

Norfolk Flora Group News - Winter Newsletter 2022-23

Welcome to the NFG Winter Newsletter !

Issue 8 ... In 2022 we returned to field meetings at our pre-COVID level, with over 30 taking place between April and October inclusive, and we also held five workshops, including three which centred on dandelions (I am sure it helped, but I fear that many of us, including me are still very much in the 'beginners and improvers' category as far as ID ability goes).

We also ran one workshop on *Limonium* (which hopefully left us happier about our ability to ID *L. humile* and its hybrid) and one on Cotoneasters. My thanks go to Alex Prendergast for leading the majority of the workshops.

Before and after the main programme we ran regular winter meetings, so that the total number of events for the year was in excess of 60. Unsurprisingly, we found some interesting things as a consequence!

Contributors to this edition are Marilyn Abdulla, Jake Brendish, Mary Ghullam, Simon Harrap, Bob Leaney, Megan Crewe, Mike Padfield, Suki Pryce, Ian Senior and myself; our amazing special guest-star celebrity author Leif Bersweden, and, back by popular demand; our passerine puzzle-setter, the Sedge Warbler.

Feedback on the content of NFG News would, as always, be extremely welcome - and please do send me your articles and snippets of botanical news for inclusion in future editions.

Finally, a special mention goes to Jake Brendish, who was with us for only a little more than a year, but in that time reminded us of something that we tend to forget in the quest for records:- that botany should, above all else, be fun. We wish him well in Scotland.

Jo Parmenter



Cryobotany: White Bryony

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.

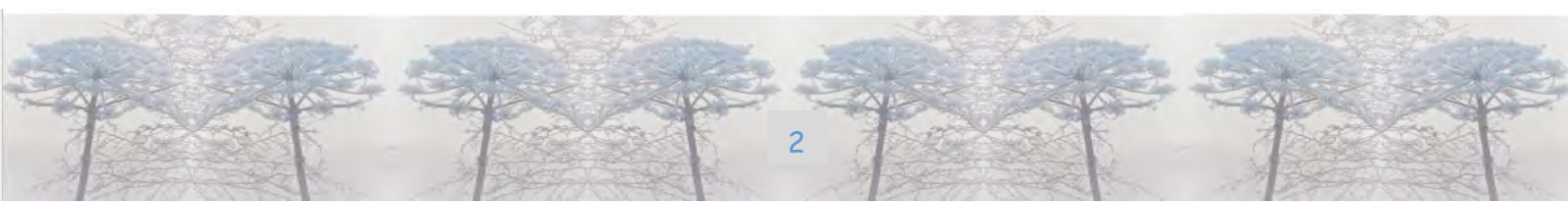
SOMETHING WORTH PROTECTING

Continuing the extremely high calibre of celebrity guest authorship set last year by Nick Acheson

From a young age, my love for nature - for all things wild - was guided by an obsession with wild plants. They were everywhere and anywhere, present in my day-to-day: at school, out of the car window, at the bus stop. In my local meadows and woods, I discovered plants that poisoned predators, fought battles and played mind games with pollinators. There were climbers and carnivores, puppeteers and parasites. Some were giants hundreds of years old, while others were tiny pinpricks a millimetre across. Their inability to run away meant I could look at them closely and I quickly lapsed into a familiar plant hunting routine. Botanising - the art of simply walking along and noticing wild plants - was something that brought me great joy. It calmed me. It was a source of inspiration and entertainment throughout the year. And - unlike school - it never, ever left me bored.

As I grew up and my initial curiosity laid the foundations for a deep sense of care, I began to learn about how threatened our wildflowers are. It bothered me that so few people seemed to notice the plants growing all around us, let alone take an active interest in them. The losses endured by wild plants in Britain and Ireland are appalling, and the dangers they face on a daily basis - over-grazing, climate change, habitat destruction - seem more worrying than ever before. And so, perhaps inevitably, my love for nature fed an increasingly urgent obligation to share the importance and beauty of what we have left with as many people as possible.

But if I was going to encourage people to spend time noticing plants, I needed to understand why we have become disconnected from botany and what it is about wildflowers that intertwined our lives with theirs in the first place. So I decided to go on some adventures. In 2021, I cycled through the places our plants call home, learning about their ecology, their role in our culture, the threats they face, and what it is about them we've grown to love. I botanised my way through an entire calendar year, walking along windswept clifftops spread with Thrift and roaming through flower-filled woodland brimming with Bluebells. I scrambled up mountains, climbed trees, squelched around marshes and bobbed about on lakes and ponds, documenting my adventures though the seasons as I tracked down the best of our wild plants. Along the way I walked with people who still have a connection to their local flora; to prove to myself, if nothing else, that our instinctive love for the botanical world has not wholly vanished.



I learnt a lot during those months of plant hunting, much more than I thought I would, and now, with the resulting book on the shelves, I'd like to share three things that stuck with me most.

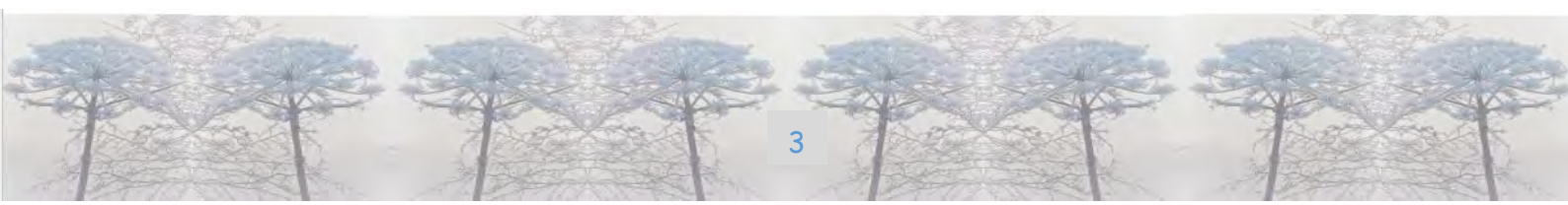
The wondrous world of aquatic plants

I've been botanising since I was leaf-high to a buttercup, but before 2021 I'd never thought much about aquatic plants. I had seen them before - water-lilies and duckweeds hidden in old ponds near where I grew up - but I hadn't taken time to appreciate the challenges they face, nor the ways they have invented to deal with them. Visiting the Norfolk Broads with Jo Parmenter on a balmy summer day changed all this, though, and left me buzzing with delight, amazed at what plants are capable of. First, there was the Water-soldier (*Stratiotes aloides*), a spiky species that looked like the top of a pineapple protruding from the water-filled ditches. Faced with the annual prospect of damaging winter ice, Water-soldier submerges itself in autumn and sinks into the silt where it waits out the colder months, reappearing at the surface in the spring. Then there was the Yellow Water-lily (*Nuphar lutea*) on the open Broad, which floats its seeds off across the water like a ship in a bottle. Best of all, though, was my encounter with one of our most majestic carnivorous plants, Greater Bladderwort (*Utricularia vulgaris*).

Bladderworts are fantastic. They float on the surface of the water, rootless, guided around their aquatic kingdoms by the wind, hoovering up their prey like botanical jellyfish. Above the water all you see is a short red stem bearing a couple of bright yellow flowers. Below - if you're lucky enough to be able to peer into its watery realm - are delicately divided leaves, hung in suspension like feather boas. And within those leaves are the bladder traps. These small, pea-sized, lidded pots are the key to the bladderwort's success.

It is one of the most sophisticated mechanisms of botanical carnivory known to science. The plant pumps water out of each trap, creating a tiny vacuum inside. When a small aquatic invertebrate - a water beetle, perhaps - tickles hairs around the edge of the lid it springs open and water floods in to fill the void, carrying the nonplussed beetle with it. This movement, which takes one thousandth of a second, is the fastest we know of in the plant kingdom. It's all over in a flash: the beetle is swiftly snaffled and gulped down.

Once it's captured its prey, the bladderwort starts feasting, employing a combination of digestive enzymes and bacteria to break down its catch into bitesize chunks before absorbing all the juicy nutrients. Within half an hour the food is gone and the trap is



reset, ready to catch the bladderwort its next meal. What an extraordinary process. What an *animalistic* process. Plants aren't all that different to animals, after all. How on earth are we lucky enough to share the world with such things?

Botanising in Shetland and our attentiveness to day-to-day wildflowers

As I cycled around Shetland in July, one thing I noticed while chatting to local people was how attentive they are to the plants in their environment. Everyone, no matter who they were, had a story to tell about wildflowers. Sometimes it was a snippet of folklore or an ingredient in a recipe, while on other occasions I was told stories about favourite local plants. An elderly woman outside a village grocery store told me fondly of a coveted patch of Primroses (*Primula vulgaris*) - or 'Mayflooers' - up on her local hillside. The next day I stopped at a café for cake and the waitress expressed her delight at how the view from the kitchen had turned pale blue earlier in the year as Spring Squill (*Scilla verna*) bloomed on the sea slopes. One of the most memorable conversations I had was with a crofter as he moved his sheep from one field to another. He stood in a roadside carpet of Common Bird's-foot-trefoil (*Lotus corniculatus*) and told me he had always known the plant as 'Da-cock-an-da-hen', a tribute to its yellow flowers (the hens) and bright-red buds (the cockerels).

Shetlanders seemed much better at paying attention to the plants around them than many on the mainland. 'Our communities are rural - far more so than in England - and most of us live in scattered houses,' explained a couple I met on the road when I asked them why they thought that was. 'Our neighbours live at least a hundred metres away and that's fairly standard around here.' They told me that they felt in tune with the seasons, watching the different flowers come into bloom through the year in the ditches that ran parallel with their road. They found they knew the names of its inhabitants - Ragged-robin, Bog Cotton and Bog Asphodel - without ever having consciously learnt them. For many people I met, noticing the wildflowers was still a part of their day-to-day lives. Plants are present in abundance when they go to the shops, when they drop in at a friend's house, and when they take the dog for a walk. That's not to say this isn't the case anywhere on the mainland, but it was noticeable how frequently people would engage with me when I began talking about plants.

There was a time when people across mainland Britain and Ireland were more connected to the plants on their doorstep. We have such a rich botanical folk history, captured to an extent by the dozens of local vernacular names we have for the same species. As our society becomes increasingly urban, and as we strip the land of its nature, there are fewer plants in our daily lives for us to form bonds with and to care about. We are losing the abundance of nature around us, and with it opportunities to interact with

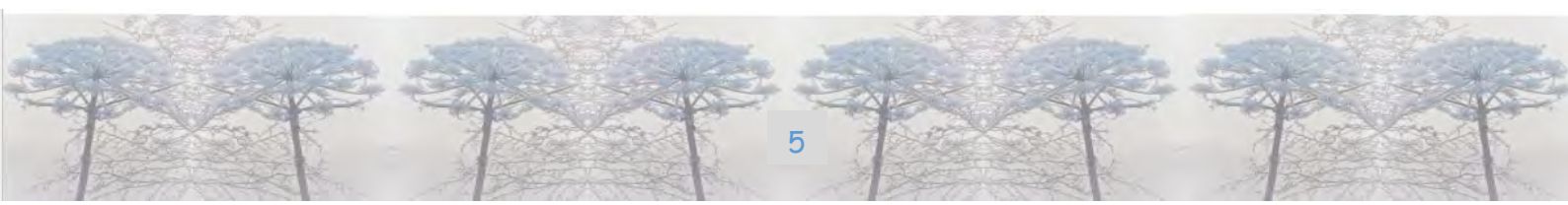
plants, which has led to a reduced sense of care. In Shetland, though, that connection hasn't been lost. Not yet, it seemed - or at least not to the same extent. I found that many places clearly hadn't changed much for centuries. It was like stepping back in time. It's the rest of the country that's changed.

