

Flora News

Newsletter of the Hampshire & Isle of Wight
Wildlife Trust's Flora Group

No. 56 Spring 2019 Published January 2019



In This Issue

Forthcoming Events	2	
Reports of Recent Events	5	
Features		
Assessing Decline in Fluctuating Populations: A Hampshire Case Study (Part 2) Martin Rand	11	
Western Gorse <i>Ulex gallii</i> in the New Forest	Neil Sanderson	15
A Field Guide to the NVC – Part 5: Wet Brackish Grassland.....	John Norton	19
Recording		
VC11 Notes and Records.....	Martin Rand	29
VC12 Records	Tony Mundell	39
Membership and Recording Information.....	48	

Dear Flora Group member

In this issue we have details of lots of events to be held during 2019. Our Annual General Meeting (AGM) this year will be held on Saturday 18 May 2019 when we will be visiting Hogmoor Inclosure and The Slab in the vicinity of Bordon. Other field meetings during 2019 include visits to Headley Gravel Pit, Old Burghclere Lime Quarry, marshes and meadows in the vicinity of Stockbridge and an interesting estate at Cholderton.

In response to requests from Flora Group members, Martin Rand and Andy Cross will be leading training days during June 2019 to help people identify sedges and grasses. In August Gareth Knass will be leading a training day on the identification of roses. We are very grateful to everyone who has helped to organise these events.

For a variety of reasons, a number of Flora Group events scheduled to take place last year had to be cancelled. It would therefore be extremely useful if you could let the leader know if you are intending to participate in an event. The leader would then be able to inform you if the event has to be cancelled or let you know about any other unforeseen circumstances.

As usual we welcome your suggestions for Flora Group events or activities. Please raise your ideas with any of the Committee members – Sarah Ball (Chairman), Catherine Chatters, Clive Chatters, Ginnie Copsey, Andy Cross, Isobel Girvan, Gareth Knass, Tony Mundell, John Norton, Martin Rand or Neil Sanderson.

We are always keen for more people to provide contributions to *Flora News* on any relevant botanical topics. If you have enjoyed any of the Flora Group events and would like to write a report we would be very pleased to receive it. Please send your articles, notes or reports to Catherine Chatters (Flora Group Secretary) at Catherine.Chatters@hiwwt.org.uk or to her home address which is given at the end of this newsletter.

Catherine Chatters
Flora Group Secretary

John Norton
Editor

Cover photo: Red Wood Dock *Rumex sanguineus* var. *sanguineus*, Over Wallop, 4 October 2018 (*Tony Mundell*)

Forthcoming Events

Please note that for some Flora Group events prior booking is required. If so, this will be stated clearly in the text relating to that particular event. It would be useful if you could let the leader know if you are intending to participate in an event. The leader would then be able to inform you if the event has to be cancelled or let you know about any other unforeseen circumstances. Bring a packed lunch and suitable footwear to all meetings.

Saturday 9 Feb 2019, 10.30am–4pm
Herbarium Workshop
County Museums Service, Bar End, Winchester
Leaders: Martin Rand and Tony Mundell

This workshop is designed for people who are considering making collections for a herbarium (often necessary for critical groups of plants and new discoveries), and will cover the following: reasons for collecting specimens (and when not to!); how to collect; pressing; mounting; what to do with your specimens. It will include a practical workshop and a short guided tour of the Winchester herbarium, which holds interesting and historic collections.

It will be led by Martin Rand and Tony Mundell, with the assistance of staff and volunteers at the Chilcomb collections.

Meet at Chilcomb House, Bar End, Winchester, SO23 8RB, OS grid reference SU 491 284. There is plenty of parking on site. The nearest bus service is to the St Catherine's Park and Ride from many points in Winchester, from where there is a short walk out to the Bar End Road and then down Chilcomb Lane; people with bus passes can use them on this service. On arrival, follow the signs to reception and come to the meeting room which faces you down a short hall after you enter the building.

Fee £7: Booking is essential (by Tuesday 5 February at the latest) for this event, as numbers will be limited and part of the fee goes towards making up 'starter packs' for each participant. The remainder of the fee will go as a donation to the Hampshire Cultural Trust, who maintain the collections. Bookings should be made to Martin Rand (details on back page), and fees will be collected on the day. Please contact Martin if you have any queries. Bring your own lunch, but there will be facilities for hot drinks.

Sunday 24 Feb 2019, 10.15am-12.15pm, 1pm-3.15pm
(1) Atlas 2020 Review Session
(2) Workshop on GPS, mapping and recording technology
Testwood Lakes Education Centre, Totton
Leader: Martin Rand

This indoor meeting is split into two halves. You are welcome to come for either or both of them.

The first session will look at progress with the national Atlas recording work in Hampshire, and review what needs to be done for the final year of recording in 2019. There will be a chance to see new facilities on the Hants Plants web site to help with tracking down elusive species that look as if they are under-recorded, and some time to answer your questions. If time permits, there will also be a short session on things to occupy our idle hours once 2019 is over, including a demonstration of work in progress on an online Supplement to the 1996 Flora, indicating how you can contribute if you want to.

The second session answers a demand from a number of Flora Group members, and will look at techniques and technologies for finding out where you are in the field and for making records in the field. It will cover use of paper maps; basic GPS; smartphone apps like *GridReferenceFreeOS*; apps for smartphones and tablets with GPS, such as *OS Maps* and *ViewRanger*, that can be used even when your phone signal disappears; and the *iRecord* app for recording on smartphones and tablets.

Meet at the Wildlife Trust's Testwood Lakes Education Centre on the edge of Totton. The approach is a gated track off Brunel Road, Totton at OS grid reference SU 349 151. Ignore the public car park and Sea Scouts' building on the way and continue to the Education Centre at the end of the track, where there is ample parking. The grid reference for the Education Centre is SU 344 155. If you are using a sat nav the nearest postcode is SO40 3WX. The event will take place in the upstairs meeting room. Please arrive promptly at the start of your chosen session(s).

Both sessions are free, but **you need to book** providing a contact phone number, so that in the event of bad weather we can contact you. Please contact Martin Rand (details on back page) for bookings and queries. There are refreshment facilities at the centre in return for a small donation to the Wildlife Trust. As a small 'thank you' to Atlas 2020 contributors, there will also be free cake (gluten-free and glutinous) in the morning to go with your tea or coffee. If you are staying for both sessions, please bring your own lunch.

Saturday 18 May 2019, 10.30am-4pm
Flora Group AGM with visit to Hogmoor Inclosure and The Slab, Bordon
Leader: Tony Mundell

Both Hogmoor Inclosure and The Slab are areas of heathland that for many years have been used by the army for testing tanks. The frequently disturbed damp sandy soils have developed a rich flora with plants like Common

Cudweed *Filago vulgaris*, Coral Necklace *Illecebrum verticillatum*, Corn Spurrey *Spergula arvensis*, Heath Pearlwort *Sagina subulata*, Mossy Stonecrop *Crassula tillaea*, Shepherd's Cress *Teesdalia nudicaulis*, Small Cudweed *Filago minima*, Smooth Cat's-ear *Hypochaeris glabra*, Smooth Finger-grass *Digitaria ischaemum* and I am hoping we can refind X *Conyzigeron stanleyi* the hybrid between Blue Fleabane *Erigeron acris* and Bilbao's Fleabane *Conyza floribunda* that was present in 2018. The pine woods have a little Common Wintergreen *Pyrola minor*, and in the wetter areas we should also see Bottle Sedge *Carex rostrata*, White Sedge *Carex canescens*, Small Sweet-grass *Glyceria declinata* and Bristle Club-rush *Isolepis setacea*. Now that the army has ceased operations in the area it is worth seeing these plants as many of them will eventually be lost as the area scrubs over. After munching our sandwiches we will have our brief AGM then continue botanising at The Slab.

Meet at the new Hogmoor Inclosure car park at SU 7859 3536, nearest postcode GU35 9HL. This is accessed by a turning off Hogmoor Road at SU 7859 3571 onto a concrete track, then continuing for around 300 metres. By May a new café with toilets should have opened close to the car park and the children's play park. We will hold our brief AGM after our picnic lunch.

Contact: Tony Mundell (details on back page).

Saturday 25 May 2019, 10.30am-4pm
Visit to Headley Gravel Pit and Old Burghclere Lime Quarry
Leader: Tony Mundell

HIWWT would like the plant records updated for these two reserves. Headley Gravel Pit is well known for its impressive display of Green-winged Orchid *Anacamptis morio*, whilst Old Burghclere Lime Quarry has huge numbers of Fly Orchids *Ophrys insectifera*. However, our aim will be to make as complete a plant list as we can for both reserves. This meeting will be suitable for relative beginners as well as those experienced at plant recording.

We will start at Headley Gravel Pits, Park and meet in Ashford Hill Road, Headley (off the 339) SU 5151 6268, postcode RG19 8AD, at 10.30am. After lunch we will drive on to Old Burghclere Lime Quarry. Next to the farmyard gate at SU 469 577 there is another gate (that I will open) with a Wildlife Trust car park sign. Park in here and not in the adjacent farmyard. Access to the reserve is now along the road up to the line of railway cottages then through a gap between the cottages about half way along them.

Contact: Tony Mundell (details on back page).

Saturday 1 June 2019, 10.30am–4pm
Visit to Stockbridge Marsh on the River Test floodplain
Leader: Tony Mundell

Our visit is courtesy of various landowners bordering the River Test at Stockbridge, including Penny Burnfield. Our aim is to make a list of all the plants seen in the marshes and meadows north of Stockbridge in parts of SU 3535 and SU 3536 and if time permits also to the south of Stockbridge including the National Trust land. What we find will depend on which areas we can get access to and flowering times, but in the past SU 3535 has proved to be exceptionally rich with 13 different sedges recorded, including Lesser Tussock-sedge *Carex diandra*, Distant Sedge *C. distans*, Brown Sedge *C. disticha* and Long-stalked Yellow-sedge *C. lepidocarpa*. Many orchids have also been recorded, including Early Marsh-orchid *Dactylorhiza incarnata*, Southern Marsh-orchid *Dactylorhiza praetermissa*, Marsh Helleborine *Epipactis palustris* and Marsh Fragrant-orchid *Gymnadenia densiflora*. Other scarce plants previously found in this area are Broad-leaved Cottongrass *Eriophorum latifolium*, Blunt-flowered Rush *Juncus subnodulosus*, Marsh Lousewort *Pedicularis palustris* and Marsh Violet *Viola palustris*.

Meet at Penny Burnfield's house called Terstan in Longstock Road SU 3541 3612, postcode SO20 6DW at 10.30am. There will probably be a yellow 'Garden Open' sign marking the entrance. Please car-share if possible and be aware that the ground could be very wet in places.

Contact: Tony Mundell (details on back page)

Sedge Identification Workshop
Saturday 8 June and Sunday 9 June 2019, 10am–5pm
Leader: Martin Rand

This two-day workshop will provide an introduction to the sedge family (Cyperaceae) and will cover: sedge characteristics and differences from rushes, grasses and other assorted brown-flowered objects; sedge family genera; the sedge subgenera and main groupings found in Hampshire; use of keys for species ID at the bench and in the field.

On each day we shall have an introductory talk and bench session of 2-3 hours at the Wildlife Trust's Testwood Lakes Education Centre on the edge of Totton, before departing on trips to the New Forest and the Trust's Lower Test reserve to see a range of species of heathland, mire, river valley and acid, neutral and coastal grassland.

If you are using a sat nav to find Testwood Lakes Education Centre the nearest postcode is SO40 3WX. The approach is a gated track off Brunel Road, Totton at OS grid reference SU 349 151. Ignore the public car park and Sea Scouts' building on the way and continue to the Education Centre at the end of the track at OS grid reference SU 344 155, where there is ample parking.

Booking is essential and numbers will be limited. The course is designed as a unit and people will need to commit to attending both days; however, if any spare places remain in the last week, people who already have some experience of sedge ID will be able to book for the Sunday only. The fee for the two days will be £10. Contact Martin Rand (details on back page) for booking or queries. Participants will need to be able to undertake some rough walking of a couple of miles at a stretch on the field sessions. Refreshments will be available at the Testwood Lakes Education Centre for a small donation to the Wildlife Trust; participants will need to bring lunch each day.

Sunday 16 June 2019, 10.30am–4.30pm
Training Day: Grasses Workshop
Leaders: Andy Cross and Martin Rand

The day's training is for those at the 'Improvers' stage of identification. We are aiming to help you develop your grass identification skills by looking at grass anatomy and the classification of grasses according to tribes and genera. With that under our belts, we will then apply that to looking at the identification of some of the more widespread of our species. Please note that it isn't the object of the workshop to cover the identification of large numbers of grass species. There will be a short discussion about grassland habitats and the plant communities that they form part of. The first part of the day will be at Testwood Lakes Education Centre in Totton followed by a field visit to look at grasses in their habitats and plant communities.

We will base the workshop primarily on Martin Rand's grasses workshop notes (prepared for an earlier workshop and available on the Hants Plants website) though we will also spend some time with the grasses section of the *Vegetative Key to the British Flora* by John Poland and Eric Clement. The BSBI's 2010 *Grasses of the British Isles*, BSBI Handbook 13 by Cope & Gray will be essential for this workshop.

If you are using a sat nav to find Testwood Lakes Education Centre the nearest postcode is SO40 3WX. The approach is a gated track off Brunel Road, Totton at OS grid reference SU 349 151. Ignore the public car park and Sea Scouts' building on the way and continue to the Education Centre at the end of the track at OS grid reference SU 344 155, where there is ample parking.

Numbers will be limited and **booking is essential**. Please contact Andrew Cross in the first instance at andymcross@gmail.com.

Saturday 27 July 2019, 10.30am–4.00pm
Visit to Cholderton Estate at invitation of Henry Edmunds
Leader: Tony Mundell

Henry Edmunds has a large farm at Cholderton that spans the Hampshire/Wiltshire border. The estate is managed organically so is very rich in wildlife. In fact Henry puts as much effort into encouraging Lapwings to breed in his fields as growing crops, and the farm houses several rare breeds of animals. The arable flora is particularly rich, including the only site known in North Hampshire for Martin's Ramping-fumitory *Fumaria reuteri*. Arable plants are always fickle in their appearance but hopefully we should see that as well as other rarities like Fine-leaved Fumitory *Fumaria parviflora* and Field Gromwell *Lithospermum arvensis*. We will probably confine our attention to the Hampshire half of the estate. Other uncommon arable plants that have been recorded in recent years in the Hampshire part include Small Toadflax *Chaenorhinum minus*, Dense-flowered Fumitory *Fumaria densiflora*, Venus's-looking-glass *Legousia hybrida*, Prickly Poppy *Papaver argemone*, Rough Poppy *P. hybridum*, Corn Parsley *Petroselinum segetum*, Cornflower *Centaurea cyanus* and Night-flowering Catchfly *Silene noctiflora*.

We will also visit a botanically rich area of chalk grassland which has recent records for Field Fleawort *Tephrosieris integrifolia*, Bastard-toadflax *Thesium humifusum*, Chalk Milkwort *Polygala calcarea*, Squinancywort *Asperula cynanchica*, Hairy Rock-cress *Arabis hirsuta*, Pyramidal Orchid *Anacamptis pyramidalis* and Basil Thyme *Clinopodium acinos*. Nearby we might try to re-find Dyer's Greenweed *Genista tinctoria*, last seen in 2000. One or two old bushes of Common Juniper *Juniperus communis* occur naturally and Henry has planted some young bushes to help maintain it.

Please car share if possible. Meet at 10.30am at Home Farm farmyard SU 2327 4291, postcode SP4 0DR.

Contact: Tony Mundell (details on back page).

Saturday 17 August 2019, 10am – 4.30pm
Introduction to the identification of Roses in Hampshire
Leader: Gareth Knass

Join Gareth Knass for an introduction to the identification of roses in Hampshire. The focus will be on basic taxonomy, including recent changes in the taxonomy of Dog-roses, tips for identifying species present in the county and potential issues of hybrids. The event will include a morning session indoors at Testwood Lakes Education Centre in Totton and an afternoon session nearby in one or two New Forest locations to see a variety of species *in situ*. Numbers will be limited to 12 people and **booking is essential**. To book your place, please contact Gareth.

Contact: Gareth Knass garethknass@yahoo.com, tel. 01488 648321.

Reports of Recent Events

Visit to Longmoor Airstrip – Saturday 28 July 2018

A report by Tony Mundell

The plan was to start with a long, brisk walk with few botanical distractions in order to reach Longmoor Airstrip where I knew we would find interesting plants. There was a good weather forecast for a somewhat cooler day at the close of a very long heat wave that previously had made long walks rather uncomfortable, so I was expecting a good turn-out, but was surprised when only two people, Ken Sandell and Cathy Wilson turned up. Evidently my comments about the potential difficulty of finding enough parking deterred people.

Anyway the three of us stuck to the plan with the briefest of stops en-route to look at some spikes of Broad-leaved Helleborine *Epipactis helleborine* as well as the parched remains of Common Cudweed *Filago vulgaris* and Viper's-bugloss *Echium vulgare* frazzled-up by the drought. Once we reached the airstrip I used the 'GoTo' facility on my GPS to navigate to the plants of interest that I had seen on my check-out walk a week before. We refound Bristle Club-rush *Isolepis setacea* but most of the Coral-necklace *Illecebrum verticillatum* and Yellow Bartsia *Parentucellia viscosa* was dried up. However, later on we did find flowering plants of all these in good condition in damper areas. There was some splendid Allseed *Radiola linoides* but no sign of the Chaffweed *Centunculus minimus* that I had recorded in abundance in 2007. I searched a ditch trying to re-find the Round-leaved Crowfoot *Ranunculus omiophyllus* formerly there in 2007 but its place had been taken by Marsh St John's-wort *Hypericum elodes*.

Brookweed *Samolus valerandi* was noted in several places. This is mainly a coastal species and Longmoor Airstrip is its only known VC12 site. A few Lesser Centaury *Centaureum pulchellum* were in flower and nearby on bare sand it was surprising to see Sharp-leaved Fluellen *Kickxia elatine* as I regard it as a plant of arable field edges that tends to prefer calcareous soils rather than



Coral Necklace *Illecebrum verticillatum*, Longmoor Airstrip, 28 July 2018 (Tony Mundell)



Allseed *Radiola linoides*, Longmoor Airstrip, 28 July 2018 (Tony Mundell)



Smooth Finger-grass *Digitaria ischaemum*, Longmoor Airstrip, 28 July 2018 (Tony Mundell)

the acidic heathland of Longmoor. I managed to navigate to a rather hidden Royal Fern *Osmunda regalis*. It had produced spores but I fear that it will eventually be lost here in the dense scrub growth. In contrast, Common Wintergreen *Pyrola minor* is remarkably abundant in parts of the secondary woodland that are dominated by Rusty Willow *Salix cinerea* subsp. *oleifolia*. In that same habitat we found no sign of the Yellow Bird's-nest *Hypopitys monotropa* that I used to see here. It is an interesting plant lacking leaves and surviving without photosynthesis in a symbiotic relationship with a fungus in the genus *Tricholoma*, which in turn needs the roots of Rusty Willow or Beech. Sadly it seems to have disappeared recently from several VC12 sites.

Apart from the plants that I had marked with my GPS the week beforehand we did stumble on a few other species. The most significant of these was Smooth

Finger-grass *Digitaria ischaemum* in a new site. This was declared extinct in the 1996 Hampshire Flora but was subsequently found to be plentiful at The Slab, Bordon and is now also known at sites at Woolmer Forest and Hogmoor Inclosure.

A large female Wasp Spider was still in the same spot where I had seen it a week before and the ditches also supported a good number of Keeled Skimmer dragonflies. Round-leaved Sundews *Drosera rotundifolia* and Lousewort *Pedicularis sylvatica* were still in fresh condition in spite of the drought and with them I found a single spike in green seed of what I am sure was Southern Marsh-orchid *Dactylorhiza praetermissa*. There was a rain shower as we headed back but it must have provided welcome relief for many plants in the dusty, parched ground.

Carnivorous plants in Dorset – Sunday 5 August 2018

A report by Catherine Chatters

Following the successful Flora Group led by Tim Bailey in the New Forest during August 2017, Tim kindly offered to lead a Flora Group event focusing on carnivorous plants in Dorset.

On a gloriously bright, sunny, warm morning ten people met up with Tim at Studland on Sunday 5 August and had a most enjoyable and fascinating day looking at a wide variety of species and hybrids. We started by exploring Spur Bog, Tim's favourite place for studying carnivorous plants. Here we compared Common Sundew *Drosera rotundifolia* with Oblong-leaved Sundew *D. intermedia* and Great or English Sundew *D. anglica*. Clive Chatters described the leaves of *D. rotundifolia* as being shaped like soup spoons, compared with the grapefruit spoon-shaped leaves of *D. intermedia* and *D. anglica*. The flower stalk of *D. anglica* comes straight out of the centre of the rosette of leaves like a candle on a birthday cake, whereas the flower stalk of *D. intermedia* curves up like a hockey stick. Tim described the different habitat preferences of the sundews and explained that *D. anglica* 'likes to keep its feet wet'. Whilst at Spur Bog we also found *D. x obovata*, the sterile hybrid between *D. anglica* and *D. rotundifolia*.

It was interesting to learn that sundews obtain approximately 60% of their food from insects; they can also obtain nutrients from non-animal sources such as pollen, from the atmosphere and through their roots.

At Spur Bog Tim showed us Lesser Bladderwort *Utricularia minor* and explained how bladderworts catch their prey, involving trap-doors and trigger hairs. After a bit of patient searching Felicity Woodhead finally found Pale Butterwort *Pinguicula lusitanica*, the smallest of our butterworts, with pale grey-green leaves.

Before leaving Spur Bog we enjoyed seeing Marsh Gentians *Gentiana pneumonanthe* in flower, the deep pink flowers of Dorset Heath *Erica ciliaris* and an impressive population of Marsh Clubmoss *Lycopodium*



Tim Bailey and Flora Group members at Spur Bog, Dorset, 5 August 2018 (Catherine Chatters)



Dorset Heath *Erica ciliaris*, Spur Bog, Dorset, 5 August 2018 (Gareth Knass)

inundatum. We also came across the Thread-leaved Sundew *D. filiformis* which is native to North America and had obviously been planted here.

Leaving Spur Bog we set off to Little Sea where Tim had hoped to show us Southern Bladderwort *Utricularia australis* in flower. Although Tim did find this species for us, unfortunately it wasn't in flower and in the hot summer weather of 2018 it was not in good condition.

After our picnic lunch we headed off across Godlingstone Heath nature reserve towards the Agglestone Rock and were rewarded with the stunning sight of bright clumps of *Drosera x eloisiana*. This natural hybrid between *D. intermedia* and *D. rotundifolia* has only been reliably recorded in Dorset, despite the fact that its parents commonly grow together. Tim explained that the hybrid between these two species was first reported and published as *D. x belezeana* based on a specimen collected in France in 1890. However, the type specimen held at Paris Herbarium is not actually the hybrid and is clearly *D. rotundifolia*. Tim supplied the replacement name for the hybrid (based on the names of his daughters Eloise and Georgiana), following the collection of verified

hybrid material from Dorset which has been deposited in the Herbarium of the Royal Botanic Gardens, Kew.

We enjoyed studying and photographing the sparkling, bright red patches of sundews beneath the Agglestone Rock before wandering back to our cars. Afterwards, John Day (BSBI *Utricularia* Referee) led Tony Mundell and Gareth Knass to another bog/pond near Wareham where they found many more sundews and where Tony was delighted to find Bog Sedge *Carex limosa*. Tim kindly spent time showing a couple of us Lower Hyde



***Drosera filiformis*, Spur Bog, Dorset, 5 August 2018 (Catherine Chatters)**



***Drosera x eloisiana*, Godlingstone Heath, Dorset, 5 August 2018 (Gareth Knass)**

Bog where work is being undertaken on behalf of the Forestry Commission to control the invasive non-native Pitcher Plant *Sarracenia purpurea*.

Many thanks to Tim for leading and arranging an extremely enjoyable and fascinating day. Flora Group members who don't already own a copy of his book will be interested to know that Tim is the co-author (with Stewart McPherson) of a very attractive and informative book titled 'Carnivorous Plants of Britain and Ireland' published in 2016 by Redfern Natural History Productions.

Workshop on Charophytes (Stoneworts) – Sunday 21 October 2018

A report by Andy Cross

The Stonewort workshop led by Martin Rand and Alison Bolton was a one-day introduction to this fascinating group of plants. For some of us we were meeting them properly for the first time, whilst for others it seemed to be a day for rejuvenating interest. The day was divided into a morning session in Testwood Lakes Education Centre followed by a visit to see Stoneworts in their habitats in the Crockford Stream and associated former marl pits (SZ39P).

The session in the Education Centre drew on Martin's article on Stoneworts in *Flora News* No. 55 (Autumn 2018) to which all reading this piece are referred to as an excellent overview of charophyte literature and a list of the modern (post-1999) records for this group in our two vice-counties. The first part of the time in the Education Centre was an illustrated presentation by Martin that described the anatomy of stoneworts and some of the key identification features. Following on from the presentation, we all had a go at identifying a range of species recently collected by Alison. This was a valuable exercise both in getting to use a stonewort key under Martin and Alison's direction that was immediately followed by group discussions on problems interpreting the keys. The keys are good but, as with all of them, one has to understand the anatomical and morphological characters – given that we were stepping into the world of algae it meant new features and names had to be learnt; but that is no bad thing.

Alison, in addition to bringing us fresh specimens also brought in some fossil stonewort oogonia collected from Hampshire – these were somewhere between 30-40 million years old and a pleasure to see.

I thought Martin and Alison provided a superb workshop and thank them both for the time and effort they put in to provide a great introduction to stoneworts – I hope it leads us to explore wetlands for this group and contribute to records on their distribution in the landscape. I would also like to thank Hampshire & Isle of Wight Wildlife Trust, and Catherine Chatters in particular, for organising and providing the facilities for these workshops.

Since the workshop, I have found that the excellent '*Polish charophytes: an illustrated guide to identification*' (Urbaniak & Gąbka 2014) is available online via

researchgate.net and can be downloaded for free. My thanks to the authors for this generous gesture.



Andy Cross looking pleased to have found some charophytes (*Nitella translucens*), New Forest, 21 October 2018 (Catherine Chatters)

REFERENCES

Rand, M. (2018). Charophytes (stoneworts) – our neglected plants. *Flora News*, No. 55. Hampshire & Isle of Wight Wildlife Trust.

Urbaniak, J. & Gąbka, M. (2014). *Polish charophytes: an illustrated guide to identification*. UWP, Wrocław.

Flora Group/BSBI Exhibition Meeting – Sunday 2 December 2018

A report by Catherine Chatters

Martin Rand and Tony Mundell organised another enjoyable Exhibition Meeting at Testwood Lakes Education Centre, making excellent use of a rather grey December day. Martin recalled that his predecessor Pete Selby had arranged the first of these Exhibition Meetings in 2002 at Bishopstoke; since then they have become a very popular annual event and an excellent opportunity for Flora Group members to get together and catch up on botanical news.

Rosemary Webb and Nigel Johnson exhibited a superb display of photographs they'd taken of orchids, including unusual colour forms and some interesting hybrids. John Poland brought along a selection of labelled twigs, and Flora Group members will be pleased to know that his



Rosemary Webb and Nigel Johnson presented another fascinating display of their superb photographs of orchids (Catherine Chatters)



Robin Walls and John Poland with copies of their newly published *Field Key to Winter Twigs*, written by John and illustrated by Robin (Catherine Chatters)

book to assist with identification of winter twigs has now been published. Illustrated with excellent line drawings by Robin Walls, the book is titled '*The field key to winter twigs: a guide to native and planted deciduous trees and shrubs and woody climbers (xylophytes) found in the British Isles*' and is available from Summerfield Books.

Sarah Ball's book '*Wild Flowers of Eastern Andalucía: A field guide to the flowering plants of America and the Sierra de los Filabres region*' was available to purchase, and there was an opportunity to obtain Clive Chatters' book '*Flowers of the Forest: Plants and people in the New Forest National Park*'. A sale of second hand books raised £55.50 for Hampshire & Isle of Wight Wildlife Trust.

As usual there was an interesting range of herbarium sheets for people to inspect. I was interested to see the pressed specimens of Chia *Salvia hispanica* brought to the meeting by Eric Clement. This species, which is native to Mexico and Guatemala, was first recorded in Britain during 2014 on the edge of Chew Valley Lake in Somerset; it was first recorded in Sussex in 2018 but has not yet been recorded in Hampshire. Chia means 'oily'

and its seeds are used in breakfast cereals, energy bars, yoghurt and bread. It was apparently originally used by the Aztecs. Chia was first described and pictured in the Mendoza Codex in the sixteenth century when it was used as widely as maize.

Paul Stanley from the Isle of Wight brought along a very interesting selection of herbarium sheets, including Brown Galingale *Cyperus fuscus* as a casual in a garden centre car park. Paul has had a particularly fruitful eighteen months finding new species for the Island.

After a tasty bring-and-share buffet lunch, we enjoyed illustrated talks on a range of botanical topics. Martin Rand began the afternoon's entertainment with a presentation titled 'Seasonality – in praise of early botanising'. He has now seen Water Bent *Polypogon viridis* in every month of the year and noted that this species has become much more widespread in recent years. Winter is a good season to record evergreens such as Juniper and alien conifers and a good time to spot Mistletoe. The non-native flowering shrub *Cornus mas* is easy to spot in the winter and this is another species that Martin has observed becoming established in the wild. Inspired by Paul Stanley, Martin decided to visit Gunwharf Quays in February and was rewarded with plants such as 'Tiny' Bedstraw *Galium murale* and *Polycarpon tetraphyllum* var. *diphyllum* i.e. the 'Two-leaved, Four-leaved Allseed'!

It's certainly been a year of extreme weather conditions and the snow we experienced in March prevented Martin doing much botanising although he did find non-native comfreys, for example *Symphytum grandiflorum* flowering that month.

During the first week of April Martin participated in the Flora Group's visit to Port Solent and was pleased to see *Galium murale* flowering and fruiting. Other plants seen that day included Cut-leaved Deadnettle *Lamium hybridum* on bare soil in an ornamental border and Thick-leaved Stonecrop *Sedum dasyphyllum* (an alien) growing on the sea wall.

Botanising was challenging in the hot, dry summer of 2018 and September turned out to be one of the most productive months for Martin's plant-hunting that year. He finished his talk with a photograph of the Lady's-mantle *Alchemilla glaucescens* looking particularly attractive in the rain during a walk on Ingleborough.

John Norton's talk was titled 'Aliens and Archaeophytes'. John also referred to the Flora Group's visit to Port Solent, mentioning plants such as Parsley-piert *Aphanes arvensis*, Small-flowered Buttercup *Ranunculus parviflorus* and Hen-bit Deadnettle *Lamium amplexicaule* which is now quite common at the base of walls in Gosport. It was fascinating to hear that Jersey Cudweed is spreading and is growing in driveways which have recently been replaced by block paving; John wonders whether it has been brought in with the sand supplied by builders' merchants.

John showed some photos of Twiggy Mullein *Verbascum virgatum* which was found for the first time at Browdown in 2018. Also at that site large patches of Cornfield

Knotgrass *Polygonum rurivagum* have colonised the shingle where willow scrub had been cleared. John emphasised that it grows completely prostrate, in contrast to published accounts which state it is upright.

Debbie Allan's garden was the source of some of John's photographs including Oak-leaved goosefoot *Chenopodium glaucum* and the rather attractive *Impatiens balsamifera*. A unusual plant which John and Debbie found in a local Gosport park was *Amaranthus deflexus* with its distinctive inflated fruit capsules.

A plant which John has noticed is increasing in distribution is Bastard Cabbage *Rapistrum rugosum*, a species which is associated with calcareous soils and which has pale yellow flowers and distinctive fruits about 3mm across.

Tony Mundell took us on an illustrated tour of Ireland in his search for the Kerry Lily *Simethis mattiazzii* actually growing in the county of Kerry. Tony and his wife Pat had enjoyed a holiday exploring the beautiful coastal scenery along the popular tourist route known as the Ring of Kerry and, whilst searching for the Kerry Lily, had come across a lot of interesting plants such as the Irish Marsh Orchid *Dactylorhiza kerryensis*, the Irish Spurge *Euphorbia hyberna* with its knobbly fruits and St Patrick's Cabbage *Saxifraga spathularis*. Tony was delighted to see familiar plants growing in abundance, for example Royal Fern *Osmunda regalis* which is very common in south west Ireland. Other plants Tony mentioned included Chamomile *Chamaemelum nobile*, Round-leaved Crowfoot *Ranunculus omiophyllus*, Hay-scented Buckler fern *Dryopteris aemula* and Yellow Centaury *Cicendia filiformis*. Sand dune habitats supported Sea Bindweed *Calystegia soldanella*, Sea-holly *Eryngium maritimum*, Sea Spurge *Euphorbia paralias* and the bright yellow flowers of Wild Pansy *Viola tricolor* var. *curtisii*. Tony was delighted to achieve his aim of finding the Kerry Lily growing in Kerry on Abbey Island (an island only at high water), here amongst Purple Moor-grass *Molinia caerulea*.

