

## Norfolk Flora Group News - Winter Newsletter 2020-21

### Welcome to the NFG Winter Newsletter !

**Issue 6** ... Unfortunately we have a slightly depleted edition this winter as botanical experiences last year were sadly reduced due to the COVID pandemic; and there was of course, no opportunity to visit our wonderful Norfolk pubs for the 2020 Pub of the Year awards. However, we have put a few bits and pieces together for your amusement, including a new section on exciting plant finds of 2020, which I think I would like to repeat in every issue, if you would be so kind as to send me your records.

Contributors to this edition are Marilyn Abdulla, Richard Carter, Arthur Copping, Tim Doncaster, Mary Ghullam, Janet Higgins, Bob Leaney, David Lester, Mike Padfield, Suki Pryce, Carl Sayer, Ian Woodward, and myself, and, of course, our feathered friend, the Sedge Warbler.



Winter Mistletoe

Jo Parmenter

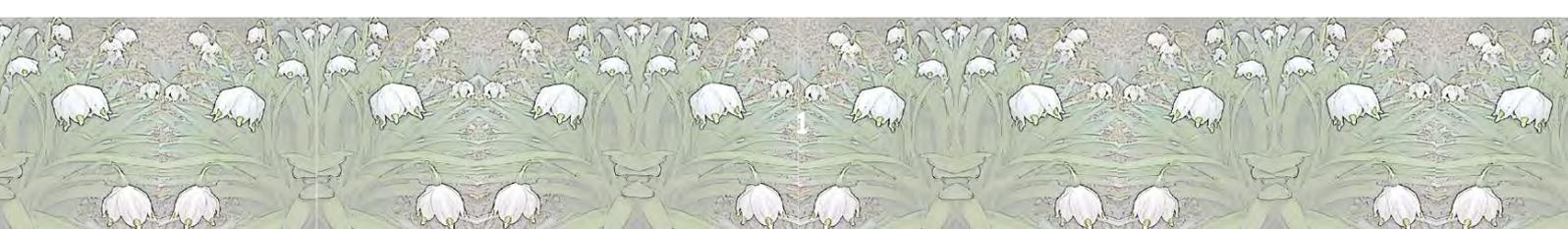
Feedback on the content of NFG News would, as always, be very welcome - and please do feel free to send me your articles and snippets of botanical news for inclusion in future editions

### Botanising in 2021

At the time of writing, the plan is to try to hold the events we had lined up for the latter part of 2020 in 2021 instead, possibly starting in July. A pre-requisite will have to be that Government rules allow us to meet in groups of more than 6, and so far that seems to be on the cards, but these are strange times.

### 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.



### NORFOLK PLANT NEWS

This is something of a new initiative, but I thought it would be a nice idea to celebrate some of the exciting plant finds of the year, because although none of us have been very far, there have been some surprises ..... JP

#### **Pedunculate Club-rush *Bolboschoenus laticarpus***

The first record of the Nationally Scarce 'inland' Club-rush *Bolboschoenus laticarpus* has been confirmed for Norfolk on Beeston Common SAC and SSSI.

A small clump of club-rush had been known since 2006 on the margin of a pond at Beeston Common, but until recently, *B. laticarpus* was not thought to occur in the UK, and so the plant was assumed to be Sea Club-rush *Bolboschoenus maritimus*. Marilyn Abdulla observed the club-rush in June 2020 and queried it as possible *B. laticarpus*. Local botanist Mike Padfield collected samples in early September 2020 and identified it as *B. laticarpus*, using guidance in an article in BSBI Volume 1 of British & Irish Botany (Rumsey et al., 2019). Ripe nutlet samples were subsequently sent to Fred Rumsey, who confirmed it as this species.



*Bolboschoenus laticarpus*

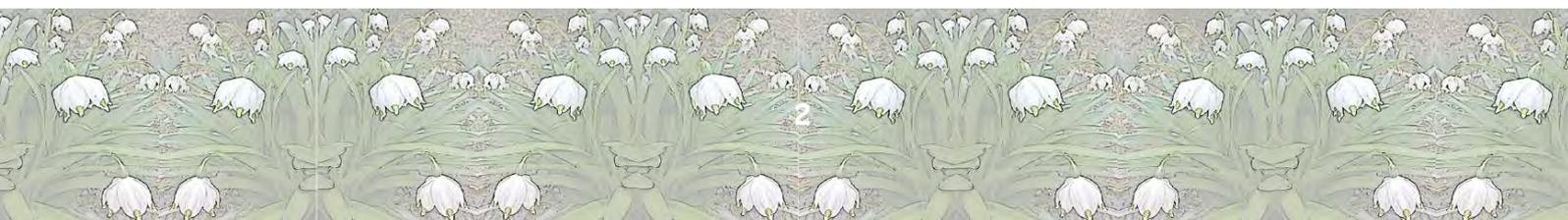
Marilyn Abdulla

*Bolboschoenus laticarpus* habitat

Mike Padfield

#### **Mike Padfield & Marilyn Abdulla**

F.J. Rumsey, H.J. Crouch, R.V. Lansdown, M.A. Spencer (2019) Pedunculate Club-rush *Bolboschoenus laticarpus* (Cyperaceae) – an overlooked native or a spreading neophyte? In BSBI Volume 1 of *British & Irish Botany* Issue 2 May 2019.



### Grass-poly *Lythrum hyssopifolia*

In early July 2020, The Norfolk Ponds Project Team, led by Carl Sayer were surveying along the high-water mark of the recently restored Dairy Farm Pond at Heydon, work on which had been funded by the Natural England Great Crested Newt District Level Licensing Scheme. In amongst a new 'meadow' of *Agrostis stolonifera* and *Rorippa palustris*, they encountered a plant that was not immediately recognised, and so Carl sent a photograph to Jo Parmenter. Six plants of Grass-poly *Lythrum hyssopifolia* L., the first confirmed record for the county in over a century, were thus discovered.

*Lythrum hyssopifolia* is a highly specialised, and very rare, archaeophyte and is protected by Schedule 8 of the Wildlife and Countryside Act. Norfolk records of *L. hyssopifolia* are few in number. The BSBI database (DDB) shows that there have only ever been 4-5 records made of the plant in the county. The most recent, from a ditch survey of Cantley/Limpenhoe Marshes is likely to be erroneous; the habitat isn't very suitable for it, and those involved in surveying and researching Broads ditch systems both during this period and since are unaware of it (pers. comm. Margaret Palmer and Rob Driscoll). Earlier DDB records for the species, and which are considered to be correct, are from Brumstead, in north-east Norfolk in 1906, Watton, in central Norfolk in 1913, and from Heigham near Norwich prior to 1911 (likely pre-1901 and thus the first for the county).

For more information, see the recently published article in BSBI News.



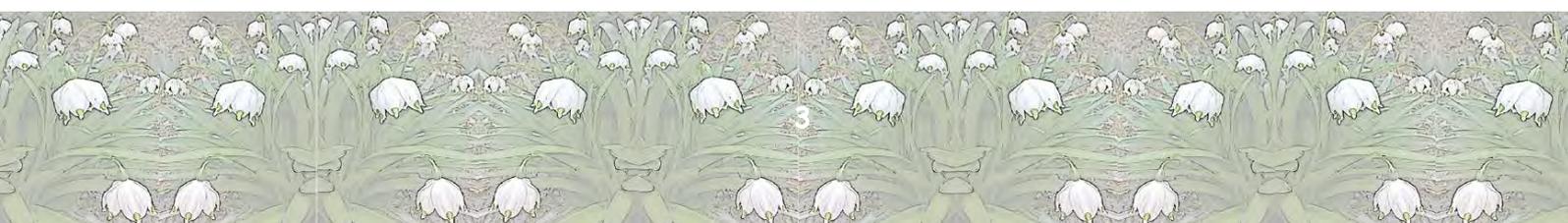
*Lythrum hyssopifolia*



Rob Peacock

### Carl Sayer & Jo Parmenter

Sayer, C. & Parmenter, J. 2021 Resurrection of a Norfolk pond gem: Grass-poly *Lythrum hyssopifolia*. *BSBI News* **146**, pp 11-14.



I wanted to include this one, because although technically in VC26 West Suffolk, politically-speaking it is in Norfolk. Tenuous, I know! JP

### Creeping Marshwort *Helosciadium repens*

In late June 2020, a member of a conservation volunteer group in Thetford noticed a strange umbellifer in a newly created wild flower meadow area at Nuns Bridges, Thetford. After the Breckland Flora Group were informed, Ian Woodward visited the site and the plant was later confirmed to be Creeping Marshwort *Helosciadium repens*. This extremely rare plant is protected by Schedule 8 of the Wildlife and Countryside Act and was known at the time of its discovery to be extant as a native at only one site in Oxfordshire, although it was also rediscovered in 2020 at another site in Essex where it had not been seen for 11 years. It prefers habitat where seasonal flooding occurs and helps reduce competition from other plants. The site where it was found had been dug out in autumn 2019 to create a banked meadow area, but left to see what would come up naturally, rather than sowing wild flower seed. It is believed that the marshwort seeds must have been present in the soil seed bank and that the overwinter flooding in 2019/20 created ideal conditions for it.

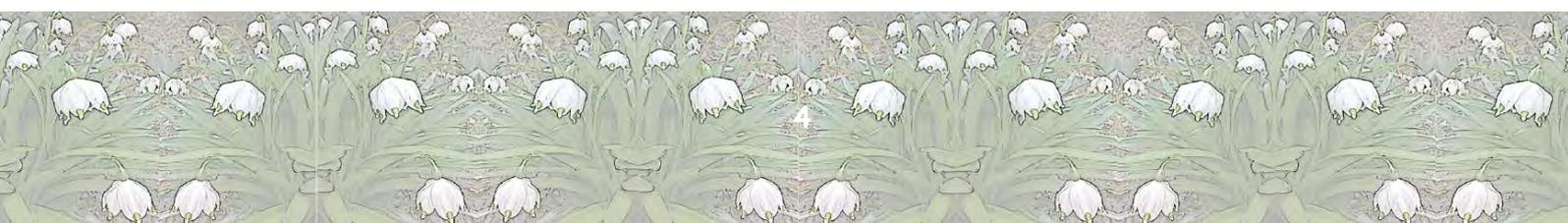
Whilst it is within the current Norfolk county boundary, the Nuns Bridges site is approximately 50 metres outside West Norfolk vice-county (in West Suffolk VC) and therefore just outside the Norfolk Flora Group's area. There are no previous records of *Helosciadium repens* close to Thetford, and a previous possible Norfolk record based upon a herbarium specimen is considered to be a misidentification. However, given the completely unexpected appearance of the species in Thetford it might be worth searching any suitable habitat elsewhere in the Little Ouse catchment area on both the Norfolk and Suffolk sides of the river. For more information, there will be an article in the January issue of BSBI News.



*Helosciadium nodiflorum* Jo Parmenter

**Ian Woodward**

McDonald A.W., & Lambrick, C.R. 2006. *Apium repens* creeping marshwort. Species Recovery Programme 1995-2005. English Nature Research Reports, No 706



### A mystery grass: Persian Meadow-grass *Eremopoa persica*

One plant of a mystery grass species was found in December 2020 growing on part of the medieval town wall of Gt Yarmouth, close to the quayside, by the authors, and after all attempts to identify it failed, the specimen was sent to the referee for alien grasses, Oli Pescott.

The general morphology suggested an *Eragrostis*, although our plant lacked the fringe of hairs which replaces the ligule in many members of this genus, and there are some other unusual features: Oli observed that our specimen has long anthers at ~1.4mm, and this rules out the common annual species listed in Cope and Gray and seems to be atypical for the genus. Initially too, our specimen seemed to have 2 anthers, a very unusual feature in *Eragrostis*.

Oli then started to key the plant out 'from scratch' using the genus key in the 1<sup>st</sup> ed. of *Genera Graminum*: it keyed to *Eremopoa*, and thence to *Poa persica* (*Eremopoa persica*). Indeed, the plant keys to *Poa persica* subsp. *persica* in a recent treatment of the group (most of which seem to be rare endemics of the Eastern Med.).

The issue with there being only 2 anthers was eventually resolved by dissecting a number of other florets, which showed that, in fact, the ones first looked at with two anthers were not the only type, and there were others with three (so, some florets had undeveloped anthers, which Oli noted is not uncommon in *Poa*).

*Eremopoa* is distinguished from *Poa* on the basis of the panicle branches being whorled (not usually whorled in *Poa*, at least on a global basis), and the lemmas being lanceolate to narrowly oblong in side view (as opposed to ovate in *Poa*), the last of which accounts for the superficial similarity to *Eragrostis*. *Eremopoa* is illustrated in Ryves *et al.* *Alien Grasses of the British Isles*, but does not appear in Stace ed. 4.

*Eremopoa persica* has previously been recorded in the UK, although it does not appear in the BSBI's database; previous records are from Leith Docks, two locations close to the River Avon near Bristol and from Galashiels in the Scottish Borders. The first record was from 1906 and the most recent dates from 1961. Our Gt Yarmouth record is therefore the first for nearly 60 years, and the first for Norfolk, although as it's a rather unassuming little grass, it is possible that it may have previously been overlooked.

Ryves notes an association with wasteland and docks (the place seafaring types hang out, not the plant). Could it have persisted in the area around Yarmouth Quayside, or is it a new arrival? It has not been refound at any of the other recorded sites, and the most likely scenario is that has arrived here quite recently as a contaminant of birdseed. Around half of the world's production of sunflower, which is a very common component of birdseed mixtures, is grown in the Ukraine and Russia, within the native range of *Eremopoa persica*.