The magic of ancient woodlands and our connection across time

Old woodlands are magical places. I spent weeks exploring their myriad incarnations throughout the year. I looked for coloured buds on twigs in winter and watched bronzed leaves spiralling to earth in the autumn. In early May I cycled the South Downs Way from Hampshire to East Sussex, passing through woodlands flooded with Bluebells (*Hyacinthoides non-scripta*). In July I climbed up to a fragment of Caledonian pine forest in the Cairngorms, where I was treated to delicate Twinflower (*Linnaea borealis*) and some of the oldest, most gnarled Scots Pines (*Pinus sylvestris*) I had ever seen. Then in November I had the honour of walking through Glengarriff Woods in south-west Ireland where my botanical hero, Ellen Hutchins, did her botanising more than 200 years ago. Every trunk, branch, rock and bough had been clothed in emerald-green: countless mosses, liverworts, filmy-ferns and lichens. In all my woodland wanderings, I had never seen anything remotely like it. It was glorious and heart-breaking and joyful and mesmerising all at the same time.

These are special places, defined by their plants. Knowing that these species were also present in the 1800s, and beyond; that they were being enjoyed then just as we enjoy them now, is a humbling thought. Engaging with these plants in these ways, in this practice that stretches back for so long, connects people across time. It's comforting to know that this instinct to take delight in the natural world and in the plants growing around us remains, whether it's in a nineteenth-century liverwort, or a new-millennium Bluebell.

In many ways, we are incredibly lucky to be living in the twenty-first century. At most previous points in history, life would have been a lot more challenging and the number of avenues at our fingertips for entertaining and occupying - or perhaps distracting - ourselves would have paled in comparison. Imagine living in a world without any of the things that most of us take for granted - phones, computers, books - and then going outside and seeing a sea of Bluebells, without any other way of seeing anything like it. It would have been utterly spectacular. There's something very transporting about the whole experience. We talk about magic: for me, this is a kind of magic.

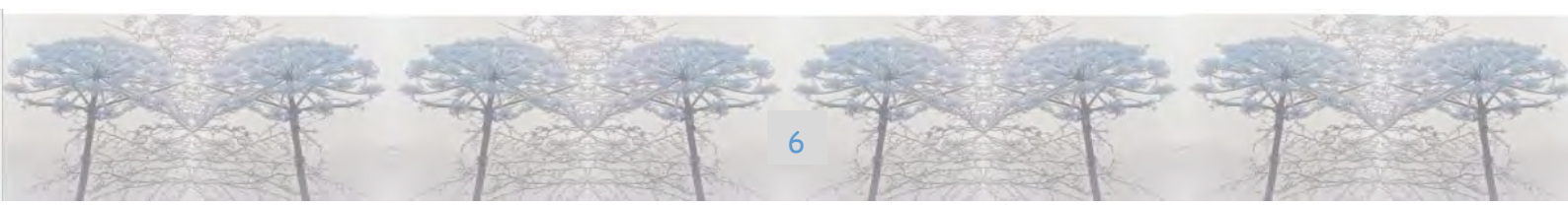


We have something worth protecting

One thing that was repeatedly driven home during my travels is that we seriously underestimate what plants can do. Yet despite the feeling of awe impressed upon me so often, time spent with our plants, or any part of nature, brings with it a greater understanding of the perils they face. Over the course of 2021, I experienced first-hand that all is not well. I was confident that after two decades of plant hunting I'd read enough to understand nature's perilous state, but seeing the nationwide ecological devastation for myself from train windows and my bike saddle brought with it the shocking realisation that I really had no idea how bad things are.

The issues were the same everywhere: chronic over-grazing, habitat destruction and endless application of fertilisers and herbicides - humans messing with finely balanced ecosystems. The impact of climate change was evident on all my adventures and most prominent in the extremes: in dry, free-draining grasslands in southern England and high up on the crumbling slopes of Scotland's mountains. We recently learnt that plants in the UK are flowering on average a month earlier today than they were in the 1980s, which has significant ecological implications for the delicate, synchronised relationships between plants and their pollinators. With their habitats disappearing and, in some cases, their very existence stigmatised, our plants are struggling more than ever. Seeing the impact of our actions and thinking about the future makes my heart hurt. It still bothers me, now more than ever, that so few people seem to notice our plants. But writing *Where the Wildflowers Grow* has been part of my attempt to change that. Plants can be found everywhere we go and are capable of extraordinary things we rarely hear about or give them credit for. As an accessible and mindful activity with no time-specific requirements, botanising can benefit us on a large scale and small, from improving wellbeing to safeguarding the planet long-term. We have something worth protecting. Spending time with nature gives us purpose, challenges us while we are outside and leaves us feeling connected to our surroundings. For me, it always has been - and always will be - everything.

Leif Bersweden





Utricularia vulgaris (Greater Bladderwort) Catfield Fen, Norfolk



Silene flos-cuculi (Ragged-robin) Swindale, Cumbria

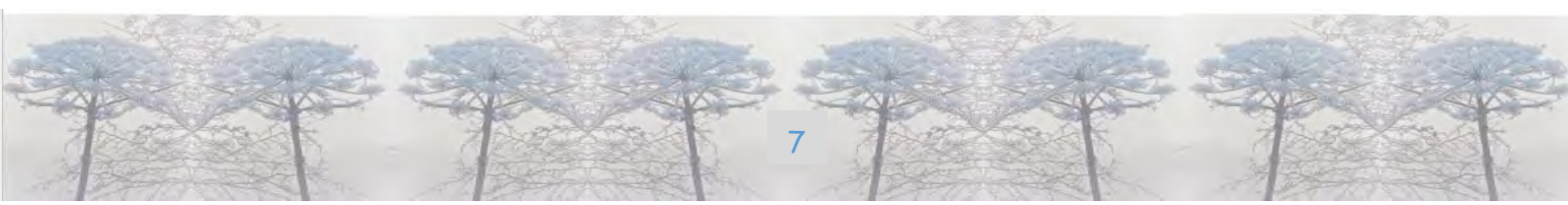


Linnaea borealis (Twinflower) Cairngorms



Trichomanes speciosum (Killarney Fern) (Glengarriff Woods, south-west Ireland)

All photos: Leif Bersweden



NORFOLK PLANT HIGHLIGHTS IN 2022

Jersey Cudweed *Laphangium luteoalbum* (L.) Tzvelev, (formerly *Gnaphalium luteoalbum* L. and *Pseudognaphalium luteoalbum* (L.) Hilliard & B.L. Burt).

2022 seemed to be the year of Jersey Cudweed *Laphangium luteoalbum*. It has cropped up in varying amounts and places throughout the year. Although known in Norfolk since 1831¹, its Norfolk and national status still seem in doubt. Nicholson² considered it 'doubtfully native', while Petch & Swann³ considered it 'unquestionably a native Norfolk plant.' Beckett & Bull⁴ merely speak of it being an autumn-germinating annual. The most recent Suffolk Flora hedges its bets by calling it 'native or alien, annual or biennial'⁵. Stace⁶ thinks it is 'possibly native' and mentions it as local in W. Norfolk. What there does seem to be is recent agreement over the fact that it is now spreading. A very recent column in *BSBI News* speaks of its explosion in the last decade⁷ and it is no longer classified on the Red List, possibly because, according to Stace⁸, it is being increasingly introduced. The experience of members of the Norfolk Flora Group, recording in Norfolk and north Suffolk over the last year or so, seems to support its spread. There is also broad agreement about the type of habitats where it is or has been found. The older local floras, already cited, mention coastal sand dunes, sandy fields including in Breckland and one record from 1951 on waste ground at Buxton Heath.⁹ The more recent Suffolk flora also includes a 2008 record from arable reversion and mentions its historical occurrence in the 19th century in Norfolk Breckland meres.¹⁰ Tyler thinks it is now "fast becoming a regular pavement weed."¹¹

The Norfolk Flora Group has found Jersey Cudweed in almost all the habitats referred to above. Within the last ten years it has been found on the edge of a roundabout close to the public toilets in Hemsby; and more recently a small population has been discovered growing along the edge of a track in acid heathland at what is now Broadland Country Park, where it still persists today. In December 2021 a large, flowering population was recorded in sandy areas between the line of the river defences near the harbour's mouth in Gorleston (VC25). It was subsequently noted again in the 2022 New Year Plant Hunt (NYPH). Interestingly enough in the most recent NYPH on 1st January 2023, this population seemed to have virtually disappeared and only two or three small non-flowering plants were seen in the cracks in the gutter on the roadside side of the river defences.

In the autumn, in September, the group found a few flowering plants growing in an arable edge among *Filago germanica* L. - Common Cudweed at Burnham Deepdale. This is very close to the

¹ See Nicholson, W.A. ed. 1914. *A Flora of Norfolk*. West, Newman & Co, London., citing Rev. G.R Leathes' record from Larlingford in Sir W.J. Hooker's *British Flora* 2nd ed. 1830-31.

² *Op cit.* p 97.

³ Petch, C.P. & Swann, E.L. 1968. *Flora of Norfolk*. Jarrold & Son Ltd. Norwich, p 209.

⁴ Beckett, G. & Bull, A. 1999. *A Flora of Norfolk*. Privately published Gillian Beckett, p. 205.

⁵ Sandford, M & Fisk, R. 2010. *A Flora of Suffolk*. D.K. & M.N. Sandford, Ipswich., p.359. The previous Suffolk Flora by Simpson considered it extinct there, but previously probably native in Breckland. Simpson, F.W. 1982. *Simpson's Flora of Suffolk*. Suffolk Naturalists' Society, Ipswich, p.319.

⁶ Stace, C.A. 2019. *New Flora of the British Isles* (4th ed). C & M Floristics, Middlewood Green, p.773.

⁷ Tyler, S., Country Roundups: Wales in *BSBI News* 149, January 2022, p.63.

⁸ *Op cit.* p.773.

⁹ Petch & Swann, *op cit.* p.210.

¹⁰ Sandford, *op cit.*, p.359.

¹¹ Tyler, *op.cit.* p.63.

Holkham-Burnham Overy Staithe area, the so-called 'maritime stations'¹² where the species was found by Rev. E.F. Linton in 1882, cited in the Norfolk floras from Nicholson onwards and still present at the time of recording for Beckett & Bull's flora in the dunes. At the end of October, during a trip to the Breckland meres at East Wretham, one non-flowering plant was discovered at Fenmere in the wet drawdown area of the mere with such plants as *Rorippa amphibia* (L.) Besser - Great Yellow-cress. The adjacent Ringmere had a flowering plant near the top edge of the mere. Towards the end of the year, the group strayed again into Suffolk to the Somerleyton Estate, which is involved in a programme of Rewilding. Scattered flowering plants of Jersey Cudweed were found in an arable reversion.

Although we did not find any of the species actually in dune slacks or sand dunes, as had been recorded previously, at least some of the habitats were close to coastal or maritime areas, such as near the harbour's mouth, in Gorleston. There was no evidence that any of the cudweed we found had been deliberately introduced. Finding it again around the Breckland meres, even in very small amounts, in an area where it may not have been seen since the 19th century, was a considerable surprise. It will be interesting to see if it continues to spread and where.

Corn Parsley *Sison segetum* L. (Formerly *Petroselinum segetum* (L.) W.D.J. Koch) and *Carum segetum* Benth. & Hook. (Corn Caraway)).

While what was so special about Jersey Cudweed in 2022, apart from its relative scarcity, was the number and variety of sites where it was found, with Corn Parsley it was both its rarity in Norfolk, but also the sheer size of the population discovered. Nicholson considered it a 'colonist' found on damp chalky soil, rare in Norfolk, but with sites in both East and West Norfolk.¹³ By the time of Petch & Swann's flora it was only reported in West Norfolk and as 'not common'. It was now thought to be native.¹⁴ In Beckett & Bull, there are records in both vice counties. They described it as 'a winter green biennial', and 'a scarce plant of open hedgebanks, dry ground, often alongside estuaries.'¹⁵ At that time it was classified as a nationally scarce species, but no longer. In the twenty something years I have been a member of the Norfolk Flora Group, I have only come across it rarely, perhaps 3 or 4 times - once on top of a steep chalky riverside bank in the far west of Norfolk, once on an arable edge in Suffolk and more recently in a similar situation alongside the remains of the part of the airfield at Langham, where there were a number of vegetative plants lining the field edge. So it came as a complete surprise to find a field at Warham, immediately south of the Norfolk Coast Path, with literally thousands, if not tens of thousands of flowering and fruiting plants in a stubble field. Simon Harrap found the first plant along what initially appeared to be a somewhat unpromising arable field. Subsequent exploration revealed that while there were few plants along the edge, further into the field there were plants as far as the eye could see! What made that particular field so prolific? Possibly the weather over the past few years may have helped and the fact that the field had been allowed to remain as stubble long enough for the Corn Parsley to almost complete its biennial life cycle and set seed. In comparison there were relatively few vegetative Corn Parsley plants visible.