Clive Chatters showed us photographs of some of the plants he'd seen and places he'd visited in 2018 whilst undertaking research for his forthcoming book on heathland. Upright chickweed *Moenchia erecta* was growing in 'huge abundance' at East End in the New Forest where it has benefited from lots of poaching by the cattle. Clive had enjoyed a trip to the Isles of Scilly, particularly Wingletang Bay on St Agnes, which he described as being like 'Dartmoor at sea level' and where Chamomile was growing. He was pleased to find Dwarf Pansy *Viola kitaibeliana*, a Scilly specialist growing on St Martin's, which he'd photographed next to a rabbit dropping to emphasise the plant's tiny size. Although bracken is often criticised as being invasive, when well-managed it is a valuable habitat supporting many invertebrate species as well as plants such as Lily-of-the-valley *Convallaria majalis* which Clive had photographed in the New Forest.

Clive shared photographs of some of the plants he'd seen during the Flora Group visit to Dorset to focus on carnivorous plants. Marsh clubmoss *Lycopodiella inundata* was also seen that day where it was growing in heathland habitats which were poached and grazed by Sika Deer on very infertile soils.

Travelling around Scotland, Clive had visited Assynt, an area which is quite acid with base-rich volcanic dykes; here he'd seen lots of Lesser twayblade *Listera cordata*, Beech Fern *Phegopteris connectilis* and Upright Vetch *Vicia orobus* growing on sea cliffs amongst the heather. On the Black Isle he'd been interested to find Yew, Juniper and Scots Pine growing together.

Back in the New Forest, Clive had found Flea Sedge *Carex pulicaris* growing in abundance on base-rich clays in Roydon Woods Nature Reserve – a 'real sign of quality'. Pillwort *Pilularia globulifera* was doing well on Beaulieu Heath as the stock numbers have increased. By late July Cadnam Green looked very droughted but Chamomile *Chamaemelum nobile* stood out vividly as bright green patches of vegetation.

Clive was delighted that Hampshire & Isle of Wildlife Trust have taken on the management of an additional 250 hectares in Woolmer Forest. Where a mowing machine got stuck at Woolmer, Marsh Clubmoss *Lycopodiella inundata* is doing very well and Clive recalled that Francis Rose used to say 'The JCB is this inter-glacial's woolly mammoth!'

After the illustrated talks, Martin Rand took the opportunity to let Flora Group members know about future botanical activities:

- The Flora of Hampshire was published in 1996 and its coverage of aliens was relatively sparse, so Martin would like to produce a Supplement as an ongoing, on-line exercise.
- The Hampshire Rare Plants Register needs to be updated and Martin would like Flora Group members to help by preparing detailed survey sheets for certain sites, with notes on associated plants, management, threats, etc. Martin would like to digitise the sheets and make them available on the web.
- Christine Taylor, who now works at Portsmouth City Museum, has discovered lots of un-curated natural science material including herbarium sheets which will be made available via computer.
- Martin is trying to persuade the County Museums Service to photograph the herbarium sheets which are stored at Winchester so that they can be stored and made accessible to the public electronically.

Sarah Ball thanked Martin and Tony for organising another very successful and enjoyable Exhibition Meeting and thanked Clare and Pat for looking after us and keeping us supplied with refreshments.

Assessing Decline in Fluctuating Populations: A Hampshire Case Study (Part 2)

Martin Rand

INTRODUCTION

Last time (*Flora News* 54, spring 2018) I looked at recognised ways of evaluating the threat status of species, some of which relate to decline over time, and considered the issues when using geographical cover in circumstances where abundance measures were not available. These issues are especially relevant for quite small geographical regions like a UK county. I also considered ways to break down a diffuse metapopulation spread over generally suitable terrain into sub-units when census data *is* available, but not necessarily in the ideal form of a planned experiment. This led to a method using cluster analysis, which intuitively seems to provide a good basis for defining the sub-populations related to terrain, although it inevitably ignores other factors such as reproductive biology or a range of other local conditions.

In this article I will look at the census data using the subpopulations I considered 'usable' for analysis, to test the approach and see what we can derive reliably from that data. Since the last article appeared, the New Forest Study Group has provided two more years' worth of data for several Marsh Gentian (*Gentiana pneumonanthe*) sites, and this is incorporated.

I should make clear that although we shall be looking at regression lines in the next section, I am dealing here with descriptive, not predictive, statistics. The aim is to look for historical patterns for which further evidence can be adduced or sought. The analysis would need to be extended and deepened in several ways for us to say whether future trends can be extrapolated, and the first task is to find out whether there is any justification for trying to do this.

INVESTIGATING CHANGE: THE BARTLEY HEATH EXAMPLE

To recap, we have two useful sets of census data for Marsh Gentian in Hampshire. In the south of the county there is the work of the New Forest Study Group, who have recorded in every year since 1998; and in the north, the surveys carried out by Dr Peter Vaughan and others who have recorded at Bartley Heath in most years since 1985 and in a couple of years before that, going back to 1975. There are other recording episodes in both areas from earlier years, some of which entailed detailed counts, but I shall confine my analysis to the periods 1998-2018 for the New Forest and 1985-2017 for Bartley. In these periods the approach to recording will have stayed fairly consistent, and many of the same personnel will have been involved. The earlier recording events would be interesting if they showed radically different annual totals, but in general they don't.

Before getting too deeply enmeshed in analysis, it's always a good idea to look at the data in straightforward

ways to pick out any tendencies or anomalies. In fact, the New Forest Study Group have provided some helpful commentary on their spreadsheets, so even looking at the raw data is valuable in this case (**Figure 1**).

43	SU354043	Rowbarrow	Y	1570	909	667	810
Total Count				1570	909	667	810
* 2nd Year after burn - new growth of gorse and bramble might be crowding out gentians						*** Larger survey area	
** One year after burn, flowers small and pale.						**** incomplete count	

Figure 1: Notes for analysts on survey report

But for most questions, a little bit of visualisation helps enormously. Let's begin with the Bartley Heath site, because it takes a lot of uncertainty out of the considerations of census accuracy. It's a small site, and so can be completely covered by a small team. It's bounded by unsuitable habitat on all sides, so there can be little doubt about whether the same area has been surveyed each time. And because it's managed as a unit, the factors that might influence year to year performance can perhaps be better isolated and understood.

If we begin with a scatter plot of flowering spikes counted against year, and then try to fit a linear regression line to it, we get the following diagram (**Figure 2**).

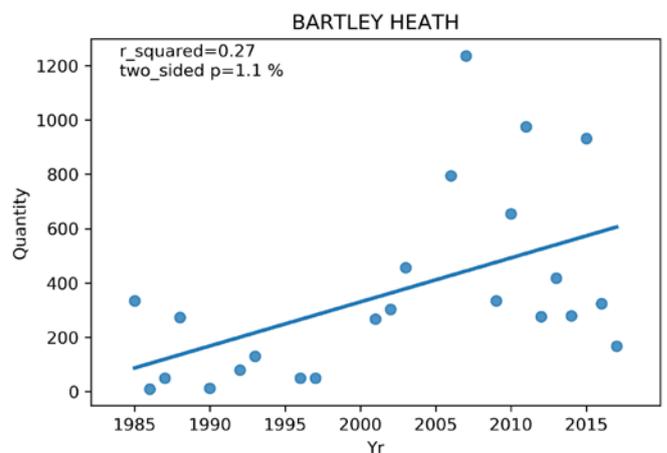


Figure 2: Gentian counts at Bartley Heath 1985–present

That regression line, taken in isolation, presents an optimistic picture of the fortunes of Marsh Gentian here over the last 30 years. However, consider the value R^2 (long name 'coefficient of determination'). This varies between 0.0 and 1.0, indicating at the '0' end that there is no linear association between the passage of time and the numbers of gentians, and at the '1' end there is a perfect association. It is a bit cheeky to be using this metric without doing some other statistical legwork, but as a blunt instrument it gives us a starting point for looking closer at the rest of the picture, which certainly doesn't show any glaring non-linear relationships. Values of R^2 between 0 and 1 indicate levels of certainty that will be interpreted differently according to disciplines. A safety engineer will often be looking for a value approaching 1.

A social or behavioural scientist may be happy to work with values around 0.3 or 0.4. Note the word 'linear' above, since this value can be high for a close non-linear association while the straight-line regression fit can be way off beam.

For our purposes, a value of 0.27 for R^2 isn't very promising. A glance at the scatter plot suggests several complications in the situation. Overall, we can intuitively see a trend of uplift in numbers between the first half of the period and the second. And the second statistic on the graph (the p-value) gives us a low probability of our regression line being flat, so that gives us encouragement in this belief. We can be tempted to posit that something happened between 2000 and 2005 resulting in much more year-on-year variability. We have a very limited amount of data so we should be cautious in over-interpreting it, and we ought to go back to the stats behind that p-value to compare variance in the pre-2000 period to that post-2000 explicitly. But for the moment, let's concentrate on the post-2000 period to see what sense we can make of that (**Figure 3**).

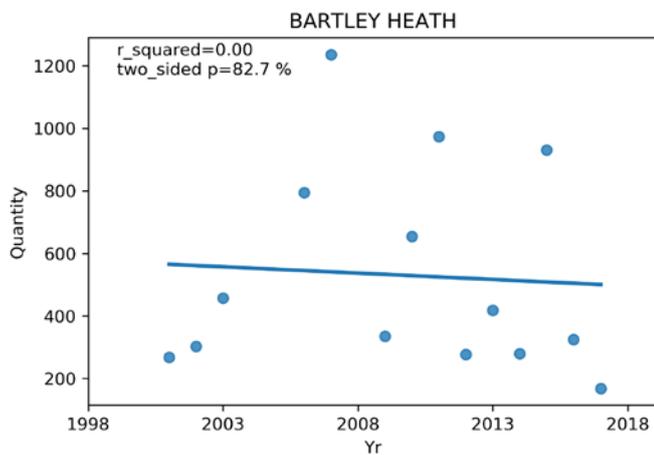


Figure 3: Gentian counts at Bartley Heath post-2000

The sample size is now so small that we are pushing the limits, but there is huge variation in counts, and no detectable association between the passage of time and Gentian numbers. The p-value suggests quite strongly that there is now a 'plateau' in the counts, but to get a better idea of the reliability of our data we really need to put some confidence limits around our lines (**Figure 4**).

The coloured envelopes show what we can accept with 95% probability as the limits on the slope and the intercept of our regression lines. For the whole of the period we can see that even in the worst case there is an upward trend, and we can be confident in making a generalised statement that things seem to have got better for Marsh Gentians over the total period. A look at the pre- and post-2000 profiles show the limitations, and sometimes the dangers, of working with small datasets extracted from a larger sample. For the pre-2000 period, the confidence boundaries show no more than something between a moderate decline and a very slight improvement. After 2000, there is a large increase in year-on-year variability and, at the same confidence level, the best we can say is that the figures show something between a serious

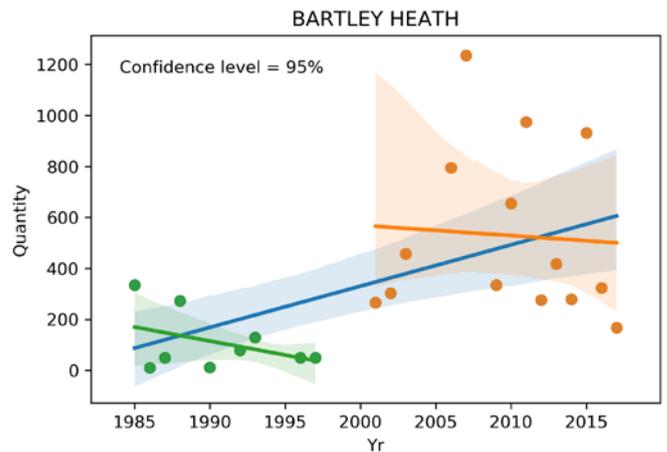


Figure 4: Gentian counts at Bartley Heath: overall picture vs. limited periods

decline and a fairly large improvement – in other words, not much.

What this graph does do, however, is reinforce our intuition that there was a step change around 2000 when a relatively stable small population went to being a larger population whose average size was inflated by 'boom years' in which significantly more flowering spikes were recorded. It's a pity that there was a hiatus in recording in exactly this period of changeover, and we can't yet put forward a reason for it. It may have been an objective change in the environment, or it may have been an artefact of a change in recording approach. But at least we have something to investigate with people on the scene.

LOOKING FOR MORE GENERAL PATTERNS

Before we leave Bartley Heath and look at the wider picture, let's take one more look at those fluctuations. It looks as though there might be a 'boom and bust' pattern here, where a few years of increased numbers are succeeded by a sudden drop to lower counts (**Figure 5**).

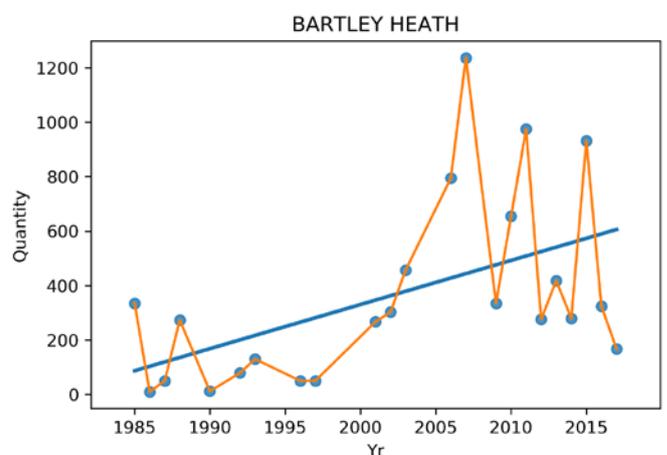


Figure 5: Gentian counts at Bartley Heath: fluctuations

Although this pattern is most visible in the first two spikes post-2000, there is a suggestion of it in the much earlier spike in 1987. Could this be a general

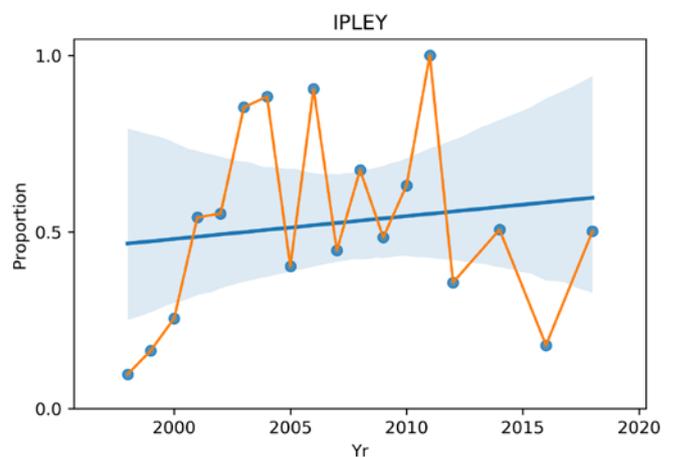
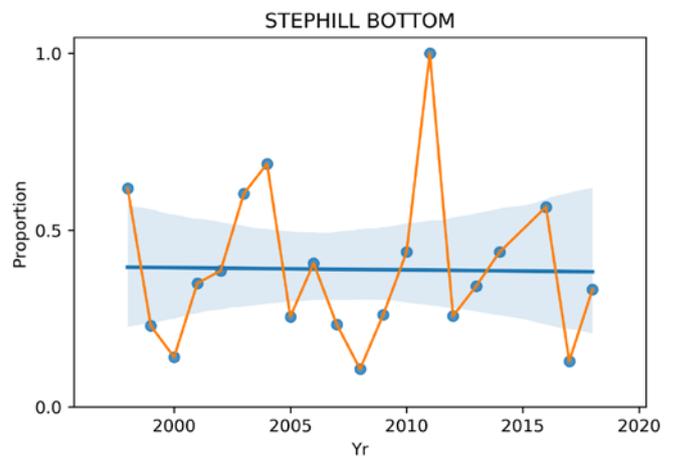
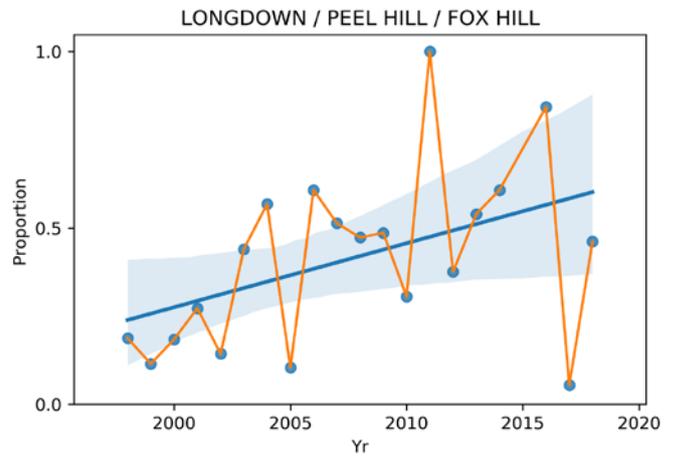
phenomenon, linked to something in the plant's biology or general environmental factors? Or is it something specific to events or factors at the site? It's time to make comparisons with some other sites, starting with the four on the New Forest with the largest populations, ranging from high hundreds to low thousands in peak seasons; sites with very small numbers of plants are likely to show little except random noise from fluctuations in absolute numbers (**Figures 6-10**).

To make comparisons straightforward, we normalise the statistics by plotting the counts as a proportion of the highest count found on the given site in the year range. We also limit the year range to 1998-2018.

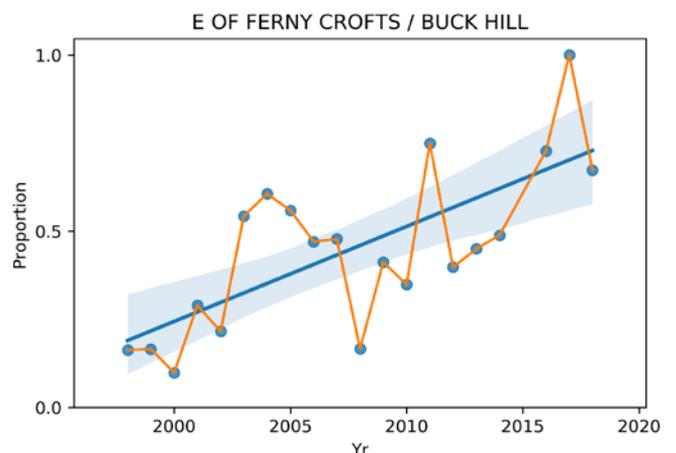
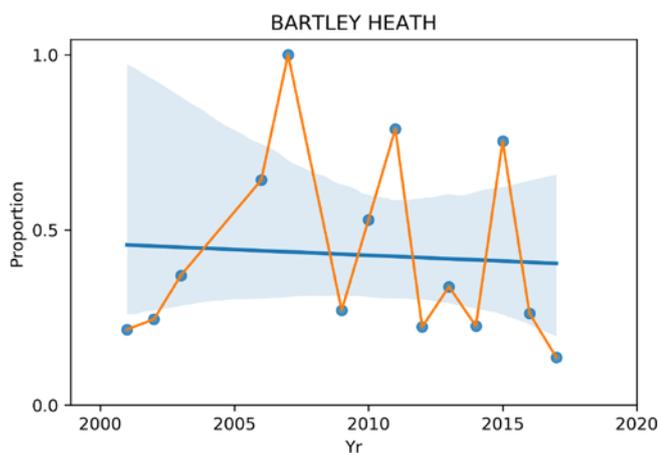
We can first say that all these sites show a great deal of spikiness, with often sharp fluctuations from year to year. This limits the conclusions we can draw about the stability of populations over the period. We have already discussed Bartley. Longdown appears to be at least stable and perhaps increasing over the period. Stephill Bottom looks more or less stable, ranging between a modest decline and a modest increase. Ipley is much more difficult to characterise, as the 95% confidence limits allow for anything from a significant decline to a significant increase. Star of the show is Buck Hill, with a quite narrow envelope defined by the confidence limits, all possibilities showing a significant increase.

It's apparent even from this small sample that we can't infer some overarching environmental factor acting as the controlling influence for population changes in our area taken over the 21-year period. In fact, we can't speak with confidence about a general trend in populations. What is interesting, however, is the pattern of fluctuation. Because not every site is censused in every year, parts of this pattern are masked. But there is at least a suggestion of the same 'boom and bust' pattern as at Bartley, where two or three years of major increase are followed by a crash in the next year.

To see how well this notion holds up, we can examine the distribution patterns of counts for our sample sites (**Figures 11-13**). We might expect to see a couple of



Figures 6-10 (below): Marsh Gentian counts at Bartley Heath and four New Forest sites



local maxima, with the larger one towards the bottom of the distribution range. However, this is only going to work out of the box on populations where there is not a significant decline or increase, and another approach, for instance weighting the counts inversely to the value for the year on the fitted regression line, would be needed to overcome this limitation. For now, we present the three graphs most likely to give useful results.

Given the small number of recorded years for a site, anything larger than six bins for categorising the population size doesn't really give us much information. I have used the logarithm (base 5) of the recorded yearly percentages of highest count for the site to counteract the effect of a much higher numerical dispersion of counts at the upper end. This certainly shows two local maxima in each case, but only Bartley Heath really shows the pattern we might have expected from our 'boom and bust' hypothesis. From the evidence we have, there is no case for positing a regular cycle driven by the plant's intrinsic biology.

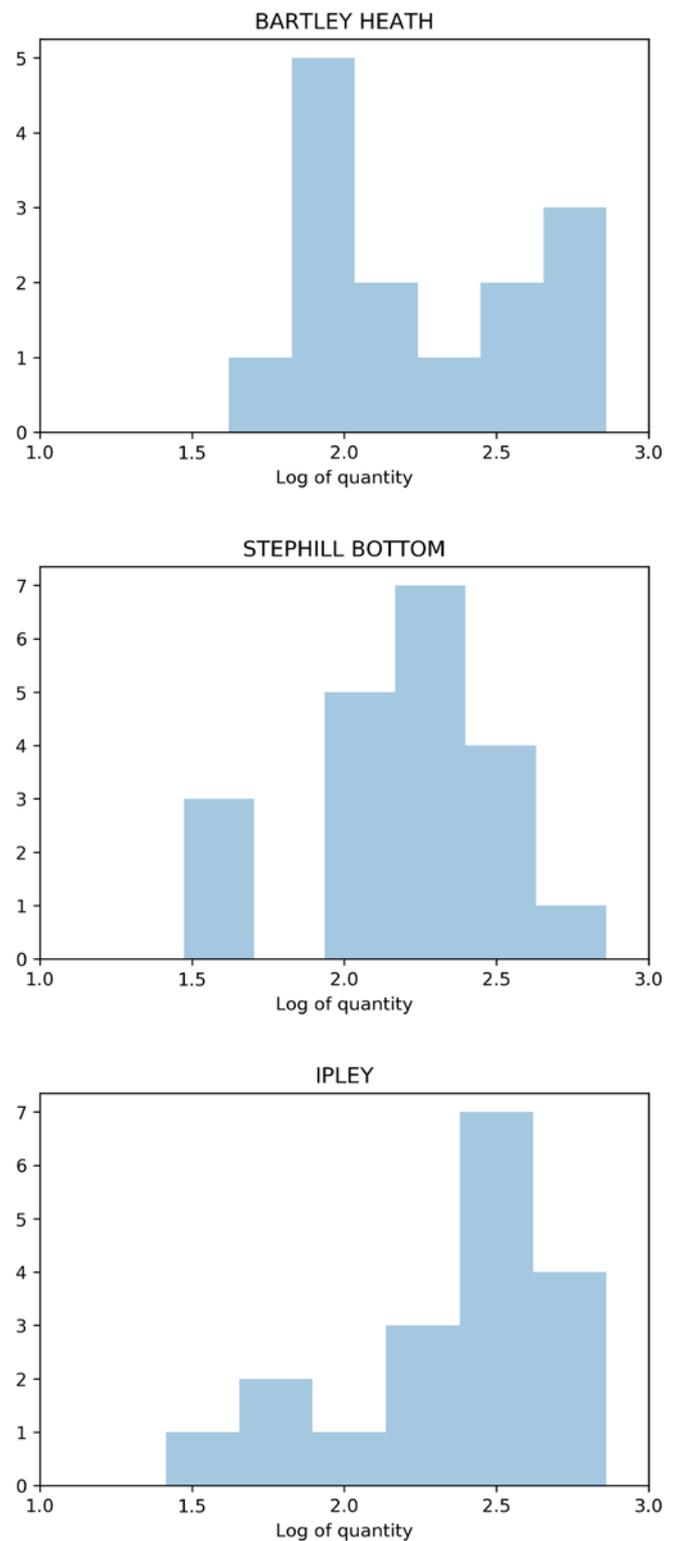
FURTHER INVESTIGATIONS

There is likely to be more to learn from the fluctuations in counts at all of the sites, and an analysis of the 'peakiness' or 'troughiness' of counts for each given year might be suggestive. Also, one of the things you may have noticed when looking at the scatter plots is that there are years which are common 'peak years' and 'trough years' for a number of the sites. This does suggest that global environmental factors (weather!) may be an important factor in fluctuations. Finally, it would be interesting to see whether size of site and/or population relates to the pattern or relative magnitude of fluctuations. I plan to tackle these issues in part 3 of this article.

SOURCES AND ACKNOWLEDGMENTS

First acknowledgments must go to the individuals and groups who, by undertaking systematic censuses at many of the locations listed here, have made this analysis possible in the first place. The New Forest Study Group in the south of the county and Dr Peter Vaughan in the north deserve to be singled out for their efforts in recent years.

The analysis work was undertaken using the Python programming language and its supporting libraries: *pandas* for data manipulation, *numpy* and *scipy* for numerical and statistical processing, *matplotlib* and *seaborn* for graphical output. Anyone interested in examining or using the procedures should contact the author.



Figures 11-13: Distributions of annual census counts at sites

Western Gorse *Ulex gallii* in the New Forest

An article by Neil Sanderson



Western Gorse *Ulex gallii*, Backley Plain, New Forest (Neil Sanderson)

INTRODUCTION

Western Gorse *Ulex gallii* and Dwarf Gorse *Ulex minor* have largely separate distributions in Britain but they do locally overlap, most famously in a few Dorset Heaths (Stokes 2003). Western Gorse does also occur in South Hampshire with several populations in the New Forest and one recorded from Sandy Point, Hayling Island. There has been some doubt cast over the New Forest records (Martin Rand, pers. com.), but there are two located sites, which have good Western Gorse and a third site with a single bush recorded in 1985 at Turf Hill (SU2117) (Rand & Mundell 2011). My interest in the New Forest Western Gorse was stimulated when I stumbled over a very large and apparently new population on Backley Plain east of Handy Cross (SU2007, SU2107, SU2006 & SU2106) during my heathland lichen survey of the New Forest (Sanderson 2017) in 2015.

IDENTIFICATION

This at first seems straightforward in the New Forest. Dwarf Gorse is a (relatively) soft plant that can be grabbed hard by the confident without much pain and is mostly eaten flat by the ponies, while no one sane would grab Western Gorse. However, it is not that easy. There is an

upright hard form of Dwarf Gorse in the New Forest that is largely avoided by the ponies and can easily be mistaken for Western Gorse. I did this myself, collecting some in February 2001 from Hart Hill, Godshill (SU 180 149), which looked very like Western Gorse, with Francis Rose agreeing when shown a specimen. However, checking the site again recently in the flowering season only 'hard' Dwarf Gorse was present. The only easy way to tell the species apart is in late summer when they are both flowering. The flowers are a different colour with Western Gorse flowers a deeper yellow, while Dwarf Gorse's are paler and lemony; which is good for spotting candidates from some distance, but not definitive. Stace (2010) gives the length of the floral standards in Western and Dwarf Gorse as 11–17mm and 7.5–12.5mm respectively. There is overlap, but the differences are clear on most bushes if good numbers of flowers are measured.

THE SITES

I have failed to find any further new sites beyond the three located sites, but there are probably more out there. The known sites were all looked at in 2015.

Deadman Hill: first found by Alison Bolton and Martin Rand in 2008, a small patch with a few bushes of Western



Western Gorse foliage and flowers (Neil Sanderson)



Dense H8a heath – tough going! (Neil Sanderson)

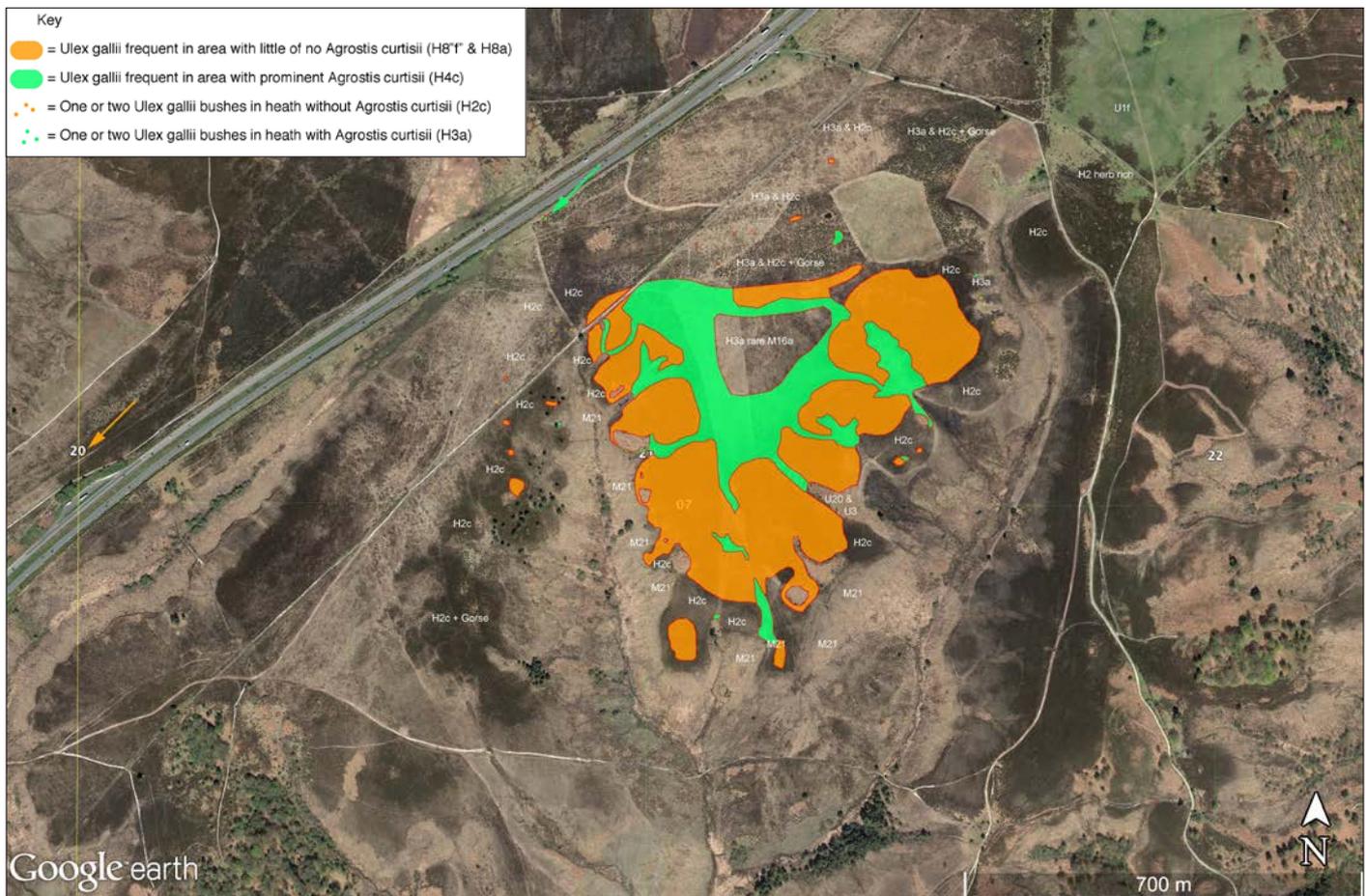
Gorse on the north side of Roger Penny Way (SU 2022 1656) along with one apparent *Ulex gallii* x *Ulex europaeus* hybrid bush on east side. Other associates were *Calluna vulgaris*, *Erica cinerea*, *Agrostis curtisii*, *Molinia caerulea* and some *Erica tetralix* (NVC: H4c *Ulex gallii*–*Agrostis curtisii* heath, *Erica tetralix* sub-community). This small population is on a plateau gravel terrace.

The head of Foulford Bottom by Picket Post: first found by Alison Bolton and Martin Rand in 2008. Here Western Gorse was found to be frequent in a triangular area 40m north to south and 30m east to west (0.06ha) on a terrace edge slope facing west (between SU 1914 0595, 1915 0599 & 1912 0596). Other than the presence of Western Gorse, the vegetation was a typical New Forest humid heath, with a combination *Calluna vulgaris*, *Molinia caerulea* and *Erica* species (NVC: H2c *Calluna vulgaris*–*Ulex minor* Heath, *Molinia* sub-community). Without *Agrostis curtisii* the NVC would put this heath in *Calluna vulgaris*–*Ulex gallii* heath (H8) but as discussed below there is no sub-community in H8 with *Molinia* as a prominent and constant associate.