### Jo Parmenter & Bob Leaney

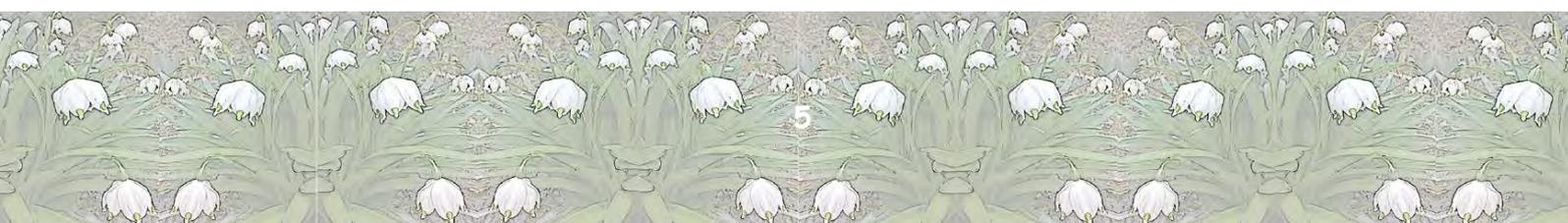
Clayton, W.D. & Renvoize, S.A. 1986 *Genera Graminum: Grasses of the World*. Kew: Royal Botanic Gardens.

Cope, T. & Gray, A. 2009 *Grasses of the British Isles*. BSBI Handbook No. 13. London: Botanical Society of Britain and Ireland.

Portal, R., & Duhem, B. 2002 *Eragrostis de France et de l'Europe Occidentale*. Vals-près-le-Puy: Portal.

Ryves, T.B., Clement, E.J., & Foster, M.C. 1996 *Alien Grasses of the British Isles*. London: Botanical Society of Britain and Ireland.

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



## ALLIUM PARADOXUM

When I first found Few-flowered Garlic (*Allium paradoxum*) it was in the early 1990's, before the publication of Stace's first flora (Stace 1991). The taxon did not feature in any of the generally available illustrations (e.g. Stella Ross-Craig, 1972; Clapham, Tutin & Warburg, 1965) and in the text of my "CTW" it had only a minimal small print entry. Partly because it seemed to have too many flowers, but mainly on the always suspect grounds of "what else could it be", I sent in the record as *Allium triquetrum*, a generally much better known alien, but one that I now know struggles to survive in the wild in our region, seldom if ever forming large patches like the ones I reported. The then V.C. recorder gently suggested that it might be *A. paradoxum*, which has since become a very frequent plant in the N. E. part of Norfolk, and especially in the Broads area (Beckett & Bull, 1999; Preston *et al.* 2002).

The first population I found was round the corner from my house, growing typically in shade and in thick leaf mould. There were no associates at all save for *Pentaglottis sempervirens* (Alkanet), another alien which often colonises this otherwise almost empty niche. This population has increased enormously over the last 25 years, producing dozens of dense patches c. 2 - 10 metres long, over a total distance of c. 200 metres of road verge.

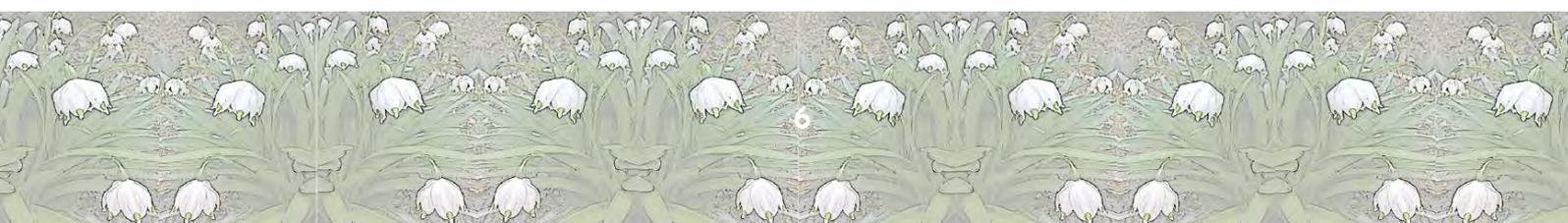
Passing them so frequently, I have slowly realised that only about two thirds of the plants have bulbils only, or bulbils plus 1 - 3 (4) flowers, as in the standard descriptions (Clapham, Tutin & Warburg, 1962; Sell & Murrell 1996, Stace, 2010), around a third or so of the plants in long standing and large patches appearing to have 5-8 flowers.

On closer examination these "excess flowers" are found to be not true flowers at all, but what one could call secondary umbels. Whereas the true flowers are bright white with a broadly elliptical outline the flower-like secondary umbels are flask shaped, with a bulbous base rapidly attenuated into a narrow curved neck, the apparent perianth consisting, not of opaque white petals, but of translucent buff coloured bracts much like the bracts subtending the primary umbel, but smaller. The bulbous base of the fused bracts contain only 1 - 3 bulbils, whereas the primary umbels have 3 - 8 (11) bulbils.

Secondary umbels often have long stalks much the same length as those of the flowers, which means that they can be taken at a glance as being flowers. However, they can also be short stalked or completely sessile - in the latter case the one to several bulbils they contain sit among the bulbils of the primary umbel and are only distinguishable as constituting secondary umbels because they have their own flask shaped set of bracts surrounding them.

The illustrations in the BSBI Illustrations of Alien Plants (Clement *et al.* 2005 ) and in the standard German flora (Rothmaler, 2009), both show secondary umbels with long stalks, but these have not, to my knowledge, actually been described before.

Over the last 5 years I have drawn lots of sketches of plants from this population and from several other populations, to define the extremes of variation in floral structure. I have found that the secondary umbel may produce not just bulbils but also 1-2 stalked "tertiary umbels" of 1-3 bulbils, a stalked "secondary flower", or even, occasionally, one of each! Extremely tall plants can produce up to 7 secondary umbels and one flower, or 2 or 3 flowers plus up to 3 sessile secondary umbels.



At the other extreme, small plants which appear to have only an umbel of bulbils [for some reason, the phrase 'bumble of umbils' popped into my head and now it won't go away! JP] frequently have one or more sessile secondary umbels mixed in with the bulbils, as already described. The extremes of floral variation discovered thus far are shown in the illustrations.

The number of bracts surrounding the primary umbel is also very variable and at variance with standard descriptions. Most frequently there are three, very narrowly triangular bracts, with two of them very close together at the base, but very often there are two bracts, one narrow and the other broad and often partially split into two. Occasionally there is only one very broad bract, very occasionally four, all narrow.

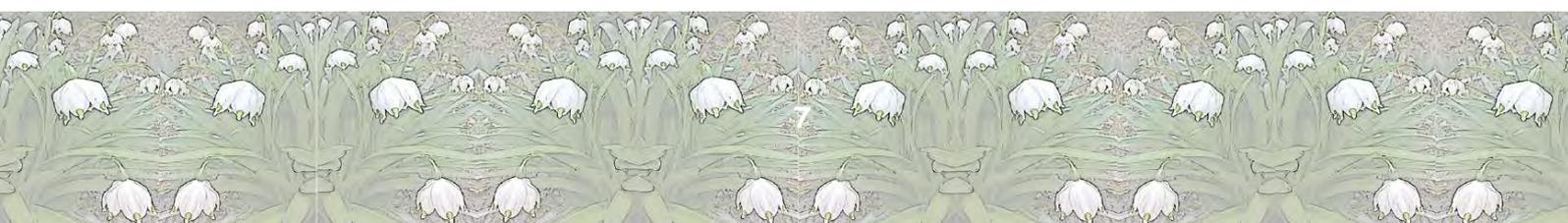
Despite hardly understanding even Mendelian genetics, I feel that this remarkably chaotic pattern of variation must be an example of extreme phenotypic plasticity - that is an unusually varied expression of a single genotype, induced either by different conditions of soil or microclimate, or usually just associated with vigour of growth as the plants become older and taller.

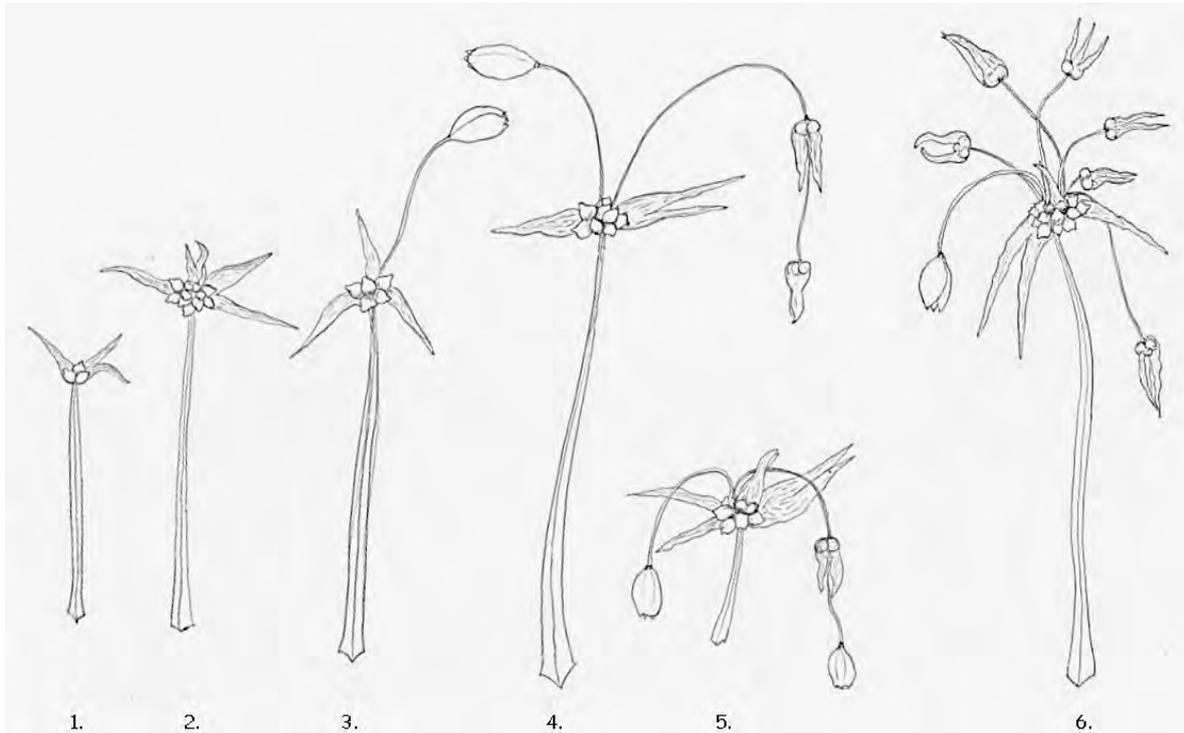
The enormous patches of plants produced after a decade or two and consisting of separate, one bulbous plants a few centimetres apart, must be clonal and entirely the result of vegetative reproduction from the bulbils, which fall off and roll only a very short distance. If one looks at the patch in late winter by scraping away the leaf mould, all one finds are the bulbils attached tenuously to the ground by their first roots, with no seedlings growing in between. I have never seen any fruits developing from the flowers, which are extremely short lived, disappearing completely along with all the leaves by mid summer.

During flowering around May, it is striking that the oldest and tallest plants in the centre of each patch are the ones with the most floral parts, with up to 11 bulbils, 3 primary flowers and 7 secondary umbels, some of these producing some secondary flowers or tertiary umbels, as described. The youngest and shortest plants at the edge of the patch almost always have only bulbils (usually 2-5), or bulbils with 1-2 sessile secondary umbels, and struggling clonal patches, present some time but with all short plants, the same. These observations would seem to indicate that the unusual variations in number and type of floral parts in this taxon is an expression mainly of vigour of growth.

Once one is aware of the existence of secondary umbels, and don't mistake them for flowers, there should be no problem with identification. For such an undisciplined plant there does seem to be a strict limit on the number of true flowers produced, for whether the flowers are produced from the primary or secondary umbel, or both, there "never" seems to be more than 3, which does fit the standard keys and descriptions.

It may be that the 2<sup>0</sup> umbels, 2<sup>0</sup> flowers, and 3<sup>0</sup> umbels are unique to *A. paradoxum*, and, at least in the *Allium* taxa encountered in the British Isles, these features would seem to be diagnostic. Other characters of *A. paradoxum* little remarked upon, and also more or less unique, are the fact that it is one leaved and that the leaves are a very beautiful deep, lustrous green, unlike most of the genus which tend to be rather greyish green in colour. It is also a very nice salad plant with a very pleasant rich taste, a sort of mixture of onion and garlic.





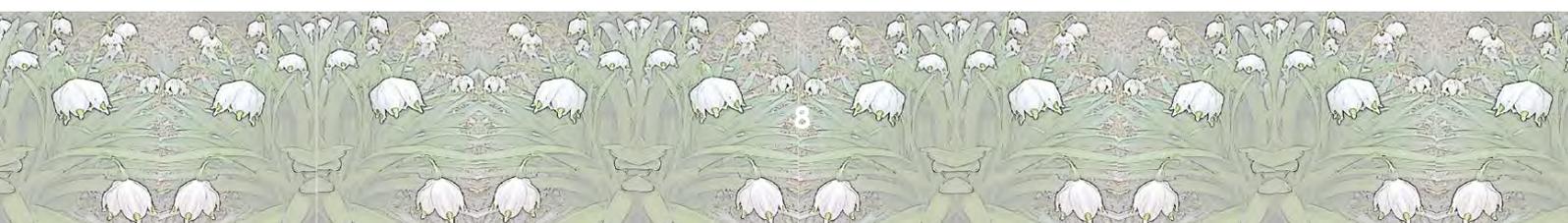
1. Short, young or depauperate plants with a primary umbel of 3 bulbils
2. Short, young or depauperate plants with a primary umbel of 9 bulbils and a sessile secondary umbel of 2 bulbils
3. A taller, older or better-grown plant with a primary umbel of 5 bulbils and 1 primary flower
4. A tall plant with a primary umbel of 8 bulbils and 1 primary flower, and a secondary umbel producing a tertiary umbel
5. A similar tall plant, but with the secondary umbel providing a secondary flower rather than a tertiary umbel
6. A very tall plant with a primary umbel of 11 bulbils, a sessile secondary umbel, 1 flower and 6 long-stalked secondary umbels

All drawings are taken from specimens found on the road verge of The Avenues, Wroxham

*Allium paradoxum* is a fascinating plant. There can be few taxa exhibiting such enormous variation in flowering structure in a single clonal patch, in vivid contrast to say, the vast clonal patch of a reed bed, where the individual plants of *Phragmites australis* all look more or less alike. The genetics of this extreme phenotypic plasticity could well repay study and could conceivably be of use in crop breeding, giving enhanced ability to respond to nutrient input.