¹² Petch & Swann, *op cit*, p 209 and still known to persist in the dunes in 1967 and in the same area in Beckett & Bull, *op.cit* p.205.

¹³ Nicholson, *op.cit* ,p.87.

¹⁴ Petch & Swann, *op cit*. p.162.

¹⁵ Beckett & Bull, *op cit*. p.160.

Rustyback *Asplenium ceterach* L. (formerly *Ceterach officinarum* Willd.)

This is another species which is not common in Norfolk. In this case, it was finding it at all, which was the surprise, as there was only one small, hoar-frosted plant, nestling among a wealth of *Polypodium interjectum* Shivas - Intermediate Polypody ferns on a low wall in Syderstone. Slightly commoner in the west of the county than in the east (Beckett & Bull have twelve localities in all for the county)¹⁶, I have only seen it in Norfolk on the sea wall at North Denes, Great Yarmouth and by a leap of faith on Heydon Church tower, where, as is always quoted, 'it was recorded by Trimmer, 1866, "above the reach of ladders"¹⁷, and where it still seems to be. The Syderstone site is not mentioned in the floras of Beckett & Bull, Nicholson or Petch & Swann. Swann's 1975 supplement to their *Flora of Norfolk* also has no mention.¹⁸ Whether a larger colony awaits discovery on other walls in Syderstone or on the church remains to be seen. Unfortunately there was no time on a December afternoon to explore further.

Mary Ghullam



Sison (Petroselinum) segetum

Simon Harrap

¹⁶ Op cit, p.54.

¹⁷ Ibid.

¹⁸ Swann, E.L. 1975. *Supplement to the Flora of Norfolk*. F. Crowe & Sons Ltd, Norwich, p.2.

SUMMER DROUGHT REVEALS LONG LOST PLANT IN EARLHAM CEMETERY

I live close to Earlham Cemetery and over the last few years have been attempting to re-find all plant species known up to 2008. The original plant listing the Friends of Earlham Cemetery have was compiled by Craig Robson. He spent many hours plant hunting across the site from 1984 to when he moved away from the area in 2008. His list of 210 taxa including trees and non-native species was the result of this work. This list was the basis for my own search and over the last 4 years or so, I have relocated many of these original records. Most have been easy as there are still lots around on the site. Others have proven elusive, but I have eventually spotted them lurking in the undergrowth, hiding on walls or even in open areas when I've wondered how I missed them!

There are two 'fabled plants' that were listed as being present on the County Wildlife Site citation for the site written in 1997. These are *Succisa pratensis* (Devil's-bit Scabious) and *Pimpinella saxifrage* (Burnet Saxifrage). Neither have been seen since the 90s as far as we know and Craig didn't find them in his searches either.

Summer 2022 was very notable for both the extreme heat and dryness that we experienced from May to September. The summer peaked when we reached an astonishing 40.3°C on 19th July at Coningsby (Lincolnshire). Norwich peaked at 37 °C which is still pretty hot! As a result of the heat and drought our gardens gradually turned brown and crisped up as plants struggled to survive in the heat. In Norwich we barely had any rain for months. Grass growth stopped which meant the mowers were silenced and flowering of all but the deepest-rooted species declined or even halted. Grasslands turned brown with just these deep-rooted species toughening it out in the summer heat. Little islands of colour in a sea of brown.

I work from home and most lunchtimes I nip to the cemetery for a quick wander to see what I can find. It's a great place to wander around and being so large there are always areas you haven't been to for a while. On one such wander in mid-August I was wandering around the newer sections of the site when I spotted a plant growing in the brown grass that I didn't immediately recognise. On close inspection it turned out to be one of the fabled plants: *Pimpinella saxifrage* (Burnet Saxifrage). Result! Now I had spotted one more came into focus and I realised there was a small colony of these plants all around me. I found 12 in all spread over a small area of about 6m x 3m with a couple of outlying plants beyond this tiny group. It's a plant that can cope well in dry conditions and is often found on dry chalk or limestone grasslands in places like the Chilterns. In Norfolk it is widespread and grows in established grasslands which are base-rich sites.

Under normal summer conditions, the grass in this area of the cemetery is regularly cut down but due to the summer drought the Council had stopped mowing as there was the danger that hot machines could start a serious grass fire across the site. This gave the *Pimpinella* an opportunity to grow and flower which it hasn't had for a while and me the opportunity to re-find one of the fabled 'lost plants' of Earlham cemetery. Now on to re-find *Succisa pratensis*!

Ian Senior



Pimpinella saxifraga at Earlham Cemetery

Ian Senior

EXTRAORDINARY HEADWEAR

Very large leaf of *Arctium lappa* ?

Or very small botanist?



Burdock and Botanist

Megan Crewe

Jake was thrilled to realise that he could keep his nose warm AND find plants during the cold snap.



Frost-creature near Syderstone

Jo Parmenter

SHOULD WE BE RECORDING EPIPHYTES' HOST SPECIES?

Bryologists¹⁹, lichenologists, and many mycologists and pteridologists routinely record the hosts on which their group of epiphytic species grow. That does not seem to be so with general botanists. The obvious exception is the recording of Mistletoe, where the tree hosts are often mentioned²⁰. This omission is true of the various Norfolk & Suffolk floras going back to at least Simpson²¹ in Suffolk (and presumably before) and as far back as Trimmer²² in Norfolk up until the present day. If there are such august precedents, then why should we bother? Is it important?

We are experiencing a period of extreme change. Many of our native trees are being affected by climate change and are increasingly subject to a range of pests and diseases²³. Here in Norfolk, Ash Dieback (*Chalara*) is rife, Acute Oak Decline (AOD) is killing our oaks, including Pedunculate Oak *Quercus robur*, but also other oak species, Sycamore *Acer pseudoplatanus* and Horse Chestnut *Aesculus* species are suffering from *Phytophthora* and Sweet Chestnuts *Castanea sativa* are also dying, to cite just a few native and non-native broad-leaved species under threat. Some of us can still remember a time when the East Anglian landscape was dotted with mature elms, but how many of us remember what epiphytes these elms supported? How could we find out now? What has happened to these epiphytes? Have they moved on to other host species or have they declined in line with the elms? Was there something unique about the microhabitat and suite of species dependent on the various epiphytes that grew on elms? We will probably never know now.

From observation, most fern and higher plant epiphytic species seem to favour large old trees - possibly in part because there are a variety of niches and microhabitats available as well as firmer anchorage. However the diseases also attack such trees. Increasingly it is, for example, the older and veteran oaks that are being affected by AOD. The exceptional weather this last summer and the ensuing heavy mast year places an enormous strain on trees such as, for example, Beech *Fagus sylvatica*, but its effects may not become evident for a number of years. Now is the time to make sure that we know what these trees support in terms of epiphytes at very least. It is no good waiting until they have gone or there is a hiatus in tree age classes, which will be very difficult to bridge in the future.

¹⁹ See Preston, C.D. & Hill, M.O. 2019. *Cambridgeshire's Mosses & Liverworts - a dynamic flora*. Pisces Publications, Newbury for an extremely detailed account of the host trees used by epiphytic bryophytes.

²⁰ See, for instance, Briggs, J. 2011. Mistletoe - a review of its distribution, conservation and insect associates. *British Wildlife*. 23, 1, 23-31 and various Norfolk & Suffolk floras.

²¹ Simpson, F.W. 1982. *Simpson's Flora of Suffolk*. Suffolk Naturalists' Society, Ipswich.

²² Trimmer, K. 1866. *Flora of Norfolk*. Hamilton Adams and Co. London.

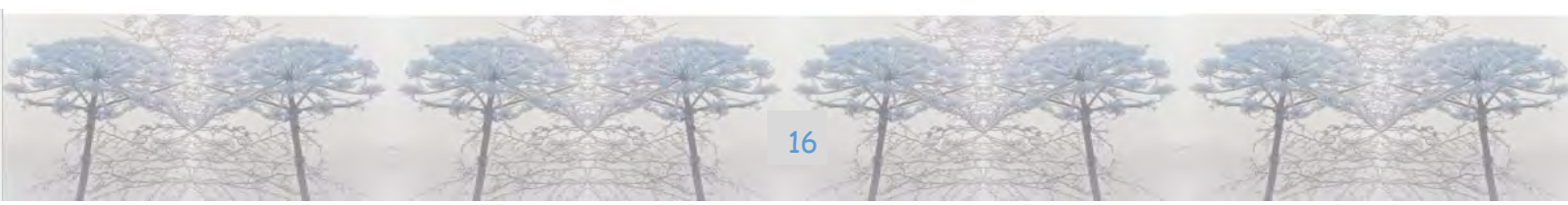
²³ Hill, L. 2022. The other pandemic: ten years of Ash Dieback. *British Wildlife*. 34, 2, 121 for a list of such introductions to the UK going back to 1971, from Forest Research.

It is, however, not just sufficient to start recording the common hosts that support, for example, different Polypody *Polypodium* ferns or some of the other tree species such as Yew *Taxus baccata*, Holly *Ilex aquifolium* or birch *Betula* spp. that grow up in pollard points of veteran oaks. We need to look both to the future and the present.

Increasingly, different species of trees are being suggested for planting to replace those that will not tolerate the local changing climate. Some of these are, of course, the same native species we already have, but of different genetic stock, from warmer and drier areas such as southern Europe. Others are non-native species such as Walnut or Black Walnut *Juglans regia* and *J. nigra*, or other members of the *Juglandaceae* like Hickories or Wingnuts. There are, however, many other exotic tree species around us already, here and now in our parks, gardens and along our streets. Some of them have been here for hundreds of years and include very large specimen trees. On a recent visit to the gardens at Raveningham Hall a majestic Japanese Walnut *Juglans ailanthifolia* supported a range of interesting epiphytic bryophytes, as did the adjacent large presumably Turkish Hazel *Corylus colurna*. We need to take notice of what is growing on such exotic trees species now and in the future. These may well become the main future hosts for some of our epiphytes.

Just as we record garden plants that appear as casuals in the wider environment or track the spread of alien species across Norfolk, such as Narrow-leaved Ragwort *Senecio inaequidens*, so we need to be aware now what is happening to our epiphytic species and their hosts.

Mary Ghullam



LIZARD ORCHIDS AHOY

Youngest NFG member Jake organised an extracurricular outing to the Devil's Dyke, Cambridgeshire, on Sunday 26th June 2022, to visit the iconic *Himantoglossum hircinum* Lizard Orchids that grow there. Jo and David attended (Jo prepared with a map of where desirable taxa have been seen, and NFG recording sheets - impossible for list nerds not to record on such a rich site), plus Ian Senior, Tim Doncaster, Mary Ghullam and myself. On the walk to the Dyke from our handy parking on Heath Road (TL60656335) we passed abundant *Anacamptis pyramidalis* Pyramidal Orchids, *Picris hieracioides* Hawkweed Oxtongue which we rarely find in Norfolk, plus one *Ophrys apifera* Bee Orchid. We then crossed the A14 by footbridge, and went over part of Newmarket race track to reach the Dyke.

