf. Smooth-stalked Sedge, *Carex laevigata*, with its large distinctive ligule, grew along some of the roadside banks. It was good to get reacquainted with Hay-scented Buckler-fern, *Dryopteris aemula*, but I missed seeing the filmy ferns, which grow in the gorge up from Craighouse.



It wasn't just the plants that were of interest. All of us managed to see Marsh Fritillary butterflies, when the sun was out and there were one or two close encounters with Adders! It was a memorable visit

While I expected to see some new species on Jura, Norfolk didn't disappoint either. A NFG visit to Snettisham gave me the chance to see Red Hemp-nettle, *Galeopsis angustifolia*. Growing on the bare shingle to the north of the car park, the three stunted flowering stems were identified by Jenny. It looked as if the rabbits had been busy, as, unlike its other site to the south, it was unprotected.

It was again in the west of the county, surprisingly along the verge of the A1101 at Welney, that we found flowering Greater Dodder, *Cuscuta europaea*, in a small patch near nettles. This road verge was particularly interesting, as it produced abundant Sneezewort, *Achillea ptarmica*, the first time I'd seen the native species in Norfolk, although the double form occasionally occurs, such as at Hoveton station. Perhaps the most frustrating part of that day was finding the remains of what could be the alien One-glumed Hard-grass, *Hainardia cylindrica*, in the road gutter on the bridge over the New Bedford River. Unfortunately we'll have to wait until this summer to see if it was, indeed, what I thought, assuming it germinates again. Something to look forward to in 2018! I wonder what else the year will bring....

Mary Ghullam



BOTANICAL JOKES

A selection of our very 'finest'...

Bob is walking along a woodland ride. It is a soft, misty day in springtime, but the sun is pushing through the mist and the air feels warm, and full of seasonal promise. Birds are calling joyously, and a light breeze ruffles the flower strewn sward. He sees the flowering head of a grass dancing gently in response to a playful zephyr a little way ahead.

He asks his companion if she can make out what the grass is.

"*Poa triv* in motion, she replies"

What did the adder's tongue say to the spleenwort? "Hiss..."

It is Christmas Eve and the frost hasn't really lifted all day.

Jo and Chris are desperately searching a square in northeast Norfolk for *Rumex crispus*, the only species on Bob's 'Desiderata' list for the tetrad which is highlighted in red.

It is late afternoon and beginning to get cold and dark.

They are becoming increasingly desperate. They've scoured almost the entire tetrad. **It must be here somewhere.**

Bob is going to be dreadfully disappointed in them. They've failed. They can't bear to think of what he might say.....

Suddenly, up ahead, Jo spots a crinkly edged leaf, its covering of rime sparkling in the late sun.

Could it be ... ? (knowing our luck that would be far to much to hope for?)

Chris rushes up to it and exclaims joyously:

"Oh, I wish it could be *crispus* every day!"

What did the Bee Orchid say to the Policeman?

"I'm just fed up with this constant sexual harassment by insects."

"Knock, knock"

"Who's there?"

"Basil"

"Basil who?"



"Basil Thyme"

What did the Petunia say to the Wallflower?

"Darling, if you will insist on wearing those drab colours, nobody will *ever* ask you to dance".

(Nobody promised the jokes would be any good - you can only imagine what the ones that didn't make the grade were like!)

Chris Roberts, Robin Stevenson, Jo Parmenter

PLANT PHOTO OF THE YEAR

Robin does take a good photo, even if his jokes leave something to be desired.....JP



Astragalus danicus (Purple Milk-vetch) at Grimes Graves

Robin Stevenson



A CUT-OUT-AND-KEEP FIELD KEY: POTAMOGETONACEAE

I put a first draft of this together in sheer desperation earlier this year and since then BobL has been fiddling with it. At first I found this rather annoying, but I am pleased to say that we both survived the experience of collaborative working, and the end result is as good as it possibly can be.

The idea is to create a key that allows field ID of the more straightforward members of the Potamogetonaceae and related taxa which occur in Norfolk and surrounding counties, but crucially, tells you when to take a specimen.

Some ground rules:

1. Always ensure you take key measurements (leaf widths etc) from mature leaves;
2. Look for venation characters at the mid leaf, not the tip;
3. You need to dissect out stipules to be able to see some of the key characters. It is important to look young shoots especially in order to determine whether they are open or tubular.
4. Look at how the plant is growing before you fish it out of the water. Are there any floating leaves?
5. When taking material, ensure you have both younger and older growth, and both floating (if present) and submerged leaves; but do make sure you leave some behind to carry on growing.
6. Although this is a vegetative key, if fruiting material is present it is worth taking some, as a few species can only be reliably differentiated using the inflorescence (shape/density) or ripe fruit (*Ruppia*, *P. coloratus* etc).
7. Our VCRs are going to want to see some of the material for themselves before accepting records for certain species. This isn't because they don't trust you, but because Potamogeton ID, particularly of the fine leaved species, takes a bit of time to get the hang of.
8. Put specimens in either a Ziploc bag or small container, along with a little water. Snails are best left in the ditch, not least because they might be tempted to eat your precious specimen.
9. Label the outside of the pot/bag with a sample number, grid ref and your initial thoughts on ID. If you put a label inside the bag, it will a) get soggy and disintegrate and b) I have found that if you do miss the odd snail (see 8.), it will eat your label before it starts on the specimen.
10. When you get your sample home, if in a bag then transfer to a jar as they keep better. They will be OK on the kitchen worktop in a light position but not direct sunlight. Refrigerate if you're planning to keep it for more than a week.
11. When you want to look at the specimen, set it out on a white tray (or Tupperware with a sheet of white paper beneath) and float in water –ordinary tap water is OK. One sample per tray is best. Make sure you keep your label with the specimen at all times.
12. Leaf venation is best studied by placing the sample in a petri-dish and viewing it under your dissecting microscope using 'through light'. If you don't have a petri-dish (or microscope) then you may find you can stick a wet leaf to the window for short periods of time and look at it with a x20 hand-lens.