### Bob Leaney

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Many of us have done a spot of solitary botanising this year, or ventured out in pairs or small groups when permitted. Suki and Mary have been out and about a fair bit in their local patch **JP**

## INFORMAL PLANT SURVEYING 2020

In March 2020 I moved to North Walsham, and the circumstances of this unusual year encouraged me to explore locally, and record sites more widely, than I probably wouldn't have, if a full NFG programme had been in place. Fortuitously, my new home is just round the corner from Mary Ghullam, and she has been a mainstay of support - helping me with IDs, partnering me in surveying many sites, and helping with write-ups. Tim Doncaster and Mike Padfield have also been of great help. This article describes some of what we found in 2020, roughly in the chronological order of starting surveying. **SP**

**BSBI Garden Wildflower Hunt SP.** Organised by the BSBI to give botanists something to do close to home, we were asked to record native and self-sown non-natives in our gardens during 2020. My new flat is set in long-established communal gardens, and I recorded a surprising 94 taxa which fitted the brief, of which 20 were non-natives.

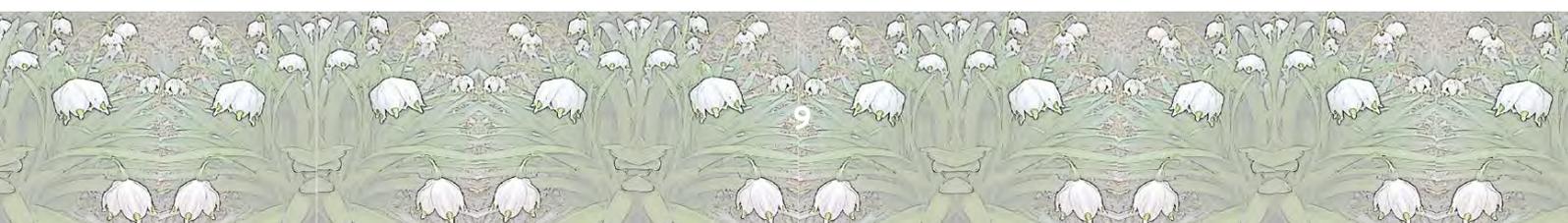
**Mossymere Wood CWS SP, TD;** late April; 134 spp.

Renowned for its magnificent 'river' of bluebells running between tall stands of sweet-scented Bird Cherry trees, and its excellent spring woodland flora, Tim and I recorded this for the NFG in late April. Finds included plentiful *Adoxa moschatellina* Moschatel, *Conopodium majus* Pignut, *Cruciata laevipes* Crosswort, *Lysimachia nemorum* Yellow Pimpernel, *Oxalis acetosella* Wood Sorrel, *Sanicula europaea* Sanicle, and *Veronica montana* Wood Speedwell.

**Bryant's Heath, Felmingham MG, SP, TD;** April - Aug; 17.7 ha; 195 spp.

This site is a registered Common and SSSI comprising a mix of dry acidic heath, wet heath, fen, carr woodland, and pond habitats. Particularly rich plant communities developed here in the flushed areas where nutrient-poor sands meet underlying calcareous clays - hence the SSSI designation. Unfortunately only a little of this special habitat now remains - mostly in one tiny marked-off area. Much of the site is now dominated by *Ulex europaeus* Gorse, and *Pteridium aquilinum* Bracken. Plants had been surveyed in 2019 as part of the NWT's Commons project, but Mary and I decided to give the Heath a proper 'NFGing', and found many species not on the 2019 list. Below are those of particular interest (*NB Species marked \* were found as only single plants or in very low numbers*).

**Dry Heath:** *Agrostis vinealis* Brown Bent\*, *Avenella flexuosa* Wavy Hair-grass\*, *Carex binervis* Green-nerved Sedge\*, *Cuscuta epithymum* (abundant on Gorse, and also found on *Erica cinerea* Bell Heather), *Danthonia decumbens* Heath-grass\*, *Festuca filiformis* Fine-leaved Sheep's Fescue\*, *Hypericum pulchrum* Slender St John's-wort\*, *Ornithopus perpusillus* Bird's-foot\*, *Polygala serpyllifolia* Heath Milkwort, *Spergula rubra* Sand Spurrey\*, and *Ulex gallii* Western Gorse.



**Wet Heath/Mire:** *Anagallis tenella* Bog Pimpernel\*, *Drosera rotundifolia* Round-leaved Sundew\*, *Eleocharis multicaulis* Many-stalked Spike-rush\*, Bell Heather, *Erica tetralix* Cross-leaved Heath, *Eriophorum angustifolium* Common Cotton-grass\*, *Frangula alnus* Alder Buckthorn, *Juncus acutiflorus* Sharp-flowered Rush, *Juncus bulbosus* Bulbous Rush, *Salix repens* Creeping Willow\*.

**Carr Woodland:** *Athyrium filix-femina* Lady-fern (many, some nearly 2 m tall), *Blechnum spicant* Hard-fern (a single well-established colony of c50 plants), *Dryopteris affinis* ssp. *borreri* Scaly Male-fern, *D. carthusiana* Narrow Buckler-fern, *Lysimachia nemorum* Yellow Pimpernel.

**Ponds:** *Hottonia palustris* Water Violet (usually abundant in one pond, but unfortunately damaged by off-roaders this year), *Ranunculus flammula* Lesser Spearwort.



Mary with Lady Fern

Suki Pryce

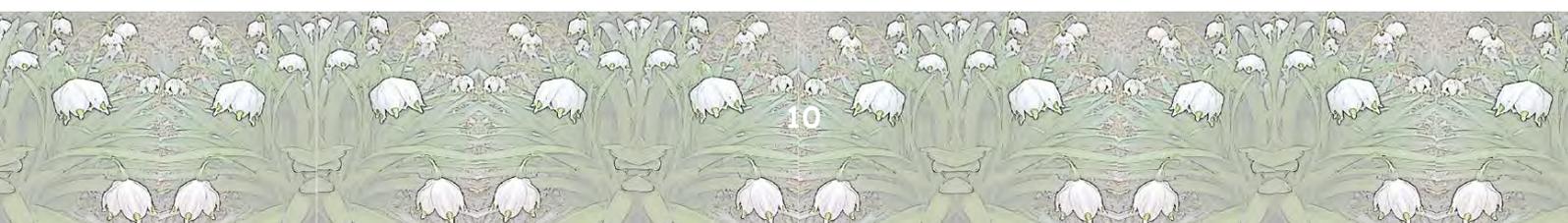
**Green's Common CWS, East Runton SP, TD, MG, May-Sept; 1.32 ha; 120 spp.**

A small but rich CWS, which hasn't been recorded for some time. It has a pond to the north, and raised acid dry heath, dominated by Bracken (recently cut to control it) to the south. Under the Bracken is *Aira praecox* Early Hair-grass, *Galium saxatile* Heath Bedstraw, *Hyacinthoides non-scripta* Bluebell, and *Potentilla erecta* Tormentil.

In the middle is a low-lying, species-rich area, comprising mostly marshy grassland/acid fen (flagged up by Bob Ellis as one of the very few areas of acid fen in North Norfolk). A dense and varied mosaic includes *Cardamine pratensis* Lady's Smock, *Carex flacca* Glaucous Sedge, *C. leporina* Oval Sedge, *C. nigra* Common Sedge, *Dactylorhiza fuchsii* Common Spotted-orchid, *D. praetermissa* Southern Marsh-orchid, *D. x grandis* (*D. fuchsii* x *D. praetermissa*), *Eleocharis palustris* Common Spike-rush, *Galium palustre* Marsh Bedstraw, *Hydrocotyle vulgaris* Marsh Pennywort, *Juncus acutiflorus* Sharp-flowered Rush, *Ophrys apifera* Bee Orchid, *Ranunculus flammula* Lesser Spearwort, *Stellaria alsine* Bog Stitchwort, and *Silene flos-cuculi* Ragged Robin.

**Cookies Car Boot Site, Beeston Regis SP, TD, MP; 23 May; c3 ha.**

The circumstances of this year meant that some previously apparently rather dull sites such as this one - normally a well-mown field covered in car booters and customers - suddenly became interesting through a) no mowing and b) drought. We surveyed the car boot site field plus adjoining areas of former allotments, wasteland, and unmanaged damp and dry meadows. We recorded around 145 species, some of which are rare in this area, or unusual in such large quantities. In particular, the **main field** was patchworked with carpets of very dwarfed *Vulpia bromoides* Squirrel-tail Fescue, and *Aira caryophylla* Silver Hair-grass. Forbs included *Arenaria serpyllifolia* Thyme-leaved Sandwort, *Erodium cicutarium* Common Stork's-bill, *Geranium rotundifolium* Round-leaved Geranium, *Silene vulgaris* Bladder Campion, *Spergula arvensis* Field Spurrey, and *Trifolium arvense* Hare's-foot Clover. The **former allotments** had some interesting relict plants such as *Matthiola incana* Hoary Stock, *Hesperis matronalis* Dame's Violet, *Lathyrus latifolius* Everlasting Pea, *Colchicum autumnale* Autumn Crocus, *Phalaris arundinacea* 'Variegata' Gardener's Garters, and *Silene coronaria* Rose Campion. The adjacent **damp meadow** to the NW



had *Dactylorhiza fuchsii* Common Spotted-orchids, and *Hypericum tetrapterum* Square-stemmed St John's-wort.

**Morley Hill, Sheringham MP, TD, SP;** early July; 6 ha; 145 spp.

Mike Padfield kindly arranged for Tim and I to help with surveying this intriguing site. Perched on a hill to the east of Holway Road, it is an island of acid grassland flanked by tall herb, scrub, and woodland habitats, and now largely surrounded by developed land. Species of interest we found



Blue pimpernel

Suki Pryce

included *Aira praecox*, *Avenella flexuosa*, *Cerastium arvense* Field Mouse-ear, *C. semidecandrum* Little Mouse-ear, *Hypochaeris glabra* Smooth Cat's-ear, *Lysimachia arvensis* var *caerulea* Blue Pimpernel (on disturbed ground of building-site), *Ornithopus perpusillus* Bird's-foot, *Polypogon monspeliensis* Annual Beard-grass (masses in the building-site area), *Potentilla argentea* Hoary Cinquefoil, *Sedum anglicum* English Stonecrop (many-square-metre carpets of this, in flower), and *Spergula arvensis* Corn Spurrey.

**Euphrasia Hunting** In August Bob Ellis suggested we have a look for *Euphrasias* in West Norfolk, targeting sites where they've been found previously.

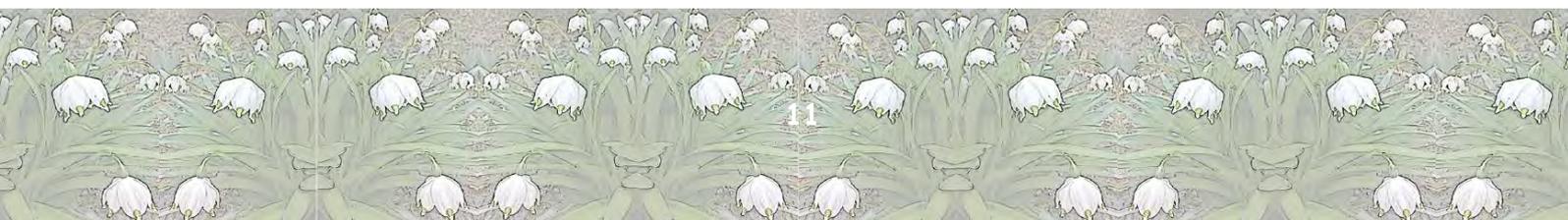
1) **Warham Camp and Cockthorpe Common TD, MG, SP,** 11<sup>th</sup> Aug. We searched Warham Camp to no avail (though the site was gorgeous with chalk grassland flowers and butterflies), but found a single sizable population at Cockthorpe (tentative verdict *E. nemorosa*), and samples were taken for the *Euphrasia* referee.

2) **Foulden Common , MG, PL, SP;** 29<sup>th</sup> Aug. Peter Lambley showed us the best places to hunt, and we found one small patch of around five *Euphrasia* plants. Photos were taken to help identify them. In compensation, we found over 70 plants of *Campanula glomerata* Clustered Bellflower, a patch each of *Gentianella amarella* Autumn Gentian and of *Hippocrepis comosa* Horseshoe Vetch, and fairly frequent *Ononis spinosa* Spiny Restharrow. It was also notable that the cattle on site seemed to have preferentially left the *Lithospermum officinale* Common Gromwell ungrazed.



Cockthorpe Common

Suki Pryce



**North Walsham and Dilham Canal - Unrestored Section NW of Swafield Bridge, plus Pond and Meadow nearby MG, SP; 26<sup>th</sup> Aug.**

This land belongs to Mick and Anne Starling, who kindly allowed us to survey it. *Athyrium filix-femina* Lady-fern featured near the Canal (it seems to like the side-ditches in the Ant valley). The Starling's pond caught our eye as it had several species that are interesting for a variety of reasons. It's on the edge of their garden, quite large, and though some garden taxa have been planted, the owners assured us that most had not, so have colonised naturally. These included *Ceratophyllum demersum* Rigid Hornwort, *Eleocharis palustris* Common Spike-rush, *Menyanthes trifoliata* Bogbean, and *Ranunculus lingua* Greater Spearwort. An unwelcome natural coloniser was the invasive alien *Crassula helmsii* New Zealand Pygmyweed, to which we alerted the Starlings. An even more unwelcome - but planted - species was *Nymphoides peltata* Fringed Water-lily, which had 'gone rogue' and is proving nearly impossible to control.

**Other Nice Finds (all SP unless others named)**

*Ambrosia artemisiifolia* Ragweed: a single plant reappeared on the NW&D Canal after a two-year absence. *Ceratophyllum demersum* Rigid Hornwort appeared for the first time - suddenly and in quantity - in late summer in the NW&D Canal at Ebridge Lock.