This is a long, steep-sided, prehistoric-man-made chalk ridge which is home to many chalk grassland taxa rare or absent in Norfolk. I've visited twice in the past ten years, and seen the Lizard Orchids lush and 70 cm+ tall; but as it's been a very dry spring and early summer this year, they were smaller and 'going over'. Nevertheless, it was a thrill to see them, with more scattered along both sides of the Dyke than I'd seen on previous visits. The drought had also, happily, reduced the vigour of the potentially competitive Dyke grasses - notably *Brachypodium pinnatum* (was Tor-grass, now Heath False-brome) which can be extremely dominant in wetter seasons. We walked north-west to the Newmarket Stud end of this section of the Dyke and back, and highlights included the following - many in quantity:

Flora Sightings *Anacamptis pyramidalis* Pyramidal Orchid, *Anthyllis vulneraria* Kidney Vetch, *Asperula cynanchica* Squinancywort, *Avenula pubescens* Downy Oat-grass, *Blackstonia perfoliata* Yellow-wort, *Briza media* Quaking-grass, *Campanula glomerata* Clustered Bellflower (in adjacent rough grass area), *Carlina vulgaris* Carlina Thistle, *Centaurea scabiosa* Greater Knapweed, *Cirsium acaule* Stemless Thistle, *Euphrasia* agg Eyebright, *Filipendula vulgaris* Dropwort, *Frangula alnus* Alder Buckthorn, *Helianthemum nummularium* Rockrose, *Hippocrepis comosa* Horseshoe Vetch, *Koeleria macrantha* Crested Hair-grass, *Linum catharticum* Fairy Flax, *Onobrychis viciifolia* Sainfoin, *Ononis repens* Restharrow, *Pimpinella saxifraga* Burnet-saxifrage, *Plantago media* Hoary Plantain, *Polygala vulgaris* Common Milkwort (in all its colour ranges - pink, purple, blue, white), *Poterium sanguisorba* Salad Burnet, *Pulsatilla vulgaris* (one still in flower!) Pasqueflower, *Rhamnus cathartica* Purging Buckthorn, *Scabiosa columbaria* Small Scabious, *Thalictrum minus* Lesser Meadow-rue, *Thesium humifusum* Bastard-toadflax, *Thymus drucei* Wild Thyme, *Viola hirta* Hairy Violet.

Taxa we sought but didn't find were *Nepeta cataria* Catnip, *Tephrosieris integrifolia* spp. *integrifolia* Field Fleawort and *Astragalus danicus* Purple Milk-vetch.

Favourite Finds Jake: Pasqueflower: "I've been meaning to hunt one down for ages." Even perched on top of the Dyke, they were still fresh and green, with some even flowering - perhaps rejuvenated by the latest rainfall.

Suki: *Thesium humifusum* - a tiny white-flowered plant initially spotted by ever-eagle-eyed Mary. I'd never seen it before, didn't know it existed, and am fascinated by it sounding like a rare-earth element, and being the only UK relative of Mistletoe (family Santalaceae). I'm also intrigued by the other-worldly, goblinsque shape of its flowers, bracts and foliage seen in close-up.

Mary: "Thesium humifusum, as it is a first for me and not just because I recognised it and almost got the name right!!" The amount of Marbled White butterflies on the Greater Knapweed was amazing as well, and to see pristine Lizard Orchids.

Tim: Thesium as well!

"Within continental Europe, *Thesium humifusum* is found throughout France, Spain, and Italy. In the Netherlands it is very rare, being now restricted to a single dune system near Katwijk aan Zee, Belgium. It can be found in coastal dunes in Flanders, and perhaps one site in Wallonia. It is the only species of *Thesium* in Great Britain, and is there considered 'scarce'. *Thesium humifusum* may also occur in parts of North Africa.

Thesium humifusum is a [hemiparasitic plant](#) that steals nutrients from Hedge Bedstraw (*Galium album*) or Lady's Bedstraw (*Galium verum*). Although it can be abundant in appropriate habitats, its low growth habit and inconspicuous flowers mean that it is often overlooked. In Great Britain, it is restricted to downlands over chalk or oolitic limestone in southern England. Elsewhere, it may also grow in sand dune systems."(Wikipedia).

Stace (2019) says that it's "a root parasite on various herbs"

Beckett and Bull (1999) say that it was "... once widespread on chalk grassland, surviving until 1953 on the Devil's Dyke at Cranwich W70 and at Gooderstone W70 until 1963. A nationally scarce species."

Calcicolous Grass Grappling In the pub afterwards (Jo and David had had to leave earlier) the rest of us did our best to come to grips with the unfamiliar-in-Norfolk grasses of the Dyke, and their frightening name changes: *Helichochloa pratensis* (was *Helichotrichon*) Meadow Oat-grass, *Avenula pubescens* (was *Helichotrichon*) Downy Oat-grass, *Brachypodium pinnatum* Heath False-brome - which was Tor-grass (or are our specimens the current Tor-grass title-holder *Brachypodium rupestre?*), *Bromopsis erecta* (was *Bromus erectus*) Upright Brome, *Schedonorus pratensis* (used to be *Festuca*) Meadow Fescue. Eek!

Conclusions The Devil's Dyke is a must-see site for calciphilous botanists, so many thanks to Jake again for arranging this excellent event - and may there be more outings like it. Our records have been sent to the Cambridgeshire VCR Jonathan Shanklin.

Suki Pryce



Thesium humifusum

Jake Brendish

NEED A CHALLENGE? THINK NECROBOTANY IS TOO EASY?

- TRY CRYOBOTANY!

In the NFG Winter Newsletter 2021-22 Mary touched on 'the totally underrated pastime' of Necrobotany which can be quite a challenge! However I feel we all had our skills stretched a bit more on a recent expedition around the fields north of Syderstone, during an extended period of freezing fog.

Jo christened this particular branch of botanising Cryobotany, from the Greek root 'cryo-' involving or producing cold, especially extreme cold: which seems a perfect description to me, since pretty extreme cold was involved on the day, and also produced in fingers and toes as the day progressed!

I had been in two minds whether to turn up at all, thinking that we wouldn't be able to ID much but the promise of a seasonal get-together afterwards, just a few minutes from my house, was too much to miss out on! (Thanks, Lynn, for your hard work and hospitality - it was lovely).

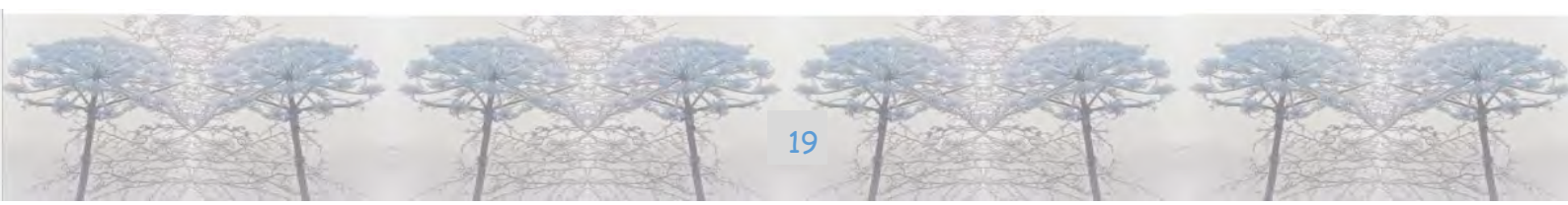
We set off through the village and even things as well-known to us as the seed pods of Shepherd's Purse *Capsella bursa-pastoris* were almost unrecognisable, but we soon started to get acclimatised, in more ways than one. I spent some time puzzling over a very pretty Buck's-horn Plantain *Plantago coronopus*, before realisation set in. Our adventurous young person soon developed a new methodology for thawing specimens to look at the details - on the tongue apparently works well! I was too busy taking photos to test this!

By the time we had explored the fields and the wood, and ascended a couple of tumuli we were well away, with a good list being produced and it was time for lunch. By now the decidedly watery sun had just about given up and the mist was reforming, but fortified by mince pies and a sit down on a pile of composting leaves, we pressed gamely on.

After admiring the perfectly still wind turbine, looming out of the mist, and the beautifully-frosted seed heads of Giant Hogweed *Heracleum mantegazzianum*, we turned for home. However the best was yet to come, with 2 new species for me - Hoary Mustard *Hirschfeldia incana* on the verge as we re-entered the village and a lovely little plant of Rustyback *Asplenium ceterach* spotted by Mary on a wall after everyone else had walked past and the clipboard had actually been stowed away! I took a leaf and a flowering spike of the *Hirschfeldia* to look at once it had thawed, in the full expectation that it would have turned to mush by the time I got it home, but was amazed to find it in good condition the next day.

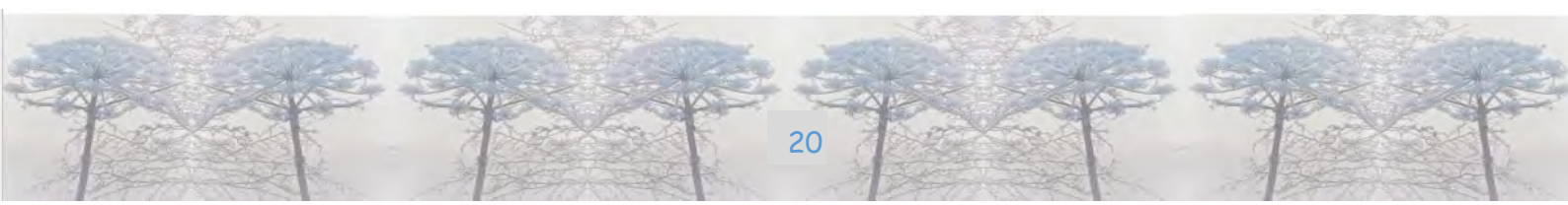
Quite an incredibly beautiful day out!

Marilyn Abdulla





Plantago coronopus, *Capsella bursa-pastoris* and
Heracleum mantegazzianum Marilyn Abdulla





Frosted turf, *Asplenium ceterach* and *Hirschfeldia incana* Marilyn Abdulla



NORFOLK FLORA GROUP AND THE BSBI NYPH 2022-2023 - AND A COMPARISON WITH PAST HUNTS

NFG members carried out three NYPHs this midwinter: Sat 31st Dec 2022 Sheringham; Sun 1st Jan 2023 Gorleston; Mon 2nd Jan 2023 Wells-next-the-Sea. All these sites had previously been NYPHed in recent years, using similar routes and personnel, and so it was possible to compare the records of plants-in-flower this season with that of previous years. **The main observation from all teams is that many of the taxa that are usually most commonly found weren't flowering this year (or only in tiny quantities), so that some list totals were reduced.**

I keep a cumulative spreadsheet of all the North Norfolk NYPHs I've done (alone, or shared), from 2017 to the present; and the most widely-found species are shown in the table below.

Coastal North Norfolk 2017-'21/22: Commonest Species Found in 9 NYPHs

(i.e. present in at least 8 of the 9 pre-'22/'23 lists)

Achillea millefolium Yarrow, *Bellis perennis* Daisy, *Capsella bursa-pastoris* Shepherd's-purse, *Dactylis glomerata* Cock's-foot, *Lamium purpureum* Red Dead-nettle, *Poa annua* Annual Meadow-grass, *Senecio vulgaris* Groundsel, *Stellaria media* Common Chickweed, *Taraxacum* Dandelion.

In previous years, these common plants weren't just displaying the odd inflorescence at New Year, but many/most specimens were flowering. In contrast, this year we managed to find plenty of these species in a vegetative state, but few or none with flowers. Going beyond the above nine commonest species to other frequently-found winter-flowerers, such as *Hypochaeris radicata* Cat's-ear, *Crepis capillaris* Smooth Hawk's-beard, and *Sonchus oleraceus* Smooth Sow-thistle, these were notable this year for an unprecedented near-complete absence of flowers.

We put the marked difference between this year's NYPHs and previous ones down to the strong cold spell we had in early December, with some ten consecutive days experiencing temperatures below, at, or barely above freezing. The mild autumn preceding this snap meant that typical North Norfolk 'autumn stragglers', mainstays of previous NYPHs - like Yarrow, *Tripleurospermum inodorum* Scentless Mayweed, and *Lobularia maritima* Sweet Alison - were full of flower when the cold weather hit. The frost then thoroughly struck them down, and they were not - or barely - able to recover in the short period between the end of the cold snap and the NYPH dates. On the other hand, this year's North Norfolk NYPHs also show that a handful of adepts can either survive freezing periods unscathed, or recover exceptionally quickly from them. In particular, the annual species *Senecio vulgaris* Groundsel has proved to be exceptional in this regard, as have *Capsella bursa-pastoris* Shepherd's-purse and *Poa annua* Annual Meadow-grass. The perennials *Bellis perennis* Daisy and *Taraxacum* agg Dandelion also seem to have great powers of frost resilience and/or rapid regrowth of flowering parts.