To transect the stipules of the fine-leaved Potamogetons, you need a scalpel blade and a dissecting microscope. BobL is under the misapprehension that most NFG members have these lying around the house. If you are among the 99.9% of the population that possess neither, don't despair. The whole point of the key is that it will take you through, and ID/eliminate most of the species you are likely to find, without specialist equipment. If you have any of the rarer species or those which are impossible to ID without a good bit of experience and the right equipment, the key will tell you when to collect specimens to pass on to someone with greater expertise (marked '**S**' in the Key).

Important Note: specimens which do not key out readily may be hybrids or taxa not usually found in East Anglia, in which case consult the BSBI Potamogeton handbook, or an expert.

Jo Parmenter & Bob Leaney







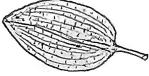




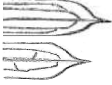







VEGETATIVE KEY TO EAST ANGLIAN POTAMOGETONACEAE AND ALLIED TAXA

1	most leaves in opposite pairs, threes or clusters
1	most leaves alternate
POTAMOGETON-LIKE SPECIES (and <i>P. pectinatus</i>)	
2	leaves elliptic-lanceolate to broadly strap-shaped, with an undulate or toothed margin, amplexicaule, translucent and bright green, with rounded stem
2	Leaves linear or filiform
3	leaves in clusters of up to 20, giving an untidy habit; opaque; more or less cylindrical in cross section, showing 2-4 'tubes'
3	leaves in twos or threes, linear, tapered with finely mucronate apex, and slightly flattened in cross section, with 2 tubes; entire, translucent, stems white; often with curved fruit present
4	leaves arising at the top of a sheath which surrounds the stem above the node
4	leaves arising directly from the nodes (sheaths absent)
5	leaf margin denticulate, at least near apex; often markedly so; without ligule; slightly flattened with 2 tubes in cross section (2 species: <i>R. maritima</i> has acute leaves while <i>cirrrosa</i> has obtuse leaves; but species can only be reliably determined in fruit)
5	leaf margin entire, very gradually attenuated to tip, with ligule at junction of leaf sheath and lamina; midrib inconspicuous; plant abundantly branched
6	some or all leaves elliptical, ovate or broadly lanceolate with convex sides; floating or submerged
6	all leaves filiform, linear or linear-oblong with parallel sides, submerged
BROAD LEAVED POTAMOGETONS	
7	all, or most, leaves floating (or crowded leaves breaking surface), often coriaceous and more or less opaque, without distinct midrib
7	some or all leaves submerged, with a distinct midrib and a translucent lamina
8	floating leaves with discoloured 'hinge like' junction between petiole and lamina; submerged leaves reduced to phyllodes; stipules 40-170mm
8	floating leaves without discoloured 'hinge like' junction between petiole and lamina; stipules 10-63mm
9	floating leaves opaque, coriaceous with inconspicuous secondary veins, often with orange-brown coloration
9	floating leaves translucent, with conspicuous secondary veins, generally greenish-brown
10	most or all leaves sessile
10	all leaves with petioles at least 1mm long
11	leaves on main stems not amplexicaule, leaf margin entire
11	leaves on main stems amplexicaule to some extent, leaf margin entire or denticulate
12	leaf margin entire, leaf apex hooded
12	leaf margin denticulate, leaf apex not obviously hooded; leaves perfoliate, encircling stem
13	leaves at base of stem reduced to phyllodes; other leaves strongly translucent; apex of mature leaves mucronate or with excurrent midrib; net-veined; stipules rigid with 2 prominent green wings
13	leaves at base of stem not reduced to phyllodes; leaf apex obtuse or acute, but never mucronate
14	leaves narrowly elliptical; 5-30 times as long as wide
14	leaves elliptical to ovate; less than 6 times as long as wide
15	most submerged leaves above 12mm wide; leaf margin of submerged leaves entire and shallowly undulate; stems unbranched
15	most submerged leaves under 12mm wide; leaf margin of submerged leaves denticulate; stems branched, stipules acute