Backley Plain east of Handy Cross: a new site, and a very large one (Map 1). Western Gorse was found to be frequent across about 22ha of heath in monads SU2007, SU2107, SU2006 & SU2106. It occupies contiguous areas of heath on the edge of the gravel terrace and the drier parts of the gravel plateau in a triangle of terrace between two arms of Harvest Slade Bottom. There are also smaller isolated patches extending north and west from the main population. Most of these are within 300m of the main population and south of the A31, but a single bush was found 1km to the west and north of the A31 on Handy Cross Plain (SU 2000 0708). The distribution is suggestive of a long established population with active colonisation beyond this established colony. The longevity of the colony is confirmed by the main Western Gorse population being visible on a 1946 aerial photograph. Even further back, thin Gorse symbols are marked on the 1871 6-inch OS Hampshire sheet 71 in the area of the main Western Gorse population but not in an adjacent area free of Western Gorse. This is not quite conclusive but does suggest that this colony has been here a long time.

The main vegetation types with Western Gorse at Backley Plain were sampled with NVC style quadrats (Rodwell 1991). The Western Gorse population here is growing in quite ordinary New Forest gravel plateau heathland. Dwarf Gorse is scattered through the site at a low constancy (40% of the quadrats in the two main vegetation types), as is typical of most heaths in the rest of the Forest. The main division within the heaths supporting Western Gorse is the presence or absence of Bristle Bent *Agrostis curtisii*. In the New Forest, the distribution of *Agrostis curtisii* reflects the presence of finer slightly more fertile soils derived from brick earth (in situ loess, i.e. periglacial wind-blown dust) or head (eroded and redeposited brick earth mixed with other eroded deposits) (Tubbs 2001). The distribution of *Agrostis curtisii* containing heath with Western Gorse reflects this here. *Agrostis curtisii* is absent from the plateau edges where the loess has been eroded exposing raw gravel but occurs in shallow valleys in the terrace edge slope where head has accumulated and further from the plateau edge where thin brick earth deposits survive. Five quadrats were taken from the *Agrostis curtisii* heath (Table 1). Without the Western Gorse this would be a typical example of New Forest damp *Agrostis curtisii* heath (NVC: H3a *Ulex minor*–*Agrostis curtisii* Heath, typical sub-community). With Western Gorse it fits well into NVC community H4c *Ulex gallii*–*Agrostis curtisii* heath, *Erica tetralix* sub-community.

In the less fertile plateau edge heath lacking *Agrostis curtisii* the predominant associates are *Calluna*, both *Erica* species and *Molinia* (Table 3). There are also a few drier areas lacking both *Erica tetralix* and *Molinia* and with a greater diversity of lichens (Table 2). The latter areas were small, so only two quadrats were recorded, but represent typical very dry New Forest heath. Without Western Gorse this would be classified as *Calluna vulgaris*–*Ulex minor* Heath, typical sub-community (H2a), which is typically lichen rich. The closest Western Gorse



Map 1: Distribution of Western Gorse *Ulex gallii* at Backley Plain, New Forest (outliers arrowed)

Heath in the NVC is *Calluna vulgaris–Ulex gallii* Heath, Species-poor sub-community (H8a), although this is usually poor in lichens.

The bulk of the plateau edge heath lacking *Agrostis curtisii* with Western Gorse, however, is within very standard New Forest humid heath, the most widespread type of drier heath in the New Forest. Without Western Gorse this would be classified as *Calluna vulgaris–Ulex minor* Heath, *Molinia* sub-community (H2c). With Western Gorse the resultant assemblage is not represented in the NVC. The NVC has no samples from *Ulex gallii–Calluna–Erica* spp.–*Molinia* heaths. This undescribed H8 '*Molinia* sub-community' however, is not unique, it has also been noted in Wales (Stevens *et al.*, 2010) and doubtlessly occurs in the Dorset Heaths, where the NVC failed to sample any *Ulex gallii* heaths.

CONCLUSIONS

The Backley Plain Western Gorse population is significantly larger than the other known Forest sites and is a substantial area of *Ulex gallii* heath. This introduces an interesting new element to the range of heath communities in the New Forest. The *Ulex gallii–Agrostis curtisii* heath, *Erica tetralix* sub-community (H4c) is a typical community of lowland heath in the south west and is unsurprising. The *Calluna vulgaris–Ulex gallii* Heath, '*Molinia* sub-community' (H8'f), is a much more unusual community and was not sampled by the NVC. Similar vegetation has been noted in Wales and

probably exists in Dorset but it appears to be a rare type of heath in Britain.

The reasons for the strange distribution of both Western and Dwarf Gorse in Hampshire, Britain and Europe are unknown. In Britain and France the former has a western distribution and the latter an eastern one which only overlap, if at all, for short distances (Stokes *et al.* 2003). Climatic controls presumably are at least part of the reason, but if so the mechanism must be very rare events. For example Western Gorse was introduced to a plot in Ashdown Forest in 1961 and was still flourishing there in 2003 (Stokes *et al.* 2003).

It would seem likely that Western Gorse will spread, if slowly, in the New Forest. This is not entirely welcome; walking through mature *Calluna–Ulex gallii* stands at Backley Plain was a struggle, which brought back painful memories of NVC surveying in Exmoor in the 1990 and the resultant pricked legs!

REFERENCES

- Rand, M. & Mundell, A.R.G. (2011). *Hampshire Rare Plant Register*. Trollius Publications
- Rodwell, J.S. (1991). *British Plant Communities. Volume 2, Mires and Heaths*. Cambridge: Cambridge University Press
- Sanderson, N.A. (2017) *The New Forest Heathland Lichen Survey 2011–2015*. Natural England Joint Publication

Table 1: Backley Plain *Ulex gallii*–*Agrostis curtisii* Heath, *Erica tetralix* sub-community

Species	Q2	Q8	Q10	Q11	Q12	Constancy
Vascular plants						
<i>Agrostis curtisii</i>	6	6	5	2	5	V
<i>Calluna vulgaris</i>	7	5	6	8	6	V
<i>Erica tetralix</i>	3	4	6	4	6	V
<i>Molinia caerulea</i>	6	7	8	5	7	V
<i>Ulex gallii</i>	6	4	5	5	5	V
<i>Erica cinerea</i>	4		2	3	3	IV
<i>Polygala serpyllifolia</i>		1	1	1		III
<i>Ulex minor</i>	1		1			II
Bryophytes						
<i>Campylopus introflexus</i>		5			2	II
Lichens						
<i>Cladonia cryptochlorophaea</i>		2				I
<i>Cladonia floerkeana</i>	2					I
<i>Cladonia ramulosa</i>					2	I

Table 2: Backley Plain *Calluna vulgaris*–*Ulex gallii* Heath, species-poor sub-community

Species	Q3	Q9
Vascular plants		
<i>Calluna vulgaris</i>	8	8
<i>Erica cinerea</i>	5	4
<i>Pteridium aquilinum</i>	3	4
<i>Ulex gallii</i>	5	5
Bryophytes		
<i>Campylopus introflexus</i>	4	6
<i>Hypnum jutlandicum</i>		2
Lichens		
<i>Cladonia cryptochlorophaea</i>	1	2
<i>Cladonia floerkeana</i>	6	2
<i>Cladonia portentosa</i>	2	3
<i>Cladonia diversa</i>		1
<i>Cladonia ramulosa</i>		2

Table 3: Backley Plain *Calluna vulgaris*–*Ulex gallii* Heath, 'Molinia sub-community'

Species	Q1	Q4	Q5	Q6	Q7	Q13	Constancy
Vascular plants							
<i>Calluna vulgaris</i>	9	8	8	6	8	8	V
<i>Erica cinerea</i>	4	2	5	4	3	5	V
<i>Molinia caerulea</i>	2	5	4	7	6	4	V
<i>Ulex gallii</i>	4	6	5	6	6	5	V
<i>Erica tetralix</i>		6		6	6		III
<i>Polygala serpyllifolia</i>				1		2	II
<i>Pteridium aquilinum</i>	2		6				II
<i>Ulex minor</i>					1	2	II
<i>Vaccinium myrtillus</i>			3				I
Bryophytes							
<i>Hypnum jutlandicum</i>	3				4		II
<i>Campylopus introflexus</i>						4	I
Lichens							
<i>Cladonia portentosa</i>	1			2		3	III
<i>Cladonia cryptochlorophaea</i>						1	I
<i>Cladonia macilenta</i>						3	I
<i>Cladonia squamosa</i> var. <i>subsquamosa</i>						2	I

JP020. Peterborough; Natural England <http://publications.naturalengland.org.uk/publication/6223067854929920>

Stace, C. (2010) *New Flora of the British Isles. Third Edition*. Cambridge: Cambridge University Press.

Stevens, D.P., Smith, S.L.N., Blackstock, T.H., Bosanquet, S.D.S. & Stevens, J.P. (2010). *Grasslands of Wales: A survey of lowland species-rich grasslands, 1987-2004*. Cardiff: University of Wales Press.

Stokes, K.E., Bullock, J.M. & Watkinson, A.R. (2003). *Ulex gallii* Planch. and *Ulex minor* Roth. *Journal of Ecology* **91**: 1106-1124.

Tubbs, C.R. (2001). *The New Forest*. New Forest Centenary Trust, Lyndhurst.

A Field Guide to the NVC – Part 5: Wet Brackish Grassland

An article by John Norton



Abundant Meadow Barley with Corky-fruited Water-dropwort and Red Clover in a cattle-grazed flood meadow at Titchfield Haven, 9 July 2012 (John Norton)

FOREWORD

In Part 3 of this series of articles (*Flora News* 51, September 2016) I covered wet grassland and rush pasture vegetation. In this article I tackle a number of similar types of grassland that occur on damp to wet soils but are saline to some degree, which I have termed 'wet brackish grassland'. As usual, some of the accounts are based on my own field experience and interpretation of the NVC, so may not necessarily agree with the descriptions in the published chapters. I also describe a new community (pictured in the photo above) that was

not covered by the NVC. Comments and feedback on this article would be gratefully received.

INTRODUCTION

Definition and Ecology

Wet brackish grassland is vegetation that is largely dominated by grasses and rushes on moist or wet, weakly to moderately saline soils, lying above high water. It typically develops alongside the tidal reaches of estuarine rivers and on coastal grazing marshes, or may persist on land that retains a degree of salinity

following historical coastal reclamation or drainage but is no longer inundated by tidal water. Note that a few types of wet brackish grassland can also be found on heavy clay soils inland, as well as on weakly saline coastal soils. My definition excludes any vegetation developing within the intertidal zone, which can be viewed as 'saltmarsh proper', even though this does include several types that are dominated by grasses and rushes.

Wet brackish grassland is mostly permanent vegetation which is poor in annual species. However, some types are somewhat seasonal in appearance, developing after winter floodwater has abated, especially around the drawdown zones of coastal ponds and ditches in late summer. Most types require regular management to maintain their floristics and structure. Like wet (non-saline) grassland, wet brackish grassland is not easily cultivated so is predominantly utilised for cattle and pony grazing. Except in more strongly saline situations lack of management usually leads to the invasion and slow development of scrub, especially Grey Willow *Salix cinerea*, or in drier situations by Blackthorn *Prunus spinosa* and Gorse *Ulex europaeus*.

Distribution and Conservation

Together with much of the wet grassland in Britain, most of the more extensive areas of wet brackish grassland qualify as Coastal and Floodplain Grazing Marsh Priority Habitat (Maddock 2008), now a Section 41 Habitat of Principal Importance in England. Both often occur together. Because wet brackish grassland is predominantly associated with muddy estuaries which are themselves restricted in distribution in Britain, several of the associated NVC types are likely to be very localised or rare in their occurrence (though not necessarily of high conservation value because of this) and some types support nationally scarce and uncommon vascular plant species.

Substantial areas of wet brackish grassland occur in Hampshire and other coastal counties in the south and east where it is predominantly associated with coastal grazing marshes. Much of this habitat is protected by both UK and international designations for its importance as waterfowl habitat. However, even though many sites are nature reserves and tend to be relatively well managed, much traditional grazing marsh has been lost in recent decades (for example from the North Kent Marshes), and many sites are probably under-grazed. Nevertheless, the amount of wet brackish grassland could increase in the future through managed coastal realignment schemes or seawater incursion following inevitable sea level rise caused by global warming!

From a botanical point of view, it is apparent that wet brackish grassland is relatively poorly studied and under-appreciated, a situation similar to that of floodplain meadows until the work of Rothero *et al.* (2016) (see Part 3, *Flora News* 51). Coastal grazing marsh is infrequently looked at by vegetation surveyors, since it rarely comes up for development. Sampling of wet brackish grassland

and saltmarsh vegetation in south-east England during the NVC fieldwork in the 1970s appears to have been relatively poor (as it was for other types of vegetation). My own knowledge of wet brackish grassland is not particularly extensive, so for this article I draw heavily on my own vegetation surveys of sites in Hampshire, including Titchfield Haven nature reserve (Norton 2016) and I would be interested to receive comments from other surveyors who may have covered other areas.

Floristics

Wet brackish grassland is characterised by the presence of various saline-tolerant plants, including certain grasses, rushes, sedges (i.e. Cyperaceae, including spike-rushes *Eleocharis*) and a number of herbaceous species. Many grasses are tolerant of nutrient enrichment and this often predisposes them to cope with brackish conditions. Those more characteristic species of wet brackish grassland include Common Couch *Elytrigia repens*, Creeping Bent *Agrostis stolonifera*, Red Fescue *Festuca rubra* (including subsp. *litoralis*) and Meadow Barley *Hordeum secalinum*. Sea Barley *H. marinum* is more strongly saline tolerant but rather rare in Britain. Common Saltmarsh-grass *Puccinellia maritima* is predominantly a species of intertidal habitats and does not usually feature in wet brackish grassland as defined here. Common Reed *Phragmites australis* is of course very tolerant of brackish water and sometimes occurs in undergrazed wet brackish grassland. Associated rushes and sedges include Sea Rush *Juncus maritimus*, Saltmarsh Rush *Juncus gerardii* and Slender Spike-rush *Eleocharis uniglumis* on more strongly saline soils, with Divided Sedge *Carex divisa*, False Fox-sedge *C. otrubae*, Distant Sedge *C. distans* and Slender Club-rush *Isolepis cernua* being more typical of weakly to moderately saline soils; though there is some overlap in tolerances. The last species is strongly coastal in distribution but is rare in the south and south-east, though described as locally common in the New Forest (Brewis *et al.* 1996).

Characteristic herbs of wet brackish grassland include Spear-leaved Orache *Atriplex prostrata*, Lesser Centaury *Centaureum pulchellum*, Sea Milkwort *Glaux maritima*, Parsley Water-dropwort *Oenanthe lachenalii*, Silverweed *Potentilla anserina*, Hairy Buttercup *Ranunculus sardous*, Brookweed *Samolus valerandi*, Sea Arrow-grass *Triglochin maritimum* and Strawberry Clover *Trifolium fragiferum*. Wild Celery *Apium graveolens* can also sometimes persist in grazed swards. As with wet grassland, wet brackish grassland usually has a lower frequency of the larger weedy species such as Creeping Thistle *Cirsium arvense*, Ragwort *Senecio jacobaea* and docks *Rumex* spp. which do not tolerate regular inundation, and certainly not by saline water; but these may be locally frequent in drier and weakly saline swards, some of which are somewhat 'improved' in nature.

Wet brackish grasslands are very poor for bryophytes; one of the more frequent associates is *Drepanocladus aduncus*, a species which can also tolerate prolonged winter inundation in wet meadows.

Surveying wet brackish grassland

In the field most types of wet brackish grassland can be readily distinguished from wet non-saline grassland by the presence of usually at least a few of the characteristic species listed above. The majority of stands can be assigned to one of the published NVC communities on the basis of dominant species, though differentiating sub-communities can sometimes be difficult.

As with other types of grassland there is the usual proviso that the detectability of species is dependent on their growth stage and so varies considerably with the time of year that the survey is carried out. The optimum survey period for wet brackish grassland in the south of England is July to August, when most species will be flowering or fruiting. Earlier surveys will miss late-developing annual species such as Lesser Centaury, and could overlook several of the other herbaceous perennials listed above, most of which are late-flowering. Divided Sedge is the earliest species to flower (generally early May), but identification is not a problem for this species because it retains its distinctive short-bracted fruiting heads throughout the summer and has characteristic channelled leaves which are 'U'-shaped in cross-section. One of the most critical species to detect is Meadow Barley, which flowers in mid to late June to July and often dies back very quickly. In late summer the dead inflorescences are distinctive, but they disappear by the end of August.

Although two survey visits are usually recommended for most types of grassland vegetation, one visit will usually suffice for wet brackish grassland, but two or more may in any case be necessary when surveying this

type of grassland within larger habitat complexes of wet grassland, rush pasture, water margin vegetation and tall herb fen, as will often be the case in coastal grazing marsh habitat.

DESCRIPTIONS

Overview

Wet brackish grassland falls within at least eight vegetation communities (**Table 1**), seven of which are covered by the published NVC. Two of these, **MG11** and **MG12**, are weakly saline communities described within the mesotrophic grasslands chapter (Rodwell 1992). A related type, but not covered by the NVC, is provisionally named here, as '*Agrostis stolonifera*-*Hordeum secalinum* grassland'. The next three (**S18**, **S19** and **S21**) fall under the swamps and tall herb fens chapter (Rodwell 1995). These are divided into various sub-communities that occur in both non-saline and saline habitats, so only the saline ones are covered in detail here. Some of the sub-communities are not particularly 'grassy' in character but are included here nevertheless. The last two strongly saline communities (**SM16** and **SM20**) are included in the saltmarsh chapter (Rodwell 2000). Two of the six SM16 sub-communities mainly occur as types of intertidal saltmarsh, but are dealt with here for convenience.

SM13 *Puccinellia maritima* salt-marsh community is more strictly intertidal and will be dealt with in a future article on saltmarsh vegetation. **SM19** *Blysmus rufus* salt-marsh community is allied to SM20, but with a local distribution along the west coast of northern Britain (reflecting the distribution of Saltmarsh Flat-sedge *Blysmus rufus*), so is not covered here. Two others omitted are **SM24**

Table 1: Types of wet brackish grassland

Community	Sub-community
MG11 <i>Festuca rubra</i> - <i>Agrostis stolonifera</i> - <i>Potentilla anserina</i> grassland	MG11a <i>Lolium perenne</i> sub-community
	MG11b <i>Atriplex prostrata</i> sub-community
	MG11c <i>Honkenya</i> [<i>Honckenya</i>] <i>peploides</i> sub-community
MG12 <i>Festuca arundinacea</i> [<i>Schedonorus arundinaceus</i>] grassland	MG12a <i>Lolium perenne</i> - <i>Holcus lanatus</i> sub-community
	MG12 species poor sub-community
	MG12b <i>Oenanthe lachenalii</i> sub-community
<i>Agrostis stolonifera</i> - <i>Hordeum secalinum</i> grassland	Possibly three sub-communities but further research needed.
S18 <i>Carex otrubae</i> swamp	S18b <i>Atriplex prostrata</i> sub-community
S19 <i>Eleocharis palustris</i> swamp	S19c <i>Agrostis stolonifera</i> sub-community
S21 <i>Scirpus maritimus</i> [<i>Bolboschoenus maritimus</i>] swamp	S21c <i>Agrostis stolonifera</i> sub-community
	S21d <i>Potentilla anserina</i> sub-community
SM16 <i>Festuca rubra</i> salt-marsh community	SM16a <i>Puccinellia maritima</i> sub-community
	SM16b Sub-community with <i>Juncus gerardii</i> dominant
	SM16c <i>Festuca rubra</i> - <i>Glaux maritima</i> community
	SM16d Sub-community with tall <i>Festuca rubra</i> dominant
	SM16e <i>Leontodon</i> [<i>Scorzoneroides</i>] <i>autumnalis</i> sub-community
	SM16f <i>Carex flacca</i> sub-community
SM20 <i>Eleocharis uniglumis</i> salt-marsh community	no sub-communities defined

Note: Blue text denotes types not included in the published NVC.

Elymus pycnanthus [*Elytrigia atherica*] salt-marsh community (Sea Couch grassland) and **SM28** *Elymus* [*Elytrigia*] *repens* salt-marsh community (Common Couch grassland), which are rather dry types of ungrazed grassland lying at or just above the mean high water level, so are best considered as true saltmarsh rather than wet brackish grassland.

MG11 *Festuca rubra*-*Agrostis stolonifera*-*Potentilla anserina* grassland

General characteristics

This type of grassland is usually distinguishable at any time of year by the constant presence of Silverweed, which has distinctive leaves. However, it is quite variable and may form mosaics or transitions with other communities. It is normally grass-dominated, but by late summer, if grazing levels are high, Silverweed or other herbs may become dominant and the grass cover may diminish. Also by late summer patches of bare ground can become colonised by weedy low-growing herbs, including saline species such as Spear-leaved Orache or by Toad Rush *Juncus bufonius*.

Other grasses present in the community include typical species of improved pasture such as Perennial Rye-grass *Lolium perenne*, Yorkshire-fog *Holcus lanatus* and Meadow-grasses *Poa* spp., together with some coarser species, such as Common Couch and Cock's-foot *Dactylis glomerata*. Distant Sedge, Saltmarsh Rush and Sharp-flowered Rush *Juncus acutiflorus* can sometimes be conspicuous in stands (Rodwell 1992), but most of the general saltmarsh associates listed in the Introduction can occur, including Divided Sedge. Generally it is a herb poor community, but can support a range of common wet meadow and improved grassland herbs such as White Clover *Trifolium repens*, Common Mouse-ear *Cerastium fontanum*, Ribwort Plantain *Plantago lanceolata* and Creeping Buttercup *Ranunculus repens*.

Drier stands may also support weedy species such as Creeping Thistle and docks. **OV28** *Agrostis stolonifera*-*Ranunculus repens* community, is somewhat similar to MG11 and MG13, but will usually have high frequency of one or more weedy species of damp ground, such as Knotgrass *Polygonum aviculare* or Water-pepper *Persicaria hydropiper*. Wet grassland that becomes dominated by Common Fleabane *Pulicaria dysenterica* by late summer may also be related to MG11.

Distribution

The distribution maps for MG11 in Rodwell (1992) indicate that it was not sampled at all from south-east England (east of Southampton Water). This probably relates to the lack of NVC sampling in this region, but may also reflect that the community could be rather local in distribution. **MG11a** *Lolium perenne* sub-community is the most widespread sub-community. A form of **MG11b** *Atriplex prostrata* sub-community certainly also occurs in the south-east, but may be more variable than Rodwell (1992) indicates. **MG11c** *Honckenya peploides* sub-community was mainly recorded from Shetland and does not occur in our region, but a brief description is included

below. It is clear that much more research on MG11 is needed.

Sub-communities

MG11a *Lolium perenne* sub-community is a species poor grassy sub-community, described by Rodwell (1992) as being co-dominated by Perennial Rye-grass and Creeping Bent with varying amounts of Red Fescue and Silverweed. A number of other grasses can be locally frequent, including Yorkshire-fog, Meadow Fescue *Schedonorus pratensis*, Common Bent *Agrostis capillaris* and Timothy *Phleum pratense*. Frequent herbs include White Clover, Creeping Buttercup, Dandelion *Taraxacum* agg., Common Mouse-ear and Creeping Thistle. Rodwell (1992) makes a distinction between this type (which is rather similar to **MG6a** *Lolium perenne*-*Cynosurus cristatus* grassland but with the presence of Silverweed) and saltmarsh stands which have occasional records for Saltmarsh Rush, Sea Arrow-grass, Parsley Water-dropwort, Spear-leaved Orache and Sea Mayweed *Tripleurospermum maritimum*. This presumably reflects the fact that many of the NVC samples came from inland sites, particularly around the Midlands, as indicated on the published distribution maps.

MG11a is often closely grazed, when species such as Common Cat's-ear *Hypochaeris radicata*, Red Bartsia *Odontites vernus*, Autumn Hawkbit *Leontodon autumnalis* and Toad Rush can be locally prominent. Average 11 species per quadrat (NVC floristic table), but can be much richer.

MG11b *Atriplex prostrata* sub-community occurs in more strongly saline situations than MG11a and is dominated by Creeping Bent and Silverweed with smaller amounts of Red Fescue and occasionally abundant Common Couch and Smooth Meadow-grass *Poa pratensis*. White Clover, Creeping Thistle and docks can be locally frequent, as in MG11a. Rodwell (1992) lists a number of species of 'disturbed and saline habitats' as preferentials, including Spear-leaved Orache, Sea Mayweed, Knotgrass, Parsley Water-dropwort and Sea Campion *Silene uniflora*. Buttonweed *Cotula coronopifolia*, an increasing alien, grows in disturbed hollows and ditches within saline grassland and may be associated with weedier forms of MG11b.

Rodwell (2000) states that the distribution of this sub-community is mainly from saltmarsh sites on the west coast, but it certainly also occurs in south-eastern England, where species such as Divided Sedge, Strawberry Clover and Sea Barley are often also present in the sub-community. More work is needed to see if other sub-communities should be distinguished. It is a moderately species rich sub-community, so the average of 10 species per quadrat given in the NVC floristic table seems too low for examples in the south and south-east.

MG11c *Honckenya* [*Honckenya*] *peploides* sub-community is composed of Red Fescue and Silverweed, with smaller amounts of Creeping Bent. Herbs include White Clover, Ribwort Plantain and Common Mouse-ear, with preferential Common Bird's-foot-trefoil *Lotus corniculatus*,

Meadow Buttercup *Ranunculus acris* and Common Sorrel *Rumex acetosa*. Differentials (not found in other sub-communities) include Sea Sandwort *Honckenya peploides*, Sand Sedge *Carex arenaria*, Procumbent Pearlwort *Sagina procumbens* and occasionally Sand Couch *Elytrigia juncea* and Marram *Ammophila arenaria*. Marsh Ragwort *Senecio aquaticus* is also recorded for this sub-community. Average 11 species per quadrat. Although sampled mainly from Scotland, something quite similar to this sub-community occurs on vegetated shingle at Lee-on-the-Solent.

MG12 *Festuca arundinacea* [*Schedonorus arundinaceus*] grassland

General characteristics

Using Rodwell's terminology, this is a 'coarse' grassland, dominated by the tussocks of Tall Fescue *Schedonorus arundinaceus*. Other frequent to locally abundant grasses are Red Fescue, Creeping Bent and Common Couch, with usually smaller amounts of Yorkshire-fog. Rodwell (1992) lists Silverweed and White Clover as the most frequent herbs, with others including Smooth Meadow-grass, Distant Sedge, Creeping Thistle and Tufted Vetch *Vicia cracca*.

Distribution

Rodwell states that this is exclusively a coastal community recorded predominantly from the south and west coasts of England and Wales, occurring on 'moist but free-draining soils subject to inundation by brackish or tidal water or occasional salt-spray'. Two sub-communities are distinguished: MG12a on weakly saline soils and MG12b on more strongly saline soils, so that halophytes are poorly represented in MG11a but are strongly characteristic of MG12b. The community is based on relatively few samples (35), with none in Hampshire, one on the east coast of the Isle of Wight and only two others anywhere east of Hampshire. As a coastal type of vegetation it does appear to be genuinely rare in saline habits in the south-east, where the couch grasses *Elytrigia repens* and *E. atherica* usually tend to dominate ungrazed swards (in SM28 and SM24 respectively).

I have recorded only very small stands of Rodwell's MG12a in Hampshire, generally in areas that receive some trampling and nutrient enrichment next to footpaths and car parks. It is clear, however, that Tall Fescue can dominate in non-saline or weakly saline situations and does also occur inland, perhaps as another species poor sub-community (see below). This type seems to be especially associated with heavy clay soils and clay-capped restored gravel pits. As I remarked in a previous article it is well established on clay soils in Gosport and there is also an extensive stand on wet ground on part of Staunton Country Park, Havant.

Sub-communities

MG12a *Lolium perenne*-*Holcus lanatus* sub-community is dominated by Tall Fescue together with the community constants Red Fescue and Creeping Bent, and also Perennial Rye-grass and Yorkshire-fog both abundant. Other grasses may include Common Bent, Crested

Dog's-tail *Cynosurus cristatus*, Sweet Vernal-grass *Anthoxanthum odoratum* and Cock's-foot. Preferential herbs include typical neutral grassland species such as Common Bird's-foot-trefoil, Meadow Buttercup, Red Clover *Trifolium pratense*, Ribwort Plantain and Common Mouse-ear. Rodwell notes that saltmarsh stands frequently have some Distant Sedge, False Fox-sedge and Saltmarsh Rush, implying that he did actually record stands *without* these species away from saltmarshes. Average 11 species per quadrat (NVC floristic table).

MG12 species poor sub-community can occur with a similar range of grasses as MG12a, especially Yorkshire-fog on damper soils and False Oat-grass on drier soils but is often very strongly dominated by Tall Fescue with very few herb associates. This type needs more research, but it is very species poor and of little ecological and conservation value. Most examples appear to have developed either from bare clay on gravel pits, or on previously mown improved to semi-improved wet grassland that has been left unmanaged for at least 10 years.

MG12b *Oenanthe lachenalii* sub-community is distinguished by the presence of constant Parsley Water-dropwort along with other saline grassland species such as Sea Milkwort, Autumn Hawkbit, Sea Arrow-grass, Spear-leaved Orache and Perennial Sow-thistle *Sonchus arvensis*. More frequently occurring graminoids include Saltmarsh Rush, Sea Rush, False Fox-sedge, Slender Spike-rush, Common Reed and Sea Couch. This is a species rich type, averaging 20 species per quadrat in the NVC floristic table.

***Agrostis stolonifera*-*Hordeum secalinum* grassland**

General characteristics

In the introductory article to this series I mentioned that Rodwell *et al.* (2000) noted the omission of at least one type of grassland 'with an affinity to MG6' found in 'inland clay pastures and reclaimed coastal marshes', supporting species such as 'Hairy Buttercup, Meadow Barley and Strawberry Clover'. Although forms of it are indeed closely related to MG6 and other types of mesotrophic grassland, in this article I propose that it may well deserve community status as '*Agrostis stolonifera*-*Hordeum secalinum* grassland'.

Agrostis stolonifera-*Hordeum secalinum* grassland is usually dominated by Creeping Bent, with variable amounts of Perennial Rye-grass, Yorkshire-fog and Red Fescue. However, on drier and less saline soils Common Bent may exceed the cover of Creeping Bent and Crested Dog's-tail can also become frequent. Meadow Barley is usually abundant, but only visually prominent during a short period from the latter half of June to early July (and then only when the grassland is not grazed). Most of the saline-tolerant sedges and relatives are absent, apart from Divided Sedge, which can be frequent to locally abundant, and False Fox-sedge, which may be occasional. Hairy Sedge is probably also a fairly frequent associate.

Associated herbs include several of those typical of wet or damp grazed neutral grassland, including Creeping and Meadow Buttercups and White Clover, but characteristically also Hairy Buttercup and Strawberry Clover, though the latter species is more common in MG11a. It appears that Corky-fruited Water-dropwort *Oenanthe pimpinelloides* is a distinctive associate of the community. Silverweed is usually absent (allowing the vegetation to be visually differentiated from MG11). No other strongly saline tolerant species occur at any frequency; Spear-leaved Orache is possibly one of the more likely to be found in the more strongly saline examples.

Perhaps three sub-communities can be differentiated (see below – these are provisional at present), which differ mainly in terms of their herb richness and wetness.

Distribution

Agrostis stolonifera-*Hordeum secalinum* grassland is well represented in Hampshire. Examples occur on the east side of Titchfield Haven meadows (Norton 2016) and in the Bedhampton and Farlington Marshes area, and probably also on Hayling Island. However, as Rodwell notes it is not confined to the coast and is probably widespread inland on heavy clay soils. The community is deserving of more investigation, particularly as some forms are relatively species rich types of grasslands of ecological and cultural importance and could easily be lost through inappropriate management of coastal nature reserves.

Sub-communities

(a) *Lolium perenne* sub-community is the least herb rich type, occurring on more strongly improved non-saline inland sites and very weakly saline coastal sites. Perennial Rye-grass is abundant; Creeping Bent and Meadow Barley are frequent, together with common damp pasture grasses such as Yorkshire-fog, Rough Meadow-grass and Meadow Foxtail *Alopecurus pratensis*. Herbs, if present, include species of improved to semi-improved grasslands, such as White Clover, Meadow Buttercup, Creeping Buttercup and Common Mouse-ear. Saline herbs are usually absent.

(b) *Oenanthe pimpinelloides*-*Trifolium pratense* sub-community is a herb rich version occurring on drier, weakly saline soils. Corky-fruited Water-dropwort is often abundant and Red Clover frequent. Other hay meadow herbs such as Common Bird's-foot-trefoil may be occasional. Such examples are close to MG6a with respect to their high grass cover, but the best examples approach MG5a in terms of their species composition and higher herb cover. The abundance of Meadow Barley distinguishes this type from those. It is also possible that Creeping Bent could be partly or largely replaced by Common Bent, which occurs in addition to other species of drier pastures, especially Crested Dog's-tail, Cock's-foot and Yorkshire-fog (in addition to the damp pasture grasses in the first sub-community). A few saline herbs and sedges may be present, especially Divided Sedge in coastal areas. Pepper Saxifrage *Silaum silaus* may



***Agrostis stolonifera*-*Hordeum secalinum* grassland at Bedhampton pony fields (Quadrat B2) with Corky-fruited Water-dropwort, 12 July 2016 (John Norton)**

also be characteristic of this type. Average 13 species per quadrat (author's own data, three samples; see **Table 2**).