The above comments apply equally to coastal Norfolk/North Suffolk. For comparison, the table below shows the BSBI's analysis of the 2020 NYPH lists in terms of the top 13 most reported taxa, and reveals that these are very similar to our NFG findings.

BSBI 2020: Top 13 Most Reported Taxa

Bellis perennis Daisy, *Senecio vulgaris* Groundsel, *Taraxacum* Dandelion, *Poa annua* Annual Meadow-grass, *Stellaria media* Common Chickweed, *Sonchus oleraceus* Smooth Sow-thistle, *Lamium purpureum* Red Dead-nettle, *Capsella bursa-pastoris* Shepherd's-purse, *Ulex europaeus* Gorse, *Euphorbia peplus* Petty Spurge, *Lamium album* White Dead-nettle, *Achillea millefolium* Yarrow, *Veronica persica* Common Field-speedwell

Although the total numbers of taxa found flowering were reduced this year, many new and interesting plants-in-flower still cropped up (particularly in Sheringham), despite the severe weather:

**Coastal North Norfolk/North Suffolk 2022/'23:
Plants In Flower New To Our Respective Lists**

Sheringham compared to adjacent **Beeston Regis 2021**: *Aphanes arvensis* agg Parsley Piert, *Armeria maritima* Thrift, *Atriplex portulacoides* Sea-purslane, *Ballota nigra* Black Horehound, *Cotula australis* Annual Buttonweed, *Elaeagnus x ebbingei* Elaeagnus, *Fumaria capreolata* White Ramping Fumitory, *Gazania rigens* Treasureflower, *Geranium lucidum* Shining Crane's-bill, *Geranium pyrenaicum* Hedgerow Crane's-bill, *Lamium amplexicaule* Henbit Dead-nettle, *Lolium multiflorum* Italian Rye-grass, *Ornithopus perpusillus* Bird's-foot, *Phacelia tanacetifolia* Phacelia, *Schedonorus arundinaceus* Tall Fescue, *Veronica chamaedrys* Germander Speedwell, *Vinca major* 'Variegata' Variegated Greater Periwinkle.

Gorleston compared to very similar area 2022 produced additional species including: *Cotula australis* Annual Buttonweed (which almost but not quite made up for not finding Jersey Cudweed in flower this time), *Galanthus elwesii* Greater Snowdrop, *Poa infirma* Early Meadow-grass and *Ulex europaeus* Common Gorse.

Wells compared to January 2021 (1 group finding 57 species). NB a different route was followed this year, with 2 groups also covering the cemetery and coastal bank, and finding 54 species. Notable absences this year were *Oxalis incarnata* Pale Pink-sorrel and other possible *Oxalis* species (frost-wilted); and no *Erophila verna* Common Whitlowgrass (was frequent along the A149 in '21). Additional records of interest not recorded in '21 included: *Fumaria muralis* Common Ramping-fumitory, *Ophrys apifera* Bee orchid (100s of rosettes in verges and growing up through bark mulch in a new housing estate), *Poa infirma* Early Meadow-grass, *Sherardia arvensis* Field Madder.

Which just shows that it's always worth having a hunt in coastal East Anglia; and that you never know what you'll find while plant recording - even in midwinter. To prove this, my cumulative spreadsheet of North Norfolk NYPHs has now reached a remarkable 141 taxa, with other interesting pre-'22/'23 taxa from that list shown in Fig. 4.

Coastal North Norfolk NYPHs: Unusual Plants In Flower 2017-2021

Aethusa cynapium Fool's Parsley, *Allium triquetrum* Three-cornered Garlic, *Anthemis tinctoria* Yellow Chamomile, *Antirrhinum majus* Snapdragon, *Briza maxima* Greater Quaking Grass, *Echium plantagineum* Purple Viper's-bugloss, *Erigeron acris* Blue Fleabane, *Gaillardia x grandiflora* Blanketflower, *Hordeum vulgare* Six-rowed Barley, *Malcolmia maritima* Virginia Stock, *Potentilla indica* Yellow-flowered Strawberry

Suki Pryce



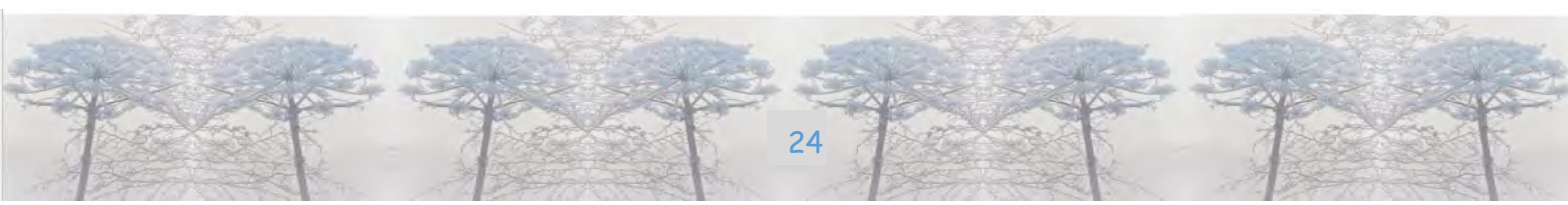
Cotula australis, Sheringham

Mike Padfield



Fumaria capreolata, Sheringham

Mike Padfield



A YEAR (AND A BIT) AS A BLIGHT UPON THE NFG

When I dragged myself up to Norfolk for my first NFG outing, it wasn't so much a love for plants that motivated me so much as a mild fear that I was a terrible botanist. I had heard the horror stories of botanical howlers made by consultant ecologists and was desperate not to add my name to the Wall of Shame. The solution, I thought, was to hunt down some *proper* botanists. With no organised recording in my motherland of Suffolk, I covered my un-webbed digits and crossed the county border.

The first field meeting went something like this: I turned up at a village hall somewhere in East Norfolk, nervously said hello, and spent the next six hours staring gormlessly at national experts who tried valiantly to cater to their new charge. Though only a fraction of their teachings were retained by my overwhelmed brain, it was easily the most I'd learnt in a single day and left me exhausted. I drove home and fell asleep soon after.

The same fear compelled me to return for the next few weeks. Each time I'd leave exhausted, but each time a little less so. Eventually, as I got to grips with the regular suite of plants, I could focus on learning a handful of new species each week and start to make small steps in the right direction. As, in my wisdom, I'd decided to join at the end of the season, the motley crew of winter botanists were truly invaluable and continued to teach me new species every week through vegetative ID or the ungodly practice of necrobotany. When I finally had enough energy to join the others at the pub, I realised that I was now motivated by (gulp) enjoyment.



The hat: a botanical essential. Whether it's to ward off the sun or cover long-receded hairlines, one can only speculate...

By this point I was already beyond saving, with my first BSBI handbooks arriving soon after. Taking home samples from the field was a big help in forcing the species to stick in my mind when so many species were shouted out in such rapid succession. On one occasion only did I feel on the same level as the others: the Prendergast-led *Taraxacum* workshops, in which we learnt that none of us (save for the host) were amongst the handful of botanists able to make sense of the vile things.



Some botanical highlights from 2022



During a lull in the Dyer's Greenweed Hunt, Ian impresses BobL with his new suntan

It wasn't always about cryptic species, though. Sometimes even showy plants were a challenge to find, like the afternoon spent searching Cranwich Camp for purple milk-vetch (*Astragalus danicus*). Ten or so experienced botanists (and me) spent hours combing through overgrazed grassland featuring Spanish catchfly (*Silene otites*) and proliferous pink (*Petrorhagia prolifera*), eventually finding a few minute plants that had survived the merciless onslaught of the resident ponies (probably found by someone naturally close to the ground, like Jo or Suki).

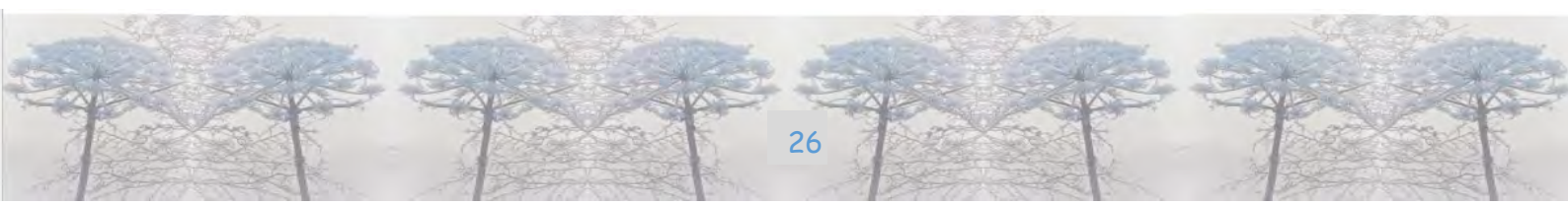
On occasion, other memorable moments threatened to outshine the enjoyment of botany itself. Stand-out moments of botanists on top-form include BobL leaving his stick at the other end of Hooks Well Meadow, Mary threatening to beat me with an *Orobanche*, and Tim escaping from a hungry hedgerow.

Thankfully, Tim (seen crowning to the right) is as adept at extricating himself from the bowels of hawthorn hedging as he is charming his way onto private allotments.



New life: Tim is birthed from a hedgerow

Adcocks Common was a standout trip for me. At least five orchid species were present in the marshy grassland, including a carpet of chalk fragrants (*Gymnadenia conopsea*) spread so widely and thickly that it was easier to trample them than not. Though I had seen rarer species in the Chilterns, this outshone that experience with sheer orchid density. It even took my mind off the fact that I had forgotten to wear wellies and had given myself some sort of trench-foot precursor.





Saltmarshing near Holkham



Some poor sods I forced to squint into the sun

Over the year, I got a sense of the diversity of habitats crammed into Norfolk. Living on the right side of the border in Suffolk, I had seen the odd tiny patch of saltmarsh but assumed that bogs and vegetated dunes were things of the north. I was unprepared for the vastness of the North Norfolk saltmarsh, on which we spent a day getting lost, then trapped by ditches, then lost again. I had also seen nothing like the boggy commons we visited, featuring species like bog pimpernel (*Anagallis tenella*) and marsh cinquefoil (*Comarum palustre*). I do still feel like Suffolk is missing out, though - I've haphazardly stumbled across some scarce plants in the Sandlings, and an organised group could find far more!



Botanists are intrepid explorers

Though my time down here has ended, I leave having seen more species than I had hoped for and odd memories that I'll laugh at for years, and for that I'm grateful to anyone who tried to teach me something useful. Special thanks to the core winter group - Jo, BobL, Mary, Suki and Tim - who persevered every week with their challenge of educating a botanical numpty only to see him run away when their job started getting easier! I owe my now-passable botanical knowledge to you.

Jake Brendish

'BEST NORFOLK PAVEMENT CRACKS': FAILED COMPETITION BUT FUN IDEA?

Jo and I cooked up the idea of a 'Best Gutter' competition after the NFG found a most unusual array of aliens and natives in Worlingham village's 'pavement environment' in March 2022. So we invited NFG members to submit info about pavement sites with **interesting, unusual, or significant taxa** found either while out NFG-recording, or elsewhere in Norfolk during 2022. We said that participants could include plants found in gutters, drains, and adjacent garden walls/banks as well as in pavement cracks; and could survey as many different discrete sites and revisit them as often as they liked to add fresh taxa.