NARROW-LEAVED POTAMOGETONS

19	Leaves oblong to linear-oblong, margin denticulate or entire and undulate; stems terete or very slightly compressed with shallow groove along one side
19	leaves narrowly oblong to linear-oblong, linear or filiform, margin not denticulate or undulate; stems sometimes compressed but never grooved
20	At least some leaves above 4mm wide; sclerenchymatous strands present (these appear as multiple parallel lines on upper surface and may render the leaf opaque); stems strongly compressed
20	All leaves below 4mm wide; sclerenchymatous strands absent; stems slightly compressed to compressed
21	leaves very long (85-270mm), (2-) 3-6mm wide, abruptly attenuated to tip, dark green, always with two veins each side of midrib (outer often faint); stipule obtuse, 2.5-3.5cm long; stem 3-6mm wide, often slightly winged
21	leaves shorter (35-135mm), green, 1.5-4 (-5.5) mm wide, gradually attenuated to acuminate tip; with one vein each side of midrib; stipule acute, 1.5-2.5mm long; stem 1.5-2 (-4)mm wide
22	most leaves above 2mm wide, often with 2 lateral veins either side of midrib; stems distinctly compressed
22	most leaves less than 2mm wide with 1 lateral vein either side of midrib; stems round to slightly compressed
23	stems compressed, leaves (1-) 2.5-3.6mm wide, often pink or red tinged, obtuse or very slightly mucronate with 1-2 lateral veins; stipule 1.3-2cm long, obtuse; stems much-branched and leaves often crowded especially near tip of shoot
23	stems strongly compressed (feeling flat); leaves green-brown 1.5-3.5 (-4) mm wide, with 1-3 lateral veins, tip sub-acute or mucronate; stipules obtuse, 0.7-1.5cm long and rigid; leaves spread out near tip of shoot
24	leaves rather rigid, not adhering together when removed from water, with prominent, broad midrib, very narrow 0.3-1 (rarely to 1.8) mm wide and gradually attenuated to a finely pointed tip; stipules acute, 7-12mm long, with indistinct venation;
24	leaves broader (0.5-2.3mm wide, usually >1mm) with shallow midrib, flaccid, and adhering together when removed from water; obtuse, shortly acute or mucronate; stipules usually obtuse, 2-17mm long;
25	stipules tubular and closed (beware of closed stipules which have split and thus appear open); 2-17mm long, obtuse and with a strong green rib along each side; leaves 0.5-1.4 (-1.9) mm wide, fairly gradually attenuated to an acute or mucronate tip, and bordered by a marginal vein
25	stipule open or rolled, 3-15mm long, obtuse with indistinct venation (this may be brown or greenish); leaves (0.5-)0.8-1.8 (-2.3)mm wide and more abruptly attenuated to an obtuse to sub-acute tip, lacking marginal vein

2			
4			
	Groenlandia densa		leaf x-s
3			
	Juncus bulbosus (aquatic form)		
	Zannichellia palustris		
5			
6			
	Ruppia S		
	P. pectinatus		
7	BROAD-LEAVED POTS		
19	NARROW-LEAVED POTS		
8			
10			
	P. natans		
9			leaf t-x
	P. polygonifolius		
	P. coloratus S		
11			
13			
	P. alpinus S		
15			
	P. praelongus S		
	P. perfoliatus		
	P. lucens		stipule x-s
14			
	P. polygonifolius		
	P. coloratus S		
	P. alpinus S		
	P. gramineus S		
	P. crispus		stem x-s
20			
21			
22			
	P. compressus S		
	P. acutifolius S		
23			
24			stipule x-s
	P. obtusifolius S		
	P. friesii		stipule x-s
	P. trichoides		stipule x-s
25			
	P. pusillus S		stipule x-s
	P. berchtoldii S		stipule x-s

Note: specimens which do not key out readily may be hybrids or taxa not usually found in East Anglia, in which case consult the BSBI Potamogeton handbook

S Take a sample for verification

NFG PHOTO-COMPETITION

Early in 2017, Robin, came up with the utterly brilliant idea of a Flora Group Photo-competition. The best images will be published in the 2018-19 newsletter and perhaps also on our new website (see Page 7).

Robin's suggested categories are as follows:

1. The most boring flower
2. The tallest flowering stem of *Plantago lanceolata* (photo should include a means of gauging size)
3. The smallest example of *Erophila verna* (photo should include a means of gauging size)
4. Biggest stand of a Proscribed Species
5. Fieldwork "Hat of the Year"
6. Most useless piece of field equipment (please submit a brief rationale with your photo)
7. Best dressed botanist
8. Worst dressed botanist
9. Best Ditching Pole (remember it's not just about how long it is)
10. Most incoherently mumbling botanist of the year (a tricky one to capture)

You may enter one image in each category. Extra points for a suitably witty caption. We all like to laugh at ourselves and especially one another, but anything which the Editor considers to be unkind will be automatically disqualified.

Please make sure your photo is clearly labelled with the category for which you are entering it, and ensure that you have the agreement of the subject of the photo if taking one of a fellow botanist. Deadline for entries is the 1st October 2018.

I may even try to come up with a prize as if the prospect of general acclaim and adulation weren't enough incentive.