*Crassula tillaea* Mossy Stonecrop, All Saint's Church car park, Beeston Regis.

*Cruciata laevipes* Crosswort: rural verge, Felmingham.

*Hypericum x desetangii* (*H. perforatum* x *H. maculatum*) Des Etang's St John's-wort: rural verge, Rawhall.

*Melampyrum cristatum*: MG, TD and SP made a 'pilgrimage' to see this at Rawhall Lane and Hulver Street RNRs in Beetley CP & Scarning CP respectively.

*Ophrys apifera* Bee Orchid: over 50 plants appeared in a formerly close-mown field next to Waitrose, North Walsham.

*Potentilla indica* Yellow-flowered Strawberry: rural verge, Lyngate, North Walsham.

*Tripleurospermum maritimum* Sea Mayweed: one plant found on Mundesley cliffs.

*Tulipa saxatilis* Cretan Tulip: Mundesley cliffs.



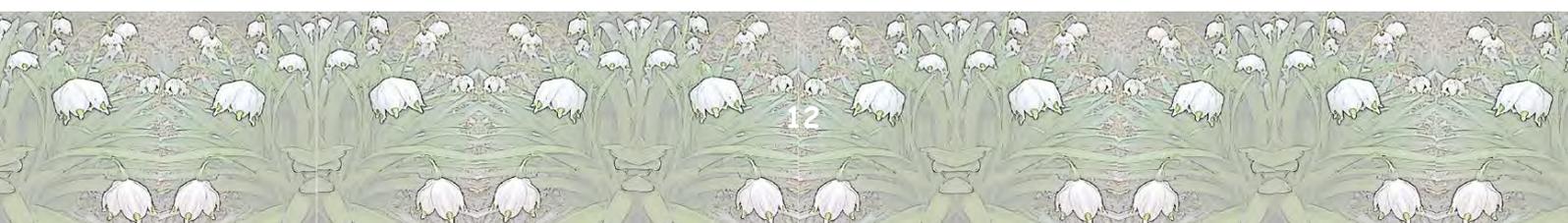
Ragweed



Cretan Tulip

Suki Pryce

**Suki Pryce & Mary Ghullam**



### BRANCHED BUR-REED SPARGANIUM ERECTUM SUBSPECIES

Branched Bur-reed *Sparganium erectum* can only be identified to subspecies from ripe brown fruit, which do not mature until late in the season. They are best collected when the fruits are just starting to turn brown and are coming away from the fruiting head. The fruits can then be left to mature on a sunny windowsill as they need to be brown and fully mature as shown in the picture below to be able to confidently distinguish the different subspecies.

*Sparganium erectum* ssp. *neglectum* was found in a ditch on Marston Marshes. The fruits are light brown, ellipsoidal and gradually taper below the beak

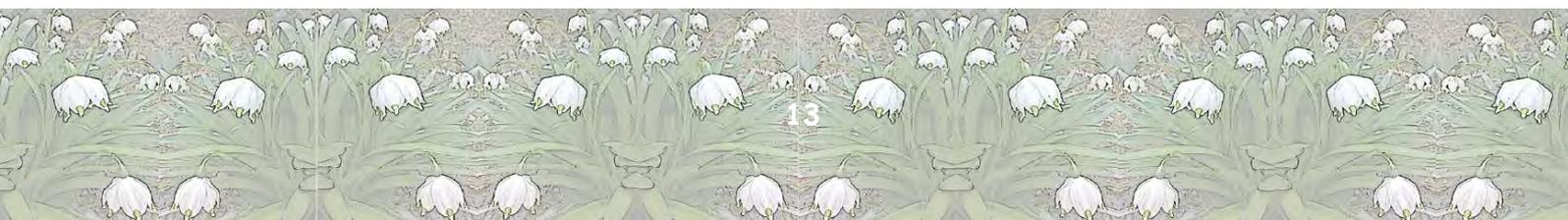
*Sparganium erectum* ssp. *microcarpum* was found on the banks of the River Bure to the west of Wroxham. The fruits are dark brown and narrow abruptly below the beak and need to be distinguished from the much flatter fruits of ssp. *erectum*, which is also found by the River Bure.

Janet Higgins



Branched Bur-reed top ssp. *neglectum*, bottom ssp. *microcarpum*

Bob Ellis



## BSBI NEW YEAR PLANT HUNT 2021: NFG MEMBERS' REPORTS

In which Suki very kindly offered to give me a break from editing and shows great promise.... JP

### Mary Ghullam & Suki Pryce: Walcott, and Beeston Regis

I've done the NYPH on my own for several years, fanning out along the coast on either side of my former home town of Cromer as far as Mundesley to the east and West Runton to the west. This year, Mary and I joined forces, and extended east to Walcott on 1<sup>st</sup> Jan, and west to Beeston Regis on 3<sup>rd</sup> Jan.

**Walcott:** We found **40** taxa in flower across a mix of bungalow-home seaside village and fairly dreary arable land (we also did an NFG sheet while we were at it). 'Most intriguing' was a mystery Boraginaceae pinned down by Mary to be an *Echium* of some sort. Other highlights were *Veronica polita* Grey Field-speedwell (spotted by MG, of course!) on an arable edge. Turnstones along the sea wall enlivened our lunch break.

**Beeston Regis:** We found **49** taxa in flower, mainly in the suburbs along Briton's Lane, but also by the footpaths near Cookie's Car Boot Sale site (a Woodcock flew up from the wasteland here), and tracks and housing on the south of Beeston Bump. Highlights were:

*Erigeron acris* (formerly *E. acer*) Blue Fleabane - several nicely developed plants in full flower in the short turf at the foot of eastern Beeston Bump.

*Gaillardia x grandiflora* (*G. aristata x pulchella*) Blanket-flower in a garden-edge crack of a c80s council estate also at the foot of Beeston Bump (see photo. I have to say that I'm proud that 'Gaillardia' was my first thought on seeing this specimen - got the genus if not the species).

*Malcolmia maritima* Virginia Stock on a garden-side bank by Briton's Lane. The only other time I've seen this was on my Plant Hunt in Overstrand, where it was also in the verge, by the main road.



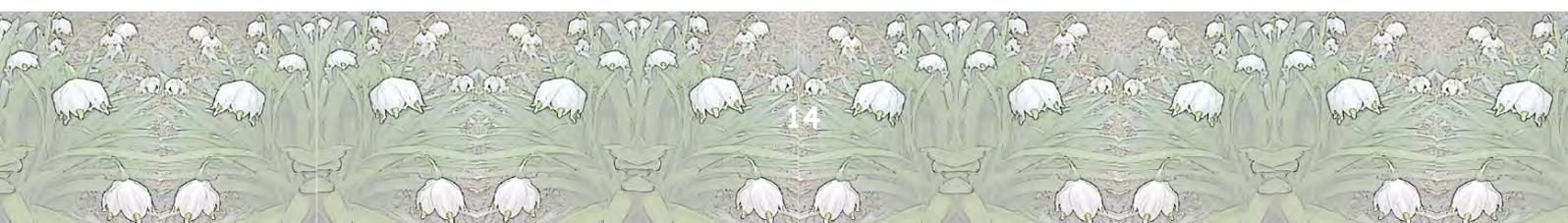
*Gaillardia x grandiflora*

Suki Pryce

The combined list of all the taxa found flowering on the Hunts with which I've been involved now totals **125**. Other interesting species found include *Cotula australis* (Mundesley), *Papaver atlanticum* (West Runton), *Potentilla indica* (Upper Sheringham), and *Stellaria aquatica* (NW&D Canal).

### Arthur Copping: Diss

I carried out the BSBI survey for vascular plants in flower at New Year on the 2nd of January. I always follow the same route in Diss each year so the list is not random. I target areas where species in flower are known to occur, for example the early flowering *Ficaria verna* and the precocious Hazel near the railway station. There were two additions to previous lists, *Viburnum tinus* on a roadside bank remote from gardens and *Petasites pyrenaicus* behind the Council Offices. Its existence came to light only in February last year. This year's total of **42** is 10 more than last year's, a result of a mild autumn and regrowth from late summer mowing.



### Ian Senior: Earlham Cemetery and Avenues Allotments, Norwich

**Earlham Cemetery:** I've been doing the NYPH at the Cemetery since 2014 (Fig 1). Last year it attracted close to 30 people but this year we were back down to little old me! Since starting these hunts I have noted which plants I always see. These are: *Bellis perennis*, *Corylus avellana*, *Euphorbia peplus*, *Galanthus nivalis*, *Poa annua*, *Primula vulgaris*, *Senecio vulgaris*. Plant-hunting is always a lottery in a place like the Cemetery, as the plants capable of flowering have to survive being mown or hoed by zealous maintenance staff even late into the autumn. Overall, this year, the Cemetery count was the second lowest, at just **21** species, none of which were particularly special.

**Avenues Allotments:** our best find here was five plants of Treacle Mustard *Erysimum cheiri* in full flower, which was lovely to see - it flowers freely over the winter months on our and next door's allotments. Further taxa totalled **16** species.

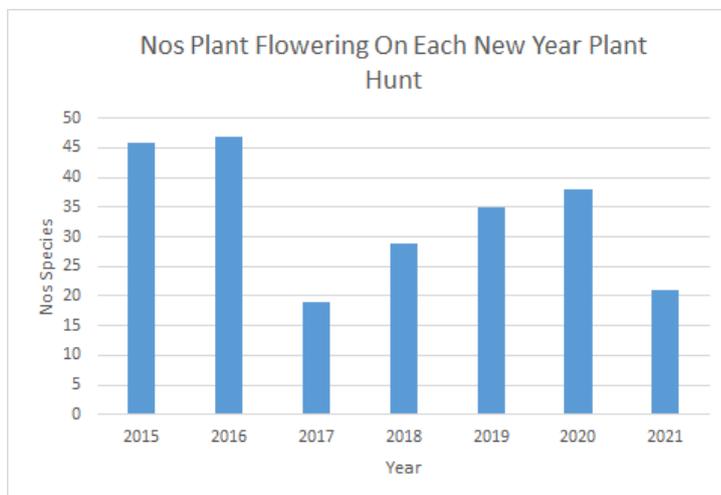


Figure 1 Number of flowering plants in Earlham Cemetery, Norwich New Year 2015 - 21



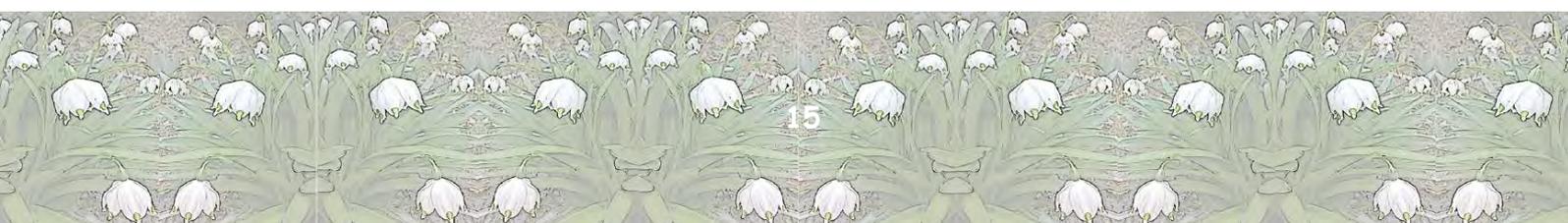
*Erysimum cheiri*

Ian Senior

### Mike Padfield & Tim Doncaster: Wells-next-the-Sea

As fair-weather botanists with a dislike of temperatures below freezing, Tim and myself waited for the sun to come out and chose a nearby coastal location to get our NYPH list on the 2<sup>nd</sup> January.

Zig-zagging seemingly randomly around the back streets and alleyways of Wells we made a good start with Pale Pink-sorrel *Oxalis incarnata*, Bilbao Fleabane *Conyza floribunda*, Mexican Fleabane *Erigeron karvinskianus* and Annual Mercury *Mercurialis annua*. Heading to the edge of town along the coast road we found our highlight of the day Wild Clary *Salvia verbenaca* in flower. We also recorded Common Whitlowgrass *Erophila verna*, a species more commonly identified by its dried flower heads in early spring.





Common Whitlowgrass

Mike Padfield



Wild Clary

Mike Padfield

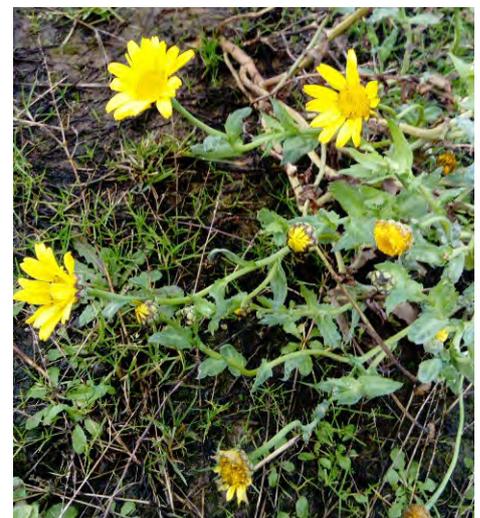
There wasn't much in flower on the beach but we added a few to the list including Buck's-horn Plantain *Plantago coronopus*. Heading inland to some roadside verges in a residential area we recorded Henbit Dead-nettle *Lamium amplexicaule* and Field Penny-cress *Thlaspi arvense*. Church walls are worth a look anytime of the year, with Slender Sandwort *Arenaria leptoclados*, Fern-grass *Catapodium rigidum*, Ivy-leaved Toadflax *Cymbalaria muralis*, and Pellitory-of-the-wall *Parietaria judaica*.

As we were nearing the end the allotted time of 3 hours we just picked up Gorse *Ulex europaeus*, a survivor on the edge of a new housing development. A total of **57** species were recorded, which for a little while made the top 20 list nationally until it was knocked out of place by a large number of entries from the southwest of the country and Wales.