As with previous unusual competition ideas (eg our 'Mean Streets' photo challenge), we had no immediate takers; and - to make matters even more unpromising - the NFG never visited any other suitable sites all season until our final official outing in late October. However, I still thought that this was a fun idea, and decided to carry on with it single-handed in the hope that others might be inspired to join me eventually. I therefore began a spread sheet comparing the Worlingham site with a non-NFG site I knew in Cromer - an unadopted cul-de-sac sporting a wide range of unusual pavement taxa, including many woody plants and herbaceous perennials surviving in this long-time un-herbiced road. Eventually, in late October, we found another suitable NFG site to join my spread sheet, in north-east Fakenham (light-industry and housing TF9330). And finally, Enid Barrie contributed a further fruitful site from Wymondham (Damgate St and Whitehorse St area).

We can therefore now present the **2022 Best Norfolk Pavement-Crack Site** spreadsheet for readers to assess. (NB because I visited my Cromer site several times, it's unfairly advantaged: any of the others might have come out as good if frequently resurveyed.)

Species		Worlingham	Cromer Holway Close	Fakenham TF9330	Wymondham
<i>Achillea filipendulina</i>	Fernleaf Yarrow	x			
<i>Alcea rosea</i>	Hollyhock				x
<i>Alchemilla mollis</i>	Soft Lady's-mantle		x		
<i>Allium schoenoprasum</i>	Chives	x	x		
<i>Allium triquetrum</i>	Three-cornered Garlic		x		
<i>Anthriscus caucalis</i>	Bur Chervil	x			
<i>Aquilegia vulgaris</i>	Columbine		x	x	x
<i>Aubretia deltoidea</i>	Aubretia		x	x	x
<i>Berberis darwinii</i>	Darwin's Barberry		x		
<i>Campanula persicifolia</i>	Peach-leaved Bellflower			x	
<i>Campanula portenschlagiana</i>	Wall Bellflower			x	
<i>Campanula poscharskyana</i>	Trailing Bellflower		x		
<i>Carex pendula</i>	Pendulous Sedge		x		
<i>Catapodium rigidum</i>	Fern-grass		x	x	
<i>Catapodium rigidum ssp majus</i>	Fern-grass		x		
<i>Centaurea debeauxii</i>	Slender Knapweed		x		
<i>Centaurea montana</i>	Perennial Cornflower	x	x		
<i>Chaenomeles agg</i>	Japanese Quince		x		
<i>Chelidonium majus</i>	Greater Celandine				x
<i>Clematis vitalba</i>	Traveller's-joy		x		
<i>Cordylone australis</i>	Cabbage-palm	x		x	
<i>Cotoneaster horizontalis</i>	Wall Cotoneaster		x		

Species		Worlingham	Cromer Holway Close	Fakenham TF9330	Wymondham
<i>Cyperus eragrostis</i>	Pale Galingale	x		x	
<i>Daucus carota</i>	Wild Carrot		x	x	
<i>Digitalis purpurea</i>	Foxglove				x
<i>Dipsacus fullonum</i>	Wild Teasel				x
<i>Erigeron karvinskianus</i>	Mexican Fleabane	x	x		x
<i>Erodium moschatum</i>	Musk Stork's-bill	x		x	
<i>Erysimum cheirii</i>	Wallflower	x	x	x	
<i>Ficaria verna</i>	Lesser Celandine	x			
<i>Fragaria vesca</i>	Wild Strawberry		x		
<i>Helleborus foetidus</i>	Stinking Hellebore	x			
<i>Heracleum sphondylium</i>	Hogweed		x		
<i>Hieracium scotostictum</i>	Dappled Hawkweed	x			
<i>Hypericum androsaemum</i>	Tutsan		x		
<i>Isotoma axillaris</i>	Australian Harebell				x
<i>Juncus bufonius</i>	Toad Rush		x		
<i>Juncus inflexus</i>	Hard Rush	x			
<i>Kerria japonica</i>	Kerria			x	
<i>Laburnum anagyroides</i>	Laburnum		x		
<i>Lamium amplexicaule</i>	Henbit Deadnettle	x		x	
<i>Lavandula angustifolia</i>	Garden Lavender	x			x
<i>Leycesteria formosa</i>	Himalayan Honeysuckle	x	x		
<i>Lonicera periclymenum</i>	Honeysuckle		x		
<i>Montia fontana</i>	Blinks	x			
<i>Muscari armeniacum</i>	Garden Grape Hyacinth		x	x	x
<i>Nemesia fruticans</i>	Nemesia			x	
<i>Nigella damascena</i>	Love-in-a-mist		x		
<i>Oenothera agg</i>	Evening Primrose				x
<i>Oreganum vulgare</i>	Wild Marjoram		x		
<i>Oxalis corniculata</i>	Procumbent Yellow-sorrel		x	x	
<i>Oxalis corniculata ssp atropurpurea</i>	Purple-leaved Procumbent Yellow-sorrel				x
<i>Papaver atlanticum</i>	Moroccan Poppy	x			
<i>Papaver setiferum</i>	Oriental Poppy		x		
<i>Polypody vulgare</i>	Common Polypody				x
<i>Polypogon viridis</i>	Water Bent				x
<i>Primula vulgaris</i>	Primrose		x		
<i>Prunella vulgaris</i>	Self-heal		x		
<i>Pseudofumaria lutea</i>	Yellow Corydalis				x
<i>Ranunculus bulbosus</i>	Bulbous Buttercup		x		
<i>Ribes sanguineum</i>	Flowering Currant		x		
<i>Rosa rugosa</i>	Japanese Rose		x		
<i>Salvia verbenaca</i>	Wild Clary				x
<i>Sambucus nigra</i>	Elder		x		
<i>Scorzoneroideis autumnalis</i>	Autumn Hawkbit		x		
<i>Sherardia arvensis</i>	Field Madder	x			
<i>Silene coronaria</i>	Rose Campion		x		
<i>Sisyrinchium striatum</i>	Pale Yellow-eyed-grass	x		x	
<i>Sonchus arvensis</i>	Perennial Sow-thistle		x		
<i>Sorbus aucuparia</i>	Rowan		x		
<i>Stellaria pallida</i>	Lesser Chickweed	x			
<i>Symphotrichum sp</i>	Michaelmas-daisy	x			
<i>Torilis nodosa</i>	Knotted Hedge-parsley	x		x	
<i>Tradescantia virginiana</i>	Spiderwort			x	
<i>Verbascum thapsus</i>	Great Mullein				x
<i>Viola odorata ssp dumetorum</i>	Sweet Violet	x			
<i>Viola odorata var prob. leucoium</i>	Sweet Violet white form		x		
<i>Viola odorata ssp odorata</i>	Sweet Violet	x			x
<i>Viola riviniana</i>	Common Dog-violet		x		
<i>Vulpia myuros</i>	Rat's-tail Fescue		x		

Some thoughts that occur following perusal of this sheet include the following.

- You never know what you might find in the pavement environment: *Allium schoenoprasum* Chives, *Juncus inflexus* Hard Rush, *Kernia japonica* Kerria, *Tradescantia virginiana* Spiderwort, *Isotoma axillaris* Australian Bellflower . . . all unexpected and unusual. Plus the last three are 'Adventives and Aliens'-worthy, and have been submitted to BSBI News.
- Taxa in this habitat which we've seen more of in recent years include *Agapanthus sp* African Lily, *Anemanthele lessoniana* Pheasant's Tail Grass, *Cerinthe major* Greater Honeywort, *Cordyline australis* Cabbage-palm, *Cotoneaster hjelmqvistii* Hjelmqvist's Cotoneaster, *C. suecicus* Swedish Cotoneaster, *Cyperus eragrostis* Pale Galingale, *Echium pininana* Giant Viper's-bugloss, *Nassella tenuifolia* Argentine Needle-grass, *Nemesia fruticans* Nemesia, *Nonea lutea* Yellow Monkswort, *Verbena bonariensis* Argentine Vervain. Presumably, this is very much to do with climate warming and the increasing number of taxa which didn't used to set viable seeds but do now, and self-seed (see my forthcoming article on this topic in BSBI News Spring 2023).
- Of some taxa we can ask: "Why don't we see them more often in pavement cracks?" *Ficaria verna* Lesser Celandine for example.
- Finally, it seems worth deliberately seeking out unherbicided unadopted roads for the chance of a range of unusual pavement-crack perennials, including woody ones.



Nemesia fruticans, Fakenham

Suki Pryce

Suki Pryce

A VISUAL KEY TO THE ELEOCHARIS SPECIES OF NORFOLK

Of the 7 species of spike-rush that feature in Stace Ed. 4, two (*E. mamillata* and *E. parvula*) can be discounted as possibilities in our region. *E. mamillata* (Northern Spike-rush) is restricted to Northern England and Scotland and is easily identified by its broadly conical, rather than cylindrical spikelet shape. *E. parvula* (Dwarf Spike-rush) is a tiny plant of estuarine habitats and is restricted to the south coast of England, north-west Wales, and an area around Londonderry; it can be separated by its green, rather than brown glumes.

The Norfolk species

Of the 5 species that might be encountered in Norfolk, *E. palustris* (Common Spike-rush) is by far the most frequent, occurring on marshes, and the margins of ponds, ditches and rivers. *E. uniglumis* (Slender Spike-rush) is associated with fens, marshes and dune slacks. *E. multicaulis* (Many-stalked Spike-rush) is scarcer and confined to more acidic habitats such as bog, wet heath or poor-fen. The two smallest species, *E. quinqueflora* (Few-flowered Spike-rush) and *E. acicularis* (Needle Spike-rush) are both very scarce in the county. *E. quinqueflora* has a broadly northern and western distribution in Britain and Ireland and is an occasional plant of marsh and fen. *E. acicularis* is more widely distributed, but has very different habitat preferences to the other spike-rushes, occurring on wet sand or mud as a 'draw-down' species at the edge of lakes, ponds, reservoirs or rivers. It can also colonise gravel pits, and is unusual in having a submerged form (see below). All of these habitats are difficult to access and it is probable that this species is under-recorded.

Common problems with identification characters

The Key has been developed to try to avoid the Stace character of whether only the lowest glume or the lowest two glumes, are empty. Most botanists, including myself, find it very difficult, and potentially misleading to use this character, not least because when an empty glume is encountered it may not be apparent whether the nut has already been shed.

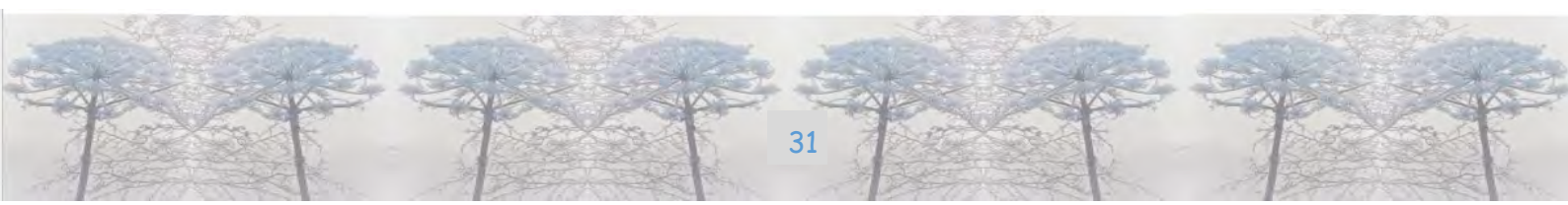
Similarly the number of stigmas (2 or 3) works for only a limited period at anthesis, and gives rise to much disagreement when used in the field. I feel that this character should be used only at home following examination of 5-10 fertile glumes with a microscope, and in the knowledge that the tip of a stigma may break off, so that a specimen with 3 stigmas may appear to only have 2. Conversely, in species with 2 stigmas, it is common to see under the microscope a stigma emerging from beneath the tip of a neighbouring glume so as to give the impression of a plant bearing 3 stigmas.

Habit

The degree of tufting is an unreliable feature, except in the case of *E. multicaulis*, which is nearly always densely tufted. *E. acicularis* is unique in having an underwater form in which the stems become greatly elongated and fail to produce spikelets.

Height of the flowering stem

The flowering stem height is very variable and likely to be misleading, except as a spotting feature for possible 'non-palustris' spike-rushes.



Length and width of spikelets

All species can have spikelets as short as 5mm in depauperate populations and so the minimum length is of limited value in reaching an ID; conversely the maximum spikelet length in a population is a useful character.