Jo



PLANT SURVEY OF THE TEMPLEWOOD ESTATE, NORTHREPPS

Following a guided walk around the Templewood estate, near Northrepps village this October 2017, hosted by the owner former ITV producer and keen conservationist Eddie Anderson, I volunteered to carry out a plant survey of his land. Most of this estate has a County Wildlife Site designation, so my work will also act as a re-survey for the NWT's County Wildlife Action project. To date (mid-December) I've recorded some 170 species - a gratifying number considering the time of year.

The Templewood Estate

This largely wooded estate (84 ha) surrounded by arable land runs broadly east to west (see map). Soils are mainly light sands and gravels, but downwashing clays cause impeded drainage in many areas. Templewood House, encircled by gardens, paddock and grassland, lies near the centre of the estate, and from it the terrain slopes northwards to an arable plateau. The small (but 'mighty' as Eddie likes to call it) River Mun passes through the southern third of the site from west to east *en route* to its *debouchement* at Mundesley, flowing into the small lake 'Little Broad' and then through wet woodland before leaving the site. Much of the estate was formerly grazed common, and there is a pattern of old hollow ways, hedge-banks, ditches and pools throughout the site - hinting at former land practices, uses and layouts. The hedge-banks now host characterful and often sizeable old scrub/multistem/standard trees and shrubs, including Sycamore, Oak, Birch, Ash, Sweet Chestnut, Beech, Field Maple, Holly, Crab Apple and Hazel. The older boundaries also mainly consist of venerable hedge-banks, and the Paston Way - a historic and partly sunken trackway - lies along the eastern boundary.

Parts of the site have evidently been ancient woodland, as indicated by species such as Bluebell, Dog's-mercury and Enchanter's Nightshade. Templewood also has a startling amount of Wood Sorrel (hundreds of square metres of it); and the same is true of Wood Anemone in the east of the site. It also has remarkably large stands of *Polystichum setiferum* Soft Shield Fern, with scores of plants thriving on a sandy slope; and also of *Phyllitis scolopendrium* Hart's-tongue.

Management Aims and Constraints

Eddie manages the estate primarily for habitat creation and nature conservation, while aiming to conserve some of the main historic ornamental features too. He also tries to profit from the forestry side whenever possible. He is, however, constrained by a number of factors, including:

- limited resources (volunteer labour is used wherever possible)
- a tree population of which much is ageing, and some is poorly located, overcrowded, and/or diseased so rendering it vulnerable to wind damage. This means that much will need to be felled soon (not least for safety reasons as the estate has many users and visitors)



- the ever-changing pressure of wild browsing animals: currently rabbit numbers are down but deer and grey squirrels are up, and these restrict the understorey and destroy most of the self-sown trees and shrubs which would otherwise be abundant.

With all these issues, currently the best way forward in the woodland is deemed to be a sort of creative *laissez faire* - allowing nature largely to take its course, but steering it towards management goals wherever possible.

In the river valley, in contrast, Eddie is not *laissez faire*, but has been highly proactive in promoting an integrated constructed wetland water treatment scheme on his land. The Mun and Little Broad were formerly eutrophic and infested by algae - polluted by effluent from an inadequately operating water treatment plant upstream. They are now far cleaner, owing to this innovative scheme - suggested by Dr Carl Sayer of UCL, and designed and carried through by Olly Van Biervleet and Dr Jonah Tosney of the Norfolk Rivers Trust. The scheme comprises three shallow lagoons planted with emergent aquatic plants which successfully trap over 90% of the phosphates from the effluent, so that the Mun and Little Broad now again run clear. Eddie also restores existing ponds and creates new ones - twelve to date.

Woodland Habitat

The majority of trees are tall standards, but they cover a range of ages from 'vintage' to saplings. The canopy is largely closed - often with just leaf litter below - and includes many fine large specimens, including the characterful hedge-bank individuals mentioned above. In most areas what one sees is a mosaic representing different eras of planting, with various layout styles and species' fashions present, plus the random input of natural regeneration. Oak, Beech, Scot's Pine and Sweet Chestnut are commonest, with Silver Birch, Alder, and Ash. But this has been a site of experiment in which owners have tried out a range of unusual, exotic and hybrid forestry trees, including Hornbeam, European Larch, Austrian Pine, *Pinus radiata* Monterey Pine, *Thuja plicata* Western Red-cedar, *Picea sitchensis* Sitka Spruce, *Tsuga heterophylla* Western Hemlock, and a range of hybrid Poplars. The estate Forestry Records Book shows the wide range of species and cultivars that have been planted, but my survey reveals that most haven't survived. However, some have, including good specimens of *Cryptomeria japonica* Japanese Red Cedar, *Taxodium distichum* Swamp Cypress, and *Picea englemannii* Blue Englemann Spruce. Of the rest, some are thriving, but some are suffering from conditions which are too wet or too dry, or from overcrowding resulting from lack of thinning and/or incursions of self-sown Sycamore. With Ash Dieback already present on site, many ash trees will probably die or need to be felled within the next few years. However, this may be a blessing in disguise as it may provide the opportunity for self-sown species to take advantage of the new, lighter conditions (deer permitting), and for structural diversity to increase.