**Bob Ellis & Janet Higgins: Southrepps**

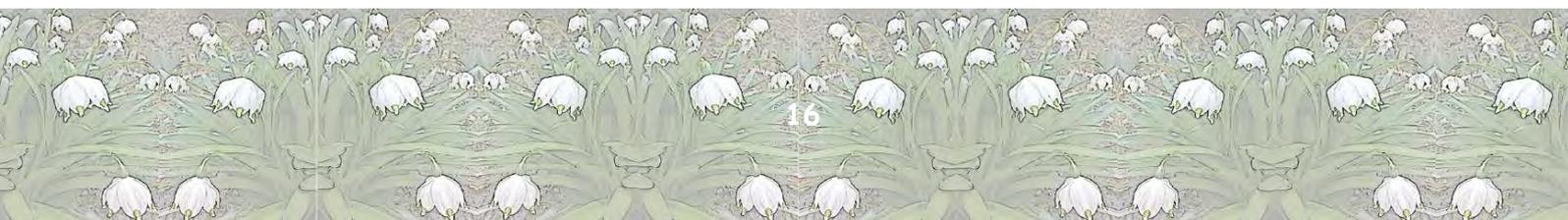
We stayed local for the New Year Plant Hunt on 1st January 2021, a lovely morning for our first venture out botanising in and around Southrepps. We explored the main village and the churchyard then followed some quiet lanes through arable fields towards Lower Street, searching the area around Gunton station.

We found **49** species in flower almost equally split between annuals and perennials. Plants of interest included several arable weeds such as Field Pennycress *Thlaspi arvense*. In the churchyard, Bulbous Buttercup *Ranunculus bulbosus* was a surprise; and Trailing Bellflower *Campanula poscharskyana* was growing from the mortar of the war memorial. Weeds and garden escapes in the village included Bilbao Fleabane *Erigeron floribundus*, Common Ramping-fumitory *Fumaria muralis* (with small out-of-season flowers) and Stinking Hellebore *Helleborus foetidus*. Our most notable find was Corn Marigold *Glebionis segetum*, which was growing in a boggy area at the edge of an arable field near a muck heap.



Corn Marigold

Janet Higgins



### Bob Leaney & Jo Parmenter: Hemsby

We decided upon Hemsby for our New Year Plant Hunt as it was a) coastal and thus likely to be a bit warmer, b) because I had been there with David a couple of weeks previously and thought it might be quite interesting, and c) because Bob has a strange fascination with car parks and what we might politely term 'slightly faded urban locations'. We had a total of **47** species in flower and spent a very enjoyable day garnering a good range of 'strange looks' from passers-by.

Our plants, as might be expected, were a mixture of garden escapes, 'urban aliens' and species of well-drained sandy grasslands, with our most interesting finds (in terms of less frequently encountering them) were *Oxalis stricta* Upright Yellow-sorrel near a boarded-up amusement arcade, *Galinsoga parviflora* Gallant Soldier on broken concrete near a car park, *Fumaria muralis* Common Ramping-fumitory along a track just inshore of the dunes, *Diploxys muralis* Annual Wall-rocket growing on blown sand, *Polypogon viridis* Water Bent in its favoured habitat of damp patches beside walls (possible link to passing canines?), *Yucca gloriosa* Spanish-dagger in what we assumed was a long-abandoned garden where one of the chalets had been lost to coastal erosion, *Ceratochloa cathartica* Rescue Brome, which was growing in profusion along the cliffs a little further down the coast, and finally *Erigeron floribundus* Bilbao Fleabane (having said we don't often encounter it, this is becoming increasingly common in the county, especially in urban locations). Also of note were the large and very vocal colonies of house sparrows, which frequented the coastal scrub.



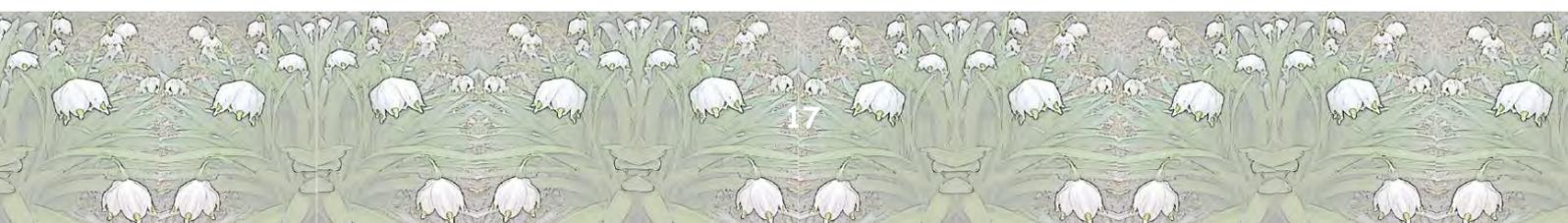
Hemsby House sparrows

David Lester

### David Lester & Jo Parmenter: Haddiscoe & St Olaves

I enjoyed my day out on New Year's Day so much that I bullied David into another fun outing, this time to Haddiscoe (in the extreme southeast of VC27) and, St Olaves which although politically in Norfolk, is actually just across the border in VC25 (horrors) and this time we managed a magnificent haul of **49** species in flower, perhaps because I spent a bit of time looking at the map beforehand and formulated a cunning plan for a route-march which started below the New Cut bridge, took us around the old boatyards, then along the riverside path to take in a bit of Fritton Woods, then back across the A143 to have a rummage in the village and finally, as we had just enough time, a rapid foray around Haddiscoe Station car park.

Our best finds were dozens of plants of *Erigeron floribundus* Bilbao Fleabane which grows in profusion in and around the boatyards between the New Cut Bridge and the River Waveney, and *Apium graveolens* Wild Celery in a soggy patch beside the hull of a long-dead boat at the start of the track around Haddiscoe Island. We also had *Spergularia marina* Lesser Sea-spurrey in a squelchy spot on the riverside by the Bell Inn, a magnificent *Helleborus foetidus* Stinking Hellebore in a wooded former sand pit, and *Carduus nutans* Musk Thistle in full flower in the Llama paddock next to St Olaves Priory.



... I have said it before, but Richard really does write beautifully .... JP

## PLANTS OF SEAWALLS AND RECLAIMED LAND

Coastal grazing-marshes together with the earth (or occasionally concrete) seawalls that bound them may not seem the most obvious place to look for uncommon plants, let alone a whole suite of uncommon plants that are distinctive to the habitat. And often it's true there isn't much to see on seawalls blanketed by *Arrhenatherum elatius* (False Oat-grass) alongside grazing-marsh in arable or semi-improved grassland dominated by *Lolium perenne* (Perennial Rye-grass). Though these sites are often SSSIs, it is usually for their birds that they are valued, or - in some cases - for their ditch systems.

The ditch systems can of course be botanically spectacular, and those of east Norfolk are second to none. But this article is concerned mainly with the seawall habitat complex, perhaps including the toe-ditch.

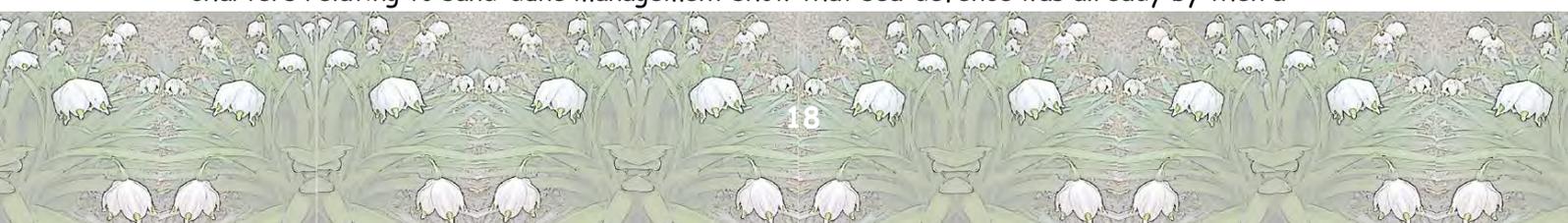
In the early 1970s, Dr Alan Gray (of the BSBI grasses handbook) was among the first to describe a group of uncommon plant species - mostly Nationally Scarce - that are particularly associated with this habitat. And at this point I must digress by confessing that I just now edited out the 'were' that I instinctively typed, for this is an assemblage under threat - one that has declined hugely since the 1970s!

We are talking, then, about earth seawalls that protect land historically won from the sea - called reclaimed land - on the soft coasts of south-eastern England, principally from the Wash to the Hampshire harbours (Portsmouth to Chichester) with outliers on estuaries from the Tees to the Severn. The word 'reclaimed' by the way is correct, even though no land has been claimed, lost, and claimed again as some think the word suggests. This latter use of 'reclaim' (the verb 'claim' plus prefix 're') is quite modern, not appearing before c.1800; while an older English word 'reclaim' (direct from Latin *reclamare*) was still common up to c.1870 and widely understood (even if not often used) up to c.1950, and it means to tame (animals) or to 'bring into cultivation' (land). This is the reason why land won from the sea has from time immemorial been called 'reclaimed land' (the word also survives in special subject-areas like falconry).

The special plants are almost all partially salt-tolerant, warmth-loving, winter annual species of Mediterranean distribution, and to understand why this habitat should support such a group, we need to know a bit more about it. They are best represented in the Thames Estuary from Suffolk to north Kent, but most reach Norfolk in small numbers, and become very scarce or absent further north.

It is easy to see that pastures and meadows have been around for two or three thousand years, and perhaps in some form or other for longer, so it is not surprising that our flora should include assemblages of plants adapted to their traditional management. The same applies to arable weeds. But just how old are the seawalls? Local people in the 19<sup>th</sup> century commonly said they were Roman, but that was just folk legend. There is some sketchy

evidence for Roman reclamations along the north coast of the Wash, but little elsewhere. Yet some reclamations were almost certainly happening by the middle ages, and early medieval charters relating to sand-dune management show that sea-defence was already by then a



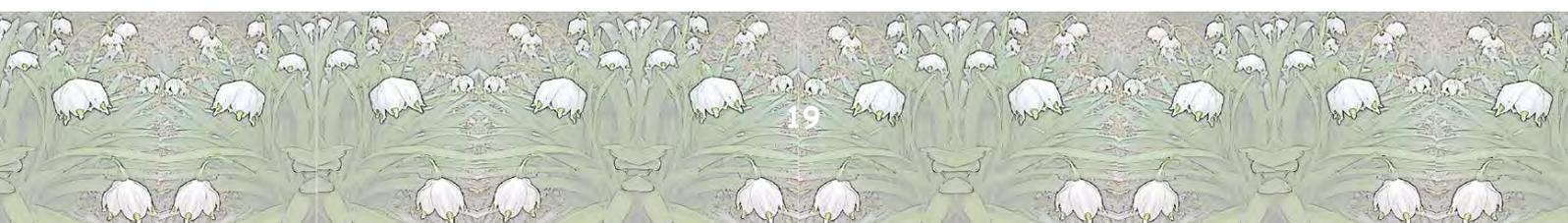
matter of public concern. By the 17<sup>th</sup> century some of the major reclamations around the Thames Estuary were being masterminded by Dutch engineers, in some cases the ones draining the Fenlands; and by area a large part of our modern grazing-marsh habitat probably dates from about that time. So, the likelihood is that our grazing-marshes are mostly c.300 to 400 years old, and - at their landward edges at least - perhaps up to c.1000 years old, giving time enough for distinctive plant assemblages to have mustered.

Land was reclaimed by 'in-walling' the upper parts of saltmarshes during periods of neap tides (when tidal inundation was infrequent). Two arms would be constructed outwards from the land, and finally a big day would come when the last gap between them was closed. It had to be successful at the first try, because if it wasn't then tidal scour deepened the gap preventing closure (you can still see the sites of the scoured-out 1953 flood breaches from U-shaped diversions in the modern walls). Saltmarshes naturally capture fine sediment as their plants slow down the flow of the seawater, so the saltmarsh outside the seawall builds in height by a few millimetres each year. Historically, therefore, having won land to a certain point at one time, it was usually possible to advance reclamations further to seaward a few tens of years later. At the same time, over the last few thousand years, the coasts of south-eastern England have been sinking by, on average, c.5 mm per year (due to the north-west rising after being relieved of the weight of ice at the end of the last ice-age a mere 12,000 years ago). Saltmarshes keep up with this, only eroding when rates of fall exceed the long-term average (as in the last fifty years), but land behind the seawall is fossilised at a height where sea level was at the time of its reclamation. Thus, the older a piece of reclaimed land is, the further below sea-level it is. Because, in any given area of grazing-marsh, the most recent reclamations are to seaward and the oldest are to landward, the land-level now rises towards the modern seawall making drainage of the older marshes problematic, and creating the need for the elaborate ditch systems that are so botanically rich. And - unless reclamation is continuing, which is today very rare (except perhaps for the Wash) - the seawall at the outer edge has to be raised in height every few tens of years to keep pace with the level of the saltmarsh accreting outside. Saltwater seeps through the wall and overtops in storms (if only as spray) making soils just behind slightly saline.

This then gives us the parameters that favour the group of plants under discussion. The seawalls provide steep, pH-neutral, clay banks warmed by the sun and favouring warmth-loving species in areas where no steep slopes occur naturally. Grazing, vehicle movements, and the periodic need to maintain the seawalls together provide constant disturbance (at periodically varying intensities) which favours winter annuals. And mild salinity keeps out some competitors, and favours species from the Mediterranean region where over-worked agricultural soils often become saline, so that weeds tolerant of a little salt are common.

The components of the seawall habitat complex can be summarised as follows.

- The outer face of the seawall, usually rock armoured around the Thames, but usually overgrown by a foot-deep mat of grass-roots. Many Norfolk outer faces are just earth. Only modern seawalls near towns are commonly concrete-faced.
- The grassy inner face of the seawall at a steep slope just about walkable.
- A level berm at the landward foot of the seawall, often with a vehicle track. Some very large seawalls have an additional smaller berm half way up the inner face of the seawall, but these are not common in Norfolk except perhaps around the Wash and the tidal reaches of the



Fenland rivers.