(c) *Alopecurus pratensis* sub-community may perhaps be differentiated on wetter soils where Meadow Foxtail is more abundant. In this type sedges are more evident, especially Divided Sedge and possibly also False Fox-sedge, Hairy Sedge and Distant Sedge. Meadow Fescue *Schedonorus pratensis* may also occur, so this type may be related to Rodwell's **MG7c *Lolium perenne*-*Alopecurus pratensis*-*Festuca pratensis* [*Schedonorus pratensis*] grassland**. Strawberry Clover is possibly a distinctive associate of this type.

Quadrat Data

Table 2 presents data from four quadrats, two from a 2012 Titchfield Haven survey (Norton 2016) and two from a survey by the author of Portsmouth Water land at Bedhampton in 2016. The two Titchfield Haven quadrats and quadrat B2 from Bedhampton probably fit into the herb rich (b) sub-community, whilst Bedhampton quadrat B1 is an example of the wetter (c) sub-community (B2 may be intermediate between (b) and (c) – this quadrat is pictured in the photograph above). It can be seen that if the abundance of Meadow Barley and Divided Sedge was ignored, then under the published NVC the vegetation would be placed somewhere between MG6a and MG7d or MG7c. The vegetation in Bedhampton B1 was probably intermediate to MG11a, due to the high cover of Silverweed. Note also the absence of Creeping Bent in TH 3-3, though this could have been overlooked.

More quadrat data are needed to elucidate the relationships of the dominant and associated species, particularly Corky-fruited Water-dropwort, which appears to be increasing in abundance in semi-improved grasslands in Hampshire and probably elsewhere in recent years. It was frequent in this vegetation at Titchfield Haven in 2012 (see photo at start of this article) but was missed by the two quadrats sampled. However, it was absent from the same area in 1996 and appears to have colonised and spread over the eastern meadows

Table 2: Quadrat data for *Agrostis stolonifera*-*Hordeum secalinum* grassland

Site / quadrat no.	TH 3-3	TH 5-1	B 1	B 2
Date	9/7/12	9/7/12	12/7/16	12/7/16
Size (m)	2 x 2	2 x 2	2 x 2	2 x 2
Easting (SU):	53761	453951	70376	70422
Northing:	02823	03167	06032	06087
Mean vegetation height (cm):	23	15	30	30
Grasses, rushes & sedges				
<i>Hordeum secalinum</i>	7	7	4	3
<i>Agrostis stolonifera</i>		3	1	6
<i>Holcus lanatus</i>	2	4	2	5
<i>Agrostis capillaris</i>	1	8	1	
<i>Poa trivialis</i>	1		3	3
<i>Carex divisa</i>	1	2	3	
<i>Lolium perenne</i>	2	3		1+
<i>Cynosurus cristatus</i>	4	5		
<i>Alopecurus pratensis</i>			5	2
<i>Festuca rubra</i>	1	3		
<i>Dactylis glomerata</i>			1	2
<i>Carex hirta</i>			1	2
<i>Elytrigia repens</i>			5	
<i>Carex otrubae</i>			2	
<i>Poa pratensis</i>			2	
Herbs				
<i>Ranunculus repens</i>	1	1	2	2
<i>Trifolium repens</i>	5	4	1	
<i>Oenanthe pimpinelloides</i>	near	near	2	3
<i>Ranunculus acris</i>	2			2
<i>Odontites vernus</i>			1	2
<i>Trifolium pratense</i>	2			1
<i>Trifolium fragiferum</i>		2	near	
<i>Potentilla anserina</i>			5	
<i>Plantago lanceolata</i>			2	
<i>Atriplex prostrata</i>			1	
<i>Cerastium fontanum</i>	1			
<i>Cerastium glomeratum</i>				1
<i>Potentilla reptans</i>			1	
<i>Pulicaria dysenterica</i>			1	
<i>Rumex acetosa</i>		1		
<i>Taraxacum</i> agg.			1	
<i>Vicia sativa</i>	1			
<i>Ranunculus sardous</i>				near
Total species	14	12	22	14
Sub-community	b	b	c (-MG11a)	b(-c)

during the intervening period. Even though this species has been given an Ellenberg value of 0 for salinity, it is presumably at least partly salt tolerant, as it also seems to appear occasionally on mown road verges. On more strongly saline soils it should be replaced by Parsley Water-dropwort.

S18 *Carex otrubae* swamp

General characteristics

Rodwell's approach to swamp vegetation (i.e. wetland vegetation composed of tall grasses and emergents) was to place any species able to form single-species or

strongly dominant stands into its own community. This was done for False Fox-sedge *Carex otrubae*, even though it rarely does form stands where it is the main dominant. The community is described by Rodwell (1995) as comprising 'narrow or fragmentary stands of marginal vegetation where *Carex otrubae* is the most abundant species, generally forming an open cover of scattered tufts'. It is 'characteristic of the clayey margins of standing or slow-mowing and moderately eutrophic waters'. This largely applies to the first of the two sub-communities, **S18a** *Carex otrubae* sub-community, which is not especially associated with saline soils and would not be considered a type of grassland. Rodwell describes it as having a patchy cover of False Fox-sedge interspersed with tussocks of Soft Rush *Juncus effusus*, and/or tall wetland herbs and emergents. The floristic table lists a wide range of marginal wetland species recorded for the lowest frequency class.

The second sub-community (**S18b**, described below) is more strongly associated with saline habitats and is less species rich. Rodwell (1995) states that it 'extends the distribution of the community to the saline water margins of ditches and pools associated with the salt industry'. It may also occur in semi-natural situations in wet brackish grassland above the high tide line but it is not very distinctive and is likely to be overlooked or considered not extensive enough to warrant mapping separately from other vegetation.

Distribution

The community is probably widely distributed in southern and south-eastern England. However, in my experience it is usually encountered as very small stands within other more extensive areas of saltmarsh and wet brackish grassland. For example, it may occur in the 'southern' form of MG11b mentioned above and in some types of SM16 *Festuca rubra* saltmarsh.

Sub-communities

S18b *Atriplex prostrata* sub-community is described by Rodwell (1995) as 'having a more complete cover of False Fox-sedge' (i.e. compared to S18a), with scattered Spear-leaved Orache and a low patchy mat of Creeping Bent. Other preferential associates listed in the floristic table are described as 'species generally characteristic of disturbed damp places' and comprise Common Orache *Atriplex patula*, Marsh Thistle *Cirsium palustre*, Toad Rush *Juncus bufonius*, Bulbous Rush *J. bulbosus*, Greater Plantain *Plantago major*, Curled Dock *Rumex crispus* and Perennial Sow-thistle *Sonchus arvensis*. The average of four species per quadrat given in the floristic table was based on only seven samples.

S19 *Eleocharis palustris* swamp

General characteristics

The community is described in the NVC account as being characterised by swards of shoots of Common Spike-rush *Eleocharis palustris* which form small stands or larger strips around the margins of water bodies, sometimes mixed with other water margin species. Three sub-communities are defined, the first two of which (**S19a**

Eleocharis palustris sub-community and **S19b** *Litorella uniflora* sub-community) are associated with freshwater habitats and not covered here. The third sub-community (**S19c** *Agrostis stolonifera* sub-community – see below) is described by Rodwell (1995) on the basis of only 11 samples collected from 'a few isolated localities in west Wales and around the Scottish coast'. However, a type similar to Rodwell's S19c is occasionally found in wet, weakly brackish pastures on heavy soils and in marshy pockets which have developed on clay-capped gravel pits. This vegetation appears to have a close affinity to MG11b, with Creeping Bent, Silverweed and Creeping Buttercup usually being frequent. In more strongly saline wet grassland *Eleocharis palustris* is replaced by *E. uniglumis* and would be classified as **SM20** *Eleocharis uniglumis* salt-marsh.

Distribution

Probably widespread but infrequent in Hampshire and lowland Britain generally; rarely present in large stands.

Sub-communities

S19c *Agrostis stolonifera* sub-community is a species poor sub-community in which Common Bent usually forms a continuous mat underneath the stems of the Common Spike-rush, often with patches of Silverweed. The other two most frequent associates listed in the floristic table are the saltmarsh species Sea Milkwort and Sea Arrow-grass. Others frequent species include Red Fescue, White Clover, Saltmarsh Rush, Sea Plantain and Few-flowered Spike-rush *Eleocharis quinqueflora*. Other species recorded for S19a and S19c include Marsh Foxtail *Alopecurus geniculatus*, Rough Meadow-grass, Marsh Pennywort *Hydrocotyle vulgaris* and Creeping Buttercup.

During my own survey of Titchfield Haven in 2012 (Norton 2016) Common Spike-rush and Creeping Bent were found to be co-dominant over a large part of the western meadows, covering 0.7ha in one field and an additional 0.3ha in two other areas. This transient vegetation had developed following a very wet winter in 2011/12 where the ground had remained flooded or waterlogged until late summer (and perhaps was also influenced by previous wet winters). The adjacent River Meon here is probably weakly brackish and may have flooded the area on occasion, though the single quadrat sampled did not contain any associated saline species. I have encountered other examples of S19c on a clay-capped gravel pit in Gosport, where the main associates were Creeping Bent, Creeping Buttercup, Silverweed and Strawberry Clover, and in a pony-grazed pond margin in Marchwood, growing with Lesser Spearwort *Ranunculus flammula*, Jointed Rush *Juncus articulatus* and a stand of Slender Club-rush close by.

S21 *Scirpus maritimus* [*Bolboschoenus maritimus*] swamp

General characteristics

This community is dominated by Sea Club-rush *Bolboschoenus maritimus* and is widespread throughout the British Isles. Rodwell describes it as 'characteristic

of ill-drained brackish sites on coastal salt-marshes, occurring as often small patches in pans, borrow pits and alongside creeks, usually on the upper marsh and in estuaries where stands may be more extensive'. Typically, the vegetation forms tall stands often only composed of Sea Club-rush or with a few halophytic associates. These species poor types fall under **S21a** Sub-community dominated by *Scirpus maritimus* and **S21b** *Atriplex prostrata* sub-community and are better classed as saltmarsh, so are not dealt with here.

The other two sub-communities (**S21c** *Agrostis stolonifera* sub-community and **S21d** *Potentilla anserina* sub-community – see below) occur typically as shorter, grassy or rushy swards that fit better into the definition of wet brackish grassland. They probably reflect more regular management, such as grazing, and are therefore much richer in species. They are both associated with a ground cover of Creeping Bent, with halophytes such as Sea Arrow-grass, Sea Milkwort, Saltmarsh Rush and Parsley Water-dropwort. Wild Celery is also recorded from all four of the sub-communities. The community can also support a wide range of other halophytes, marsh and water margin species, though often at low frequency.

Distribution

S21c and S21d are likely to be rare over our region and may typically occur only as very small or fragmentary stands amongst other grazed wet brackish grassland vegetation. At Titchfield Haven small, narrow stands occur around the margins of the coastal bird scrapes where Common Reed and other taller water margin plants are trimmed off in late summer. I have not encountered these sub-communities anywhere else in the county.

Sub-communities

S21c *Agrostis stolonifera* sub-community is described by Rodwell (1995) as being characterised by an open carpet of Creeping Bent with scattered Sea Arrow-grass, Sea Milkwort, Saltmarsh Rush and Parsley Water-dropwort, each of which may be abundant in particular stands. There are also rare records for a variety of water margin species and disturbed habitats. Average seven species per quadrat (NVC floristic table). An example at Titchfield Haven fits this description, with the addition of Brooklime and water margin species being represented by Common Reed, Common Fleabane, Water Mint *Mentha aquatica* and Gypsywort *Lycopus europaeus*. Lesser Centaury occurs nearby and may also be associated with this sub-community.

S21d *Potentilla anserina* sub-community is similar to S21c but with constant Silverweed and more frequent Curled Dock *Rumex crispus*. The published description also notes the relatively higher frequency of Common Scurvygrass *Cochlearia officinalis* (a species largely absent from the south and east), Tall Fescue and Toad Rush. Average 10 species per quadrat (NVC floristic table).

SM16 *Festuca rubra* salt-marsh community

General characteristics

This is one of the more widespread, distinctive and important communities in Britain, though may be relatively poorly represented in our region. Six sub-communities are described (and five variants recognised for two of these – not discussed here), arranged mostly according to their typical position across the coastal profile. The vegetation straddles the mean high water mark, so includes examples of true saltmarsh as well as wet brackish grassland, but for convenience all of the sub-communities are dealt with here.

Rodwell (2000) notes that the six sub-communities should be regarded as 'foci of national variation with somewhat hazy boundaries'. Although he refers generally to this vegetation as '*Juncetum gerardii*', *Juncus gerardii* itself is not included in the NVC name, presumably because it occurs at less than 20% frequency in one of the sub-communities. However, it is otherwise constant and often abundant to dominant in stands, and together with the co-abundance of Red Fescue usually makes this community straightforward to recognise. The other main constants are Creeping Bent, Sea Plantain, Sea Milkwort and Sea Arrow-grass. Thrift *Armeria maritima* and Sea Aster *Aster tripolium* are locally frequent in the more saline stands. Common Saltmarsh-grass is frequent only in the first sub-community. The community varies from species poor to moderately species rich.

Note: the sub-community accounts in the published chapter are dealt with slightly out of order. The sub-community codes used here follow the notation used at the foot of the floristic table and on the distribution maps.

Distribution

SM16 is widespread in Britain, but as Rodwell states, in the south east it is more local and tends to be represented by the *Juncus gerardii* sub-community (SM16b) at a high level in the upper marsh. In the north and west it occurs much more extensively in the mid and upper marsh, but the reason for the difference is poorly understood. Other than an extensive stand in Christchurch Harbour (which I have not looked at in detail) I have only seen small stands at Eling in Southampton Water, at Browdown Ranges and Gilkicker Marsh in Gosport and in a few other coastal areas in Hampshire.

Sub-communities

SM16a *Puccinellia maritima* sub-community comprises short swards which are floristically transitional between SM16 and **SM13** *Puccinellia maritima* salt-marsh community (Rodwell 2000). Therefore Saltmarsh Rush and Common Saltmarsh-rush may be present in variable amounts, together with the other community constants. This is a more strongly saline type of saltmarsh which probably occurs mainly at or below mean high water. Average 9 species per quadrat (NVC floristic table).

SM16b Sub-community with *Juncus gerardii* dominant has dominant Saltmarsh Rush, as the name suggests, with the other community constants. It is moderately

saline and like SM16a often occurs close to the mean high water level, so may include a number of additional saline species at low frequencies, such as Spear-leaved Orache, English Scurvygrass *Cochlearia anglica*, Common Sea-lavender *Limonium vulgare* and Greater Sea-spurrey *Spergularia media*. Rodwell (2000) suggests that stands are often small in size (2-3m diameter), especially where the Saltmarsh Rush forms clonal stands in cattle-grazed coastal pastures. Average 8 species per quadrat (NVC floristic table).

SM16c *Festuca rubra*-*Glaux maritima* community is co-dominated by Red Fescue and Creeping Bent with variable amounts of Saltmarsh Rush (which Rodwell notes may be difficult to detect in close-cropped swards). The other community constants (Sea Plantain, Sea Milkwort, Sea Arrow-grass, together with Thrift), may be locally abundant. Bryophytes appear in this sub-community and tend to comprise common grassland pleurocarps such as *Kindbergia praelonga* and *Brachythecium rutabulum*. The floristic table also lists a few additional vascular species at frequency class 0-20%, including Distant Sedge, Silverweed, Common Bird's-foot-trefoil, Common Mouse-ear and Procumbent Pearlwort. Average 9 species per quadrat (NVC floristic table).

Rodwell states that this is the core type of SM16, common in the west but rare in the south east; an example being given from north Norfolk where grazing was still being carried out. I have not carried out detailed sampling of SM16, but in Hampshire a version of SM16c is probably quite frequent on coastal grazing marshes. In Gosport, good examples occur behind the beaches at Browdown and Gilkicker, where additional species not listed in the published floristic table include Divided Sedge, False Fox-sedge and Dotted Sedge *Carex punctata*. This may indeed be the core sub-community for Divided Sedge, though as noted above it does also occur in other types of wet brackish grassland, including the closely related MG11b. Herbaceous plants are certainly poorly represented, but at the Gosport sites include both Lesser and Common Centaury *Centaurea pulchellum* / *C. erythraea* and Red Bartsia. Interestingly, the extensive area of this vegetation at Browdown Ranges SSSI is maintained only by trampling and rabbit-grazing (see photo below).

SM16d Sub-community with tall *Festuca rubra* dominant consists of dense stands of Red Fescue which Rodwell describes refers to as 'very distinctive springy mattresses'. Other main associates are Creeping Bent and Sea Plantain, but some stands may have Sea Purslane *Atriplex portulacoides* or Sea Couch. This type of vegetation probably falls into the saltmarsh category and is normally found at or below mean high water. Average 7 species per quadrat (NVC floristic table).

SM16e *Leontodon* [*Scorzoneroides*] *autumnalis* sub-community is characterised usually by a short-grazed sward which contains a wider range of non-saline grassland herbs, including Silverweed, so is very similar to MG11b. Other species include constant White Clover and frequent to locally abundant Glaucous Sedge *Carex*



Rabbit-grazed SM16c dominated by Saltmarsh Rush and Creeping Bent at Browdown Ranges SSSI, Gosport, 14 July 2018 (John Norton)

flacca. Rodwell (2000) also notes that Distant Sedge may be frequent in this sub-community. A number of pleurocarpous mosses also occur, as in SM16c.

Rodwell describes the sub-community as being mainly northern in distribution, occurring especially western Scotland with isolated examples from Wales and Cornwall. However, it is probably at least scattered throughout coastal areas of our region. I have recorded a small example at Bursledon, beside the River Hamble (which is now part of a housing estate) and there are probably small fragments present on the saline parts of the flood meadows at Titchfield Haven nature reserve. The example at Bursledon also supported Toad Rush, Strawberry Clover and Subterranean Clover *Trifolium subterraneum*. Average 11 species per quadrat (NVC floristic table).

SM16f *Carex flacca* sub-community is described by Rodwell (2000) as being essentially similar to SM16e, but with Glaucous Sedge being much more frequent and sometimes co-dominant with the other grasses and herbs, whilst a greater range of bryophytes occurs and these can also be conspicuous. This is mainly recorded from western Scotland and probably does not occur in the south. Average 16 species per quadrat (NVC floristic table).

SM20 *Eleocharis uniglumis* salt-marsh community

General characteristics

The community is characterised by dominant Slender Spike-rush with abundant to co-dominant Creeping Bent. Frequent associates include Sea Milkwort, Saltmarsh Rush, Red Fescue, Sea Arrow-grass, Marsh Foxtail and Silverweed. No sub-communities are described. In a brief account, Rodwell (2000) refers to earlier published works which describe this community as being a 'minor constituent of a variety of damp transitional communities along the upper marsh fringes; dominant in a species-poor association', and he states that 'it occurs most frequently in depressions in the upper marsh'. Average eight species per quadrat (NVC floristic table).

Distribution

The NVC dataset consists of 17 samples from scattered sites around north Wales, Cumbria and the Scottish coasts, but in the south east this appears to be a relatively rare community of brackish coastal marshes.

Although it was not sampled during the NVC survey work from southern or eastern England, it is certainly widespread but scattered in this region. In Hampshire there are some well-defined stands at Titchfield Haven and Gilkicker marsh, Gosport, and it is likely to occur in other coastal grazing marsh sites in Hampshire and neighbouring counties wherever Slender Spike-rush is present.

It was interesting to discover from quadrat samples collected at Titchfield Haven (Norton 2016) that the community is quite closely related to **S21c/d** (Sea Club-rush vegetation), as described above.

REFERENCES

Brewis, A., Bowman, P. & Rose, F. (1996). *The Flora of Hampshire*. Harley Books, Colchester.

Maddock, A. (2008). UK Biodiversity Action Plan; Priority Habitat descriptions (Updated 2011). JNCC, Peterborough.

Norton, J.A. (2016). *Titchfield Haven SSSI, Hampshire, vegetation survey 2012. April 2016 update*. Report to AMEC Environment & Infrastructure UK Limited on behalf of Portsmouth Water Ltd.

Rodwell, J.S. (ed.) (1992). *British plant communities, Volume 3. Grasslands and montane communities*. Cambridge University Press, Cambridge.

Rodwell, J.S. (ed.) (1995). *British plant communities, Volume 4. Aquatic communities, swamps and tall-herb fens*. Cambridge University Press, Cambridge.

Rodwell, J.S. (ed.) (2000). *British plant communities, Volume 5. Maritime communities and vegetation of open habitats*. Cambridge University Press, Cambridge.

Rodwell, J.S., Dring, J.C., Averis, A.B.G., Proctor, M.C.F., Malloch, A.J.C., Schaminée, J.N.J. & Dargie, T.C.D. (2000). *Review of coverage of the National Vegetation Classification. JNCC Report No. 302*, JNCC, Peterborough.

Rothero, E., Lake, S. & Gowing, D. (eds) (2016). *Floodplain meadows – beauty and utility. A technical handbook*. Floodplain Meadows Partnership, Milton Keynes.

Recording

VC11 Notes and Records

Compiled by Martin Rand (December 2018)

In the last report, a hybrid Horsetail (Bowman's Horsetail *Equisetum x bowmanii*) took the headlines, and another one is going to do the same now. You won't find it listed below, as it still needs confirmation by the referee, but it's such a distinctive hybrid that we are confident of the ID. This is Willmot's Horsetail *Equisetum x willmotiae*, a hybrid between Water Horsetail *E. fluviatile* and Great Horsetail *E. telmateia*. The combination of a large central hollow on the stem, other stem and teeth characteristics, and the sparsely branched upper stem, are striking. Andy Cross and Neil Sanderson found it in a ditch between an inclosure and the road at King's Hat in the New Forest. Only 15 other sites are known in Britain.

While we are on the subject of ferns, it's very gratifying to have a re-recording of Beech Fern *Phegopteris connectilis* south of the Lyndhurst/Bolderwood road near Millyford Bridge. This was noted in the 1996 *Flora* and is close to the well-known site south-east of Wood Crates on the other side of the road, but with no records later than 1957. I and others have looked at the original locations in intervening years but without success. The new record made by Frances Abraham and Paul Bartlett is from a new spot close by.

Frances is also a regular visitor to the translocation site (and only remaining Hampshire site) for Cut-grass *Leersia oryzoides*, and makes a detailed census of plants. Surviving numbers remain tiny, but an encouraging sign is that as well as plants close to the original translocation, a couple of possible plants were observed some way downstream. It ought to have been a good year for flowering and fruiting, but Frances could not find exerted panicles in early September, and I didn't manage to get back to check later on.



Beech Fern *Phegopteris connectilis*, Wood Crates, 24 September 2005 (Martin Rand)

Readers will notice a lot of 'New hectad' records for hectads SU22 and SZ09 in the list, which shows what you can do by square-bashing in remote parts of the county on our borders. Of course describing western Bournemouth as 'remote' is a bit strange, but you get the idea. Thanks to Pat Woodruffe and Felicity Woodhead for their efforts in these areas – and thanks to everyone else who has worked on Atlas 2020 recording, in areas that are now generally so well recorded that their contributions don't stand out so dramatically in these lists. 2019 is the last year of field work for this project, and if you want to see how we stand compared with other parts of mainland Britain, take a look at [the vice-county maps here](#) which show the number of taxa recorded by tetrad since 2000. And look out elsewhere in this issue for the meeting on 24 February, when Atlas contributors (and new volunteers) will have the chance to hear about strategy for the last year, be introduced to new web facilities to help with tracking down elusive plants, and munch free cake.

Aliens continue to pour in and spread in the county, unsurprisingly given the string of ports along our own coast and that of neighbouring counties. Some of you will have seen the article by Paul Stanley and Colin Pope in the September 2018 issue of *BSBI News*, detailing aliens recently found on caravan sites. Paul has examined several sites in VC11 and found two species of *Soliva* on them, amongst other things. Details of Jo-jo Weed *Soliva pterosperma* appear below, but the other species (*Soliva valdiviana*) will appear in the next report. These are not nice plants to have around in areas where children are likely to run barefoot or lightly shod, because of their spiny achenes. Annual Buttonweed *Cotula australis* is also turning up on the same sites, and I would be surprised if Tiny Bedstraw *Galium murale* isn't found there soon. Paul and I are currently in competition to find the first *Conyza blakei* coming in via these routes, given that it's been sighted in Le Havre. There are still touring van sites that need looking at (with the owner's or warden's permission, of course!) and I myself plan to revisit the Caravan Club's Rookley Park site this year, as it takes a lot of stop-over traffic for the Portsmouth ferries.

Finally, a retraction and apology. In the last report I gave a record for Eastern Pellitory-of-the-wall *Parietaria officinalis* on a stretch of the Monk's Brook at Eastleigh. I know this plant from the Continent, where it typically makes a medium-height upright plant along the banks of watercourses, very different in habit from the familiar *P. judaica*. However, Eric Clement tells me that there are confusing intermediates. Fortunately David Leadbetter visited my spot and failed to find it, which I thought was odd as I wasn't aware of any work along the bank that might have extirpated it; so I revisited it this summer. I was very embarrassed to find what I'd mistaken for it. In fact, I'm so embarrassed I'm not going to tell you. No, really, I'm not... stop twisting my arm, it won't work... Anyway, the record is now expunged. At least David had the consolation of seeing how well Purslane *Portulaca oleracea* is establishing itself as a pavement weed not far away. I think this mostly comes in with imported

horticultural plants from southern Europe. I predict a bright future for it in suburban streets.

The codings at the front of each plant are:

***** = Hampshire notable (****** = British or English Red List). I list these whenever I have a record for a tetrad that is either new, or the first for a long time (usually taken as about 25 years, but for species 'on the brink' it can be shorter). However, the account would be long and tedious in the case of some plants now on the English Red List that are widespread in Hampshire, so I summarise tetrads for these unless the record is a significant extension to the known range. First records for a long time have the last recorded year in brackets; new tetrads are simply listed.

NA = Native or Archaeophyte. I list these if they are new vice-county records, new to a hectad or the first for a long time.

IN = Invasive, or Potentially Invasive, Non-native. I use the IUCN's three-pronged definition of 'Invasive', so that a plant like *Artemisia ambrosiifolia* (Ragweed), which hasn't actually invaded anywhere in Hampshire yet but will pose a health hazard if it does, are included. I also list these for new tetrads, but when you are recording I would like as precise a grid reference and as many supporting details as possible.

NN = other Neophyte Non-native. Defining Neophyte (arrived after 1500) or Archaeophyte (arrived by 1500) in a local context is beset with difficulty, but I use this category if the plant in the given location is outside its generally agreed native range and can reasonably be inferred to have got there recently by human agency whether intentional or not. That includes plants that are native elsewhere in Britain, or even nearby in other habitats. Generally, I list these if they are new vice-county records, new to a hectad or the first for a long time. For some, I simply list new hectads. I exclude patently planted trees and shrubs occurring in gardens, municipal parks and cemeteries unless they are also self-establishing or very likely to do so. However, I keep records for them on the database so such records are welcome, provided you state that they are 'Planted' if the only individuals clearly are planted, or 'Introduced' if they are spreading naturally from original plantings.

Abbreviations for recorders and determiners are:

ACr=Alison Cross, **AEB**=Alison Bolton, **AHP**=Andrew Powling, **ALu**=Adam Lucas, **AMC**=Andrew Cross, **ARGM**=Tony Mundell, **ASt**=Anna Stewart, **BGo**=Barry Goater, **BHep**=Brian Heppenstall, **BMd**=Ben Mead, **BSBI**=BSBI/HFG members (leader or recorder's name in brackets), **CC**=Clive Chatters, **CWW**=Charles Whitworth, **DaWo**=Daphne Woods, **DC**=David Caals, **DJMcC**=David McCosh, **DL**=David Leadbetter, **DN**=Dawn Nelson, **DNe**=David Nesbitt, **DPa**=David Pearson, **DPr**=Dominic Price, **DRA**=Debbie Allan, **DTr**=Dennis Trunecka, **EJC**=Eric Clement, **ELe**=E Lesourd, **FA**=Frances Abraham, **FAW**=Felicity Woodhead, **GCo**=Ginnie Copsey, **GD**=Graeme Down, **GFa**=Geoffrey Farwell, **GK**=Geoffrey Kitchener, **HBIC**=Hampshire Biodiversity Information Centre, **HFG**=Hampshire Flora Group members (leader or recorder's name in brackets), **ILR**=Ian Ralphs, **JAN**=John Norton, **JF**=Jeanette Fryer, **JGu**=Joanne Gulliver, **JMill**=Joel Miller, **JOa**=Jill Oakley, **JoW**=Joanna Walmisley, **JuW**=Julian Walmisley, **KBo**=K Bourdillon, **KT**=Keith Turner, **LG**=Laura Gravestock, **LMal**=Lisa Malter, **MCre**=Mike Crewe, **MGra**=Marcus Grace, **MNes**=Marion Nesbitt, **MPa**=Mary Parker, **MR**=Martin Rand, **MSh**=Mike Shaw, **MWR**=Mike Rowe, **NAS**=Neil Sanderson, **PAB**=Phil Budd, **PBa**=Paul Bartlett, **PCo**=Phil Collier, **PGLT**=Pete Thompson, **PM**=Peter Marston, **PS**=Paul Stanley, **PW**=Pat Woodruffe, **RCh**=Bob Chapman, **RCR**=Clare Rand, **RGo**=Richard Gowing, **RPH**=Robin Harley, **RVHL**=Richard Lansdown, **SCa**=Shireen Caals, **SDa**=Sarah Davis, **SNHS**=Southampton Natural History Society, **SP**=Steve Povey, **TAC**=Dr Tom Cope, **TGCR**=Tim Rich, **VFr**=Victor Freestone.