The woodland understorey includes much *Rhododendron ponticum* and some native shrubs such as Holly, Hazel, and Blackthorn. A few wild Blackcurrant, Redcurrant, Gooseberry, and Raspberry add interest; and Western Red-cedar regeneration plus regrowth from fallen limbs creates an unusual 'shrubby' layer in places. Ornamental shrubs that have persisted in semi-natural conditions include *Spiraea douglasii* Western Spiraea, Red Dogwood, and *Pseudosasa japonica* Bamboo. Besides the herbs already mentioned, Primroses, Red Campion, Soft Rush, Broad Buckler-fern and Ground Ivy are common as a ground layer, with Nettles, Bracken and Bramble.

River Valley Habitat

One of Eddie's predecessors in the mid twentieth century was keen on draining and tree-planting (including with unsuitable species such as Beech and Sweet Chestnut) on much of the low-lying river valley land; and many of his ditches and ponds still remain in the woods there. However, benign neglect is now allowing nature to take its course, and more appropriate species such as Alder are re-establishing in this carr habitat.

Throughout these damper areas there is much old fallen and rotten timber of all sizes, well clad with mosses, ferns and herbs, and some parts are made almost impenetrable by wet ditches, logs, and thickets of willow, Dogwood and self-sown Alder - so making them particularly valuable for wildlife. Where felling has opened up reasonably sizeable areas, some herb species not found much elsewhere onsite have begun to appear, including Water Figwort, Brooklime, and Toad Rush. There are also sizeable areas of reedbed in those low lying areas which were formerly kept unplanted in order to provide open skylines for shooting. The vegetation round Little Broad is also restricted largely to Common Reed, probably owing to former eutrophication, and the water surface is partly covered by Common Duckweed. However, it is hoped that species diversity will increase with the improving water quality. Stands of the mildly invasive alien *Fallopia sachalinensis* Giant Knotweed are a talking point along the north bank.

Conclusion

Managing this site is a balancing act involving reconciling forestry, wildlife conservation and amenity goals, but it is in good hands, with "lots more to learn, discover, consider, plan and improve!" as the admirable Mr Anderson puts it.

Suki Pryce

Please note that Templewood is **privately owned**, visits by invitation only. JP



NORFOLK FLORA GROUP PUB OF THE YEAR, 2017!!!!

... and now it's time to reveal the **NFG Pub of the Year for 2017**.

The survey scored pubs on a total of 10 categories (beer choice; beer quality; food; crisps/snacks; garden; décor; comfort; loos; tea/coffee; atmosphere/welcome) 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.). This year, I substituted the 'would Bob come back' category for 'comfort' due to periodic and rather tiresome interruptions in the supply of Bobs.

Sometimes we didn't end up quite where we'd expected to be and so the final list of pubs visited doesn't quite match the programme. I also forgot to do the scoring on a couple of occasions. Apologies if this has resulted in any disappointment - but in my defence, I would just like to say that nobody reminded me.....

In third place, we have Richard's local hostelry: the **Coach & Horses in Dersingham**, which was CAMRA Norfolk Pub of the Year, 2014

In second place, we have Richard's other local hostelry (presumably the quality and abundance of pubs was one of his key reasons for settling on this part of West Norfolk??): **The Rose & Crown in Snettisham** (voted 2015 UK Pub of the Year)

These two delightful establishments were (only just) pipped at the post by.....

In first place, the winner of the **NFG Pub of the Year Award for 2017** is.....

*****THE WHITE HART IN HINGHAM*****

I am sure they'll be as thrilled to hear this as we are.

Incredibly, Hingham used to have no fewer than 20 pubs, but now they're down to just one. Luckily for both the locals and passing botanists, it's a good one. The White Hart doesn't seem to have won any awards yet, but has only been open under its new ownership since 2016.

Thank you all for taking part (willingly or otherwise).

Jo Parmenter





NATIVE TREES - A MENTAL EXERCISE FOR THE DARK DAYS

Reading between the lines - I think this is how Mary amuses herself on long train journeys! - JP

Just recently I've come across a couple of mentions of our lack of native trees in this country, in comparison with (one example cited) Japan, which has 24 species of maple alone! The figure of around thirty species was given, including (according to another source) three conifers. So which are they all - and could I list them, I wondered?

No - I didn't reach for the computer or my non-existent 'Smart' phone.

Once I'd started thinking about it, I realised the attempt to list raised a number of problems, particularly with parameters. How did I define 'native'? Was Sycamore, for instance, to be counted as native? Some members of the Ancient Tree Forum have made a case for considering it so. Did the references apply to the whole of the UK? More worrying was how to define a tree - what about, for instance, Elder, hawthorns or some willows? Did the thirty species include hybrids? If so, then, assuming such hybrids exist, if a native/endemic hybridises with a non-native species - where does that fit in? Even the mention of three conifers raised the issue of whether Alder was a conifer? After all it bears cones!!