- A flooded borrow-dyke from which material for the wall was originally excavated (though modern seawall construction is likely to use imported material). The borrow-dyke intercepts saline water seeping through or draining off the seawall and berms, so that it is usually brackish. One-way sluices usually separate it from freshwater ditches on grazing-marsh to landward.

Nearly all of the special seawall plants flower in June, with the exception of *Bupleurum tenuissimum* (Slender Hare's-ear) which flowers much later - August to September.



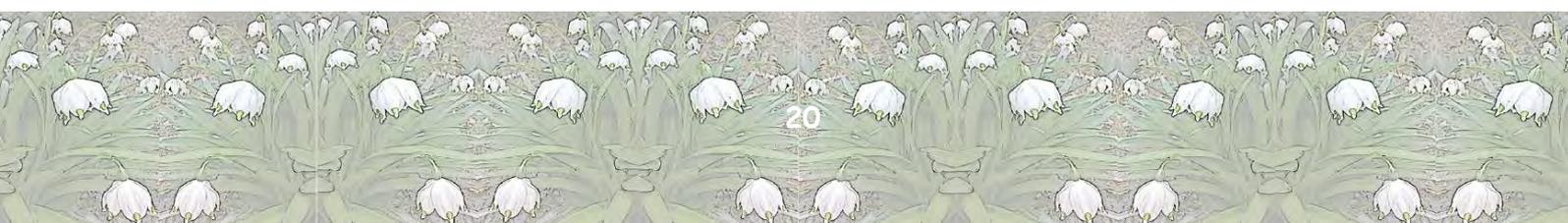
*Bupleurum tenuissimum*



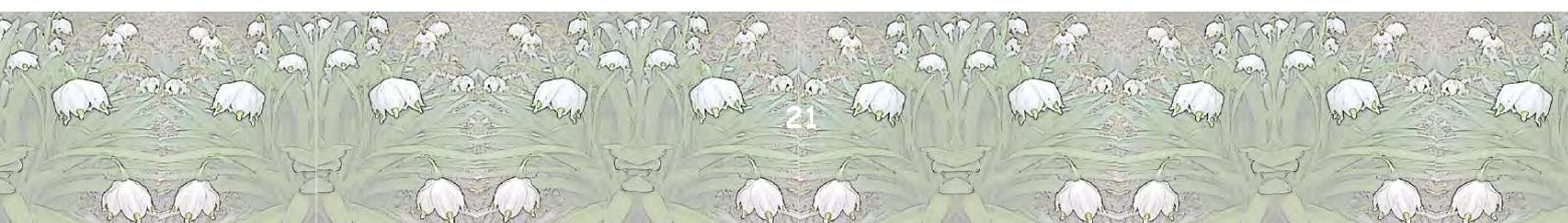
Richard Carter

Botanically the outer face of the wall is not the place where the distinctive seawall plants are concentrated, though any of them may occur there in small quantity. It is perhaps most notable for upper saltmarsh plants such as *Artemisia maritima* (Sea Wormwood), *Limbarda crithmoides* (Golden-samphire) and *Suaeda vera* (Shrubby Sea-blite), which grow along the drift-line at the foot of the wall.

In the absence of the grazing, the inner face of the seawall is often strongly dominated by species-poor stands of *Arrhenatherum elatius* (False Oat-grass), *Elymus repens* (Common Couch) and *Elymus athericus* (Sea Couch). Today this sad condition prevails on 95% of seawalls. But where seawalls are still grazed - as well over 50% were in the past - a very distinctive type of short, open, and species-rich neutral grassland may occur. It contains *Lolium perenne* (Perennial Rye-grass) and other common grasses such as *Cynosurus cristatus* (Crested Dog's-tail) and *Trisetum flavescens* (Yellow Oat-grass); its grasses are seldom remarkable, though *Hordeum secalinum* (Meadow Barley) may be unusually abundant. But the grasses collectively achieve only about 40% cover, and in early summer the sward has more than 50% cover of winter-annual legumes, principally *Medicago arabica* (Spotted Medick) and *Vicia sativa* (Common Vetch) plus several relatively uncommon species. From among the distinctive seawall set of species, six are associated with these inner-face swards, three legumes and three umbellifers.



- *Lathyrus nissolia* (Grass Vetchling). In Essex and Kent, this can be hugely abundant on seawalls, and nationally seawalls are probably the main natural habitat of the species. Unfortunately, it is now scattered widely across the UK in wild-flower seed mixtures, and in the 1970s it was a component of grass-seed mixtures sown on new motorways - there were vast populations on the wide cuttings of the Gloucestershire M5 and the dual-carriageway by-passes around Coventry for example. In Norfolk, it is not especially common on seawalls, occurring mainly between King's Lynn and Heacham.
- *Lotus tenuis* (Narrow-leaved Bird's-foot-trefoil). In Essex and Kent, this too can be hugely abundant on seawalls. Like *Lathyrus nissolia* it also occurs in dry grassland at inland sites, but it can be called a seawall plant because its populations there are so very much larger. In Norfolk it mostly occurs in the east around Yarmouth and the Broadlands grazing-marshes, with only scattered records from the Snettisham to Holme area in the west. Unlike inland plants, the Essex and Kent seawall plants are often a bit difficult to distinguish from *Lotus corniculatus* (Common Bird's-foot-trefoil). This is hard to understand as *Lotus tenuis* is allegedly diploid and *Lotus corniculatus* is tetraploid, so they should not hybridise easily. It would be interesting to know if these difficult plants occur in Norfolk.
- *Trifolium squamosum* (Sea Clover). This is a small pink-flowered clover of slightly more erect habitat than such Norfolk species as *Trifolium striatum* (Knotted Clover). It is seldom seen anywhere except seawalls (and nearby sub-saline spots on reclaimed land). In Essex and Kent, it is locally abundant there, both in grazed inner-face swards and on disturbed soil on berms, where it often dominates in huge carpets. It is apparently missing from Norfolk, but the right habitat is certainly present, especially along the Wash and the Wolferton shores and behind Yarmouth. It would be a very exciting find, and with global warming who knows whether it might not turn up soon?
- *Torilis nodosa* (Knotted Hedge-parsley). In Essex and Kent this is another plant headquartered mainly on the seawalls, but in Norfolk it is widespread inland in open grassland.
- *Sison segetum* (Corn Parsley). This small umbellifer has drab flowers with petals too small to see except by close inspection. It has neat-looking rosettes of 1-pinnate leaves that are distinctly long in relation to their width, with upwards of a dozen pairs of leaflets. It is occasional in the more open swards on seawalls, and on the banks of grazing-marsh ditches in spots where frost-heave creates bare soil. As a grazing-marsh plant in Norfolk it mainly occurs between Kings Lynn and Heacham.
- *Bupleurum tenuissimum* (Slender Hare's-ear). Like *Trifolium squamosum*, this tiny yellow-flowered umbellifer is seldom seen anywhere except seawalls or nearby, and occurs both in inner-face swards and on disturbed soil on berms. In Norfolk it is recorded in the east from the Yarmouth, Halvergate and Berney marshes, and it is scattered along the north coast between Thornham and Salhouse. There are old records from the Wolferton area where it may still be clinging on. It is moderately conspicuous in early autumn, but finding its tiny, entire leaves in June is a challenge! It has declined greatly in recent years and post-2000 records from west Norfolk are few. Look for it in disreputable-looking disturbed saline ground around car parks and road edges as well as in grazed swards.



Swards on the level berm are usually less open than on the inner face for the simple reason that hoof-poaching is more severe on steep slopes. Though by no means confined to this berm habitat, *Trifolium fragiferum* (Strawberry Clover) is characteristic, as is *Ranunculus sardous* (Hairy Buttercup). This looks very much like *Ranunculus bulbosus* (Bulbous Buttercup) with turned-down sepals when in flower, but it lacks the swollen base to the stem. In Norfolk it is mainly recorded from grazing-marshes east of Norwich and in the Holkham area. Both species occur in this habitat in Norfolk, so it is worth checking. Perhaps the most distinctive species in these berm swards is *Carex divisa* (Divided Sedge), which has a Norfolk distribution very similar to that of *Ranunculus sardous* (Hairy Buttercup). It is a narrow-leaved sub-genus *Vignea* sedge (the ones with all spikes looking similar) growing up to about 18 inches tall depending on the general height of the sward. Compared to familiar Norfolk sedges like *Carex divulsa* (Grey Sedge), it has an inflorescence that looks too small for the plant. It can occasionally dominate the sward.

On most berms there are occasional wetter areas which get churned up by hoof-poaching and heavily rutted by vehicles. This sub-habitat houses several seawall specialities, all of them grasses:

- *Hordeum marinum* (Sea Barley). This ornamental-looking barley is usually no more than six inches tall, and often forms sheets on disturbed and wet saline soils. In Norfolk it is mainly found in the Cley-Salthouse area and the Berney Marshes area. It is worth looking for more widely.
- *Puccinellia fasciculata* (Borrer's Saltmarsh-grass). This grass looks a bit like a *Poa*. It is scattered in Norfolk in the Yarmouth and Berney Marshes area, in the Cley-Salthouse area, and in the Fenlands.
- *Puccinellia rupestris* (Stiff Saltmarsh-grass). This too looks a bit like a *Poa*, but it has an architectural and rigid-looking panicle with branches at right-angles to the central rachis. In Norfolk it is mainly recorded from the several grazing-marsh areas east of Norwich, but there is plenty of suitable habitat for it in the west Norfolk grazing-marshes. It also grows on roads, like *Puccinellia distans* (Reflexed Saltmarsh-grass) more familiarly does. I have seen it as a pavement weed in Chelmsford and at Exeter Services on the M5. Trampled plants on seawall paths have small kite-shaped panicles with upswept branches just like trampled *Poa annua* (Annual Meadow-grass) and are almost certainly being widely overlooked. The bluish green appearance and longish spikelets are the clues.



*Puccinellia rupestris*

Richard Carter



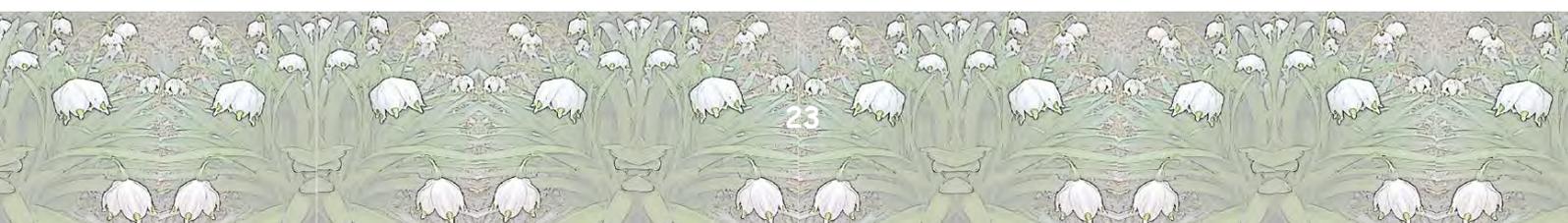
- *Polypogon monspeliensis* (Annual Beard-grass). Though this ornamental grass with dense, silky-hairy panicles has historically been a plant of grazing-marshes in Kent and Hampshire, it is increasingly being found all over the place in Norfolk as a casual.
- ×*Agropogon lutosus* (Perennial Beard-grass). One of the rarest seawall plants is the intergeneric hybrid between *Polypogon monspeliensis* (Annual Beard-grass) and *Agrostis stolonifera* (Creeping Bent). We saw it recently on a NFG meeting in King's Lynn and it is well worth looking out for.
- *Alopecurus bulbosus* (Bulbous Foxtail). This is a small more-or-less erect foxtail grass like *Alopecurus geniculatus* (Marsh Foxtail), with which it freely hybridises. It is distinguished by a striking onion-like bulb at the base of the stem. It occurs sparsely in the east coast grazing-marshes, but is commoner in the west along the Severn, Usk and Exe estuaries. Jonathan Graham recently rediscovered it in Norfolk by the tidal River Nene. It is easily overlooked and well worth searching for.

x *Agropogon lutosus*

Richard Carter

And finally, the rarest of all seawall plants is *Lactuca saligna* (Least Lettuce), now reduced to a single decent population by the Thames in Essex, and intermittent finds on the Isle of Grain and the Isle of Sheppey in north Kent, and near Rye Harbour in Sussex. Though often described as looking like a small *Lactuca serriola* (Prickly Lettuce) it really looks very different. *Lactuca serriola* is very plastic and varies from monster plants 6 feet high with over 2000 capitula to tiny plants 8 inches high with fewer than 10 capitula. But its leaves always have some breadth to them and a row of spines on the back of the midrib, whereas *Lactuca saligna* has linear leaves with no spines at all. Large plants may reach c.2 feet high and show some branching in the inflorescence. But typical seawall plants are no more than c.1 foot high with reduced panicles consisting of sessile capitula in something like a spike. The capitula (at least when closed) are about the same size and shape as spikelets in *Lolium perenne* (Perennial Rye-grass) and arranged in the same way, so you may imagine what a ten-inch high *Lactuca saligna* superficially looks like. And it mainly grows... among *Lolium*! You don't generally expect to confuse yellow composites and grasses but finding *Lactuca saligna* in *Lolium* grassland is no easy matter. It could so very easily be overlooked somewhere. *Lactuca saligna* has never been recorded from Norfolk, but until about sixty years ago it grew on Fenland river walls near Earith just beyond the vice-county boundary. And the grazed river walls around Downham Market are by far the nearest thing I have ever seen to the places where it classically grew in the seawall grasslands of Essex and north Kent in the 1970s - it's really quite tantalising!

**Richard Carter**



## OBSERVATIONS RESULTING FROM OPPORTUNITIES OF LOCKDOWN 2020

Humans are creatures of habit or, at least, I am. I tend to note down only what's new in my vicinity, for example, when I go on my regular shopping trips or on my annual Christmas card round. I don't explore the rest of my close surroundings much, being busy recording further afield in Norfolk or even occasionally in darkest Suffolk! The restrictions of lockdown and furlough have meant staying closer to home as well as having time to stop, observe and ponder. It's also given me time to catch up on my natural history reading, such as back numbers of *British Wildlife* and the *BSBI News*. Both activities have led to these comments on my recent urban explorations.