NN *Abies grandis* (Giant Fir): Beaulieu Airfield (NW side), SU343017; 29 Jun 2018; MWR. 1.2m sapling, heath, SU 3434 0178. **1st for SU30.**

NN *Acer palmatum* (Smooth Japanese-maple): Sparrowgrove Copse, SU464239; 17 May 2018; MR. Possibly but not obviously planted. **1st for SU42.**

NN *Aconitum x stoerkianum* (*A. napellus x variegatum*): Horsebridge Road, SU352303; 23 May 2018; MR and GCo. Garden variety in verge. **1st VC record.**

NN *Agrostemma githago* (Corncockle): Romsey, SU357215; 25 Jul 2017; PM. Flowering on rough ground on west side of footpath beside Barge Canal at SU3578 2150. **1st for SU32.**

NA *Agrostis vinealis* (Brown Bent): King's Hat, SU3805; 13 May 2018; AMC, MR & NAS. By main track north of King's Hat car park SU38650 05485. **New tetrad.**

IN *Ailanthus altissima* (Tree-of-heaven): B2199 Pulens Crescent Junction, SU760236; 19 Sep 2017; JMill. (HBIC). Full GR: SU7600 2361. **1st for SU72.** Bournemouth Upper Gardens North., SZ0692; 20 Jul 2017; FAW. **1st for SZ09.**

NN *Alcea rosea* (Hollyhock): North Baddesley, SU390203; 29 Aug 2017; PM. Fruiting on south side of Botley Road at SU3900 2038. **1st for SU32.**

IN *Allium paradoxum* (Few-flowered Garlic): Forest of Bere, SU606119; 03 May 2018; HFG[MR]. On S side of ride at entrance to FC woodland, SU6062 1195. Patch 90 x 30cm. **New tetrad.**

NN *Allium schoenoprasum* (Chives): West Tytherley (Standing Hill and Dean Road), SU2729; 17 Jul 2018; PW. Garden escape. **1st for SU22.**

NN *Alnus cordata* (Italian Alder): Turf Hill, SU209173; 19 Sep 2017; PM. Young trees at SU2092 1736. **1st for SU21.**

NN *Amaranthus cruentus* (Purple Amaranth): High Street, just off, SU748233; 05 Aug 2018; JOa & DN. One plant probably bird-sown at base of low wall in Folly Market area SU7483 2331. **1st for SU72.**

IN *Amelanchier lamarckii* (Juneberry): Cadnam, south of, SU297124; 27 Sep 2018; PM. At SU2978 1243. **1st for SU21 since 1986.**

NN *Anchusa officinalis* (Alkanet): Bunny Lane Meadow and Woodland Strip, SU361249; 13 Jul 2017; ILR. (HBIC). Full GR: SU3615 2492. **1st for SU32.**

NN *Anemanthele lessoniana* (New Zealand Wind-grass): Muscliff, Castle Lane West, Wimborne Rd, Muscliff Ln, Epiph Sch, SZ0995; 19 May 2017; FAW. Epiphany School, footpath behind school field. Bournemouth Pier, East Cliff, SZ0890; 27 Mar 2017; FAW. lower end of slope from pier. **1st for SZ09.**

NN *Anemone blanda* (Balkan Anemone): Denmead 1 km north-west, SU6413; 12 Apr 2018; AHP & EJC. **1st for SU61.**

NN *Anemone x hybrida* (Japanese Anemone): Broughton, SU308328; 26 Apr 2018; MR & Ast. On wall. **1st for SU33.**

NN *Angelica archangelica* (Garden Angelica): Nea Meadows, SZ2093; 02 Jun 2018; PAB. **1st for SZ29.**

NN *Anisantha madritensis* (Compact Brome): Bournemouth West, Upper Gardens, SZ0791; 04 Apr 2017; FAW. **1st for SZ09.**

NN *Anthemis austriaca* (Austrian Chamomile): Romsey, SU356215; 25 Jul 2017; PM. A few flowering plants at SU3569 2153. **1st for SU32.**

****NA *Anthemis cotula* (Stinking Chamomile):** Nutburn, SU399203; 21 May 2018; MR, GCo & LMal. Dumped soil by footpath. **New tetrad.** E of Nutburn, SU400203; 21 May 2018; MR, GCo & LMal. Along trackway. **New tetrad.** Sarum Farm, Pitt, SU448291; 07 Aug 2018; MR. **New tetrad.** Teglease Down, SU655197; 28 Jun 2018; MR, GCo & Ast. **New tetrad.**

NN *Antirrhinum majus* (Snapdragon): Cadnam, SU296135; 15 Jul 2018; PM. Red-flowered plant at side of pavement at SU2963 1353. **1st for SU21.**

****NA *Apium inundatum* (Lesser Marshwort):** Gritnam area, SU2806; 27 Jun 2018; MR. **New tetrad.** Dockens Water, SU201115; 16 Aug 2018; MR & GCo. **1st for tetrad since 1966.**

NN *Aster novae-angliae* (Hairy Michaelmas-daisy): Bournemouth East Cliff, seafront, SZ0990; 26 Sep 2017; FAW. 09966 90986 +

09533 90911 (tall) + 09469 90893 (short). Westbourne, Durley Chine and cliff path up to east, SZ0790; 18 Sep 2017; FAW. Durley Chine, seafront to W. **1st for SZ09.**

NN *Aster x salignus* (Michaelmas Daisy (*A. lanceolatus x novi-belgii*)): East Tytherley (Roadside south of church), SU293286; 15 Sep 2018; PW. **1st for SU22.**

Bournemouth Pier, West Cliff, SZ0890; 27 Aug 2017; FAW. pier up to car entry point. Westbourne, Durley Chine and cliff path up to east, SZ0790; 18 Sep 2017; FAW. Durley Chine, seafront to W. **1st for SZ09.**

***NA *Atriplex x gustafssoniana* (*A. longipes x prostrata*):** Gutner Point, Hayling Island, SU735018; 16 Sep 2017; AMC & HFG det. MR. At SU73559 01818 in upper saltmarsh. **1st for SU70.**

NN *Aucuba japonica* (Spotted-laurel): Hoe, North Baddesley, SU388192; 28 Aug 2018; MR & GCo. **1st for SU31.**

Eastleigh Road, SU736078; 09 May 2017; JoW & JuW. **1st for SU70.**

****NA *Baldellia ranunculoides* (Lesser Water-plantain):** Brockis Hill, SU298119; 15 Aug 2017; PM. Several at SU2988 1197. **New tetrad.**

***NA *Berberis vulgaris* (Barberry):** Howen Bottom, Fritham, SU229149; 12 Jul 2018; MR & GCo. Single large bush in a small 'island' of scrub, SU2292 1494. **1st for tetrad since 1984.**

NN *Bergenia x schmidtii* (*B. crassifolia x ciliata*): S of Tatchbury Manor, SU328129; 28 Sep 2018; MR & GCo. By entrance to green lane, established garden outcast. **1st for SU31.**

NA *Berula erecta* (Lesser Water-parsnip): East Dean (Holbury Lane), SU289269; 22 Jul 2018; PW. **1st for SU22.**

NA *Betula x aurata* (*B. pendula x pubescens*): N of Hurst Hill, SU285058; 31 Jul 2018; MR & PCo. **1st for SU20.**

NA *Bidens cernua* (Nodding Bur-marigold): Fishlake and Ashley Meadows, SU357226; 24 Aug 2017; ILR. (HBIC). Full GR: SU35702267. **1st for SU32 since 1986.**

NN *Briza maxima* (Greater Quaking-grass): Tricketts Cross East, Parley Common Heatherlands, SU0900; 02 Sep 2017; FAW. 09214 00416. **1st for SU00.** Kings Close, Chandlers Ford, SU435210; 10 Jun 2018; MR. Pavement weed, junction of Kingsway. **1st for SU42.** Wickham Square, SU5711; 18 May 2018; GCo. Wall/ pavement. **1st for SU51.**

***NA *Bromus commutatus* (Meadow Brome):** Lockerley (South of village), SU2925; 20 May 2018; PW. **New tetrad.**

NN *Bromus secalinus* (Rye Brome): Buriton, N of, SU743214; 06 Jul 2018; ARGM & DN. At SU7430 2148 on edge of fallow arable field. **1st for SU71.**

NN *Buddleja x weyeriana* (*B. davidii x globosa*): Blackfield, SU440013; 10 Sep 2017; MWR. 1 small plant, hedge by green space, Kings Ride, SU 4404 0138. **1st for SU40.** Hinton Admiral, SZ208946; 22 Sep 2017; MWR. 1 bush, edge of wood by gardens, SZ 2081 9464, with *Lonicera nitida*. **1st for SZ29.**

***NA *Butomus umbellatus* (Flowering-rush):** Titchfield Haven Ditch 3, SU542038; 07 Sep 2017; JMill. (HBIC). Full GR: SU5424 0389. **New tetrad.** Winkton, Winkton Fishery meadows, SZ1696; 23 Jul 2017; FAW. **New tetrad.**

NN *Buxus sempervirens* (Box): East Leigh Havant, SU7207; 07 Oct 2017; DN & JOa det. DN. surviving well from what was probably a hedge, now in a derelict site S of footpath to railway footbridge. **1st for SU70.**

***NA *Callitriche brutia* subsp. *brutia* (Pedunculate Water-starwort):** Head of Backley Bottom. South of A31, SU221088; 11 May 2018; AMC. Reflexed style. Peduncle 4mm. On drying, heavily-poached ground in and adjacent to corral. Head of Backley Bottom. South of A31, SU221087; 11 May 2018; AMC. 10m x10m patch in corral on drying, wet trampled ground. **New tetrad.** Holmsley, old railway line E + bogs to NE, SU2201; 08 Jul 2017; FAW. **New tetrad.** Turf Hill, SU213177; 19 Sep 2017; PM. Fruiting in bog at SU2131 1773. **New tetrad.** Ipley Manor, SU375071; 22 Jun 2017; MR & AMC. Linear leaves not deeply notched. **New tetrad.**

***NA *Callitriche brutia* subsp. *hamulata* (Intermediate Water-starwort):** Nr Queen Bower, SU288042; 07 Jun 2018; HFG[MR] det. MR. Stream feeding into Highland Water. **1st for tetrad since 1986.**

NN *Calystegia pulchra* (Hairy Bindweed): Mudeford Wood North, Watery Lane, A35, A337, Runway, SZ1893; 17 Sep 2017; FAW. Watery Lane, southern part behind Sainsbury's, 18189396. **1st for SZ19.**

NN *Campanula lactiflora* (Milky Bellflower): Ramsdean, SU706221; 25 Sep 2018; DN. SU70636 22121 garden escape/survivor. **1st for VC11.**

NN *Campanula persicifolia* (Peach-leaved Bellflower): Druitt Gardens, SZ1592; 31 May 2017; SDA. **1st for SZ19.**

NN *Cannabis sativa* (Hemp): Nr Ipley Bridge, SU378061; 20 Sep 2017; VFr. growing in a New Forest bog near Ipley Bridge; SU37820 06195 (3 photos provided). **1st for SU30.**

NN *Capsella rubella* (Pink Shepherd's-purse): Knightwood Leisure Centre, Valley Park, SU420203; 21 May 2018; MR, GCo & LMal. Car park of leisure centre. **1st for SU42.** Muscliff, Castle Lane West, Wimborne Rd, Muscliff Ln, Epiph Sch, SZ0995; 19 May 2017; FAW. Epiphany School road, kerbside. **1st for SZ09.**

NA *Carex rostrata* (Bottle Sedge): Dibden Bottom, SU394064; 05 Aug 2017; AMC & NAS. **New tetrad.**

NA *Centaurea debeauxii* (Chalk Knapweed): West Tytherley (Standing Hill and Dean Road), SU2729; 17 Jul 2018; PW. **1st for SU22.** West Tytherley, SU2730; 31 Aug 2017; MR, GCo & ASt. Bussle Wood/Bradley Down area, SU2634; 04 Sep 2017; HFG[MR] det. MR. West Tytherley, NE of, SU2831; 10 Jul 2017; MR & GCo. **1st for SU23.**

NN *Centaurea montana* (Perennial Cornflower): Romsey, SU358212; 04 Jun 2017; PM. A large clump at SU3586 2122. Romsey, SU357220; 04 Jun 2017; PM. Flowering at SU3570 2204. **1st for SU32.** Meonstoke 1 km east, SU6220; 27 May 2018; MR. **1st for SU62.**

NA *Ceratocloa carinata* (California Brome): Stroud, W of, SU711234; 06 Aug 2018; ARGM, SP & DN. At SU7119 2347 on arable field edge beside footpath. Stroud, W of, SU711236; 06 Aug 2018; ARGM, SP & DN. At SU7110 2366 on arable field edge. **1st for SU72.** Mengham, Hayling, SZ729989; 09 Sep 2017; BSBI[ARGM] det. ARGM. Norman Road jctn under road name sign, SZ7298 9895. Voucher Hb ARGM. **1st for SZ79.**

NA *Chaenorhinum minus* (Small Toadflax): Mengham, Hayling, SZ726995; 09 Sep 2017; BSBI[ARGM] det. ARGM. Disturbed soil beside ditch in new housing estate, SZ7260 9953. **1st for SZ79 since 1986.**

****NA *Chenopodium murale* (Nettle-leaved Goosefoot):** Mengham, Hayling, SZ725995; 09 Sep 2017; BSBI[ARGM] det. ARGM. 6 plants on grassy verge, SZ7252 9953. Photographic evidence held by G Knass. **New tetrad, 1st for hectad since 1969.**

NA *Chenopodium rubrum* (Red Goosefoot): Lyndhurst (Pinkney Lane area), SU295076, SU296077; 02 Sep 2017; MWR. Edge of maize field, Pinkney Lane, SU 2951 0762. 1 small plant, roadside gutter, Pinkney Lane, SU 2965 0779. **1st for SU20.**

****NA *Cicendia filiformis* (Yellow Centaury):** Burley, east of, SU252028; 24 Sep 2017; AMC & NAS. In re-seeded/limed area at SU25225 02818 and SU25214 02826. Nr. Duck Hole, Markway Inclosure, SU2559 0264; 08 Sep 2018; MPa. 2 plants. **1st for tetrad since 1966.**

***NA *Clinopodium ascendens* (Common Calamint):** Littledown, Castle Lane East, Littledown lakes, park, footpaths, SZ1293; 04 Sep 2017; FAW. area 4, rough grass. **New tetrad.**

***Convallaria majalis* (Lily-of-the-valley):** (?NA) Tricketts Cross East., Parley Common Heatherlands, SU0900; 02 Sep 2017; FAW. 09495 00213. **1st for SU00.**

(NN) U189 Lee Ground, SU536084; 01 May 2017; JMill. (HBIC). Full GR: SU5365 0840. 1st for SU50.

NN *Cornus sanguinea* subsp. *australis* (Dogwood): Allbrook, NE of link underpass, SU453218; 01 May 2018; MR & ASt. Presumed planted. **1st for SU42 for subspecies.**

IN *Cornus sericea* (Red-osier Dogwood): Sherfield English (Gambledown Farm), SU29602459; 29 Sep 2018; PW. **1st for SU22.**

NN *Cotoneaster conspicuus* (Tibetan Cotoneaster): Barton on Sea (Durlston Court area), SZ245937; 09 Sep 2017; MWR det. JF Jan 2018. Very small plant, pavement, Penny Hedge, SZ 2455 9376, clearly not planted. **1st for SZ29.**

NN *Cotoneaster dielsianus* (Diels' Cotoneaster): Somerley area (The Belt), SU122074; 24 Sep 2017; MWR det. JF Jan 2018. Roadside hedge, SU 1220 0742. **1st for SU10.**

NN *Cotoneaster franchetii* (Franchet's Cotoneaster): Boarhunt village, SU6010; 11 Oct 2018; AHP & EJC. **1st for SU61.**

NN *Cotoneaster hsingshangensis* (Hsing-Shan Cotoneaster): Pennington (S side), SZ313949; 11 May 2017; MWR det. JF Jan 2018. Hedge round grounds of Priestlands School, North Street, SZ 3135 9490. Not obviously planted. **1st for SZ39.**

NN *Cotoneaster rehderi* (Bullate Cotoneaster): Buriton, N of, SU743210; 06 Jul 2018; ARGM & DN. At SU7435 2104 near pond beside Hangers Way. Large leaves to 130mm x 55mm on specimen collected. **1st for SU72 since 1986.**

NN *Cotoneaster sternianus* (Stern's Cotoneaster): Ramsdean, SU705222; 25 Sep 2018; DN det. JF. Previously found here S of village green SU705222 on 21/2/13 with Steve Povey. **1st for SU72.**

NN *Cotoneaster x watereri* (Waterer's Cotoneaster): Silkstead, SU444242; 30 Jan 2018; MR & RCR. Hedgerow on W of Silkstead Lane. **1st for SU42 since 1988.**

NN *Cotula australis* (Annual Buttonweed): Denny Wood camp site, SU333066; 01 Apr 2018; JAN & DRA. Small patch in worn area of short acid grassland, SU3336 0661. **1st for SU30.** Kingfisher Lake camp site, Eastoke, SZ735987; Jun 2017; KT det. PS. Approximate grid reference. **1st VC record.**



Annual Buttonweed *Cotula australis* specimen from Denny Wood campsite, 1 April 2018 (with millimetre scale) (John Norton)

IN *Crassula helmsii* (New Zealand Pigmyweed): Broad Bottom area, SU198040; 12 Jul 2018; MWR. Abundant, wood, SU 1987 0401. **New tetrad.** Shobley area, SU180069; 06 Jul 2018; MWR. Roadside hollow, SU 1804 0696. **New tetrad.** Nomansland, SU254173; 19 Sep 2017; PM. Flowering and spreading over small pond at SU2544 1731. **New tetrad.** Brockis Hill, east of, SU298119; 15 Aug 2017; PM. Large area at SU2988 1197. **New tetrad.** King's Hat - Road Verges, SU387053; 01 Jul 2018; AMC & NAS. In wet hollow in eastern verge at SU38722 05378. Frequent in area 3m x3m. **New tetrad.** Nea Meadows (Bure Brook), SZ2021 9377; 17 Jan 2018; RPH. several clumps plus floating fragments. Highcliffe Castle, Nea Meadows, SZ2093; 08 May 2017; FAW. 20211 93786.

New tetrad. St Leonards, SZ406983; 28 Sep 2017; MWR. Abundant, roadside pond, SZ 4066 9833. **1st for SZ49.**

***NA *Crassula tillaea* (Mossy Stonecrop):** Tricketts Cross East, Parley Common Heatherlands, SU0900; 02 Sep 2017; FAW. 09160 00533. **1st for SU00.** Hollands Wood camp site, SU303036; 15 Jul 2017; PS. Camping pitches a few yards E of reception. **New tetrad.**

***NA *Crataegus laevigata* (Midland Hawthorn):** Hipley Copse NW, SU619112; 03 May 2018; AHP det. MR & AHP. At least two bushes, SU6197 1124. **New tetrad.**

NA *Crataegus x media* (*C. monogyna x laevigata*): Hipley Copse, North Boarhunt, SU619112; 03 May 2018; HFG[MR]. NE fringes of ancient woodland, with both parents, SU6197 1123. **New tetrad.**

NN *Cuscuta campestris* (Yellow Dodder): Dibden Purlieu, SU417056; 29 Sep 2018; RCh. Garden of house at southern end of Roman Road with a number of alien plants probably from bird seed. **1st for SU40, 3rd VC record.**

NN *Cyclamen repandum* (Spring Sowbread): West of Hiltingbury Lake, SU440219; 02 Apr 2017; PAB. Naturalised in woodland over 5 metre square area. **1st VC record.**

NN *Cynara cardunculus* (Globe Artichoke): Ashley Manor Farm area, SZ251944; 16 Oct 2017; MWR. Var. *scolymus*, 1 plant (well over 2m tall), roadside, Caird Avenue, SZ 2515 9447. **1st for SZ29.**

***NN *Cynodon dactylon* (Bermuda-grass):** Christchurch, Quomps, SZ1592; 14 Aug 2017; FAW. 15693 92468, edge of path by river. **New tetrad.**

***NA *Cynoglossum officinale* (Hound's-tongue):** Shawford Down (Grassland), SU470250; 22 Jun 2017; JMill. (HBIC).. Shawford Down, SU470249; 10 May 2018; HFG[MR]. Abundant on steep area recently cleared of scrub below memorial. **1st for tetrad since 1950.**

NN *Cyperus eragrostis* (Pale Galingale): Land at West Road, Milford-on-Sea, SZ274922; 20 Sep 2017; ILR. (HBIC). Full GR: SZ2746 9228. **1st for SZ29.**

NA *Dactylorhiza x hallii* (*D. maculata x praetermissa*): Bishops Waltham Moors cpt 0801: E of mill pond, SU5616; 16 Jun 2018; HFG[MR]. **1st for SU51 since 1950.**

NA *Daphne laureola* (Spurge-laurel): Shawford Down, SU469249; 19 Jul 2017; MR, GCo & BGo. Large spreading single bush exposed by scrub clearance along former hedge line. **New tetrad.**

NA *Daucus carota* subsp. *gummifer* (Sea Carrot): Selsmore and Tourner Bury Fort, SZ7399; 13 May 2017; BSBI[AMC]. Sea wall. Rare. **New tetrad.**

NN *Dicentra formosa* (Bleeding-heart): Sherfield English, SU293222; 02 May 2018; PW. Naturalised on bank of stream. **1st for SU22, 2nd VC record.**

NN *Digitaria sanguinalis* (Hairy Finger-grass): Hythe (W side), SU416070; 05 Sep 2018; MWR. Urban roadside gutter, The Vale, SU 4169 0705, with *Echinochloa crus-galli*. Hythe (W side), SU412071; 05 Sep 2018; MWR. Roadside gutter, Challenger Way, SU 4123 0716. **1st for SU40 since 1958.** Botley, SU513129; 05 Jul 2018; TCGR. In lane behind Dolphin Hotel, SU5136 1294. **1st for SU51.**

***Diploxys tenuifolia* (Perennial Wall-rocket):** Lepe (Lepe Farm area), SZ440993; 20 Sep 2017; MWR. 1 plant, roadside by garden, Lepe Farm, SZ 4409 9932. **1st for SZ49.**

***Dittrichia graveolens* (Stinking Fleabane):** M27 Highbury, SU6504; 11 Sep 2018; MR. M27 Horsea, SU6404; 11 Sep 2018; MR. A27 Farlington, SU6804; 11 Sep 2018; MR. **1st for SU60.** A27 Emsworth, SU7406; 11 Sep 2018; MR. **1st for SU70.**

***NA *Dryopteris x deweveri* (*D. carthusiana x dilatata*):** Luzborough Plantation, SU379198; 14 May 2018; MR & AMC det. MR. And elsewhere in plantation. **New tetrad.**

NN *Echinochloa esculenta* (White Millet): Warnford, 1 km north west., SU6123; 12 Oct 2017; AHP & EJC. **1st for SU62.**

NN *Echium pininana* (Giant Viper's-bugloss): Bournemouth Pier, West Cliff, SZ0890; 19 Sep 2017; FAW. seafront to pier, seedling . Westbourne, Durley Chine and cliff path up to east, SZ0790; 18

Sep 2017; FAW. Durley Chine, seafront to W, 07529 90247, 5 large pls, 2 small. **1st VC records.**

NA *Echium vulgare* (Viper's-bugloss): Parley Court South, Stour Valley N, Muscliff Riverside S, Redhill F, SZ0996; 05 Jun 2017; FAW. 09105 96043. **1st for SZ09.**

NN *Elaeagnus x submacrophylla* (*E. macrophylla x pungens*): Brockenhurst (church area), SU302019; 29 Sep 2017; MWR. Roadside, A337, SU 3026 0193. **1st for SU30.** How Park, Kings Somborne, SU352315; 23 May 2018; MR & GCo. **1st for SU33.** Hedge End (SW side), SU487129; 11 Sep 2018; MWR. Edge of wood near garden, SU 4876 1297. **1st for SU41.**

***NA *Eleocharis quinqueflora* (Few-flowered Spike-rush):** Burley, east of, SU252028; 24 Sep 2017; AMC & NAS. In damp/wet re-seeded/limed area. **New tetrad.**

***NA *Eleogiton fluitans* (Floating Club-rush):** Bolderwood Walk, SU2409; 29 Jun 2017; MWR. **New tetrad.**

***NA *Epilobium lanceolatum* (Spear-leaved Willowherb):** East Tytherley (South of Church), SU2928; 15 Sep 2018; PW. **1st for SU22.** Bishop's Waltham, SU553174; 19 Jun 2018; GCo. Concrete crack. Botley, SU513129; 05 Jul 18; TCGR. In lane behind Dolphin Hotel, SU5136 1294. **1st for SU51.**

NA *Epilobium obscurum* (Short-fruited Willowherb): East Leigh Havant, SU7207; 07 Oct 17; DN & JOa det. DN. **1st for SU70 since 1969.**

***NA *Epilobium roseum* (Pale Willowherb):** Lyndhurst (Pinkney Lane area), SU294074; 02 Sep 2017; MWR. Several plants on roadside, Pinkney Lane, SU 2943 0740. **New tetrad.** Tremona Road, Southampton, SU397145; 14 Jun 2017; MR. Occasional pavement/garden weed, extending to SU397146. **New tetrad.**

NA *Epilobium x dacicum* (*E. obscurum x parviflorum*): Exbury Gardens (NW part) and Gilbury Hard, SU419008; 30 Jul 2017; MWR det. GK 13 Dec 2017. Waste ground, Exbury Gardens, SU 4193 0080. 'Probably' this hybrid (GK). **1st for SU40.**

***NA *Equisetum x litorale* (Shore Horsetail (*E. arvense x fluviatile*)):** Near Upper Pennington (Grounds of 'Crickets', Wainsford Road), SZ299949; 23 Jul 2018; MWR. SZ 2993 9492. **New tetrad.**

NN *Erigeron karvinskianus* (Mexican Fleabane): West Town, Hayling, SZ716994; 09 Sep 2017; BSBI[JAN] det. JAN. **1st for SZ79.**

***NA *Eriophorum latifolium* (Broad-leaved Cottongrass):** Kings Copse flush, SU419025; 25 May 2017; AEB. **1st for tetrad since 1962.**

***NA *Erodium maritimum* (Sea Stork's-bill):** Mudeford Quay, Hengistbury sand spit, SZ1891; 25 Jul 2017; FAW. 18412 91477, 18395 91493, + 2 small 18415 91505. **New tetrad.** Eastney, SZ6698; 23 May 2018; GD. **1st for SZ69.**

***NA *Erodium moschatum* (Musk Stork's-bill):** Boarhunt village, SU603107; 11 Oct 2018; AHP & EJC. SU6035 1070. **1st for SU61.** S of St Leonard's Farm, SZ401978; 26 Sep 2017; MWR. Several plants on roadside, SZ 4019 9780. **1st for SZ49.**

NN *Eschscholzia californica* (Californian Poppy): West Town, Hayling, SZ715995; 09 Sep 2017; BSBI[JAN]. Escape in kerb. **1st for SZ79.**

***Euonymus japonicus* (Evergreen Spindle):** Nursling Plantation, SU392157; 05 Feb 2017; PAB. Established from garden throw out in SE of wood. **1st for SU31.**

NN *Euphorbia characias* (Mediterranean Spurge): W of Fawley, SU440031; 13 Apr 2018; MWR. 1 large plant, edge of roadside ditch, Long Copse, SU 4406 0316. **1st for SU40.**

***NN *Euphorbia cyparissias* (Cypress Spurge):** Kings Somborne, SU353304; 23 May 2018; MR & GCo. SU 353304. **1st for SU33.**

NN *Euphorbia lathyris* (Caper Spurge): West Tytherley, SU275302; 31 Aug 2017; MR, GCo & Ast. **1st for SU23.** Little Hyden Lane, Clanfield, SU695173; 14 Aug 2018; BSBI[MR]. Garden escape. Brockbridge, SU614197; 24 May 2018; MR & GCo. **1st for SU61.**

NN *Euphorbia oblongata* (Balkan Spurge): Stokewood, SU485186; 19 Jul 2018; GCo. **1st for SU41.** Emsworth, SW, SU7405; 10 Jan 2017; DN. **1st for SU70.**

***NA *Euphorbia platyphyllos* (Broad-leaved Spurge):** Allenford, SU093196; 29 Aug 2017; PGLT. **New tetrad.**

****NA *Euphrasia confusa* ():** Broughton, The Valley, S side, SU302320; 30 Jul 2017; ARGM & ACr. At SU3025 3204. **New tetrad.**

NN *Fagopyrum esculentum* (Buckwheat): Christchurch, Wick Rec and tea gardens, SZ1592; 13 Aug 2017; FAW. 15269 92189. **1st for SZ19.**

NN *Fallopia baldschuanica* (Russian-vine): Hythe Road Meadow North, SU387097; 12 Sep 2017; ILR. (HBIC).. **1st for SU30.** Bournemouth East Cliff, seafront, SZ0990; 26 Sep 2017; FAW. 09276 90844. **1st for SZ09.**

NA *Ficaria verna* subsp. *verna* (Lesser Celandine): Sheffield English, SU2822; 28 Apr 2018; PW. **1st for SU22 for subsp.** West Town, Hayling, SZ7099; 13 May 2017; BSBI[ARGM] det. ARGM. **1st for SZ79 for subsp.**

***NA *Filago vulgaris* (Common Cudweed):** Hawkhill Inclosure, SU351021; 11 Jul 2018; VFr. a small colony (about a dozen plants) ...at SU 35100 02117. **New tetrad.** Port Solent, SU633050; 15 Apr 2018; HFG[MR]. On closely mown grassy bank, SU6338 0509. **New tetrad.**

NN *Fraxinus ornus* (Manna Ash): Muscliff, Castle Lane West, Wimborne Rd, Muscliff Ln, Epiph Sch, SZ0995; 19 May 2017; FAW. Epiphany School, in back hedgerow, seedlings in footpath. **1st for SZ09.**

NN *Fritillaria meleagris* (Fritillary): Holly Hill Woodland Park, SU498079; 09 Apr 2017; DaWo. Reported to PAB and among wild vegetation. **1st for SU40.**

NN *Fuchsia magellanica* (Fuchsia): Lower Buckland, Undershore, Walhampton, SZ323963; 30 Jul 2018; MWR. Hedge by footpath opposite garden, SZ 3232 9630. **1st for SZ39.**

****NA *Fumaria vaillantii* (Few-flowered Fumitory):** Royal Winchester Golf Course (Teg Down), SU456299; 07 Aug 2017; JMill. (HBIC). SU4615 2996. **2nd for VC11 and 1st for SU42.**

NN *Gaillardia x grandiflora* (*G. aristata x pulchella*): Grassland west of Beachlands, SZ712988; 04 Dec2017; DN & JOa. 3 large clumps in flower N of tarmac track SZ7124 9886. **1st for SZ79.**

NN *Galega officinalis* (Goat's-rue): Tuckton, Stockers Mead, Meridians meadow, SZ1492; 27 Jun 2017; FAW. 14821 92523, 4 pls. **1st for SZ19.**

NN *Galinsoga parviflora* (Gallant Soldier): West Town, S Hayling Island, SZ713989; 09 Sep 2017; BSBI[JAN] det. JAN. 1 plant in pavement. **1st for SZ79.**

***NA *Galium constrictum* (Slender Marsh-bedstraw):** Pig Bush, Ferney Croft, SU360053, SU361051; 06 Jun 2018; AMC. In western verge of road to Beaulieu Road Station. **1st for tetrad since 1982.**

NN *Galium murale* (Tiny Bedstraw): Port Solent, SU637048; 01 Jan 2017; PS. Brick paving in S part of car park, SU63787 04873. Gunwharf Quays, Portsmouth, SZ630997; 01 Jan 2017; PS. Under planted trees in front of a terrace of town houses, SZ6308 9970 eastwards. **1st VC records.**

NA *Galium palustre* subsp. *elongatum* (Great Marsh-bedstraw): W of Goldsmiths Hill, SU287047; 31 Jul 2018; MR & PCo. In rewilded stream. **1st for SU20 since 1954.**

IN *Gaultheria x wisleyensis* (*G. shallon x mucronata*): Hengistbury Head (BoB), SZ1691, SZ1790; 09 Jun 2018; BHep. **1st for VC and tetrad since 1981.**

****NA *Genista anglica* (Petty Whin):** Gritnam area, SU2806; 27 Jun 2018; MR. **1st for tetrad since 1987.**

****NA *Genista tinctoria* (Dyer's Greenweed):** Hordle Cliff West to Shinglebank, SZ279917; 19 Sep 2017; ILR. (HBIC). Full GR: SZ2794 9174. **New tetrad.**

NN *Geranium endressii* (French Crane's-bill): West Tytherley (Standing Hill and Dean Road), SU2729; 17 Jul 2018; PW. **1st for SU22.**

NN *Geranium nodosum* (Knotted Crane's-bill): North View, Winchester, SU474298; 01 Jun 2017; GCo det. ARGM. **1st VC record.**

NN *Geranium versicolor* (Pencilled Crane's-bill): Littledown, Castle Lane East, Littledown lakes, park, footpaths, SZ1293; 04 Sep 2017; FAW. **1st for SZ19.** Barrows Copse and Bridge Farm area., SZ280960; 07 Jul 2017; MWR. 1 plant in 'natural' vegetation on roadside by garden, Barrows Lane, SZ 2809 9609. **1st for SZ29.**

NA *Geum x intermedium* (*G. rivale x urbanum*): U117 Lower Daggons Lane, SU104146; 18 May 2017; ILR. (HBIC). Full GR: SU1047 1463. **1st for tetrad since 1979.** St Catherine's Hill, SU476270; 30 Apr 2017; ALu. SU4764 2709 6 plants beside path next to river. **New tetrad.**

***NA *Glyceria notata* (Plicate Sweet-grass):** Bishops Waltham Moors cpt 0801: E of mill pond, SU5616; 16 Jun 2018; HFG[MR]. (Native). **1st for tetrad since 1984.**

NN *Gnaphalium luteoalbum* (Jersey Cudweed): Botley, SU513129; 05 Jul 2018; TCGR. In lane behind Dolphin Hotel, SU5136 1294. **1st for SU51.**

NN *Guizotia abyssinica* (Niger): North Pond duck feeding area, SU551174; 27 Sep 2018; GCo. 3 plants. **1st for SU51.**

IN *Gunnera manicata* (Brazilian Giant-rhubarb): Land North of Station Road, Sandleheath, West, Sandy Top Field, SU132146; 13 Sep 2017; ILR. (HBIC). Full GR: SU1329 1468. **1st for SU11.** Gosfield Cottage, Winkton, SZ16129603; 05 Feb 2018; ELe. **1st for SZ19.**

NN *Hedera algeriensis* (Algerian Ivy): Allbrook, SU456206; 20 Aug 2018; MR & GCo. Garden escape along footpath bank. cv. 'Gloire de Marengo'. **2nd for VC and 1st for SU42.**

?NA *Hedera hibernica* (Atlantic Ivy): Peasash Farm, SU144164; 14 Apr 2017; CWW. **1st for SU11.** Selsmore, SZ734992; 13 May 2017; BSBI[AMC]. **1st for SZ79 since 1984.**

NN *Hemerocallis fulva* (Orange Day-lily): Houghton Down, SU323343; 13 Apr 2018; ARGM, DN & MPa. Large clump at SU3231 3439 at road/track junction, evidently from dumped garden rubbish some years ago. **1st for SU33.** Highcliffe Castle, Nea Meadows, SZ2093; 29 Jun 2017; FAW. over bridge to pavilion + conservation pond, 20203 93786. **1st for SZ29.**

NA *Hieracium argillaceum* (Southern Hawkweed): Brockenhurst, SU295025; 18 Jun 2018; MSha & EJC det. DJMcC. Between roadside ditch and garden fence on south side of Rhinefield Road, immediately west of cattle-gridded entrance to Courtyard Close, SU29586 02548. 10-20 plants. **1st for SU20.**

NN *Holodiscus discolor* (Oceanspray): Druitt Garden, Christchurch, SZ157927; 19 Aug 2017; DL. Druitt Gardens (now a wild garden), Christchurch at SZ 15741 92737. **1st VC record.**

NN *Hypericum hircinum* (Stinking Tutsan): Farlington, SU685052; 10 Jul 2017; VFr det. MR. Farlington Marshes (north of M27), it was difficult to estimate the number of plants, so a 'stand' seems the best description, SU68579 05205. **1st for SU60.**

NA *Hypericum maculatum* (Imperforate St John's-wort): High Lawn, SU719089; 25 Jul 2017; Lower Beacon Field, SU721091; JMill. (HBIC).. **1st for SU70 since 1982.**

NN *Hypericum x inodorum* (Tall Tutsan (*H. androsaemum x hircinum*)): Land East of Teboura Way, SU392140; 21 Jun 2017; JMill. (HBIC). Full GR: SU3920 1402. **1st for SU31.**

****?NA *Illecebrum verticillatum* (Coral-necklace):** King's Hat - Open Forest south of Inclosure, SU387052; 01 Jul 2018; AMC & NAS. On rutted track at SU38794 05246. Frequent in area 2m x 2m. **New tetrad.**

***NA *Inula crithmoides* (Golden-samphire):** Bunny Meadows, Warsash, SU489067; 06 Sep 2017; PM (and an anonymous record)

a few days earlier). Large plant flowering on east side of sea wall at SU4892 0673. **New tetrad**. Lymington (Waterford), SZ334941; 27 Aug 2018; MWR. Several plants, sea wall, SZ 3349 9411. **New tetrad**.