Excluding the most of the whitebeam species, which, unless you have invested in the BSBI handbook, I suspect most of us can't name, could I get anywhere near thirty species, including three conifers? Taking the widest parameters I could think of, I realised I couldn't get there without the help of a book to look up elms and willows and their respective hybrids and I still wasn't sure if some I listed were actually native.

How about trees native to Norfolk? Surely I could do a reasonable job there? After all Bob or Richard could provide a more or less definitive list within certain parameters, if asked! But what about Scots Pine- is that native to Norfolk? Oliver Rackham thought some along the Holt-Cromer Ridge were of the Caledonian type. What of Sessile Oak and its hybrid? I'd need to look that up! This mental exercise, of course, could be extended to include commonly planted forestry exotics or urban trees, encountered in Norfolk or those which support Mistletoe in the county.

Does it matter that I couldn't list them all and missed out some I should have included, even without checking? No not really, but it was certainly a good exercise for 'the little grey cells' at a gloomy time of year!

Have a go and see how you get on.

Mary Ghullam



COLLECTIVE NOUNS FOR BOTANISTS

An idea we started at the AGM. Email me to vote for up to 5 of your favourites and then we'll announce which one comes out on top in the 2018-19 issue. Current front-runners are in bold.

	VOTES SO FAR...
A miscellany	
An indetermination	1
A determination	1
A drift	1
A scatter	
A meander	
A wander	
A swathe	1
An enthusiasm	
A herbarium	
A clump	
A clade	
An aggregate	1
A disputation	1
A concentration	
A discussion	
A swarm	
A bumble	1
A crawl	1
A cluster	1
A twitch	2
A whorl	1
A family	2
A cline	1
A simple (of Herborists)	1
A vasculum	1
A bouquet	1
A florilegiu	1

As varied as the flowers of the field and indeed the botanists themselves.

Whoever would have thought there'd be so many possibilities?



RESURVEY OF FELMINGHAM CWS 2017

As part of Norfolk Wildlife Trust's County Wildlife Action Plan, which uses volunteers to resurvey County Wildlife Sites, four of us surveyed this CWS in 2017. It is a linear site running broadly east to west for a mile and a half, with The Weaver's Way long-distance footpath along the centre. The site follows the line of a railway disused since 1959 and passes first through a sandy cutting with some interesting heath-like vegetation, then through largely neutral well-drained grassland with scrub and woodland, and the westernmost section is mainly wooded. Much of the site is quite sheltered while also being light and sunny, and so functions as a 'woodland ride' habitat which seems to be enjoyed by many butterflies and other invertebrates. In all, we found nearly 220 species.

Those of particular interest include the following:

Weavers Way Footpath

This comprises a neutral grassland habitat in its own right with a wide range of typical species (about 120). Runoff from surrounding slopes tends to drain on to the path, so species typical of moister areas grow in seasonally damp depressions, including *Juncus tenuis* Slender Rush, *Juncus bufonius* Toad Rush, *Odontites vernus* Red Bartsia and *Gnaphalium uliginosum* Marsh Cudweed.

Sandy Cutting

Part of this section has developed a special character because the cutting here is steep, on nearly pure sand, and is heavily rabbit-disturbed, particularly on the north (i.e. south-facing) side. This sharply-drained, nutrient-poor habitat now sustains dry, neutral-to-acid grassland which encourages the growth of a range of small ruderals and drought-tolerant species, and it features some rare/unusual plants. The star species is the nationally rare *Silene gallica* Small-flowered Catchfly, which is currently thriving on the rabbit-disturbed areas. Also typical are *Centaureum erythraea* Common Centaury, *Anchusa arvensis* Bugloss, *Senecio sylvatica* Heath Groundsel, *Luzula campestris* Field Wood-rush, and *Pilosella officinarum* Mouse-ear Hawkweed. Lower down thrive *Ranunculus bulbosus* Bulbous Buttercup, *Sedum telephium* Orpine, *Rubus idaeus* Raspberry, and *Knautia arvensis* Field Scabious. In the damper soil conditions near the path is the unusual *Lotus tenuis* (*glaber*) Fine-leaved Bird's-foot Trefoil. There are also small patches of more acid sand where *Calluna vulgaris* Heather (Ling), *Erica cinerea* Bell Heather grow.

Broad-leaved Woodland

In the westernmost, wooded part of the site, the most notable species is *Dryopteris affinis* agg. Scaly Male-fern.