### Grasses

I first came across Water Bent, *Polypogon viridis* in an urban setting in the far reaches of West Norfolk about 13 years ago, but it wasn't until about 3 years later in 2012 that I noticed one plant growing in my town, North Walsham. Being rather distinctive in flower and having a considerably long flowering season (some plants were still fully in flower on 27<sup>th</sup> December 2020), it is relatively easy to spot. Since 2012 it has spread almost exponentially along certain roads in the town, growing usually in the pavement cracks by walls, gutters and in the gravel of unkempt gardens. This is not only a local phenomenon, but has even been noted by one of the regular columnists in *British Wildlife* (Westwood, 2019). It has been described as 'one of the fastest spreading plants in the British Isles in urban habitats' (Westwood, citing Ambrose Baker & Oliver Pescott).



*Polypogon viridis*

Mike Crewe

One of the other grasses mentioned by Brett Westwood in his reflections is Greater Quaking Grass, *Briza maxima*, a grass grown in gardens and often used in dried-flower arrangements. This also seems to be on the increase, but in North Walsham, appears to grow closer to its potential initial sources than Water Bent does. Here it is not spreading anything as fast as the former. Another grass, however, does appear to be spreading fast. This is Fern-grass, *Catapodium rigidum* (attention is drawn to this species as a pavement weed by Walls, 2019), and, seemingly, it is the subspecies *majus*, which is doing better than the more usually seen smaller *ssp. rigidum* in the pavement habitat. Until recently I have not been differentiating between the two subspecies, but based on observation over the last year, I must in future.

### Other Vascular Plants

A number of plants, more familiar in an arable context, have, for a number of years, appeared growing in the grass verges and pavement edges in Norfolk. One such is Field Madder, *Sherardia arvensis*. Another is Henbit Dead-nettle, *Lamium amplexicaule*. Both species have been noted in such a context in North Walsham recently, but more surprising was to come across Dwarf Spurge,



*Euphorbia exigua*. Not a particularly common arable plant in Norfolk, this was the first time I had seen it growing, other than in an arable setting, in the pavement by the entrance of a bungalow in an urban cul-de-sac.

Stone Parsley, *Sison amomum* also seems to be spreading in urban habitats here. I first came across it in 2015, growing in what, in the last century, was Farman's, the local thatcher's yard. In the interval, however, it has spread considerably along the adjacent street, on both sides and seems to be beginning to turn up in other streets further afield in North Walsham. There is no mention of it in an urban setting in *A Flora of Norfolk* (Beckett & Bull, 1999), which maps it as confined to calcareous clay.

Another species to look out for is Blinks, *Montia fontana*. Seen here in an urban setting in 2015, during this year's New Year Plant Hunt, it was found growing abundantly both in a gutter and along the edge of a grass verge, although not in North Walsham.

Perhaps the most surprising finds, while walking the local streets, were two plant species, not, to my knowledge, recorded in North Walsham before. One is probably native to parts of Britain, according to Stace (2019), but seen as a casual in Norfolk now, the other a naturalised neophyte, originally from the antipodes. Four-leaved Allseed, *Polycarpon tetraphyllum* is a member of the *Caryophyllaceae* that the BSBI has highlighted as spreading its range. At first glance it could be easily mistaken for Slender Pearlwort, *Sagina filicaulis*, with which it was found growing in pavement and tarmac cracks and gutters last summer at opposite ends of the town. In recent times, it was first seen on the borders of Norfolk and Suffolk in a gravelled yard at Gillingham in 2016 (Carter & Ellis, 2016).

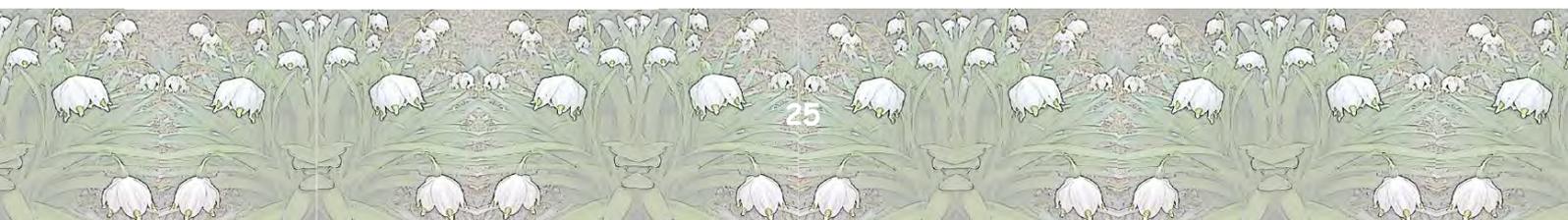


*Polycarpon tetraphyllum* Mike Crewe



*Cotula australis* Mike Crewe

The second find was Annual Buttonweed, *Cotula australis*, growing abundantly along pavements, gutters and in various people's gravelled drives. First encountered by me (and others) on a caravan site at Kelling Heath in 2015, such sites have since been highlighted as important places to look out for alien species (Pope & Stanley, 2018). The species was subsequently found in a similar venue on hard standing at Hunstanton in west Norfolk, and was picked up again by Suki Pryce during the 2020 New Year Plant Hunt in Mundesley.



Mundesley was also the site for another member of the genus, Hairless Leptinella, *Cotula dioica*, found spreading out onto the edge of the road from an abundant population on a couple of garden banks last year.

At this time of varied restrictions due to Covid, it seems appropriate to quote Brett Westwood's prescient comments: "an interest in a few parvenu street grasses" (and indeed other such plants) .... "offer us a laboratory on our doorsteps and a chance to observe and interpret their progress in a rapidly changing and modified world."



Cotula dioica

Mike Crew

### Mary Ghulam

Beckett, G. Bull, A. & Stevenson, R. 1999. *A Flora of Norfolk*. Page 161. Privately printed.

Carter, R. & Ellis, R.W. 2016. Wildlife Report 2013-2016, Vascular Plants. *Trans. Norfolk Norwich Nat. Soc.* 49 (1): 98-107.

Pope, C. & Stanley, P. 2018. Caravan touring sites - an overlooked habitat for introduced species. *BSBI News* 139: 53-55.

Stace, C.A. 2019. *New Flora of the British Isles* (4<sup>th</sup> Edn). Middlewood Green; C&M Floristics.

Stroh, P. 2020. Country Roundups: England. *BSBI News* 143: 46-48.

Walls, R. 2019. Pavement weeds in Broadmayne, Dorset. *BSBI News* 141: 29-30.<sup>1</sup>

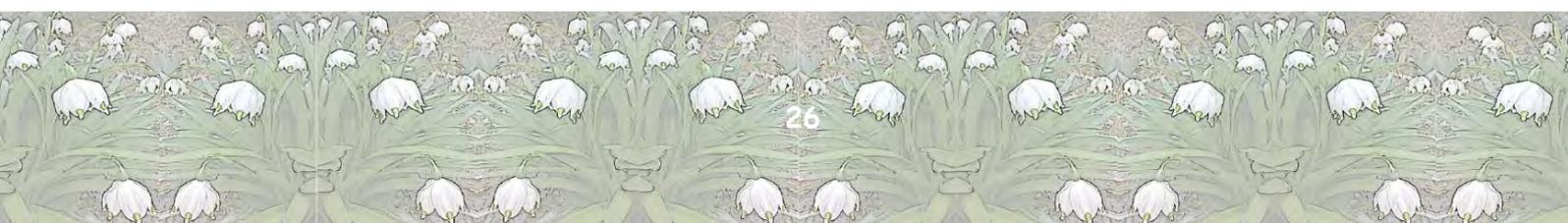
Westwood, B. 2019 Natural reflections. *British Wildlife* 31(2): 86.

### PHOTO COMPETITION FOR 2021: 'Mean-streets Botany'

Dear fellow botanists. We would like to invite you to compete in our novel photo competition 'Mean-streets Botany'. This was inspired by a discussion between Jo and I about sending Alien and Adventive reports to the BSBI, and the quality of photos acceptable to them. I said that I quite fancied seeing some gritty, street-creddy photos instead of 'good' ones, to which Jo picturesquely replied that the interesting *Cotula* she'd seen that day was 'in the gutter, enchantingly juxtaposed with a cigarette butt and some polystyrene granules'. With that splendid phrase, the 'Mean-streets' idea was born; and we'd now like to challenge those of you who appreciate the dark underbelly of plant recording to send us your 'worst' snaps. These mustn't be staged: all photos must be 100% as seen, with no art-directing or bringing in of dog turds, dead birds etc. Prizes will go to the most unusual taxa in the grottiest settings. Gosh - I feel a Calendar coming on . . .

**Please send your photos to Suki at [sukipryce@hotmail.co.uk](mailto:sukipryce@hotmail.co.uk), with appropriate caption, location, grid ref. and brief site notes, by end of December 2021 - and let us know if you'd like to help judge the Competition!**

### Suki Pryce



I wrote this next article in the space of about 30 minutes for the Broadland Tree Wardens' Magazine "Broadsheet", and decided to 'upcycle' it for NFG News when I was worried about not having enough content. BobL then kindly proof-read for me and observed that although I had covered 'where not to plant' satisfactorily, I had not actually said much about the 'Right Plant' aspect. He kindly filled in the gaps for me, and thus is credited as a joint author. JP

## **RIGHT PLANT, RIGHT PLACE: Where to plant trees and shrubs ... and where not to**

Tree planting is seen as one possible solution to climate change, through carbon sequestration; and trees are also beneficial in other ways: helping to reduce the urban 'heat island' effect; reducing erosion and soil loss; taking up nutrients which might otherwise end up in watercourses; and supporting a wide range of other animal and plant species, thus preserving global biodiversity. Trees and shrubs also look attractive and make a positive contribution to our mental wellbeing.

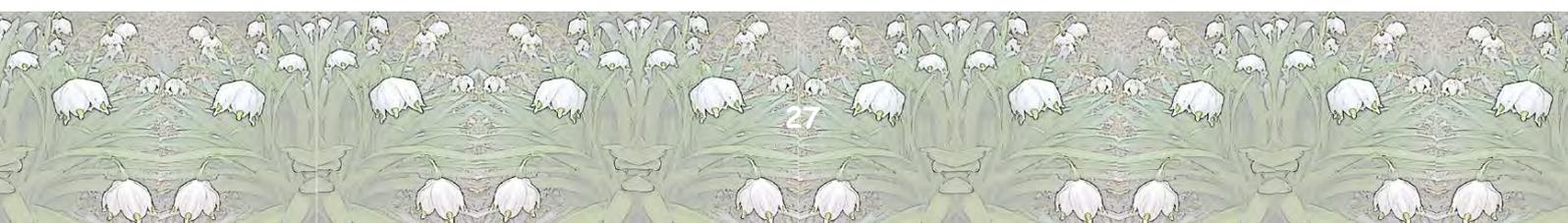
In recent years, tree planting on a massive scale has been promoted by governments and charitable bodies across the globe as a means of locking up carbon dioxide and hence ensuring that global warming does not reach a tipping point. In the UK, it has been proposed that 1.5 million hectares of additional woodland are needed by 2050 in order for the UK to become carbon neutral. This can be delivered through tree planting, or by allowing or encouraging existing woodlands to increase their area through natural regeneration. More information on the subject can be found at <https://treecouncil.org.uk/science-and-research/natural-regeneration/> and <https://www.woodlandtrust.org.uk/media/47692/emergency-tree-plan.pdf>.

From time to time, we as botanists and Flora Group members are asked for our opinion on tree planting, and this may happen more frequently as efforts to plant those 1.5 million hectares of new woodland get fully underway.

### **Where not to plant trees**

While tree planting or allowing natural regeneration has many benefits, there is also a potential downside, in terms of loss of agriculturally productive land, or loss of a habitat of a higher ecological or environmental value and its replacement with woodland.

Carbon sequestration is a natural process, and it is going on all around us. For example, our marshes and bogs, if left undrained, are capable of locking up vast amounts of carbon dioxide in the form of peat. There is a danger that if tree planting takes place on the agricultural least productive land, this might, in some parts of the UK, lead to an unintentional adverse impact upon marshes and bogs, with a consequent loss of biodiversity. Furthermore, if you were to plant trees on marsh or bog-land, you may not gain much in terms of carbon sequestration and there could even be a reduction in carbon sequestration in that location as the natural process of peat formation is disrupted.



So, if we can't plant trees on our arable land, and we can't plant them on our marshes and bogs, where should we plant them? How about agriculturally unproductive grassland? It sounds like an ideal solution to the problem, until you realise that these grasslands are often agriculturally unproductive because they are on 'poor' soils: on chalky, sandy, or heavy clay soils. Some of these grasslands have never been subject to agricultural improvements, and can support a rich and diverse flora, with uncommon plant species, and associated invertebrate and fungal interest, such as waxcaps. In some cases, the flora may not even be particularly diverse; for example infertile acid sands often do not support a very wide range of plant species, and certainly nowhere near as many plant species per square metre as, say, chalk downland; but the species these sites do support can include some very rare plants.