NN *Iris foetidissima* var. *citrina* (Yellow Gladdon): Kimbridge, SU326250; 05 Jun 2018; MR & GCo. Single clump, presumed garden outcast, on B3084 road verge. **1st for SU32 for var.**

***NA *Juncus foliosus* (Leafy Rush)**: Ashurst, south of. (Longdown Inclosure), SU352090; 28 Jun 2017; AMC. Poached ground in open canopy alder wood. **1st for tetrad since 1986.**

***NA *Juncus x diffusus* (*J. effusus x inflexus*)**: Somerley area (The Belt), SU120078; 24 Sep 2017; MWR conf. TAC, 19/12/2017. Roadside, SU 1204 0781, with *J. inflexus*. **1st for SU10 since 1955.**

***NA *Juncus x surrejanus* (*J. acutiflorus x articulatus*)**: Fletchers Thorn, SU279042; 31 Jul 2018; MR & PCo. Holmsley, old railway line E + bogs to NE, SU2201; 08 Jul 2017; FAW. Wilverley, SU243002; 10 Aug 2017; MR, GCo & ASt. **1st for SU20**. S. of Eyeworth Pond, SU228145; 12 Jul 2018; MR & GCo. Amberslade Bottom, SU202108; 16 Aug 2018; MR & GCo. **1st for SU21.**

NA *Kickxia spuria* (Round-leaved Fluellen): West Common (S side) area, SU446009; 03 Jun 2017; MWR. Several plants, bare soil on roadside, Lepe Road, SU 4464 0099. **1st for SU40 since 1986.**

***NA *Lactuca virosa* (Great Lettuce)**: Bisterne (B3347), SU148015; 07 Sep 2017; MWR. SU 1484 0157. **New tetrad**. Bishop's Waltham, SU5517; 10 Aug 2018; GCo. Pub car park. 2 plants. **New tetrad**. Manor Steps, clifftop grassland and cliff, SZ1391; 11 May 2017; FAW. by Overcliff Nature Reserve, 13573 91269. **New tetrad**. Jumpers Common, Christchurch Hospital grounds, SZ1493; 18 Jul 2017; FAW. **New tetrad**.

NA *Lamium amplexicaule* (Henbit Dead-nettle): Eastoke, Hayling, SZ727986; 09 Sep 2017; BSBI[ARGM] det. ARGM. Road verge, SZ7274 9866. **1st for SZ79.**

NN *Lavandula angustifolia* (Garden Lavender): West Town, Hayling, SZ715995; 09 Sep 2017; BSBI[JAN] det. JAN. c. 4 plants in kerb, SZ7158 9955. **1st for SZ79.**

****NA *Leersia oryzoides* (Cut-grass)**: New Forest: Ober Water (SSSI), SU260033, SU261031; 06 Sep 2018; FA. 1 at SU2604 0333. SU2600 0344 - possibly 2 miserable little plants on a gravelly island mid-channel, but id needs confirmation. 1 at SU2615 0318, 1 at SU2615 0316. **1st for tetrad since 1850.**

***NA *Lemna gibba* (Fat Duckweed)**: Minstead village, SU282109; 24 Sep 2018; MR & GCo. Roadside ditch, SU2826 1097. **1st for SU21.**

NN *Lemna turionifera* (Red Duckweed): Christchurch, Wick Rec and tea gardens, SZ1592; 13 Aug 2017; FAW. 15554 92186, by Wick Ferry S side. Towards Marsh, southern part, from Walcott Ave, SZ1594; 08 Jul 2017; HFG[FAW] det. RVHL. 1575 9491, by bridge on track. 15130 94895, 1st bridge from main gate. **1st VC records.**

NN *Leucanthemella serotina* (Autumn Oxeye): Otterbourne, SU454219; 20 Aug 2018; MR & GCo. Established on road verge from garden. **1st for SU42.**

NN *Ligustrum ovalifolium* (Garden Privet): Cadnam Green, SU299149; 15 Jul 2018; PM. At SU299149. Fritham, SU234140; 29 Aug 2018; PM. At SU234140. Cadnam, SU299139; 15 Jul 2018; PM. At SU299139. **1st for SU21 since 1987.** Mengham/Gable Head area, Hayling, SZ7299; 09 Sep 2017; BSBI[ARGM] det. ARGM. **1st for SZ79.**

NN *Linum usitatissimum* (Flax): Nomansland, SU255175; 14 Jun 2017; PM. Flowering on recently dug road verge at SU2550 1756. **1st for SU21 since 1935.**

***NA *Littorella uniflora* (Shoreweed)**: Woodfidley Crossing, SU344037; 11 Jun 2017; AEB. **New tetrad**. Ashurst, S of., SU341080; 24 Jun 2017; AMC. Scattered in small patch (1m x 1.5m) at SU34173 08086. **New tetrad.**

NN *Lonicera xylosteum* (Fly Honeysuckle): Sherfield English, SU2923; 24 Sep 2018; PW. On roadside verge at Doctor's Hill. **1st for SU22.**

***NA *Ludwigia palustris* (Hampshire-purslane)**: Dilton Farm, Boldre, SU335006; 20 May 2018; DC. SU3352 00630, a shallow pond, roughly 15mx5m. Near Little Dilton Farm, SU334000; 09 Jul 2018; MWR. Frequent, SU 3348 0004. **New tetrad.**

***NA *Luzula sylvatica* (Great Wood-rush)**: Rownhams, SU386180; 28 Aug 2018; MR & GCo. **New tetrad, 1st for hectad since 1953.**

NN *Lycium barbarum* (Duke of Argyll's Teaplant): East Tytherley (Opposite Stride's Farm), SU2878 2981; 16 Sep 2018; PW. **1st for SU22.**

IN *Lysichiton americanus* (American Skunk-cabbage): Biddenfield Lane, SU554115; 10 Apr 2018; GCo. Naturalised in water course. **1st for SU51.** Sheet Mill Alders West, SU762239; 31 Jul 2017; JMill. (HBIC). Full GR: SU7624 2395. **New tetrad.**

?NN *Lythrum salicaria* (Purple-loosestrife): Leydene Park and Sustainability Centre, SU6718; 19 Oct 2017; AHP & EJC. Clanfield village pond, SU698167; 14 Aug 2018; HFG[MR]. Perhaps planted with other aquatics. **1st for SU61.**

NN *Maianthemum bifolium* (May Lily): Sherfield English, SU293222; 02 May 2018; PW. Escaped from garden. **1st VC11 record.**

NN *Malus x robusta* (): Shobley area, SU181060; 06 Jul 2018; MWR. Tree on heath, SU 1815 0606. **1st for SU10.** Upper Pennington, SZ306953; 17 Oct 2017; MWR. Edge of Pennington Common, Ramley Road, SZ 3065 9530. **1st for SZ39.**

NA *Malva neglecta* (Dwarf Mallow): West Town, Hayling, SZ717994; 09 Sep 2017; BSBI[JAN] det. JAN. Westfield, Hayling, SZ714990; 09 Sep 2017; BSBI[JAN] det. JAN. Patch along base of fence, pavement, edge of road, SZ7144 9902. **1st for SZ79 since 1975.**

NN *Malva x clementii* (Garden Tree-mallow (*M. olbia x thuringiaca*)): Anson Grove, Portsdown Hill, SU619065; 27 Jun 2017; JMill. (HBIC).. **1st for SU60.**

IN *Matteuccia struthiopteris* (Ostrich Fern): Bournemouth West, Upper Gardens, SZ0791; 04 Apr 2017; FAW. just to west of road. **1st for SZ09.**

NN *Meconopsis cambrica* (Welsh Poppy): Setley, SU300009; 18 Jun 2018; MWR. 1 plant, roadside by garden, Tilebarn Lane, SU 3009 0097. **1st for SU30.**

***NA *Medicago polymorpha* (Toothed Medick)**: Port Solent, SU633051; 01 Jan 2017; PS. Turf just to L of office entrance door, SU63317 05109. Port Solent, SU633051; 15 Apr 2018; HFG[MR & JAN]. Grassy bank on office frontage, e.g. SU6334 0504. **New tetrad.**

NN *Melampodium montanum* (): Petersfield, just off High Street, SU747232; 07 Aug 2018; DN det. MCre. 18 self-sown plants in what was probably a patch of bedding originally, but had been cleared out. **1st for SU72.**

NN *Mentha pulegium* (Pennyroyal): North Baddesley, north-east of, SU403203; 16 Jul 2017; PM. Flowering in grassy strip between arable fields at SU4037 2037. **1st for SU42.**

****NA *Moenchia erecta* (Upright Chickweed)**: Portswood area, SU439149; 09 Apr 2017; HFG/SNHS det. JAN. Some patches of *Moenchia erecta* just in flower on the amenity grassland S of the car park (in dry turf) at SU 4391 1494. **New tetrad.**

***NA *Myosotis secunda* (Creeping Forget-me-not)**: Lockerley (Wetland off East dean Road), SU284268; 31 Jul 2018; PW. In River Dunn. **1st for SU22.**

****NA *Myosurus minimus* (Mousetail)**: Port Solent, SU635049; 02 May 2018; DPa. Growing in some numbers on a central island of the car park. . **New tetrad, 2nd for SU60 since 1933.**

***NA *Myriophyllum alterniflorum* (Alternate Water-milfoil)**: Dockens Water, SU202115; 16 Aug 2018; MR & GCo. **1st for tetrad since 1969.**

NN *Narcissus poeticus* (Pheasant's-eye Daffodil): Hursley, SU435255; 25 Apr 2018; MR. Probably planted, Bunstead Lane. **1st for SU42.**

NN *Narcissus radiiflorus* (Pheasant's-eye Daffodil): Sandy Down, SZ314993; 20 Apr 2018; MWR. 1 clump, rough ground on roadside, junction of Sandy Down (road) and Lower Sandy Down, SZ 3145 9934. **1st for SZ39.**

NN *Nectaroscordum siculum* (Honey Garlic): South Stoneham Churchyard, SU439154; 03 Apr 2017; PAB. Later confirmed on east side of church yard. South Stoneham Church, SU440154; 10 May 2018; PAB & DL. c 45 flowering stems, N corner of South Stoneham churchyard at 44028 15456. **1st for SU41.**

NN *Nicandra physalodes* (Apple-of-Peru): Westend Down (West), SU6318; 09 Nov 2017; AHP & EJC. One plant on soil heap. **1st for SU61.**

NN *Nicotiana glauca* (Sweet Tobacco): Nr Criddlestyle, Godshill, SU166141; 08 Aug 2018; DC & SCa. Two large plants, one purple, the other deep red, on a pile of dumped soil in corner of field just outside Godshill; SU16689 14156. **1st for SU11.**

NN *Nigella damascena* (Love-in-a-mist): West Tytherely (Dean Road, linear stretch), SU272297; 14 May 2018; PW. Garden escape on bank. **1st for SU22.**

NN *Oenothera x fallax* (*O. glazioviana* x *biennis*): Westbourne, Durley Chine and cliff path up to east, SZ0790; 18 Sep 2017; FAW. Durley Chine, seafront to W. **1st for SZ09.**

***NA *Ophioglossum azoricum* (Small Adder's-tongue):** Rushy Flat, SU213176; 12 Jun 2018; DPR. C. 70 plants in clump 6m west of big Hawthorn bramble clump. Plants over 3 m area, SU21306 17626. Photographic evidence supplied. **New tetrad.**

NA *Ophrys apifera* var. *belgarum* (): Martin Down, SU048190; 09 Jun 2018; DNe, MNe & ARGM. growing beside one of the downland tracks at Grid ref SU 048190. **1st for SU01 vor var.**

NN *Ornithogalum umbellatum* subsp. *umbellatum* (Garden Star-of-Bethlehem): Kimbridge, SU325251; 05 Jun 2018; MR & GCo. **1st for SU32.**

NN *Oxalis corniculata* (Procumbent Yellow-sorrel): East Dean (East Dean Road), SU284267; 22 Jul 2018; PW. West Tytherley (Standing Hill and Dean Road), SU2729; 17 Jul 2018; PW. **1st for SU22.**

NN *Oxalis exilis* (Least Yellow-sorrel): East Tytherely (Roadside), SU293291; 16 Sep 2018; PW. **1st for SU22.**

NN *Panicum miliaceum* (Common Millet): Sherfield English, SU2923; 24 Sep 2018; PW. few plants in fodder crop. Sherfield English (Gambledown Farm), SU291242; 29 Sep 2018; PW. Few plants in fodder crop. **1st for SU22.**

***NA *Papaver lecoqii* (Yellow-juiced Poppy):** Allenford, SU093196; 29 Aug 2017; PGLT. **1st for SU01.**

***NA *Parentucellia viscosa* (Yellow Bartsia):** Badminton Common, SU4501; 26 Jun 2017; PAB. At SU459017. **New tetrad.**

NN *Parthenocissus inserta* (False Virginia-creeper): Muscliff, Castle Lane West, Wimborne Rd, Muscliff Ln, Epiph Sch, SZ0995; 19 May 2017; FAW. Shelley Lane. **1st for SZ09.**

NN *Passiflora caerulea* (Blue Passionflower): Hoe, North Baddesley, SU388192; 28 Aug 2018; MR & GCo. **1st for SU31.** Romsey, SU359210; 25 Jul 2017; PM. Plant with one flower open on waste ground on west side of Southampton Road at SU3599 2100. **1st for SU32.**

NN *Persicaria amplexicaulis* (Red Bistort): Southampton Road, Hythe, SU421072; 15 Sep 2017; PAB. **1st for SU40.**

****NA *Persicaria minor* (Small Water-pepper):** Minstead Manor Wastes (Verge open to Forest stock), SU2873 1078; 19 Aug 2017; CC. In the poached and tightly grazed ditches here. **New tetrad.** Hawkhill Inclosure, SU352029; 25 Jun 2017; MWR. Frequent in muddy hollow, woodland ride, SU 3529 0291. **New tetrad.**

NN *Persicaria wallichii* (Himalayan Knotweed): Exbury Gardens (NW part) and Gilbury Hard, SU418006; 30 Jul 2017; MWR det. EJC 29/11/2017. 1 plant in scrub on waste ground, Exbury Gardens, SU 4185 0068. 'It's the more hairy form' (EJC) (presumably var. *pubescens*). **1st for SU40.**

NA *Petroselinum segetum* (Corn Parsley): Gunwharf Quays, Portsmouth, SZ631997; 01 Jan 2017; PS. N side of road S of Jupiter Court, SZ6314 9974 eastwards. **1st for SZ69.**

***NA *Phegopteris connectilis* (Beech Fern):** E of Holidays Hill, SU270075; 11 Aug 2018; FA & PBa. A good patch of Beech Fern at the base of an alder by a little stream alongside Highland Water at SU2705 0758. **1st for tetrad since 1957.**

NN *Philadelphus coronarius* (Mock-orange): Itchen Navigation, Allbrook, SU457206; 01 May 2018; MR & ASt. Garden outcast on track down to bridge. **1st for SU42.**

NN *Physalis peruviana* (Cape-gooseberry): Tanner's Close to Plain Heath, SZ210983; 19 Sep 2017; MWR. 1 plant, waste ground by maize, Forest Road, SZ 2103 9830. **1st for SZ29.**

NN *Pilosella aurantiaca* (Fox-and-cubs): Top Green, SU292263; 07 Jun 2017; ILR. (HBIC).. **1st for SU22.**

***NA *Pinguicula lusitanica* (Pale Butterwort):** Bramshaw Telegraph, SU227160; 14 Jun 2017; PM. Several at SU2276 1602. **New tetrad.**

NA *Plantago major* subsp. *intermedia* (Greater Plantain): Burton West, Cowards Marsh, southern part, from Walcott Ave, SZ1594; 08 Jul 2017; FAW. seen by JAN + FW, 5 veins + undulate toothed near base of leaves. Jumpers Common, Christchurch Hospital grounds, SZ1493; 18 Jul 2017; FAW. **1st for SZ19 for subsp.**

***NA *Poa bulbosa* (Bulbous Meadow-grass):** Ashurst camp site, SU332098; 15 Jul 2017; PS. E side of concrete hard standing N of toilet block. **New tetrad.**

***?NA *Polycarpon tetraphyllum* (Four-leaved Allseed):** Gunwharf Quays, Portsmouth, SZ630997, SZ631997; 01 Jan 2017; PS. S side of inlet ponds, on access to Aspex Gallery. S side of road on bend, c. SZ6317 9974. N side of road S of Jupiter Court, SZ6314 9974 eastwards. **1st for SZ69.**

NN *Polygonatum x hybridum* (Garden Solomon's-seal): Ringwood (S side), SU156046; 17 Sep 2017; MWR. Several plants, roadside hedge, Crow Arch Lane, SU 1567 0464. **1st for SU10.**

Blackfield, SU448010; 10 Sep 2017; MWR. 2 plants by footpath near garden, SU 4482 0105, with *Crocosmia x crocosmiiflora*. **1st for SU40.**

***NA *Polygonum rurivagum* (Cornfield Knotgrass):** Sherfield English (Gambledown Farm), SU29022452; 29 Sep 2018; PW. **New tetrad.**

NN *Polypogon monspeliensis* (Annual Beard-grass): Off Harts Farm Way, Bedhampton, SU702053; 21 Jul 2018; DL. Hundreds in car park SW of Havant at 7025 0532. **1st for SU70 since 1969.**

NN *Polypogon viridis* (Water Bent): Brockenhurst (E side), SU302021; 23 Sep 2017; MWR. Roadside near rail station, SU 3023 0211. **1st for SU30.** Marwell car park, SU502216; 26 Jun 2018; GCo. **1st for SU52.** Millfield Farm (Denmead) area, SU6613; 20 Sep 2018; AHP & EJC. On soil heap. **1st for SU61.** Legion Road, Hayling, SZ722998; 09 Sep 2017; BSBI[ARGM] det. ARGM. Hundreds of plants beside road, SZ7225 9980. Chichester Avenue Hayling Island, SZ720989; 09 Sep 2017; BSBI[ARGM] det. ARGM. Roadside, SZ7202 9894. Tournierbury Lane, Hayling, SZ722998; 13 May 2017; HFG[MR]. West Town, Hayling, SZ710990; 09 Sep 2017; BSBI[JAN] det. JAN. Pavement. **1st for SZ79.**

NN *Populus x canescens* (Grey Poplar (*P. alba* x *tremula*)): Sherfield English, SU293222; 02 May 2018; PW. **1st for SU22.**

***NA *Potamogeton lucens* (Shining Pondweed):** Winkton, Winkton Fishery meadows, SZ1696; 23 Jul 2017; FAW. **New tetrad.**

NA *Potamogeton natans* (Broad-leaved Pondweed): Sherfield English, SU293222; 02 May 2018; PW. **1st for SU22.**

***NA *Potamogeton perfoliatus* (Perfoliate Pondweed):** Winkton, Winkton Fishery meadows, SZ1696; 23 Jul 2017; FAW. **New tetrad, 1st for SZ19 since 1989.**

***NA *Potamogeton pusillus* (Lesser Pondweed):** Burton West, Cowards Marsh, southern part, from Walcott Ave, SZ1594; 08 Jul 2017; FAW. in River Avon. **New tetrad, 1st for SZ19 since 1960.**

NN *Potentilla indica* (Yellow-flowered Strawberry): Sherfield English, SU293222; 02 May 2018; PW. On roadside, close to habitation. **1st for SU22.** Throop, Holdenhurst Road, SZ1195; 02 May 2017; FAW. 11976 95262. **1st for SZ19.**

NN *Poterium sanguisorba subsp. balearicum* (Fodder Burnet): Droxford, Meon Valley, SU607183; 24 May 2018; MR & GCo. Garden escape. **1st for SU61 since 1969.**

NN *Primula juliae* (Julia's Primrose): Lockerley (South of village), SU2925; 20 May 2018; PW. **1st VC record.**

NN *Prunus lusitanica* (Portugal Laurel): Tricketts Cross East, Parley Common Heatherlands, SU0900; 02 Sep 2017; FAW. **1st for SU00.**

NN *Prunus padus* (Bird Cherry): Lepe (Lepe House area), SZ443989; 20 Sep 2017; MWR. Roadside hedge, SZ 4431 9890. **1st for SZ49.**

IN *Pterocarya fraxinifolia* (Caucasian Wingnut): Freemantle, SU402127; 04 Sep 2017; MWR. Planted, Freemantle Lake Park, SU 4020 1271. Stokewood, SU485186; 19 Jul 2018; GCo. Suckers in verge from planted tree in surgery grounds. **1st for SU41.**

?NA *Pyrus pyraeaster subsp. pyraeaster* (): Littledown, Castle Lane East, Littledown lakes, park, footpaths, SZ1293; 04 Sep 2017; FAW. area 4, rough grass. Friars Cliff, cliff top, footpath, car park, by CG station, SZ1992; 08 Oct 2017; FAW. along prom from Steamer Point car park to Mudeford. **1st for SZ19.**

***NA *Ranunculus parviflorus* (Small-flowered Buttercup):** Port Solent, SU637048; 01 Jan 2017; PS. Car park, SU63796 04824. **1st for SU60.**

***NA *Ranunculus x novae-forestae* (New Forest Crowfoot):** Bolderwood Walk, SU241095; 29 Jun 2017; MWR. Abundant on mud at edge of pond, SU 2414 0958. **New tetrad.**

NN *Raphanus sativus* (Garden Radish): Stroud, W of, SU711235; 06 Aug 2018; ARGM, SP & DN. At SU7119 2358 on arable field edge. **1st for SU72.**

NA *Reseda lutea* (Wild Mignonette): Parley Court South, Stour Valley N, Muscliff Riverside S, Redhill F, SZ0996; 30 May 2017; FAW. 09048 96080. **1st for SZ09.**

***NA *Rhynchospora fusca* (Brown Beak-sedge):** S of Holmsley keeper's cottage, SZ222995; 22 Jun 2017; AEB. **1st for tetrad since 1970.**

NN *Ribes alpinum* (Mountain Currant): Forest of Bere, SU605117; 03 May 2018; HFG[MR]. Male plant, edge of woodland at SU6058 1172. **3rd VC record.**

NN *Rosa gallica* (Red Rose): Dibden (N of), SU401093; 24 Jun 2018; MWR. Several plants, hedge by track, SU 4018 0937. **1st for SU40 since 1985.**

***NA *Rosa obtusifolia* (Round-leaved Dog-rose):** Bournemouth East Cliff, seafront, SZ0990; 26 Sep 2017; FAW. **1st for SZ09.**

***NA *Rosa spinosissima* (Burnet Rose):** Westbourne, Durley Chine and cliff path up to east, SZ0790; 18 Sep 2017; FAW. Durley Chine, seafront to W. **1st for SZ09.**

NA *Rosa x andegavensis* (*Rosa canina* x *stylosa*(fxm or mx)): Mill Lane, Minstead, SU291105; 24 Sep 2018; MR & GCo. **1st for SU21.**

NA *Rosa x dumalis* (*Rosa caesia* x *canina*): Little Hyden Lane, Clanfield, SU695175; 14 Aug 2018; HFG[MR]. Single bush in W hedgerow of lane. **1st for SU61.**

NN *Rosmarinus officinalis* (Rosemary): Boarhunt village, SU6010; 11 Oct 2018; AHP & EJC. **1st for SU61.**

NN *Rubus cockburnianus* (White-stemmed Bramble): Bournemouth Hospital, Holdenhurst hall and lane, SZ1294; 27 Sep 2017; FAW. lane from Holdenhurst village hall to Townsend + paths, play area, rec 12595 94772. **1st for SZ19.**

NA *Rubus moylei*: Bishops Waltham Moors cpt 0801: Thorn Mead, SU5517; 16 Jun 2018; HFG[MR] det. JAN. **1st for SU51 since 1988.**

NA *Rubus pruinus*: Denmead Farms area, SU6612; 14 Jun 2018; AHP & EJC. **1st for SU61.**

***NA *Rumex pulcher* (Fiddle Dock):** Brownhill Road, Chandlers Ford, SU438212; 26 Jun 2018; MR. Six fine plants in grass verge by junction with Purkess Close. **New tetrad.**

***NA *Sagittaria sagittifolia* (Arrowhead):** Winkton, Winkton Fishery meadows, SZ1696; 23 Jul 2017; FAW. **New tetrad.**
Burton North, Winkton Fishery meadows, SZ1695; 23 Jul 2017; FAW. **New tetrad.**

***NA *Salicornia dolichostachya* (Long-spiked Glasswort):** Portsea Island, SU6703; 20 Aug 2017; GFa. **New tetrad.**

NN *Salix alba* var. *caerulea* (): Highcliffe Castle, Nea Meadows, SZ2093; 29 Jun 2017; FAW. from car park round lakesides. **1st for SZ29 for var.**

?NN *Salix euxina* (Crack-willow): Millers Pond LNR woodland W, SU451109, SU452109; 20 Aug 2017; PAB & JGu det. PAB. **1st for SU41.**

NA *Salix x reichardtii* (*S. caprea* x *cinerea*): King's Hat Inclosure, SU391054; 13 May 2018; AMC, MR & NAS det. MR. One plant on SW side of main track at SU39173 05472. **1st for SU30.**

NN *Salix x smithiana* (*S. viminalis* x *caprea*): Lee Lane, SU362184; 14 May 2018; HFG[MR]. Single bush, bank of former Navigation. **1st for SU31.**

***NA *Sambucus ebulus* (Dwarf Elder):** Farlington Marshes, SU689052; 21 Jul 2018; DL. c30 plants by coastal path, Farlington at 68973 05248. **1st for tetrad since 1948.** Ramsdean Road, SU708222; 23 Apr 2018; MR & MPa. S side of road W of Orchard Farm. **New tetrad.**

NN *Saponaria officinalis* (Soapwort): West Tytherley, SU275302; 31 Aug 2017; MR, GCo & ASt. Lane verge near houses. **1st for SU23.**

***NA *Schoenus nigricans* (Black Bog-rush):** S of Holmsley Keepers Cottage, SZ224994; 22 Jun 2017; AEB. **New tetrad.**

NN *Scilla forbesii* (Glory-of-the-snow): Ponside Lane, Bishop's Watham, SU552184; 11 Mar 2017; DTr det. PAB. On hedge bank on north side of track. **1st for SU51.**

***NA *Sedum anglicum* (English Stonecrop):** Bournemouth East Cliff, cliff tops, slope up from car park, SZ0990; 27 Mar 2017; FAW. East Cliff from Bath Road car park. **1st for SZ09.**

NN *Sedum confusum* (Lesser Mexican-stonecrop): Cowley Close, Maybush, SU384149; 05 Feb 2017; PAB. Naturalised by road side. **1st VC record.**



Lesser Mexican-stonecrop *Sedum confusum* from a planted 'Sedum lawn', Chandler's Ford, 12 July 2018. (Martin Rand)

NN *Sedum forsterianum* (Rock Stonecrop): Minstead Churchyard, SU281108; 24 Sep 2018; MR & GCo. Originally planted on grave, now spreading. **1st for SU21.** Shirrell Heath, SU5713; 08 May 2018; GCo. Middle of concrete track, 30 metres stretch. **1st for SU51.**

Little Hyden Lane, Clanfield, SU695172; 14 Aug 2018; HFG[MR]. Established on wall, presumably from neighbouring garden. **1st for SU61.**

NN *Senecio vernalis* (Eastern Groundsel): Week Wood area, SU131004; 09 Apr 2017; MWR. 1 plant in flower, roadside, A338, SU 1311 0047. **1st VC record.**

NA *Senecio x ostenfeldii* (*S. jacobea x aquaticus*): Burton West, Cowards Marsh, southern part, from Walcott Ave, SZ1594; 08 Jul 2017; FAW. 15219 94775. **1st for SZ19.**

NN *Setaria pumila* (Yellow Bristle-grass): Lyndhurst (Pinkney Lane area), SU295076; 02 Sep 2017; MWR. Edge of maize field, Pinkney Lane, SU 2951 0762. **1st for SU20.**

NN *Setaria viridis* (Green Bristle-grass): Houghton, SU324319; 21 Aug 2017; VFr. Many tens of plants in a game strip at SU3245 3196. **1st for SU33.** Westend Down (North West), SU6319; 09 Nov 2017; AHP & EJC. **1st for SU61.**

NN *Silene coronaria* (Rose Campion): Lyndhurst (Pinkney Lane area), SU294079; 02 Sep 2017; MWR. Many plants in roadside gutter, Haskells Close, SU 2942 0798. Planted in nearby garden. **1st for SU20.**

****NA *Silene noctiflora* (Night-flowering Catchfly):** Nursted East VC11 part, SU761212; 29 Jun 2018; SP. SU761 212. Single plant as weed on disturbed ground. **1st for SU72.**

NA *Silene uniflora* (Sea Campion): Southbourne, Overcliff Drive and Coast Road, Warren Edge CP, SZ1491; 06 Jul 2017; FAW. Hengistbury Head (BoB), SZ1790; 09 Jun 2018; BHep. **1st for SZ19 since 1969.**

NN *Silybum marianum* (Milk Thistle): Fritham, SU233141; 29 Aug 2018; PM. A large plant on small dung heap at edge of field at SU2339 1410. **1st for SU21.**

NN *Soleirolia soleirolii* (Mind-your-own-business): Minstead, SU282113; 12 Sep 2017; PM. Spreading along a large stretch of roadside. Sherfield English, SU2822; 28 Apr 2018; PW. garden escape. **1st for SU22.**

Selsmore, SZ7399; 13 May 2017; BSBI[AMC]. Mengham, Hayling, SZ729991; 09 Sep 2017; BSBI[ARGM] det. ARGM. Road verge, SZ7292 9911. West Town, Hayling, SZ716994; 09 Sep 2017; BSBI[JAN] det. JAN. **1st for SZ79.**

NN *Soliva pterosperma* (Jo-jo Weed): MVCP centre car park, SU107056; 19 Jun 2018; FAW. At SU10721 05677. **1st for SU10.** Ashurst camp site, SU332097; 12 Jun 2018; DL. hundreds of plants in Ashurst camp site at 3323 0973, and in some other areas there. Ashurst Campsite, SU333097; 15 Jul 2017; PS. S of toilet block scattered among camping pitches. Hollands Wood camp site, SU303036; 15 Jul 2017; PS. NE of reception hut... around bare patches close to main entrance road. Hollands Wood camp site, SU303038; 15 Jul 2017; PS. **1st for SU30.**

NN *Sorbus x thuringiaca* (*S. aria x aucuparia*): N of Upham, SU541212; 23 Sep 2018; MR & RCR. In hedgerow, revealed by fall of large *Sorbus aria* in gales of preceding week. **1st for SU52.**

NN *Spiraea x billardii* (Billiard's Bridewort): Yaldhurst Copse area, SZ303966; 22 Aug 2017; MWR det. Confirmed EJC 29/11/2017. Hedge by footpath near garden, S of Sway Road, SZ 3036 9667. **1st for SZ39.**

NN *Spiraea x pseudosalicifolia* (Confused Bridewort): Tricketts Cross East, Parley Common Heatherlands, SU0900; 02 Sep 2017; FAW. 09169 00027. **1st for SU00.**

***NA *Spiranthes spiralis* (Autumn Lady's-tresses):** Fort Grange, SU590002; 11 Aug 2017; JMill. (HBIC).. **New tetrad.**

***NA *Spirodela polyrhiza* (Greater Duckweed):** Fort Rowner, SU593011; 11 Aug 2017; JMill. (HBIC). SU5924 0122, SU59300131, SU5936 0132, SU5941 0132, SU5943 0124, SU5937 0104. **New tetrad.**

NN *Symphoricarpos x chenaultii* (Pink Snowberry): Warnford 2 km NW, SU6124; 07 Jun 2018; AHP & EJC. Introduced. **1st for SU62.**

NN *Symphytum caucasicum* (Caucasian Comfrey): Kings Somborne, SU353304; 23 May 2018; MR & GCo. SU 353304. **1st for SU33.**

NN *Symphytum grandiflorum* (Creeping Comfrey): Lockerley Church (Field entrance to SE), SU29842662; 12 Apr 2018; PW. Sherfield English, SU2922; 02 May 2018; PW. **1st for SU22.**



Creeping Comfrey *Symphytum grandiflorum*, Witcombe, Gloucestershire, 5 April 2018 (Martin Rand)