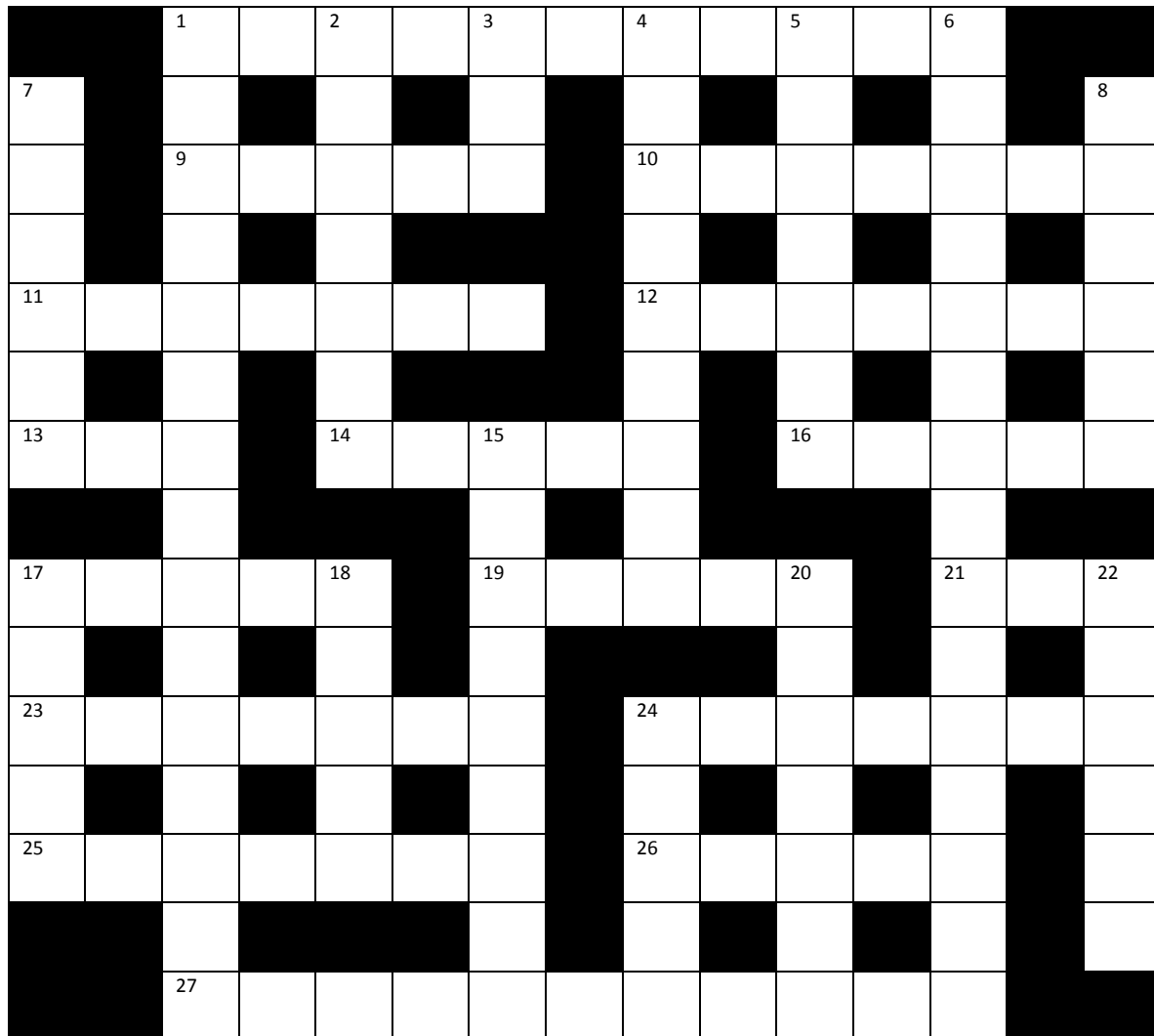
Suki Pryce



A NORFOLK FLORA GROUP CROSSWORD 2017-2018

The enigmatic and elusive Sedge Warbler has again been persuaded to tap out the clues with its little pointy beak.
Answers in the 2018-19 Edition..... JP

THE CROSSWORD



HANDY SPACE FOR SCRIBBLINGS (because we think of everything)



THE CLUES.....

Across

1. Starring role in cliché trial (11)
9. Is that electricity I hear? (5)
10. Southern supplication gets everything very wet (7)
11. *Rhus* trees years ago (7)
12. Our tomorrows! (7)
13. River initially favoured by the angling society (3)
14. Potential energy, in bigger *Galeopsis* (5)
16. A bit like 19 across (5)
17. Some of NFG's favourite haunts (5)
19. The King of the Ferns (5)
21. Mixed-up pale, and pointy (3)
23. Mumble, mumble ... (7)
24. Stretch along northern river keeps our trousers dry (7)
25. Can't hold any more (7)
26. Courage straight down the middle of moss leaf (5)
27. Unsettled paid air boss, first to be mapped (11)

Down

1. Barking Forest (15)
2. Mint, marjoram or thyme (7)
3. Goes well with the butts (3)
4. Fly lustre settles down to relax quietly (9)
5. Ted, Tony then David (just one) (7)
6. Common, lazy grass (15)
7. Half the national body wrapped in dumpling is part of a larger grouping (6)
8. Sounds like more delicious Walkers (6)
15. Italian politician full of 9 across? (9)
17. Tree in spectacular chasm (5)
18. Wrap up warm, on return journey does controversial drilling, but without the king (5)
20. A plant that's seen as 'bunny' makes a run for it (7)
22. Plant of heaths and acid grasslands (6)
24. Perhaps Latin for NFG members?? (5)

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 anonymity. Life for small migratory passerines is hard enough as it is. JP