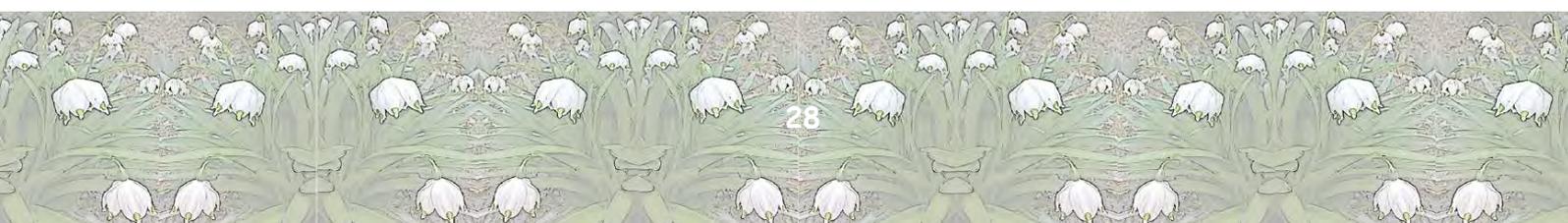
Finding sites to plant the trees we need is therefore more difficult than it might first appear. It is possible to set some basic ground rules though:

1. Don't plant on agriculturally productive land (Grade 1 or 2). To find out where this is, see <https://magic.defra.gov.uk/MagicMap.aspx> and then select 'Landscape', 'Landscape Classifications' then 'Agricultural Land Classification - Provisional (England)'
2. Don't plant on County Wildlife Sites, Roadside Nature Reserves or sites of archaeological importance (to find out where these are, see [http://www.nbis.org.uk/sites/default/files/documents/Designated\\_WildlifeSites\\_2020\\_600dpi\\_plusDistboundary.pdf](http://www.nbis.org.uk/sites/default/files/documents/Designated_WildlifeSites_2020_600dpi_plusDistboundary.pdf) & <http://www.heritage.norfolk.gov.uk/map-search>)
3. Don't plant on marsh or bog
4. Don't plant on other rare habitats, such as heathland, acid grassland, old hay meadows or chalk downland (refer to <https://magic.defra.gov.uk/MagicMap.aspx> then select 'Habitats and Species' then 'Habitats')
5. Don't plant on sites which support rare plant or animal species

The BSBI is developing a science-based approach which uses our knowledge of the UK flora to identify areas of important habitat which are either unsuited for tree planting or where further survey is needed before a location might be deemed suitable, and this guidance will be made more widely available to decision making bodies such as Natural England and local authorities later this year.

It is obviously essential to ensure that especially important site for conservation such as heath, bog, chalk grassland and old hay meadows are protected, especially if they are locally or nationally designated. But how about amenity grassland or farmland?

There are things you can easily check for yourself if asked to comment on the suitability of a grassland site for tree planting; for example, does it look as though it might support a broad range of plant species, perhaps with a few tweaks to the management? Here in Norfolk, lower quality grasslands will fall into one of two camps: coarse, rough, tussocky grassland; or close-mown amenity grassland. If you can count fewer than 5 different broad-leaved plant species in an area measuring 1m x 1m in either of these types of grassland, then it is likely that the grassland is of lower botanical value and hence more



suitable to tree planting. You can also look for negative indicator species: if there are nettles, hemlock, alexanders, or broad-leaved dock present, then you can be reasonably confident that the area of grassland you are looking at is on fertile soil and so very unlikely to support rare or scarce plant species.

It is important to realise that new woodland will never develop a diverse ground flora comparable to that of ancient woodlands, and will mainly support invertebrate species already common in the surrounding area; and yet, as it grows, will inevitably shade out the nearby grassland, arable margins, hedge banks and ditches, any of which could support the last remnants of an incredibly rich, and light-dependant flora and fauna.

At its zenith, after the planting of hedges in the era of Parliamentary Enclosure, but before the introduction of herbicides, pesticides and inorganic fertilisers, our agricultural land supported a greater diversity of plants and animals than the woodland that much of it replaced. Many woodland or woodland-edge species spread out along the new hedgerows; arable land supported scores of arable 'weeds' that in turn provided food for farmland birds; grasslands were home to the greatest diversity of all, including hundreds of species of wildflower and the associated invertebrate fauna. Unshaded ditches supported an abundance of aquatic flora and fauna.

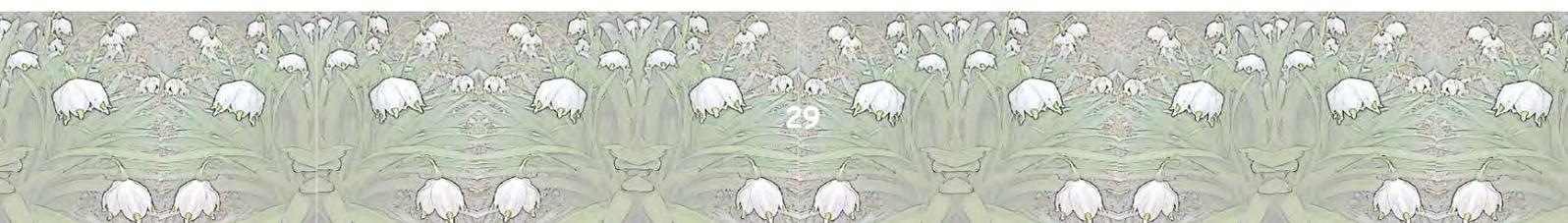
All this agricultural land biodiversity was (and is) light-dependant and will be lost with over-zealous or indiscriminate tree planting. It may be said that we have already lost so much that it is too late to be overly concerned with what is left. However, the scale of tree planting now envisaged amounts to planting up an area of land the size of one or two counties, so we should think about possible losses due to tree planting being on a similar scale.

Although we have lost most of our agricultural biodiversity over the last half-century, virtually none of the plants and animals involved have actually gone extinct at a national level. The 2014 Vascular Plant Red List for England found that of the UK Broad Habitats, arable ranked 4<sup>th</sup> for the number of rare and threatened plant species it supports, surpassed only by heath, montane and bog habitats.

We therefore need to develop guidance to ensure that tree planting schemes 'automatically' safeguard light-dependant plant and animal communities in agricultural environments and that it is not assumed that tree planting on farmland will necessarily lead to an overall biodiversity benefit.

### Universal rules to tree planting

If we are to retain the last vestiges of our light-dependant flora and fauna at the same time as tackling global warming, there have to be some universal rules of tree planting that apply automatically to all planting schemes:



1. Leave a strip c20m wide all around the newly planted areas, so that the growing trees do not shade the hedge, hedgebank or boundary ditches.
2. Manage the grassland or arable land within this 20m strip, cutting grassland 2x annually in July and October, or cultivating the arable margin every 2-3 years, so as to conserve wildflowers, arable weeds, and the invertebrate species and indeed other groups that depend upon them.
3. Ensure that 25% of the woody species planted are shrub species, such as hawthorn, blackthorn, dog rose, goat willow and hazel, rather than trees. In addition to providing structural diversity, such shrubs support a higher density and broader range of species of nesting bird compared to standard trees. The shrubs should be planted around the margins of the new woodland and managed by coppicing.
4. Hedges which lack standard trees may be enhanced by introducing blossom species such as wild cherry, rowan, whitebeam or apple, which will also provide song-posts for birds.
5. Look at a map or aerial photograph and try to plant new woodland so as to physically connect existing older woodlands, thus allowing the woodland flora and fauna to colonise the new wood more readily.
6. Consider whether natural regeneration might deliver a better long-term result: if you are close to existing native woodland, then allowing nature to take its course may be preferable to planting.

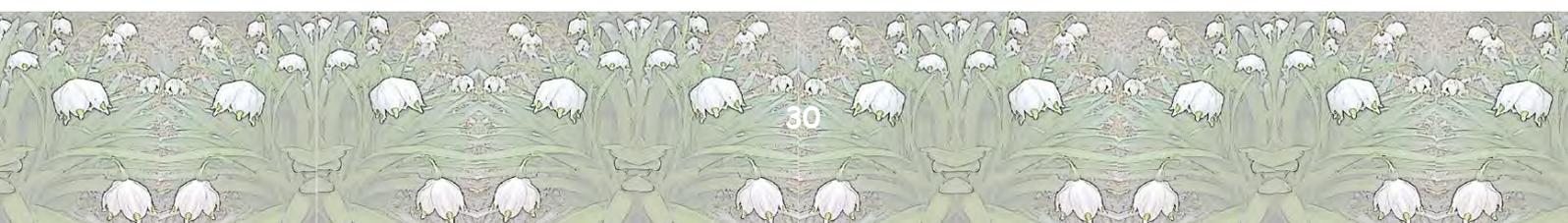
### The role of botanists and conservationists in informing tree planting

By giving advice on which species of tree and shrub to plant in what area, and especially by advising an approach to planting which avoids impact on nearby light-dependant habitats, we can ensure that tree planting enhances rather than further depletes our farmland flora and fauna. There are a number of ways in which we can do this:

1. Advice to District Councils on developing 'rules of planting' specific to that area.
2. Helping to survey possible tree planting sites.
3. Advising Tree Wardens, both individually and through local networks.
4. Identifying areas of importance for rare arable 'weeds' and alerting biological records centres and local authorities of these or carrying out surveys where data is not available.
5. Advising individual farmers and landowners who approach us for advice on tree planting schemes.

Finally, remember that our membership has a wealth of 'in-house expertise': we have botanists, ecologists, conservationists, historians and land-managers, and we have members who have been tree wardens for a considerable period of time, and for whom most of the above is second-nature. If someone asks you for advice on tree planting, and you have any doubts, then just ask.

**Jo Parmenter & Bob Leaney**



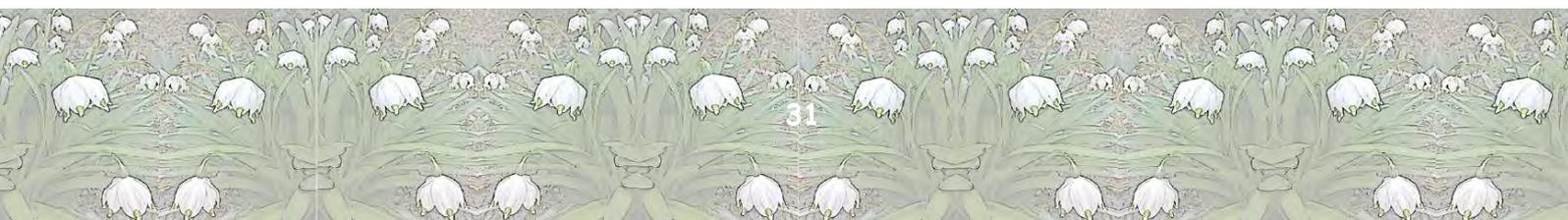
### A NORFOLK FLORA GROUP CROSSWORD 2021

And now for everyone's favourite bit of the newsletter!! Brace yourselves for another round of fiendishly frustrating clues from our little feathery friend, the Sedge Warbler, who despite having a head not much bigger than a hazelnut, still seems to be able to come up with a challenge for even the finest minds of the Flora Group JP

#### THE CROSSWORD

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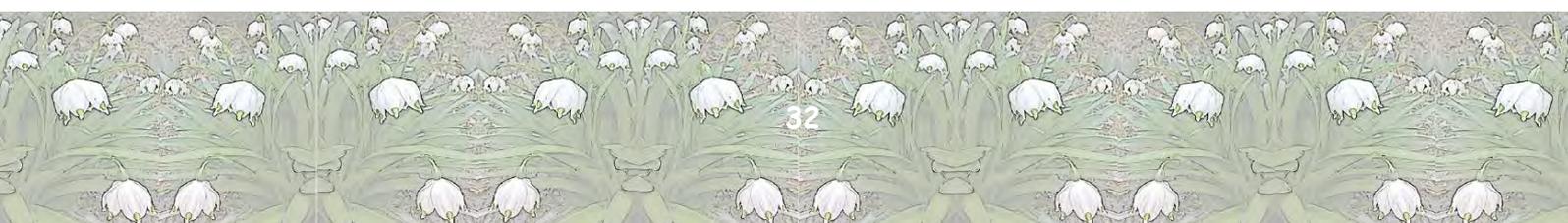


**THE CLUES.....****Across**

1. Family of exotic-looking flowers. (11)
9. Asian and Australian milkweed ahoy! (4)
10. Bouncy plant? (6,5)
11. Vehicle goes round the bend. (3)
14. Short of headgear. (7)
16. Superfood algae? Sounds like what bryologists do! (3,4)
17. Senior shrub. (5)
18. Big cat is revealed now yellow plant is less dandy! (4)
19. Darkest part is populated with ursine marmalade enthusiasts. (4)
20. Where to keep your photos of white flowers? (5)
22. Cold within the extremes of Italy. (3)
23. Mice rob confused organism. (7)
24. Argument about line of lettuce. (3)
28. Bashed gloop to make yellow wetland flower. (3,8)
30. Mud? First move a rotten log. (4)
31. Sedge of isolated places? (5,6)

**Down**

2. Pillage in the arable field. (4)
3. Glabrous plant has not one. (4)
4. Fido stood up to the spiny plant. (4)
5. Bzzzz! no horses around so initially Come! Let's eat girls!! (4)
6. Simply more cross. (7)
7. Confused potato? No Meg! It's a water plant. (11)
8. Daffodils-es! (11)
12. Confused truth claim in the Ranunculaceae family. (11)
13. Look for the little perforations ... (2,5,4)
15. Part of grisly lycra on the quiet. (5)
16. Mused uncertainly on succulent family. (5)
20. Cherry-like fruit in Malpighiaceae family. (7)
21. Shuffle 1009. (3)
25. Power source for field botanists. (4)
26. Found in crocosmia! (4)
27. Fuel in towrope attachment. (4)
29. It's grim being under it, unless you're a golfer. (3)





## ..... LOOKING FORWARD TO THE 2021 FIELD SEASON

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

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

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

**Eyebrights** - lovely to look at, but horrendous to identify...

**Highland Fling Thing** - Bob E is going to take us a-roaming on the Holt-Cromer Ridge.

**Holkham Hop**- Jake Fiennes has invited us to come along and have a look at some of their arable land. Should be some exciting 'weeds'....

**It's the Pits** - Sam B and Peter L have put together a series of fantastic County Wildlife Sites for us to look at along the River Wensum.

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

**Rambling Roses** - BobL and Alex P lead a workshop on more tricky taxa at Wheatfen.

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

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

**Wildflowers Revealed** - BobL is going to take us to Dersingham Bog this year, and promises to reveal something interesting. The format will change to a more learning-focused event for budding botanists in the morning and then those who wish to stay on for recording in the afternoon can do so.

## Jo

If you've been sitting there reading this and thinking it all sounds vaguely familiar, that is because it is! The events we had previously planned for spring 2020 we will put off until spring 2022, but we are reasonably confident that the above, and others, will be able to go ahead from July onwards and a programme will be out in due course. Sadly, we may find that not all pubs are still in business, so there could be substitutions on the day.