NN *Symphytum orientale* (White Comfrey): Foxhills, SU344118; 08 May 2018; HFG[MR]. Road verge, presumably escaped from neighbouring allotments. **1st for SU31.** West Town, Hayling, SZ702992; 13 May 2017; BSBI[ARGM] det. ARGM. Road verge. **1st for SZ79.**

NN *Symphytum x uplandicum* (Russian Comfrey (*S. asperum x officinale*)): Muscliff, Muscliff Riverside S, lane towards Redhill Ferry, SZ0995; 08 May 2017; FAW. comp 10a 09303 95984. **1st for SZ09.**

NN *Thalictrum speciosissimum* (Glaucous-leaved Meadow-rue): Exbury Gardens (NW part) and Gilbury Hard, SU419007; 30 Jul 2017; MWR conf. EJC 29 Jul 2017. Several plants on waste ground, Exbury Gardens, SU 4190 0077. **1st VC record.**

NA *Thlaspi arvense* (Field Penny-cress): East Tytherley (Edge of arable field), SU295294; 16 Sep 2018; PW. Several plants on edge of arable field. **1st for SU22.**

***NA *Torilis nodosa* (Knotted Hedge-parsley):** Riverside Park - by River Itchen, SU442152; 09 Apr 2017; PAB. In gap in paving. **New tetrad.** Highfield Campus, Southampton University, SU423152; 10 Jun 2017; MGr det. PAB. **New tetrad.** Port Solent, SU635048; 15 Apr 2018; HFG[MR & JAN]. And in many spots elsewhere in SU6304, SU6305. **New tetrad.** Locks Farm, SU733073; 09 May 2017; JoW & JuW. At road edge entrance to 3 properties, at bottom of Eastleigh Road, SU73354 07380. **New tetrad.** Selsmore Road, Hayling, SZ724991; 13 May 2017; HFG[MR]. **New tetrad.** West Town, Hayling, SZ708991; 13 May 2017; BSBI[ARGM] det. ARGM. Road verge of Bacon Lane, SZ7088 9917. **New tetrad.**

NA *Tragopogon pratensis* subsp. *pratensis* (Goat's-beard): Bishop's Waltham, SU5517; 19 Jun 2018; GCo. Stroudwood Lane, SU5119; 26 Jun 2018; GCo. **1st for SU51 for subsp.**

***NA *Trichophorum germanicum* (Deergrass):** Copythorne Common HIWWT Reserve, SU310154; 18 Jul 2017; ILR. (HBIC).. **New tetrad.**

?NA *Trifolium hybridum* subsp. *elegans* ()): Hengistbury Double Dykes, Double Dykes path and grassland, SZ1690; 25 Jul 2017; FAW. **1st for SZ19 for subsp..**

***NA *Trifolium suffocatum* (Suffocated Clover):** Avon Heath CP North, from Birch rd car park, Birch Farm, SU1203; 10 May 2017; FAW. Birch Farm, comp 5c. **New tetrad.** Port Solent, SU633050; 01 Jan 2017; PS. Kerb edge in car park, SU63310 05060. **New tetrad.**

NN *Tulipa saxatilis* (Cretan Tulip): Bournemouth East Cliff, cliff tops, slope up from car park, SZ0990; 27 Mar 2017; FAW. East Cliff from Bath Road car park, 2 fls on 1 stalk, under cliff top fence, 09176 90848. **1st for SZ09.**

?NA *Ulmus x vegeta* (Huntington Elm (*U. glabra x minor*)): North of The Holt, Upham, SU560232; 11 Jun 2017; PAB. 50 foot high healthy tree. **1st for SU52.**

***NA *Urtica dioica* subsp. *galeopsifolia* (Stingless Nettle):** Kimbridge Lane, SU332257; 05 Jun 2018; MR & GCo. **New tetrad.** Buriton, SU740201; 06 Jul 2018; ARGM & DN. At SU7408 2018 beside stream. **1st for SU72.**

NA *Urtica urens* (Small Nettle): Sherfield English (A27 roadside), SU29682245; 02 Oct 2018; PW. Lockerley (Mount Pleasant farm), SU296248; 02 Oct 2018; PW. **1st for SU22.**

****NA *Utricularia minor* (Lesser Bladderwort):** Matley, SU334070; 26 Jun 2017; PAB. **1st for tetrad since 1980.** S of Holmsley Keeper's Cottage, SZ225995; 22 Jun 2017; AEB. **1st for tetrad since 1967.**

NN *Verbascum blattaria* (Moth Mullein): East Boldre, SU374007; 16 Sep 2017; MWR. 3 plants on roadside by garden, Chapel Lane, SU 3740 0072. **1st for SU30.**

NA *Verbascum nigrum* (Dark Mullein): Mengham/Gable Head area, Hayling, SZ7299; 09 Sep 2017; BSBI[ARGM] det. ARGM. **1st for SZ79.**

NN *Verbena bonariensis* (Argentinian Vervain): Minstead, SU279116; 12 Sep 2017; PM. Flowering at SU2793 1162. **1st for SU21.** Brockenhurst (E side), SU300024; 23 Sep 2017; MWR. 1 plant, pavement edge by garden, Chestnut Road, SU 3005 0241 (2 others in same road). **1st for SU32.** Junction of West Lane and Newtown Lane, SZ7199; 01 Sep 2017; DN. **1st for SZ79.**

NA *Veronica agrestis* (Green Field-speedwell): Off Dundry Lane, SU576188; 17 Jul 2017; GCo. **New tetrad.** Droxford, SU607182; 24 May 2018; MR & GCo. At foot of wall to N of entrance to Droxford churchyard. **New tetrad.** Berry Hill, Hicks Farm, Field D1, SZ109965; 29 Apr 2017; FAW. 10833 96701. **New tetrad.** Bournemouth Hospital, Stour Valley Way, Riverside Avenue N part, SZ1294; 19 May 2017; FAW. Riverside Lane, arable field 12873 94656. **New tetrad.** Hayling Island - South Beach - West, SZ708990; 13 May 2017; BSBI[ARGM] det. ARGM. Under Lime tree on road verge, SZ7086 9906. **New tetrad.**

NN *Viburnum plicatum* (Japanese Snowball-bush): Marhill Copse E, SU451153; 10 May 2018; PAB & DL det. PAB. 1 at 45115 15387. **1st VC record.**

NN *Vicia faba* (Broad Bean): Ashurst Bridge, SU338122; 28 Sep 2018; MR & GCo. Crop relic in sown grassland. **1st for SU31.**

NN *Vinca difformis* (Intermediate Periwinkle): Pennington (North), SZ315954; 15 May 2018; MWR. 1 plant, garden wall/pavement junction, Southern Road, SZ 3155 9548, self-sown from adjacent garden. **1st for SZ39.**

NN *Vinca major* var. *oxyloba* (Greater Periwinkle): Back Lane, Broughton, SU312328; 26 Apr 2018; MR & ASt. Abundant and well established along footpath. **1st for SU33 for var.**

****NA *Viola lactea* (Pale Dog-violet):** New Forest: Backley Plain, SU214077; 16 May 2018; AMC. Scattered through grassland on track edges. c.100 flowering plants seen. **1st for tetrad since 1980.**

***NA *Viola riviniana x lactea* ():** Long Slade Bottom, SU258010; 25 Apr 2017; MR & BMd. Scattered plants among large mixed population of parents. **1st for SU20 since 1976.**

***Viola x wittrockiana* (Garden Pansy):** Emsworth, SW, SU7405; 10 Jan 2017; DN. **1st for SU70.**

***Vulpia myuros* (Rat's-tail Fescue):** Boarhunt village, SU6010; 11 Oct 2018; AHP & EJC. **1st for SU61.**

***Zantedeschia aethiopica* (Altar-lily):** Itchen Navigation, Allbrook, SU457207; 01 May 2018; MR & ASt. Established on W bank of Navigation from garden planting. **1st for SU42.**

VC12 Records

Compiled by Tony Mundell (1 Nov 2018)

Again here is a set of my personal selections from the records received recently. As usual I have tended to select the scarcer native species with a sprinkling of interesting aliens. In fact this list includes rather more than a sprinkling of aliens and some of them are very surprising finds. Of course the vast majority of alien plants never become invasive and finding them does add a bit of excitement to 'square-bashing'.

I would far prefer to include YOUR records rather than my own but sadly I was forced again to include a large proportion of my own, albeit often in the company of others. There is good crop of records for uncommon grasses, including *Agrostis castellana*, *Cynosurus echinatus*, *Poa compressa* and *Poa nemoralis*, mainly down to the expertise of Anna Stewart. Another uncommon grass was stumbled on when a group of us sat on grass to stop for lunch beside a former army parade ground near Bordon. I saw tiny little bulbils on the ground and realised they were *Poa bulbosa*, new for VC12. This is mainly a coastal species but there are old records for Petersfield Heath, just north of the pond. I collected three bulbils and planted them in a flower pot. As expected, in September they started into growth making a plant looking rather like *Poa annua*. I guess *Poa bulbosa* occurs elsewhere in VC12 on sandy heathland but is not recognised, so is under-recorded.

If you have a copy of the 'New Atlas of the British Flora' or you access the distribution maps in the BSBI DDb (Distribution Database) you can see that *Arctium lappa* is a pretty common plant south and east of a line from Exeter to Hull. However, there is an area centred on Hampshire where it is distinctly less common than in neighbouring counties. This has puzzled me for a while but I am convinced that it is genuine and not simply a case of me (and others) recording plants as *Arctium minus* in error. In Hampshire most plants of *A. minus* are the very common *A. minus* subsp. *minus* but in the last few years I have been looking out for the less common subspecies *A. minus* subsp. *pubens* and the list below includes an example. I have also included some records for what appears to be the hybrid *A. x nothum* but it is far from clear how this differs from *A. minus* subsp. *pubens*. Indeed in the 3rd edition of 'Stace' it does say that 'The distribution of ssp. *pubens* and the divergence of some of its measurements from ssp. *minus* towards *A. lappa* suggests that it might be a hybrid between these 2 taxa, but is fully fertile.....'. I will be interested to see what Stace says about this in the 4th edition of his book that will soon be published.

I am always trying to spot uncommon subspecies of plants and this year I found *Sonchus arvensis* subsp. *uliginosus* for the first time. It is easy to recognise as it lacks any of the plentiful yellow glandular hairs of the very common subsp. *arvensis*. I suspect that it is under-recorded in Hampshire so please see if you can find it.

Simon Melville's record confirms that the single plant of *Eryngium campestre* still occurs on the A34 verge, and is doing well, though it has not produced any progeny. This national rarity was declared extinct in Hampshire in the Hampshire Rare Plant Register.

At The Slab, Bordon I was delighted to find a new site for what for now is called X *Conyzigeron stanleyi*, the hybrid between *Erigeron acris* and *Conyza floribunda* (in the forthcoming 4th edition of Stace's 'bible' it will become *Erigeron x stanleyi* because all of *Conyza* is being sunk within *Erigeron*). Anna Stewart found that this hybrid is still present where originally found at its Winchester site and I have heard that it was also found in Wales this year. The bad news is that I cannot record it on my MapMate database as it has not yet been added to the MapMate taxa list (it was only given its Latin name in 2016). The same is true of several records of *Rosa* hybrids listed below. Changes were made recently splitting some of what was formerly *Rosa canina* into separate species but again those changes are not yet reflected in the MapMate taxa list. I have requested these and other additions to the MapMate taxa list but it looks as if I will have to wait a while for a response.

The list of aliens here is impressive with some very unusual species. It is the first time I have seen *Hibiscus trionum* (new to Hampshire) only the second time I have seen *Abutilon theophrasti* and the third time I have seen *Ammi majus*. Peter Billingham's *Cotoneaster affinis* is a first for Hampshire and Steve Povey's *Cotoneaster dielsianus* is only the second record for VC12 (though it has been found in about a dozen places in VC11). Andy Cross found *Gnaphalium luteoalbum* at Bordon where soil had been disturbed to make a new flood alleviation basin and this site turned up other surprises like *Potentilla argentea* and *Ligularia przewalskii* (that I managed to misidentify as the rather similar *Sinacalia tangutica* until Steve Povey pointed out my error).

HFG = Hampshire Flora Group

***Abutilon theophrasti* (Velvetleaf)** Two large plants east of Danebury Hill at SU3347 3765 and SU3346 3766 and another two 1.5m and 1.9m tall at SU3341 3771 beside a strip of manure in a field. A small voucher piece collected and photos taken, Tony Mundell & Sarah White 17 Sep 2018.

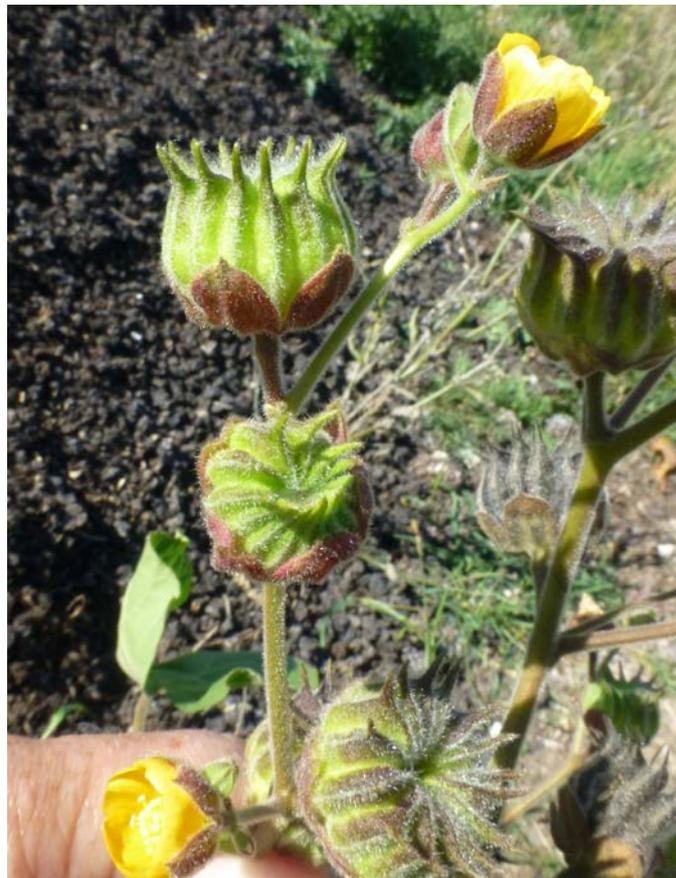
***Acanthus spinosus* (Spiny Bear's-breech)** Several at Litchfield SU4619 5398 on road verge, presumably planted, Tony Mundell & Dawn Nelson 3 Aug 2018.

***Achillea ptarmica* (Sneezewort)** Black Wood, Micheldever, edge of track and grassland at SU53745 43082 in central clearing, Andy Cross 3 Sep 2018. Filmore Hill SU6627, flore pleno 'The Pearl', planted or garden escape, Andrew Powling & Eric Clement 20 Sep 2018.

***Adiantum capillus-veneris* (Maidenhair Fern)** Noticed high up on the railway bridge at Aldershot SU8693 5055 but I was on a coach trip so I could not stop to get a better look, Tony Mundell 20 Jul 2018.

***Agrimonia procera* (Fragrant Agrimony)** Notched petals, strongly reflexed bristles, glandular. Around edge of grassland and scrub associated with central clearing in Black Wood at SU537430, Andy Cross 3 Sep 2018. At Minley beside track at SU8196 5702, SU8190 5786 and SU8186 5705, Tony Mundell & Peter Scott 12 Sep 2018.

***Agrostis castellana* (Highland Bent)** M3 Winchester Services, northbound SU522357, in unmown grass at edge of woodland.



Velvetleaf *Abutilon theophrasti*, near Danebury Hill, 17 September 2018 (Tony Mundell)

Hairy lemma and distinctive panicle shape. Voucher retained, Anna Stewart 29 Sep 2018.

***Agrostis curtisii* (Bristle Bent)** In abundance on heathland at Yateley Common SU8206 5886, Tony Mundell, Isobel Girvan & Peter Scott 31 Aug 2018. Locally plentiful at Hogmoor Inclosure SU7891 3484 plus several plants at SU7889 3504 and SU7886 3512, Tony Mundell 20 Oct 2018.

***Allium oleraceum* (Field Garlic)** SE of Itchen Wood scattered beside footpath along 20m south from SU5379 3486 plus 27 plants with ripe bulbils and shriveled-up flowers at SU5390 3461 beside the footpath, Tony Mundell, Adam Lucas, *et al.* 29 Aug 2018.

***Ammi majus* (Bullwort)** NE of Whitchurch, many thinly scattered plants in fallow arable field, e.g. SU4739 4949, SU4735 4945, SU4734 4945, SU4732 4943, SU4730 4941, etc., with pig compound nearby. Photos taken, Tony Mundell & Sarah White 24 Jul 2018.

***Anchusa arvensis* (Bugloss)** Farnborough SU8622 5581, weed in allotments, Tony Mundell 14 Aug 2018.

***Arctium lappa* (Greater Burdock)** At Ball Hill SU4284 6348 beside footpath, Tony Mundell, Dawn Nelson & Mike Harrison 23 Aug 2018. Longparish SU4310 4433 growing with *A. minus* and the hybrid, Tony Mundell & Simon Melville 21 Sep 2018.

***Arctium minus* subsp. *pubens* (Lesser Burdock)** Several similar plants at Ashe SU5345 4969 on grassy verge at road junction. Small hollow in lowest leaf petioles, capitula width (including spikes) mainly around 35mm, ranging from 25mm to 37mm (but they are now brown, containing ripe seeds and have opened somewhat at the top, so are larger than when in flower earlier), partly racemose and partly corymbose. Possibly *A. x nothum* – we are not sure how to distinguish it, Tony Mundell, Adam Lucas, Gareth Knass, *et al.* 7 Sep 2018.

***Arctium x nothum* (*A. lappa* x *minus*)** SE of Itchen Wood, a few plants at SU5393 3443 on arable field edge. Voucher specimen collected. Lowest petiole solid, Capitula 2.2 to 3.0cm (including spines) before pressing, Tony Mundell, Adam Lucas, *et al.* 29 Aug

2018. Many plants at Minley SU8198 5703 beside both sides of track, petiole solid, capitula variable in size between typical *A. lappa* and *A. minus*, some sub-corymbose and others more racemose, Tony Mundell & Peter Scott 12 Sep 2018. Longparish SU4310 4433 on road verge growing with *A. lappa* and *A. minus*, Tony Mundell & Simon Melville 21 Sep 2018. S of Basingstoke at SU6101 4799 and SU6101 4798 on road verge, lowest petioles solid, inflorescence partly corymbose and partly racemose, capitula not as large as typical *A. lappa*, Tony Mundell, Cathy Wilson, Dawn Nelson, *et al.* 3 Oct 2018.

***Arum italicum subsp. neglectum* (Italian Lords-and-Ladies)** Fresh leaves photographed at Hawkey Hanger SU73764 29962, at least 12 stems present, Catherine Chatters 5 Oct 2018.

***Asplenium ceterach* (Rustyback)** Martyr Worthy Churchyard SU515327, on external wall next to road, Dave Pearson 14 Sep 2018.

***Barbarea intermedia* (Medium-flowered Winter-cress)** SW of Binsted at SU76495 40646. Approx 12 plants along field edge near pond, Cathy Wilson 16 Sep 2018, specimen confirmed by Tony Mundell.

***Berberis vulgaris* (Barberry)** Cole Henley, Twinley Lane SU48535045, bush under first oak tree in eastern hedge (if heading south.) Did not see any other bushes between the bridleway and the corner on either side of the road, Lizzy Peat 1 Aug 2018. Litchfield SU4620 5400 in hedgerow by church entrance, Tony Mundell & Dawn Nelson 3 Aug 2018.

***Bidens cernua* (Nodding Bur-marigold)** SW of Binsted SU76517 40622, several plants in a sea of *Mentha aquatica* and *Persicaria amphibia*, in a dried up seasonal pond, Cathy Wilson 17 Sep 2018.

***Bidens tripartita* (Trifid Bur-marigold)** A few plants at edge of Hartley Mauditt Pond at SU7434 3608, Steve Povey 5 Sep 2018.

***Borago officinalis* (Borage)** At Litchfield SU4690 5413 in arable field corner, Tony Mundell & Dawn Nelson 3 Aug 2018. Farnborough SU8623 5584, weed in allotments, Tony Mundell 14 Aug 2018.

***Briza maxima* (Greater Quaking-grass)** At Crawley SU4267 3480 on roadside beneath a garden wall, Tony Mundell, Sarah White & Dave Pearson 13 Aug 2018.

***Bromus x pseudothominei* (Lesser Soft-brome)** At Liphook SU8434 3173 on road verge. Straight awns, Lemmas only 6.5-8.0mm, spikelets look glabrous to naked eye but under microscope have minute 0.1mm hairs. I'm sure this is very under-recorded in VC12 if it really is separate from *B. hordeaceus* (Cope says they are synonymous), Tony Mundell, Isobel Girvan & Anna Stewart 2 Jul 2018. At Alton SU7037 3960 on arable field edge. Spikelets appear glabrous and lemmas smaller than *B. hordeaceus*, Tony Mundell & Steve Povey 5 Jul 2018.

***Camelina sativa* (Gold-of-pleasure)** S of Basingstoke at SU6000 4631 on an arable field edge, presumably sown, Tony Mundell, Cathy Wilson, Dawn Nelson, *et al.* 3 Oct 2018.

***Campanula glomerata* (Clustered Bellflower)** Matterley Estate, only one plant seen, at SU52572841, Anna Stewart 31 Aug 2018.

***Campanula rotundifolia* (Harebell)** 6 flowering/fruitlet plants at SU54090 44243 on lawn of Popham Diner. 5 other plants within 20m on lawn and shallow ditch by fence-line., Andy Cross 5 Sep 2018. Danebury Hill in several places on the chalk grassland of the hill fort, e.g. SU3270 3767 and at SU3246 3787 on very herb-rich chalk grassland, Tony Mundell & Sarah White 17 Sep 2018.

***Carex arenaria* (Sand Sedge)** Many plants at Passfield SU8245 3414 beside footpath, Tony Mundell & Steve Povey 11 Jul 2018. Bordon SU7915 3687, locally plentiful, Tony Mundell, Cathy Wilson, Dawn Nelson, *et al.* 30 Jul 2018.

***Carex canescens* (White Sedge)** A few plants in bog at The Slab, Bordon SU7807 3503, Tony Mundell & Isobel Girvan 16 Jul 2018.

***Carex muricata subsp. pairae* (Prickly Sedge)** Locally plentiful around Bordon SU7905 3678 near army parade ground, also at Bordon SU7888 3624 where a new road is being constructed, Tony Mundell, Cathy Wilson, Dawn Nelson, *et al.* 30 Jul 2018.

***Carex rostrata* (Bottle Sedge)** The Slab, Bordon at SU7802 3581, Tony Mundell 20 Oct 2018.

***Carya illinoensis* (Pecan)** Many trees of this planted in woodland directly behind Litchfield Church, SU4618 5402. One tree had formed several Pecan nuts in the exceptionally warm summer. The aerofoil shaped leaflets are diagnostic, Tony Mundell & Dawn Nelson 3 Aug 2018. (Unfortunately I cannot record this, or the same species I saw at Isington SU7732 4280 on 24 Jun 2017, because it is not on the MapMate taxa list).



Pecan *Carya illinoensis*, Litchfield, 3 August 2018; showing diagnostic aerofoil-shaped leaflets (Tony Mundell)

***Catapodium rigidum* (Fern-grass)** Winchester, Alresford Road SU48942946, a very dried-up plant, Anna Stewart 11 Jul 2018.

***Centaurea cyanus* (Cornflower)** SW of West Worldham SU732361 in sown arable margin along SE side of field, Dawn Nelson & Jill Oakley 29 Sep 2018.

***Centaureum pulchellum* (Lesser Centaury)** Many flowering plants at MOD Longmoor SU8076 3128 to SU8076 3129, Tony Mundell, Ken Sandell & Cathy Wilson 28 Jul 2018.

***Ceratochloa carinata* (California Brome)** Single plant at Whitchurch SU4689 4832 beside public footpath. Awns c. 8-10mm, Tony Mundell & Sarah White 24 Jul 2018.

***Chenopodium giganteum* (Tree Spinach)** A few plants at Lower Woodcote SU4437 5495 amongst much *Chenopodium album*, possibly sown for pheasants, Tony Mundell, Ken Sandell, Lisa Malter, *et al.* 10 Sep 2018.

***Chenopodium murale* (Nettle-leaved Goosefoot)** M3 Fleet Services Southbound SU79905573, plant over one metre high, Anna Stewart 9 Sep 2018.

***Chenopodium quinoa* (Quinoa)** SE of South Warnborough, at SU7337 4587 in an arable field corner, from a previous sowing for

game birds, Tony Mundell, Sarah White & Dawn Nelson 19 Sep 2018.

***Cirsium acaule* (Dwarf Thistle)** Danebury Hill in several places on the chalk grassland of the hill fort, e.g. SU3269 3765, SU3254 3759 and elsewhere nearby, Tony Mundell & Sarah White 17 Sep 2018.

***Clinopodium ascendens* (Common Calamint)** Itchen Stoke Down SU5454 3419 at farmyard entrance, Tony Mundell, Sarah White & Cathy Wilson 27 Sep 2018.

***Colchicum autumnale* (Meadow Saffron)** Five flowering plants in scrub on Noar Hill Nature Reserve SU743318, but surely planted here, Steve Povey 3 Sep 2018.

***Cortaderia selloana* (Pampas-grass)** M3 Fleet Services, Northbound SU7989 5585, beside the M3, Anna Stewart 19 Oct 2018.

***Cotoneaster affinis* (Purpleberry Cotoneaster)** Ibthorpe, Windmill Lane SU3748 5362, determined by Jeanette Fryer, Cotoneaster referee. A mature specimen growing across a track from a garden which does not have this species, Peter Billingham 19 Sep 2018.

***Cotoneaster dammeri* (Bearberry Cotoneaster)** Still present at Yateley Common SU8145 5945 beside footpath, now in fruit. Totally prostrate habit, rooting at nodes, now occupying several square metres. Specimen determined as **C. dammeri Major** by Jeanette Fryer, Tony Mundell 12 Sep 2018.

***Cotoneaster dielsianus* (Diels' Cotoneaster)** West Worldham, single plant on bank by entrance to Watery Lane at SU7400 3694, specimen det. Jeanette Fryer, Steve Povey 6 Sep 2018.

***Crassula tillaea* (Mossy Stonecrop)** The Slab, Bordon, in many places on bare sand, e.g. SU7809 3588, seed spread by military vehicles, Tony Mundell & Isobel Girvan 16 Jul 2018.

***Cryptomeria japonica* (Japanese Red-cedar)** Lower Woodcote SU4511 5523, many saplings planted on what was formerly chalk downland, Tony Mundell, Ken Sandell, Lisa Malter, *et al.* 10 Sep 2018.

Cuscuta epithymum* (Dodder)** The Slab, Bordon, in extraordinary abundance on mown ***Calluna beneath minor power lines mainly in SU779347 but continuing to SU7800 3477 and SU7800 3479, Tony Mundell & Isobel Girvan 16 Jul 2018.

***Cyclamen hederifolium* (Sowbread)** Common Farm SU6129, two clumps, one well away from houses, Andrew Powling & Eric Clement 27 Sep 2018.

***Cynosurus echinatus* (Rough Dog's-tail)** M3 Fleet Services, Northbound SU7989 5597 and SU7983 5594, Anna Stewart 1 Oct 2018.

Dactylorhiza praetermissa* (Southern Marsh-orchid)** Single spike at MOD Longmoor SU80762 31281, flowers gone over but clearly this and not ***D. fuchsii, Tony Mundell 21 Jul 2018.

***Daphne laureola* (Spurge-laurel)** Malshanger Estate c. SU5726 5388 in hedgerow near a gate into an arable field, a surprising habitat for a woodland plant, HFG 14 Jul 2018. S of Upton Grey beside footpath at SU7000 4736 and SU6994 4747 also on wood edge at SU6989 4751, Tony Mundell & Cathy Wilson 26 Jul 2018. SE of Overton, many dozens, some of them exceptionally large bushes, under strip of Beech trees along arable field edge/garden boundary, extending from SU5329 4841 to SU5328 4833, plus others nearby at SU5329 4842 and SU5330 4832 in hedge, Tony Mundell, Adam Lucas, Gareth Knass, *et al.* 7 Sep 2018.

***Darmera peltata* (Indian-rhubarb)** Passfield, single plant at SU8212 3435 on river bank, away from houses so presumably carried down the river as a seed, Tony Mundell & Steve Povey 11 Jul 2018.

***Datura stramonium* (Thorn-apple)** Single plant on recently disturbed soil. Rake Road, Liss SU780276, Steve Povey 5 Sep 2018. Over a dozen large plants in flower and fruit at Itchen Stoke Down SU5438 3450 on a farm bonfire site, Tony Mundell, Sarah White & Cathy Wilson 27 Sep 2018.

***Digitaria ischaemum* (Smooth Finger-grass)** At SU7791 3549, SU78315 35531, SU7828 3534 and now widespread in many other places on The Slab, Bordon, spread by military vehicles, but an

annual that does not flower until late in the year, Tony Mundell & Isobel Girvan 16 Jul 2018. Longmoor Airstrip, hundreds of plants at SU8073 3128 on bare sand at end of the airstrip, some just starting to flower, Tony Mundell, Ken Sandell & Cathy Wilson 28 Jul 2018.

***Dipsacus laciniatus* (Cut-leaved Teasel)** Six flowering plants beside path to Somersfield Terrace, Liss at SU7784 2751, Steve Povey & B. Lowe 14 Jul 2018.

***Drosera intermedia* (Oblong-leaved Sundew)** The Slab, Bordon, still hundreds of plants at SU7798 3482 to SU7802 3484 on scrape made in 2007 (but now beginning to get overgrown) Tony Mundell & Isobel Girvan 16 Jul 2018.

Drosera rotundifolia* (Round-leaved Sundew)** The Slab, Bordon, scattered plants at SU7798 3482 to SU7802 3484 on scrape made in 2007 (but now beginning to get overgrown) also still present at SU78139 34976 with ***Rhynchospora alba but no sign of the Marsh Clubmoss that used to also grow here, Tony Mundell & Isobel Girvan 16 Jul 2018.

***Echinochloa frumentacea* (White Millet)** SE of South Warnborough at SU7337 4587 in an arable field corner, from a previous sowing for game birds, Tony Mundell, Sarah White & Dawn Nelson 19 Sep 2018.

***Echium plantagineum* (Purple Viper's-bugloss)** SW of West Worldham in sown arable margin along SE side of field, Dawn Nelson & Jill Oakley 29 Sep 2018.

***Epilobium roseum* (Pale Willowherb)** N of Woolton Hill at SU4348 6307 beside stream. White flowers with clavate stigma, long pedicels some over 1cm, veins sunk below leaf upper surface, Tony Mundell, Dawn Nelson & Mike Harrison 23 Aug 2018.

***Epipactis phyllanthes* (Green-flowered Helleborine)** Great Pen Wood, A343 verge, 207 plants on east side and 16 on west side of road, looking very dried up in the current drought conditions. Grid references of the plants between SU440619 and SU445625, Simon Melville 22 Jul 2018. Bordon, Hollywater Road, only a total of five plants this year. Two on west side of road at SU8055 3454 and two on east side at SU8057 3454, Bill Wain 25 Jul 2018.

***Epipactis purpurata* (Violet Helleborine)** Selborne Common SU736331, four plants beneath beech, one with three stems and three single-stemmed plants, Tara Betts det. Steve Povey 27 Jul 2018. Abbey Road, Beech SU675377, solitary plant on verge beside small wooded strip, Geoffrey Farwell 28 Jul 2018. Oakshott Hangers, ten-stemmed plant on north side of Old Litten Lane at SU7379 2706, Steve Povey 7 Aug 2018. SE of South Warnborough at SU7414 4517, 17 spikes in green seed on east verge of minor road, Tony Mundell, Sarah White & Dawn Nelson 16 Sep 2018.

***Eriophorum vaginatum* (Hare's-tail Cottongrass)** The Slab, Bordon, scattered plants in the wet heath adjacent to the Golf Course between SU 77695 34647, SU77716 34636 and SU77722 34605, Tony Mundell & Isobel Girvan 16 Jul 2018.

***Eryngium campestre* (Field Eryngo)** Sutton Scotney, A34, the single plant at SU4592 4011 has flowered well this year, photo taken. Searched the verge but no more plants of it found, Simon Melville 22 Aug 2018.

***Euphorbia oblongata* (Balkan Spurge)** On road verge in Duck Street, Abbots Ann SU3290 4339, John Moon 11 Oct 2018, specimen det. Tony Mundell.

Euphrasia nemorosa x confusa Matterley Estate SU5283 2796 and SU5315 2802, Anna Stewart 6 Jul 2018, det. Martin Rand.

***Fallopia baldschuanica* (Russian-vine)** Climbing among small trees at edge of pond at Hartley Mauditt SU7434 3608, Steve Povey 5 Sep 2018.

***Fallopia sachalinensis* (Giant Knotweed)** Froxfield, Green Lane, growing along 24 paces from SU71550 28099 to SU71535 28105, Catherine Chatters 5 Oct 2018.