Number of flowers and glumes

This feature varies considerably, along with the size of the spikelet, and so is of limited usefulness.

Floral characters

Features such as perianth bristles, the shape of the base of the style and anther length are only discernible for a brief period of time and so of limited usefulness.

Degree to which the lowest glume encircles the spikelet

This character is a major source of confusion and it is important to remember that the lowest glume more or less encircles the base of the spikelet in all of the Norfolk species with the exception of *E. palustris* (and even in that species it may encircle up to $\frac{3}{4}$ the diameter of the base).

The shape of the nut

The nut shape (3-angled or biconvex) may be a useful character, but it may not be easy to obtain fruits, presumably because they are quickly shed, unlike in taxa such as *Luzula* and *Polygonum*, where vigorous rubbing is nearly always successful.

Collecting material

The angle of the upper sheath apex is so crucial that specimens consisting of just the stem apex and spikelet are useless - the upper sheath apex is always on the lower few centimetres of the stem, and samples should therefore be taken at ground level. Also, variability in the other ID characters is so great that one should always take c5 stems, selecting, if possible, specimens that still display their stigmas. If you are sure that a population with a gradation of heights consists of only one species, take the tallest stems with the longest spikelets.

The Key

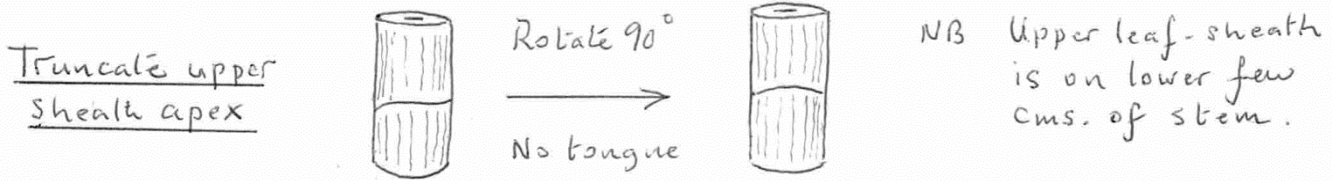
The Key is designed to be used in the field to enable a decision to be made as to which specimens should be taken home for further examination, preferably with a microscope. If the specimens are at anthesis or in fruit, the standard 'empty glume' flora and fruit characters can also be used, but these require careful dissection. Attempts to dissect spikelets in the field are likely to be misleading.

The main ID characters can be obtained using a good millimetre ruler and a 10x lens; mainly maximum spikelet length, stem width, stem cross-section shape and the shape of the 'tongue' on oblique sheaths. The tongue character can be found by rotating the stem by 90° and seems not to have been described before. As shown in the drawings, though, it is very helpful. The key makes an immediate distinction (Couplet 1) between 2 groups that have: either a truncate, more or less horizontal apex to the uppermost leaf sheath, lacking a tongue (*E. palustris* and *E. uniglumis*); or an oblique apex with a tongue that is either short with an obtuse-rounded tip (*E. acicularis* and *E. quinqueflora*), or long, and with an acute-acuminate tip (*E. multicaulis*). The two species groups are then separated by spikelet characters.

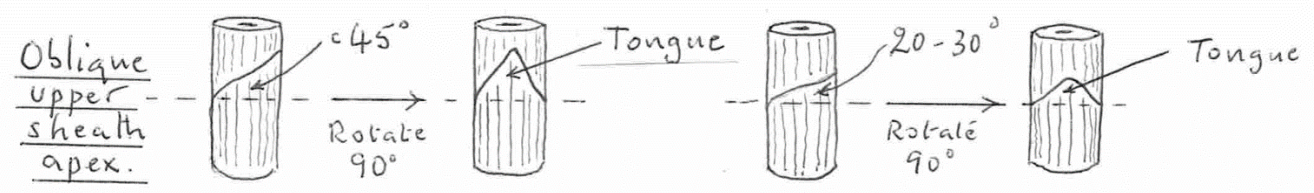


The Visual Key

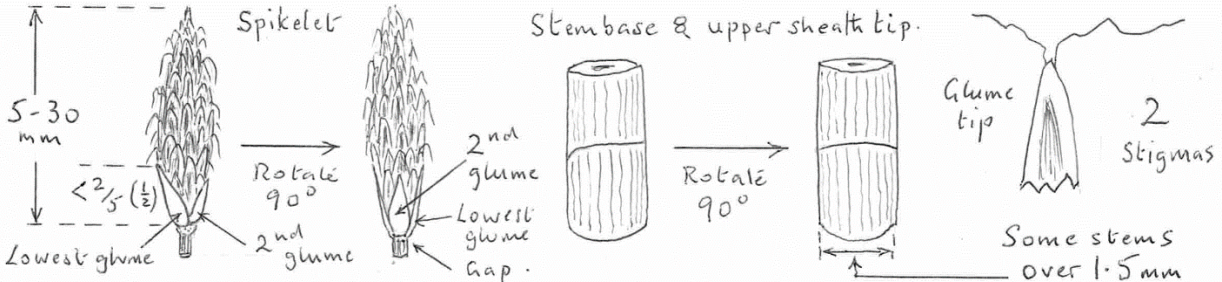
1. Uppermost stem leaf-sheath apex truncate (i.e. ± horizontal), without a 'tongue' when rotated 90°. **2.**



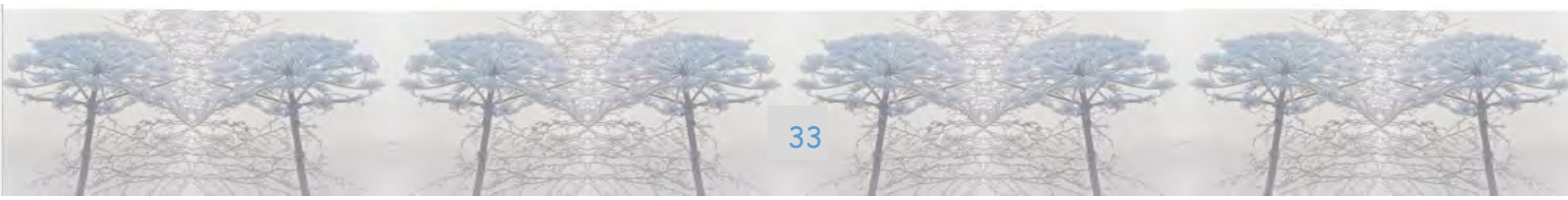
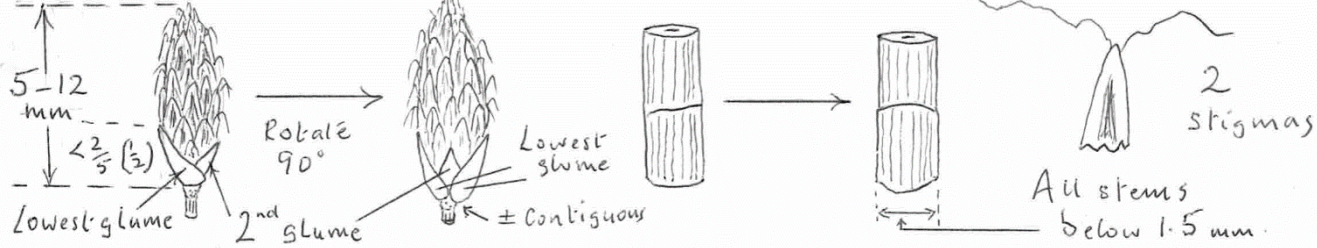
1. Uppermost stem leaf-sheath apex either very obliquely-angled (c45°), with acute-tipped 'tongue' when rotated 90°; OR slightly oblique (20-30°) with obtuse to rounded- 'tongue'. **3.**



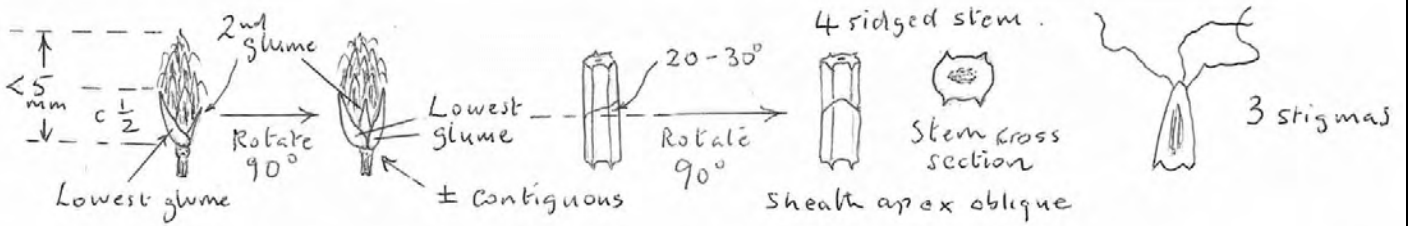
2. Usually tall, with very large spikelets (some >12mm long), and dull, broad stems (usually some >1.5mm diameter); 2 basal glumes sub-equal, each ± half-encircling the base of the spikelet. Lowest glume < 2/5 (up to 1/2) length of spikelet. **E. palustris**



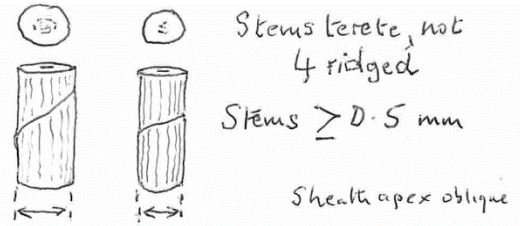
2. Usually fairly tall, with medium-large spikelets (<12mm long), and fairly broad stems (<1.5mm), which are usually shiny (when not muddy); lowest glume ± encircling the base of the spikelet and < 2/5 (up to 1/2) length of spikelet. **E. uniglumis**



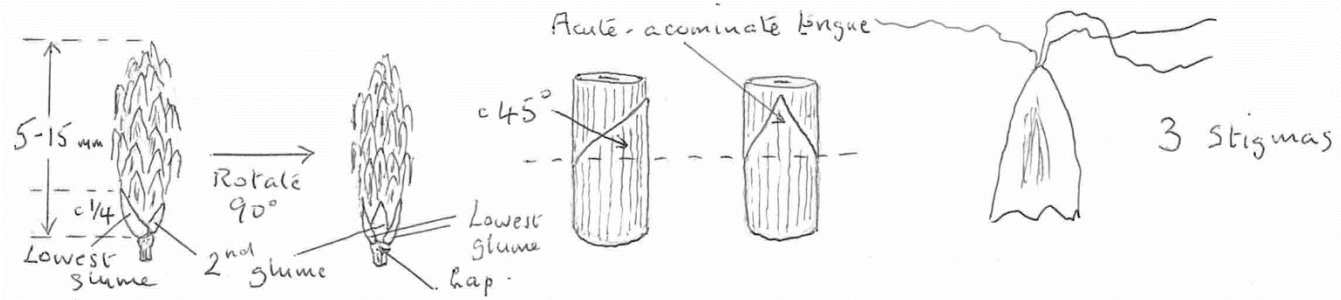
3. Usually <10cm tall with 4-ridged, very fine stems (<0.4mm diameter); spikelets tiny (usually ≤5mm), lowest glumes c1/2 as long as spikelet and ± encircling base. **E. acicularis**