ANSWERS TO THE NORFOLK FLORA GROUP CROSSWORD 2016-17

Across

- | | |
|---|-------------|
| 1. Purple-headed beauties. (7) | Cirsium |
| 5. The seaweeds to put in your bath (apparently). (6) | Wracks |
| 9. People in NFG. (7) | Members |
| 10. How many stigmas in the florets of <i>Carex nigra</i> ? (3,4) | Two Each |
| 11. King of Begonias! (3) | Rex |
| 12. See how we carry out our Flora Group activities. (11) | Observantly |
| 13. Initially, you use cold compressed aloe for plant with sword-shaped leaves. (5) | Yucca |
| 14. Confused 'sarr sedge', found rarely in Norfolk. (9) | Deer Grass |
| 16. Sounds like a small success of acid-loving plant. (5,4) | Petty Whin |
| 17. Conifer in particular churchyard. (5) | Larch |
| 19. Upset leprosy riot and fall over backwards. (11) | Posteriorly |
| 22. Tree found in steel making district. (3) | Elm |
| 23. Lives in water and sounds like a reliable person, but not saintly. (7) | Awl Wort |
| 24. Transportable shade. (7) | Parasol |
| 26. African palm found in graph I admire. (6) | Raphia |
| 27. Hair of creeping ladies. (7) | Tresses |

Down

- | | |
|---|------------------|
| 1. Reach for this if you break your leg. (7) | Comfrey |
| 2. Small, hastate-leaved plant found in acidic places. (5,10) | Rumex acetosella |
| 3. In case of emergency. (3) | Ice |
| 4. Goes with 'mellow fruitfulness'. (5) | Mists |
| 5. Break up the newer raft - like a red carpet. (5,4) | Water Fern |
| 6. Time at the Town Hall. (5) | Adoxa |
| 7. The worse flowering plant. (7,8) | Knautia arvensis |
| 8. Ye conifers in thy USA. (6) | Thuyas |
| 12. After pollination and fertilization, this part of a flower develops into a fruit. (5) | Ovary |
| 14. Experimental hot beverage for lovers of garden Asteraceae. (6,3) | Dahlia Tea |
| 15. Old name for wallflower. (5) | Gilly |
| 16. This tree is well-loved without you. (6) | Poplar |
| 18. I hear it's not funny brewing with this. (7) | Humulus |
| 20. An era, more than an echo. (5) | Epoch |
| 21. Move the plants on. (5) | Re-Pot |
| 25. Long-awned cereal (3) | Rye |

Sedge Warbler



..... LOOKING FORWARD TO THE 2018 FIELD SEASON

Highlights for the coming field season include.....

Thetford Thrills - We are planning 2 events: there are a lot of thrills to be had in Thetford and it wasn't possible to pack all of them into a single meeting. What better way to start - and end - the year.

Coastal Spring Fling - BobE has promised to lead another excursion to the seaside. Sun, sand and ice-cream are all distinct possibilities. It may be feasible to combine the latter two options on request, however I have more or less given up trying to control the weather. It's too tiring.

Wild Flowers Revealed - BobL has one meeting planned for 2018, this time in the west of the county at East Wretham Heath, on the Norfolk Wildlife Trust reserve.

County Wildlife Site surveys - Sam B is now back and hard at work at Norfolk Wildlife Trust following the birth of her (appropriately botanically-named!) daughter Lily and would like our help in surveying some of the couple of thousand CWS scattered across Norfolk. There are plenty to choose from and she's picked out some interesting ones for us to look at.

Holkham Estate - Sarah Henderson has very kindly agreed that we might look at other parts of the Estate in 2018. We came up with some fantastic records in 2017 including several species which hadn't been seen for quite some time, so 2018 promises to be interesting.

Laneside Lurkings - Meanderings along the highways and byways of West Norfolk. I do like a nice bit of alliteration.

Dull Ditches - Maybe they'll be interesting or maybe they won't ... There's only one way to find out, but before you make your final decision, I would point out that, for several of us, the Broads grazing marshes yielded some of our best plant finds in 2017.

Bashing the Borderlands - We have a few more under-recorded tetrads on the vice-county boundary to look at.

Norfolk Rivers Project - Jonah the Project Officer has kindly agreed to let us come back and help survey a couple more chalk rivers in 2018.

Mid Norfolk Railway - Part III. This year we will be moving further south and east into VC27, guided by Barney and his intrepid team of railway enthusiasts.

Scary Swamps - Richard is going to see if he can find any more pingoes for us to play in, but failing that, I am reasonably confident that several of the CWS will fall into this category.

Workshops - Alliums (this will include a guided tour of my garden and optional chicken-cuddling for anyone that way inclined); Subspecies (see pages 2 and 3); Brambles; Yellow Composites; and Yellow Crucifers.

Pubs - We haven't been to all of them yet so plenty more fun to be had ... Norwich is reputed to have one for every day of the year (although I'm not sure that's still the case). Does anyone know how many pubs there are in Norfolk??

Christmas - I am reliably informed that it is going to happen, probably later in the year.

Jo