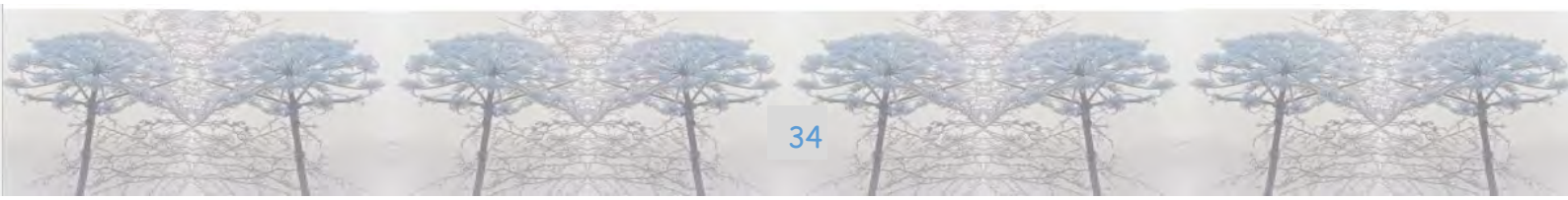
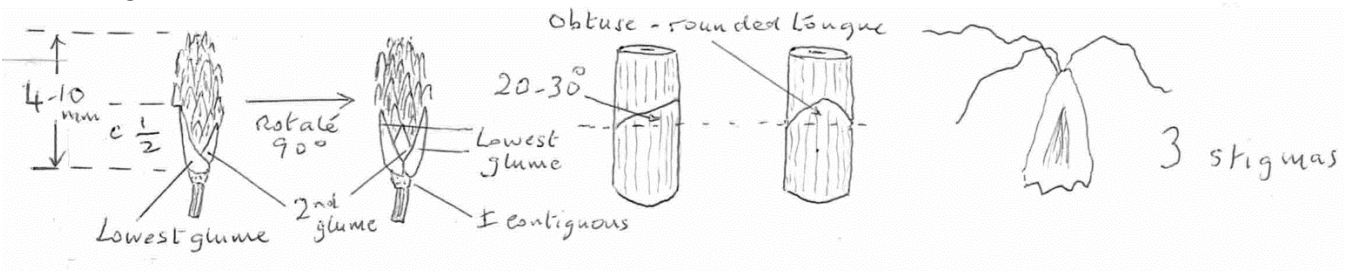
4. Usually >10cm tall; stems $\geq 0.5\text{cm}$ diameter, rounded; spikelets over 5mm long. **4.**



4. Usually densely tufted, upper leaf sheath apex very oblique (c45°), with acute-acuminate 'tongue'; lowest glume c1/4 length of spikelet and not fully encircling base. Spikelets 5-15mm long. **E. multicaulis**



4. Usually loosely tufted; upper stem sheath slightly oblique (20-30°) with obtuse 'tongue'. Lowest glume usually c1/2 length of spikelet and fully encircling the base. Spikelets 4-10mm long. **E. quinqueflora**



Acknowledgements

This Key is the result of numerous discussions with Norfolk Flora Group members whilst attempting to identify Spike-rushes in the field, and further examination of many specimens taken home after field meetings. Stem width measurements are taken from Sell & Murrell (1996); other measurements and characters mainly from Stace (2019). The 'CTW' illustrations (1965) and the illustrations in Haslam, Sinker and Wolseley's British Water Plants (1975) also have excellent whole-plant drawings, which are very useful.

I would also like to thank Jo, who advises me that she suffered terribly in her attempts to read my handwriting. There is no amount of beer that might repay my debt to her.

Bob Leaney

NORFOLK FLORA GROUP PUB OF THE YEAR, 2022

... and leading nicely on, it's time to reveal the NFG Pub of the Year for 2022. We managed a nearly clean sweep of our planned pub outings, with only a couple of misses due to closures, extreme heat etc.

We once again scored pubs on a total of 10 categories, with a maximum score of 5 and a minimum score of 0 available for each. The total was divided by the number of categories which we were able to score (not everyone needed to go the toilet and a pandemic is not the time to force them to go against their will). The categories for 2022 also included outdoor shelters (very handy from both a COVID-safety point of view and also to avoid beer becoming diluted by rainwater).

I have taken the difficult decision not to score Lynn's house or Tim's garden, as I'd be hard-pressed to choose which was best (...but Lynn's bacon and cheese twists might just sway me).

In third place, we have the [The Old Windmill, at Gt Cressingham](#).

In second place, we have the [The Three Horseshoes, Warham](#).

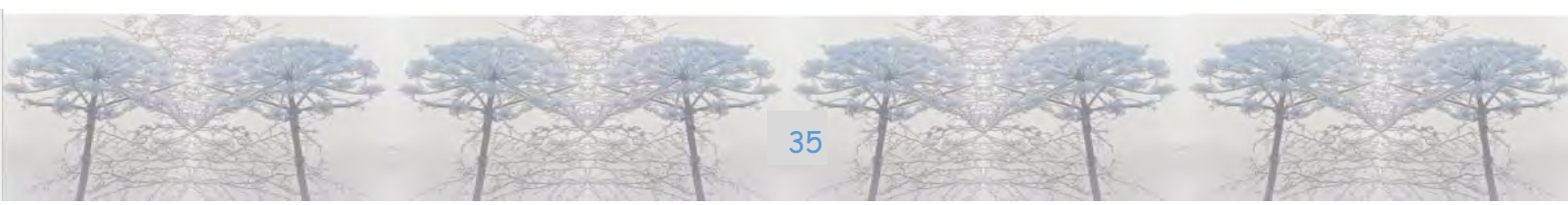
In first place, the winner of the NFG Pub of the Year Award for 2022 is ...

******* [THE Gunton Arms, Gunton](#) *******

The Red Hart in Bodham gets a special mention for super-friendly staff.

Thank you all for taking part and to the various pubs for making us so welcome.

Jo Parmenter

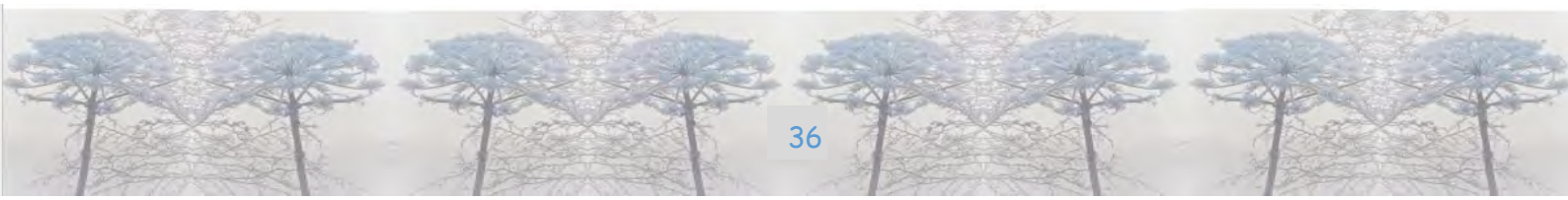


NORFOLK FLORA GROUP CROSSWORD 2023

Sedge Warbler has Tweeted his latest crossword, a clue at a time, all the way from sub-Saharan Africa, from his perch in a tree which was handily located next to the local internet café. 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														



THE CLUES.....

Across

6. Daisy's change to reconsider zoos (14)
9. Stan in a hedge (6)
10. Yellow upland flower (8)
11. Two chaps together make up this member of the Solanaceae family (8)
13. Quite like *Taxus baccata* (6)
15. Stung into action by this plant? (6)
17. Bugs' favourite food (6)
19. Gardener's second home (4)
20. Esteemed woodland and countryside ecologist (7)
22. Programme planner hiding amongst the dune grass, giving up an aromatic herb (8)
24. Three for a strawberry (6)
26. Common stinky wayside plant (5,9)

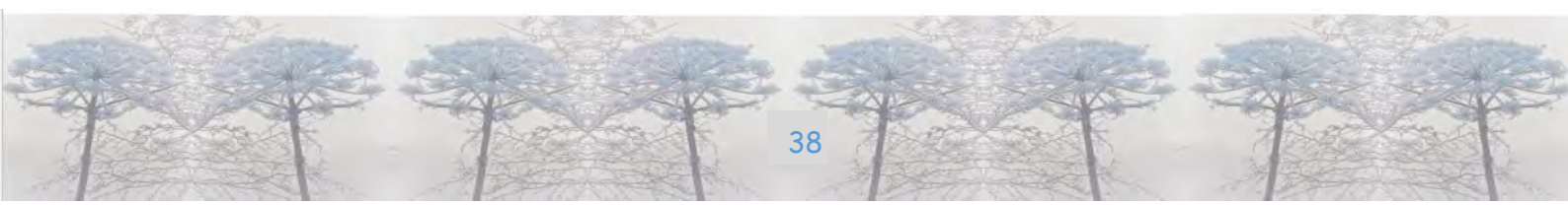
Down

1. Well-armed, ferny-looking vegetable (9)
2. Dock in Sculthorpe? (4)
3. Confused Lola follows alphabetic extremes for this water plant (6)
4. Common perennial climber (6)
5. Not a big thing in Norfolk (4)
7. Spice is a rising diamond barrel (6)
8. Plant from Trigger's nether regions (9)
12. Where botanists love to be, wet or dry (5)
14. Find value in yarrow or *thlaspi* (5)
16. Tree raced uncertainly (5)
18. 'Gem of the North Norfolk Coast' found in velcro mericarps (6)
21. Not a million miles from 10 across to reach this watery beauty (6)
23. He may go to bed at noon, or be by the hedge (4)
25. This tuberous, triangular-leaved plant occurs on the 10th and 9th days of Christmas (4)

ANSWERS TO THE PREVIOUS NORFOLK FLORA GROUP NEWS CROSSWORD

	1		2		3			4		5								
	O		C		S			G		H								
	6						7					8						
	S	I	L	E	N	E	V	U	L	G	A	R	I	S				
	M		A		E		U		A		L		R					
9	Q	U	I	N	C	E		10	L	A	D	Y	F	E	R	N		
	N				Z		P		I				A					
11	E	D	I	12	B	L	E		I		13	O	R	14	N	A	T	E
	A		I					A		L		I		I				
	15	R	O	O	T	E	D		17	G	I	N	G	K	O			
	E		M		N								H		N			
18	A	G	R	E	E	D		19	B	E	D	S	T	R	A	W		
	A					Y		R		A					L			
21	A	L	L	I	U	M				22	I	N	23	U	L	I	N	
	I					I		Z		S			L		S			
24	A	S	H				25	O	V	A	R	Y		26	E	L	M	
							N							X		S		

Sedge Warbler



..... LOOKING FORWARD TO THE 2023 FIELD SEASON

Blooming Bressingham - Suki Pryce and Sam Brown have together sorted out access to some of the meadows, wet woodland and garden areas.

Brilliant Brambles - This year's bramble workshop will be held at Wayland Wood NWT Reserve and Merton (the event had to be cancelled in 2022, unfortunately).

Delightful Dandelions - Alex Prendergast has offered to run 2 workshops, one at Thompson Common and the other at Catfield Hall Fen. It will be interesting to compare the flora of these two groundwater-fed sites.

Dickleburgh Moor - Both Chris Romer and Alex Prendergast have suggested we visit, so the site comes very highly recommended!

Eves Hill Farm and Reepham Common CWS - Joe Harkness has kindly arranged access to these sites for us.

Fun at Fairhaven - we will have a wander about in the wet woodland and water gardens.

Gt Cressingham Fen - we are planning a second visit to this wonderful site in 2023.

Hunstanton Estate - courtesy of the charming Charles le Strange

Lynford lolloping - Our lovely VC28 Recorder Richard Carter is leading a spring excursion trip to Lynford Arboretum and environs for beginners and improvers.

Lingering over *Limoniums* - Our visit to Burnham to look at *Limoniums* in 2022 was cancelled due to extreme heat, so we'll give it another go!

Poplar Pitfalls - Mike Crewe has kindly offered to run a workshop to look at these tricky taxa.

Scintillating Samphire - We will visit some of the salt marshes along the North Norfolk coast, not once but twice this year, with a second seaside workshop on *Salicornia*, which Fred Rumsey has nobly offered to lead.

Scolt Head Island - Alex Prendergast and Baz Scampion will make sure we don't become stranded nor irretrievably stuck in deep mud.

West Acre Estate - our third visit to a landholding that never fails to turn up some extraordinary plant finds.

Wild Ken Hill - Carl Chapman has offered to lead us around some of the woodland to look for spring flora.

Wildflowers Revealed - This year, BobL will reveal some interesting things in and around Blickling Park and the River Bure. The day will include a 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.

Wiveton Hall - BobL has arranged for us to have a look at some of the arable land and woodland on this North Norfolk Estate (rearranged from 2022).

Jo