***Ficaria verna* (Fig)** NE of Tangley, a young seedling at SU3335 5357 on road verge, Tony Mundell & Sarah White 14 Sep 2018.

***Fumaria densiflora* (Dense-flowered Fumitory)** Roundwood estate SU502448, arable field set aside for weeds, Anna Stewart



Field Eryngo *Eryngium campestre*, Sutton Scotney, 22 August 2018 (Simon Melville)



Giant Knotweed *Fallopia sachalinensis*, Froxfield, 5 October 2018 (Catherine Chatters)



Bladder Kelmia *Hibiscus trionum*, Danebury, 21 September 2018 (Dawn Nelson)

30 Jul 2018. One plant at Litchfield SU4690 5411 on arable field edge amongst several *F. officinalis*, Tony Mundell & Dawn Nelson 3 Aug 2018.

***Fumaria muralis* subsp. *boraiei* (Common Ramping-fumitory)** Bordon, Hogmoor Road at SU7861 3589 on road verge, a weed in a front garden here, Tony Mundell 20 Oct 2018.

***Fumaria officinalis* subsp. *wirtgenii* (Common Fumitory)** E of Itchen Wood at SU5368 3503 on arable field edge. Flowers 7-8mm with truncate tip to upper petal, fruits with an apiculate tip and not wider than long. Sepals 2.0 x 1.3mm, Tony Mundell, Adam Lucas, *et al.* 29 Aug 2018. Malshanger, Beestings field, specimen from SU5737 5351 checked with microscope keys clearly to this in the BSBI Fumitory Handbook, HFG 14 Jul 2018.

***Galinsoga parviflora* (Gallant Soldier)** Malshanger Estate, one or two flowering/fruitlets plants in triangular field north of Beestings Field, HFG 14 Jul 2018. Farnborough SU8622 5582, weed in allotments, Tony Mundell 14 Aug 2018.

***Galium x pomeranicum* (*G. verum x album*)** Matterley Estate SU5314 2809, Anna Stewart 6 Jul 2018, det. Martin Rand.

***Geranium columbinum* (Long-stalked Crane's-bill)** Danebury Hill, single flowering plant at SU3232 3772, Tony Mundell & Sarah White 17 Sep 2018.

***Glebionis segetum* (Corn Marigold)** SW of West Worldham SU732361, in sown arable margin along SE side of field, Dawn Nelson & Jill Oakley 29 Sep 2018. Oakley SU5733 4913 on arable field edge, several plants in flower, Tony Mundell, Gareth Knass & Ken Sandell 1 Oct 2018.

***Gnaphalium luteoalbum* (Jersey Cudweed)** Two plants one at SU79129 36109 and another at SU79122 36087 both 1m from Oxney Stream bank in a newly excavated flood alleviation basin, where first found recently by Andy Cross, Tony Mundell 20 Oct 2018.

***Herminium monorchis* (Musk Orchid)** Noar Hill SU74253184, in this patch many seen, Amy Robjohns 18 Aug 2018.

***Hibiscus trionum* (Bladder Kelmia)** E of Danebury Hill, single plant in flower and seed at SU3340 3772 beside a strip of manure in field. Prostrate habit, spreading to over a metre in diameter. Photos taken and small voucher pieces collected, Tony Mundell & Sarah White 17 Sep 2018.

***Hyoscyamus niger* (Henbane)** Malshanger Estate, hundreds of small flowering plants in triangular field north of Beestings Field, e.g. at SU5761 5381, also about ten small plants, mostly not flowering, in field corner at SU5759 5379, HFG 14 Jul 2018.

***Hypericum x inodorum* (Tall Tutsan, *H. androsaemum x hircinum*)** Blackbushe SU8084 5812 at site of former Clapperoak Cottage, now hidden in woodland, formerly heathland. Apart from the previously cultivated plants no sign of any building persists, Tony Mundell, Isobel Girvan & Peter Scott 31 Aug 2018. E of Danebury Hill at SU3359 3755 beside a road and track junction where garden

rubbish has clearly been dumped in the past, Tony Mundell & Sarah White 17 Sep 2018.

***Impatiens parviflora* (Small Balsam)** Ludshott Common at track junction at SU8501 3459 and many more beside the footpath around SU8502 3453, Tony Mundell & Cathy Wilson 27 Aug 2018.

***Isolepis setacea* (Bristle Club-rush)** The Slab, Bordon SU78193 35640, Tony Mundell & Isobel Girvan 16 Jul 2018. Longmoor Airstrip on track at SU8025 3125, Tony Mundell, Ken Sandell & Cathy Wilson 28 Jul 2018.

***Juncus subnodulosus* (Blunt-flowered Rush)** Southwood Golf Course, a patch at SU85425 54773 in a disused bunker on the golf course, that is usually flooded. Surprising away from any calcareous soils, Tony Mundell 4 Aug 2018.

***Juncus x kern-reichgeltii* (J. conglomeratus x effusus)** Hawley Common SU8404 5796, Tony Mundell & Keith Betton 13 Jul 2018.

***Juniperus communis* subsp. *communis* (Common Juniper)** Matterley Estate SU5205 2932, Anna Stewart 22 Aug 2018.

***Lactuca virosa* (Great Lettuce)** N of Crawley at SU4295 3581 on derelict farmyard, Tony Mundell, Sarah White & Dave Pearson 13 Aug 2018. E of Litchfield, several young plants at SU4908 5296 on road verge, Tony Mundell & Sarah White 25 Sep 2018.

***Lathyrus linifolius* (Bitter-vetch)** NW of Woolton Hill at SU4228 6262 beside track, Tony Mundell, Dawn Nelson & Mike Harrison 23 Aug 2018.

***Legousia speculum-veneris* (Large Venus's-looking-glass)** Malshanger, Beestings field, all very small droughted plants, four scattered in field margin at SU5740 5392, one at SU5738 5394 and one at SU5713 5375, HFG 14 Jul 2018.

***Ligularia przewalskii* (Przewalski's Leopardplant)** Voucher specimen in Hb.ARGM det. Steve Povey (initially recorded as *Sinacalia tangutica* in error). About a dozen plants centred on SU7913 3611 scattered along 50m of Oxney Stream bank in a newly excavated flood alleviation basin, Tony Mundell 20 Oct 2018.

***Linaria repens* (Pale Toadflax)** Whichchurch SU4616 4868 on road verge, Tony Mundell & Sarah White 24 Jul 2018.

***Lithospermum officinale* (Common Gromwell)** Popham, on northern verge of A303, Andy Cross 5 Sep 2018.

***Lycium barbarum* (Duke of Argyll's Teaplat)** E of Overton, at SU5346 4937 on opposite side of road from a house, Tony Mundell, Adam Lucas, Gareth Knass, *et al.*, 7 Sep 2018.

***Lycopodiella inundata* (Marsh Clubmoss)** Woolmer Forest, two patches at SU813320, one 10 x 2m the other 18 x 2 m in the ruts of a firebreak orientated east-west. Low hundreds of strobili. Also a patch of c.1 x 1m at SU800332 on a mown firebreak, Clive Chatters 21 Sep 2018.

***Lysichiton americanus* (American Skunk-cabbage)** N of Woolton Hill, scattered plants along stream, e.g. SU4346 6303, SU4348 6306, SU4341 6298 and SU4340 6298, Tony Mundell, Dawn Nelson & Mike Harrison 23 Aug 2018. Longparish SU4398 4491 on river bank, Tony Mundell & Simon Melville 21 Sep 2018.

***Menyanthes trifoliata* (Bogbean)** Farnborough SU8682 5519, in pond, presumably originally planted, Tony Mundell 14 Aug 2018. Sladen Green pond SU4165 5408, presumably planted, Tony Mundell & Sarah Ball 3 Sep 2018.

***Misopates orontium* (Weasel's-snout)** Farnborough SU8623 5584, weed in allotments, Tony Mundell 14 Aug 2018. Longparish SU4329 4474, several flowering plants in alleyway by houses, Tony Mundell & Simon Melville 21 Sep 2018.

***Myrica gale* (Bog-myrtle)** Minley SU819570 in boggy meadow, Tony Mundell & Peter Scott 12 Sep 2018.

***Narthecium ossifragum* (Bog Asphodel)** Basingbourne Park, Fleet SU808525, 300 flower spikes counted, Pauline Earwicker 4 Jul 2018. Bordon, The Warren SU7808 3484 in bog beneath minor power lines, Tony Mundell & Isobel Girvan 16 Jul 2018.

***Neottia nidus-avis* (Bird's-nest Orchid)** Laverstoke SU503492, one plant in seed, south of B3400, Simon Melville 31 Jul 2018.

***Nicandra physalodes* (Apple-of-Peru)** Bordon SU7935, one plant on recently scraped grassland on bank east side of playing ground, Andy Cross 30 Aug 2018. Oakley 5780 4972, a single plant on road verge at junction with Water Ridges Road, not yet flowering so will not persist, Tony Mundell, Gareth Knass & Ken Sandell 1 Oct 2018.

***Orobanche elatior* (Knapweed Broomrape)** Matterley Estate SU5261 2837, no *Centaurea scabiosa* seen here, Anna Stewart 20 Jul 2018.

***Orobanche hederæ* (Ivy Broomrape)** Church Crookham, still a few spikes in alleyway at SU8105 5205 but I have now found that it is plentiful in the woodland beside Portland Drive in many spots mainly in SU8107 5202, SU8107 5201, SU8106 5201 and SU8108 5201 where there are groups of 4, 7, 17, 30 and 50 spikes on *H. hibernica*. This is the normal purple form and as there is so much of it I am now thinking that the plants that appeared in my garden many decades ago came from seed from this wood, Tony Mundell 10 Aug 2018.

***Orobanche minor* (Common Broomrape)** Malshanger, Beestings field, one seed spike at SU5759 5377 and another much taller and denser spike nearby that might be *O. elatior*, HFG 14 Jul 2018.

***Osmunda regalis* (Royal Fern)** Longmoor Airstrip, still present and producing spores at SU80865 31310 rather hidden in wooded boggy area about 13m from track, Tony Mundell 21 Jul 2018.

***Panicum capillare* (Witch-grass)** Single plant as weed by Harrow Inn, Steep SU750251, Steve Povey 31 Aug 2018.

***Papaver dubium* (Long-headed Poppy)** Bordon SU7879 3611 on disturbed soil where new road is being constructed. Latex white, Tony Mundell, Cathy Wilson, Dawn Nelson, *et al.* 30 Jul 2018.

***Papaver lecoqii* (Yellow-juiced Poppy)** Alton SU7122 3929, a weed in garden in Queen's Road, Tony Mundell & Steve Povey 5 Jul 2018.

***Parthenocissus inserta* (False Virginia-creeper)** Farnborough SU8625 5591 on railway bridge, tendrils have no sucker pads, Tony Mundell 14 Aug 2018. Leckford SU3823 3905 on both sides of footpath beside footbridge, Martin Rand, Tony Mundell & Barry Goater 4 Oct 2018.

***Parthenocissus quinquefolia* (Virginia-creeper)** S of Yateley, climbing up Scot's Pine trees at SU8119 5847 beside a minor road, presumably from dumped garden rubbish. The tendrils have suckers, Tony Mundell, Isobel Girvan & Peter Scott 31 Aug 2018.

***Phalaris canariensis* (Canary-grass)** Lower Woodcott at SU4487 5543 and SU4482 5551 on arable field edge, Tony Mundell, Ken Sandell, Lisa Malter, *et al.*, 10 Sep 2018. Itchen Stoke Down SU5434 3439 on heap of bare chalk in farmyard, Tony Mundell, Sarah White & Cathy Wilson 27 Sep 2018.

***Philadelphus coronarius* (Mock-orange)** Blackbushe SU8084 5812 at site of former Clapperoak Cottage, now hidden in woodland, formerly heathland. Apart from the previously cultivated plants no sign of any building persists, Tony Mundell, Isobel Girvan & Peter Scott 31 Aug 2018.

***Pilularia globulifera* (Pillwort)** Woolmer Pond, several very large patches in NE corner from SU7899 3205 to SU7906 3211. It and *Littorella uniflora* are excluding *Crassula helmsii* over large areas. Water level exceptionally low due to current drought, Jonty Denton 16 Sep 2018.

***Pinus contorta* (Lodgepole Pine)** SE of South Warnborough SU730441, a couple of mature trees beside minor road in woodland strip. Grid reference approximate. Photo taken showing the small cones with sharp points and the curved (banana-shaped) needles only 8cm long, Tony Mundell, Sarah White & Dawn Nelson 19 Sep 2018.

***Pinus pinaster* (Maritime Pine)** NE of Crawley, a young tree beside arable field at SU4376 3508, Tony Mundell, Sarah White & Dave Pearson 13 Aug 2018.

***Pinus strobus* (Weymouth Pine)** E of Litchfield SU4809 5384 in wood by footpath, Tony Mundell & Sarah White 25 Sep 2018.



Lodgepole Pine *Pinus contorta*, showing spines on small cones and short needles (Tony Mundell)

***Poa angustifolia* (Narrow-leaved Meadow-grass)** Matterley Estate SU5263 2841, surrounded by coarse vegetation, photos taken, Anna Stewart 2 Aug 2018.

***Poa bulbosa* (Bulbous Meadow-grass)** Bordon SU7914 3692 in very short sparse vegetation on sandy soil close to a corner of the army parade ground. A small piece with a few bulbils taken to photograph and grow on in a pot, Tony Mundell, Cathy Wilson, Dawn Nelson, *et al.* 30 Jul 2018.

***Poa compressa* (Flattened Meadow-grass)** Malshanger Estate c. SU5729 5386 on field margin, HFG14 Jul 2018. Matterley Estate SU5259 2813, starved plants, Anna Stewart 20 Jul 2018. Matterley Estate SU5260 2835, outside fence near A272, Anna Stewart 2 Aug 2018. Bordon SU79130 36115, 1.5m from Oxney Stream bank in a newly excavated flood alleviation basin, Tony Mundell 20 Oct 2018.

***Poa humilis* (Spreading Meadow-grass)** Roundwood estate SU5124 4477, grassy area side of road and weedy field, Anna Stewart 30 Jul 2018. Matterley Estate SU5260 2829, Beech canopy not so dense at this location, Anna Stewart 2 Aug 2018.

***Poa nemoralis* (Wood Meadow-grass)** Matterley Estate SU5261 2835 and SU5259 2833, a starved grass, some spikelets at both spots had only one floret, unusual for *Poa*, Anna Stewart 2 Aug 2018. Waggoners Wells SU8562 3421 by footpath, on top of a shady wall, Tony Mundell & Cathy Wilson 27 Aug 2018. Locally plentiful at Tangley SU3349 5245 on road verge bank, Tony Mundell & Sarah White 14 Sep 2018. E of Litchfield at SU4879 5282 and SU4877 5292 on wood edge, Tony Mundell & Sarah White 25 Sep 2018.

***Polypogon monspeliensis* (Annual Beard-grass)** Bordon SU7911 3608 beside track and SU7888 3613 on disturbed soil where new road is being constructed, Tony Mundell, Cathy Wilson, Dawn Nelson, *et al.* 30 Jul 2018. Easton SU513321, car park of PH, Martin Rand 2 Sep 2018.

***Polystichum aculeatum* (Hard Shield-fern)** Monkwood SU6694 3189 in hedge, Andrew Powling & Eric Clement 18 Oct 2018.

***Polystichum setiferum* (Soft Shield-fern)** Liphook SU8442 3201 beside stream, Tony Mundell, Isobel Girvan & Anna Stewart 2 Jul 2018. Alton SU7137 3951 beside River Wey, Tony Mundell & Steve Povey 5 Jul 2018. N of Tangley SU3278 5320, two plants beside track, Tony Mundell & Sarah White 14 Sep 2018.

***Potamogeton obtusifolius* (Blunt-leaved Pondweed)** Hawley Lake SU8419 5781 along edge of lake, Tony Mundell & Keith Betton 13 Jul 2018.

***Potentilla argentea* (Hoary Cinquefoil)** Single plant at Bordon SU79129 36109 1m from Oxney Stream bank in a newly excavated flood alleviation basin, Tony Mundell 20 Oct 2018.

***Potentilla norvegica* (Ternate-leaved Cinquefoil)** Longmoor, only five very dried up plants surviving due to the current drought. All at SU80658 31461 on south side of the gravel track just north of the A3, Tony Mundell 21 Jul 2018.

***Potentilla x suberecta* (*P. anglica* x *erecta*)** Blackbushe SU8074 5814 beside main track. Four and five petals, petioles very short, mostly under 5mm, a few achenes set, mix of 2, 3, and 4 leaflets, Tony Mundell, Isobel Girvan & Peter Scott 31 Aug 2018.

***Prunus padus* (Bird Cherry)** Hawley Common SU8428 5743 and elsewhere nearby, Tony Mundell & Keith Betton 13 Jul 2018.

***Prunus serotina* (Rum Cherry)** Minley, many bushes along wood edge SU8193 5774 to SU8191 5765, Tony Mundell & Peter Scott 12 Sep 2018.

***Pyrola minor* (Common Wintergreen)** Hawley Common, droughted patch 1m x 1m at SU8432 5771, another at SU8411 5795, Tony Mundell & Keith Betton 13 Jul 2018. Still present at The Slab SU78201 35775 on corner of wood under oak and birch, a patch c. 1.5m x 1m but shriveling in the drought, Tony Mundell & Isobel Girvan 16 Jul 2018.

***Quercus palustris* (Pin Oak)** Hawley Common SU8438 5747, presumably planted. Large (2-4mm) patches of brown hair tufts on main vein joints, so not *Q. coccinea*, Tony Mundell & Keith Betton 13 Jul 2018.

***Quercus petraea* (Sessile Oak)** Ludshott Common, a couple of young c.30 year old trees at SU8559 3542, but also noticed elsewhere on the common. A website about Ludshott Common states that there used to be a coppice of Sessile Oak and locals have planted many acorns from it, Tony Mundell & Cathy Wilson 27 Aug 2018. Tangley SU3340 5294 planted beside footpath, plentiful stellate pubescence on leaves of typical shape, Tony Mundell & Sarah White 14 Sep 2018.

***Quercus ellipsoidalis* (Northern Pin Oak)** Southwood Golf Course, a single tree at SU8546 5479, determined by Douglas McKean

(BSBI *Quercus* Referee) and specimen now lodged at E. (This taxon is not on MapMate so recorded as *Quercus sp.*), Tony Mundell 4 Aug 2018.

***Quercus x rosacea* (*Q. petraea x robur*)** Many large trees planted in an avenue beside footpath from Tangley SU3359 5264 to SU3351 5277 and beyond, some *Q. petraea* and some *Q. x rosacea*, also one on roadside at SU3333 5192, Tony Mundell & Sarah White 14 Sep 2018.

***Radiola linoides* (Allseed)** Many plants at Longmoor Airstrip SU80821 31268 and SU80817 31271, Tony Mundell 21 Jul 2018.

***Ranunculus sceleratus* (Celery-leaved Buttercup)** At Ashe SU5337 4999 on dried up bed of pond, two young plants, Tony Mundell, Adam Lucas, Gareth Knass, *et al.* 7 Sep 2018.

***Rhododendron luteum* (Yellow Azalea)** S of Yateley, on heath at SU8131 5850 and at SU8125 5848 beside minor road, presumably from dumped garden rubbish, also at SU8084 5814 at site of former Clapperoak Cottage, now hidden in woodland, formerly heathland. Apart from the previously cultivated plants no sign of any building persists here, Tony Mundell, Isobel Girvan & Peter Scott 31 Aug 2018.

***Rhynchospora alba* (White Beak-sedge)** The Slab, Bordon, scattered plants at SU7798 3482 to SU7802 3484 on scrape made in 2007 (but now beginning to get overgrown). Also still present at SU78139 34976, but no sign of the Marsh Clubmoss that used to also grow here, Tony Mundell & Isobel Girvan 16 Jul 2018.

***Rorippa palustris* (Marsh Yellow-cress)** Minley SU8186 5796 beside track, Tony Mundell & Peter Scott 12 Sep 2018.

***Rorippa sylvestris* (Creeping Yellow-cress)** E of Wyck, many plants on farm track/turning area, approx SU767390, Cathy Wilson 11 Aug 2018, photo confirmed Tony Mundell.

***Rosa arvensis x squarrosa* (a Rose hybrid)** Specimen determined as *Rosa arvensis* (f) x *squarrosa* (m) by Roger Maskew (but *R. squarrosa* is not yet on the MapMate taxa list, so entered as *R. arvensis x canina* temporarily). Climbing high up SW of Oakley at SU5647 4887, many hips aborted, a few leaves have glands on the leaf teeth and stipules, Tony Mundell & Gareth Knass 1 Oct 2018.

***Rosa canina x squarrosa* (a Rose hybrid)** Steventon SU5445 4832 in hedgerow by footpath, Tony Mundell & Gareth Knass 10 Aug 2018 (but I cannot record it as not yet on MapMate taxa list, so entered as '*Rosa sp.*' as the nearest using the old names, *R. canina x canina*, is silly!).

***Rosa canina x vosagiaca* (a Rose hybrid)** Ashe SU5316 5002, beside footpath, Tony Mundell, Adam Lucas, Gareth Knass, *et al.* 7 Sep 2018, det. Gareth Knass as *R. canina sens. strict. x R. vosagiaca* (but not yet on MapMate taxa list, so noted as the nearest option *R. x dumalis*).

***Rosa micrantha* (Small-flowered Sweet-briar)** Matterley Estate SU5315 2820 and SU5314 2799, Anna Stewart 7 Aug 2018, confirmed by Gareth Knass. One plant at Black Wood, Micheldever SU5370 4305. Apple scented glands on leaves and pedicel, Andy Cross 3 Sep 2018. Danebury Hill, many bushes scattered on the hill fort, e.g. SU3253 3757, Tony Mundell & Sarah White 17 Sep 2018.

***Rosa multiflora* (Many-flowered Rose)** Farnborough SU8794 5589 beside Blackwater Valley footpath, Tony Mundell 14 Aug 2018.

***Rosa rubiginosa* (Sweet-briar)** Litchfield, one bush at SU4692 5411 and another at SU4692 5412 in the same hedgerow, specimens determined by Roger Maskew who added that one of them has a little introgression from *Rosa canina*, Tony Mundell & Dawn Nelson 3 Aug 2018. Blackbushe SU8065 5865 and SU8065 5858 with several other bushes nearby, Tony Mundell, Isobel Girvan & Peter Scott 31 Aug 2018.

***Rosa x andegavensis* (*R. canina x stylosa*)** SW of Oakley at SU56520 48350 in hedgerow by footpath. Another rose just 4m to NW at SU56513 48353 deserves a visit next August as it could be *R. canina x tomentosa* or possibly a hybrid with *R. micrantha*. It has no fresh leaves left so cannot be identified. Hips rather like *R.*

micrantha but too big for that, some leaves bipinnate and hairy with a few glands, Tony Mundell, Gareth Knass & Ken Sandell 1 Oct 2018.

***Rubus cockburnianus* (White-stemmed Bramble)** S of Basingstoke, a suckering patch along 13m of road verge at SU6104 4797, Tony Mundell, Cathy Wilson, Dawn Nelson, *et al.* 3 Oct 2018.

***Rumex sanguineus* var. *sanguineus* (Red Wood Dock)** Single well-marked plant at Over Wallop SU2871 3852 beside footpath, remote from houses, growing with *var. viridis*. Photos taken and some voucher leaves collected, Martin Rand, Tony Mundell & Barry Goater 4 Oct 2018 (see photo on front cover).

***Rumex x pratensis* (*R. crispus x obtusifolius*)** E of Itchen Wood, group of several plants at SU5362 3571 at track junction. Voucher specimen collected, Tony Mundell, Adam Lucas, *et al.* 29 Aug 2018. Tangley SU3347 5244 on field edge, Tony Mundell & Sarah White 14 Sep 2018.

***Sagina subulata* (Heath Pearlwort)** The Slab, Bordon SU7819 3562 but very droughted and shriveled up, Tony Mundell & Isobel Girvan 16 Jul 2018.

***Salix reichardtii* (*S. caprea x cinerea*)** Longparish SU4361 4408 in hedgerow beside the river ford. Specimen retained, Tony Mundell & Simon Melville 21 Sep 2018.

***Salvia verbenaca* (Wild Clary)** Overton Churchyard, still present, many plants on road verge outside church at SU5148 4996 but few survivors now inside the churchyard because of frequent mowing, Tony Mundell 10 Aug 2018.

***Sambucus ebulus* (Dwarf Elder)** Fullerton, beside footpath SU3806 3943 and plentiful from SU3794 3956 to SU3793 3960, Martin Rand, Tony Mundell & Barry Goater 4 Oct 2018.

***Samolus valerandi* (Brookweed)** Longmoor airstrip SU8076 3128, SU8098 3145, SU8100 3146 and SU8100 3145 but suffering from current drought conditions, Tony Mundell 21 Jul 2018.

***Scabiosa columbaria* (Small Scabious)** One flowering plant at Hawley Common SU8348 5764 beside road. Surprising in an area of acidic heathland so presumably it arrived in imported chalky soil when the road was made, Tony Mundell & Keith Betton 13 Jul 2018. Frequent at Litchfield SU4665 5516, Tony Mundell & Dawn Nelson, 3 Aug 2018. Lower Woodcote SU448555, plentiful in area of chalk grassland, Tony Mundell, Ken Sandell, Lisa Malter, *et al.* 10 Sep 2018. Danebury Hill SU3246 3787 on very herb-rich chalk grassland, Tony Mundell & Sarah White 17 Sep 2018.

***Scutellaria minor* (Lesser Skullcap)** Hawley Common, on edge of lake at SU8443 5775 and SU8419 5781, Tony Mundell & Keith Betton 13 Jul 2018.

***Sedum telephium* (Orpine)** N of Woolton Hill on road verges at SU4236 6255 and SU4406 6300, Tony Mundell, Dawn Nelson & Mike Harrison 23 Aug 2018.

***Silene noctiflora* (Night-flowering Catchfly)** Roundwood estate SU502448, arable field set aside for weeds, Anna Stewart 30 Jul 2018.

***Solidago virgaurea* (Goldenrod)** Woolton Hill, SU4389 6287 many plants on grassy roadside verge, also SU4359 6291 beneath roadside hedgerow, and at SU4228 6262 beside track, Tony Mundell, Dawn Nelson & Mike Harrison 23 Aug 2018. Church Crookham Churchyard SU807518, now in ripe seed and very plentiful. It has spread significantly due to sympathetic management and is now about to be mown spreading the seed further, Tony Mundell 12 Oct 2018.

***Sonchus arvensis* subsp. *uliginosus* (Perennial Sow-thistle)** SW of St Mary Bourne SU4100 4945, about a dozen plants on a grassy roadside verge but only three of them with flowers. All three inflorescences completely lacking the usual yellow glandular hairs, Tony Mundell & Simon Melville 21 Aug 2018. SE of Itchen Wood, at least two non-glandular plants amongst the common subsp. *arvensis* at SU5393 3439 on an arable field edge. Voucher specimen of a branch collected, Tony Mundell, Adam Lucas, *et al.* 29 Aug 2018. W of Mattingley at SU7292 5751 on grassy road



Dwarf Elder *Sambucus ebulus*, Fullerton, 4 October 2018 (Tony Mundell)

verge, with the common *subsp. arvensis* nearby at SU7283 5755 on verge of same road, Tony Mundell 9 Sep 2018.

***Sorbus x thuringiaca* (*S. aria* x *aucuparia*)** A young tree at Ludshott Common SU8500 3455 about 20m south of the National Trust land, beside a public footpath, growing within 5m of both parents. Presumably a natural hybrid. Too young and shaded to produce fruit, and with both the main stem and side branches damaged by Honeysuckle, Tony Mundell & Cathy Wilson 27 Aug 2018.

***Sorghum bicolor* (Great Millet)** Itchen Stoke Down SU5434 3438, sown for game birds, Tony Mundell, Sarah White & Cathy Wilson 27 Sep 2018. SW of West Worldham in sown arable margin along SE side of field, Dawn Nelson & Jill Oakley 29 Sep 2018.

***Spergularia marina* (Lesser Sea-spurrey)** Whitchurch SU4668 4831 on roadside, Tony Mundell & Sarah White 24 Jul 2018. M3 Winchester Services, northbound SU522357, at side of road, Anna Stewart 29 Sep 2018.

***Spiraea canescens* (Himalayan Spiraea)** E of Danebury Hill at SU3359 3755 beside a road and track junction where garden rubbish has clearly been dumped in the past. Growing with *Symphoricarpos orbiculatus*, *Hypericum x inodorum*, *Solidago canadensis*, etc. Small voucher piece collected, Tony Mundell & Sarah white 17 Sep 2018.

***Stachys arvensis* (Field Woundwort)** W of Upper Wield, single plant at SU6064 3979 on arable field edge, Tony Mundell, Sarah White & Ken Sandell 8 Aug 2018.

***Stachys byzantina* (Lamb's-ear)** M3 Fleet Services, Northbound SU79845592, growing by lamp post with *Lolium perenne* and *Stellaria media*, Anna Stewart 19 Oct 2018.

***Thesium humifusum* (Bastard-toadflax)** Danebury Hill SU3254 3759, Tony Mundell & Sarah White 17 Sep 2018.

***Torilis arvensis* (Spreading Hedge-parsley)** One plant still present at Whitchurch SU46105 48047 beside kerb in car park, Tony Mundell & Sarah White 24 Jul 2018.

***Trifolium incarnatum subsp. incarnatum* (Crimson Clover)** Tangley SU3384 5226 in field sown with *Daucus carota subsp. carota* and *Trifolium incarnatum subsp. incarnatum*, presumably for pheasants, Tony Mundell & Sarah White 14 Sep 2018.

***Ulmus plotii* (Plot's Elm)** Steventon SU5497 4731 in hedgerow beside public footpath, only 2-3 metres high as part of a hedge, clearly originally planted. Long pendent branches of small narrow

leaves, Tony Mundell, Gareth Knass, Anna Stewart, *et al.* 1 Aug 2018. Specimen confirmed by Dr Max Coleman.

***Vaccinium oxycoccos* (Cranberry)** Bordon, The Warren, still present in bog beneath minor power lines with scattered plants noted at SU7809 3484, SU78097 34851, SU78094 34849, SU78123 34862, SU78124 34866, SU78099 34854 and SU78088 34846, Tony Mundell & Isobel Girvan 16 Jul 2018.

***Valerianella carinata* (Keeled-fruited Cornsalad)** Whitchurch SU4612 4802 in car park and beside the minor approach road, Tony Mundell & Sarah White 24 Jul 2018.

***Valerianella dentata* (Narrow-fruited Cornsalad)** Malshanger, Beestings field, single small, droughted plants at SU5713 5375, SU5738 5394 and SU5745 5390, HFG 14 Jul 2018.

***Verbascum blattaria* (Moth Mullein)** Petersfield SU745241, single plant beside footpath off Tilmore Road, Steve Povey 17 Jul 2018.

***Verbena bonariensis* (Argentinian Vervain)** Ibthorpe area, waste ground next to a house at SU379536, Peter Billingham 22 Jul 2018.

***X Conyzigeron stanleyi* (*Erigeron acris* x *Conyza floribunda*)** Winnall Roundabout, M3 Junction 9, SU4979 3045, Anna Stewart 23 Sep 2018, both parents present, photos confirmed Tony Mundell. The Slab, Bordon, a single bushy plant at SU78116 35905 growing together with hundreds of plants of both its parents, Tony Mundell 20 Oct 2018. (Not on MapMate taxa list so I cannot record it directly, so I have temporarily noted it as a comment in the record for the accompanying *Erigeron acris*).



***X Conyzigeron stanleyi* (*Erigeron acris* x *Conyza floribunda*), Bordon, 20 October 2018 (Tony Mundell)**

***X Schedolium loliaceum* (*Schedonorus pratensis* x *Lolium perenne*)** Matterley Estate SU52612839, Anna Stewart 2 Aug 2018, specimen det. Tom Cope as *X Festulolium loliaceum* (a synonym). E of Itchen Wood SU535352, adjacent to Courtney's Copse, a very similar plant to specimen found at Matterley that was determined by Tom Cope as *X Festulolium loliaceum*, Anna Stewart 29 Aug 2018.

***Yucca gloriosa* (Spanish-dagger)** Oakley SU5772 4977 at base of railway bank, no doubt a garden throw-out, Tony Mundell, Gareth Knass & Ken Sandell 1 Oct 2018

The Hampshire and Isle of Wight Wildlife Trust Flora Group aims to monitor the status and promote conservation of the flora of the two counties and develop skills of those members interested in flora.

This edition of *Flora News* was put together by Catherine Chatters and John Norton. Many thanks to everyone who contributed. If you have any comments or would like to submit articles or photographs for inclusion in a future issue please contact:

Catherine Chatters, Flora Group Secretary

Ivy Cottage, Ashurst Bridge Road, Totton, Southampton SO40 7EA

Tel: 023 8086 3920, e-mail: Catherine.Chatters@hiwwt.org.uk

When submitting digital photographs, please reduce the size of each image to no larger than 2MB and please include your own name in the filename, along with description of subject and date taken for inclusion in the caption. Please include English and scientific names of any plants.

If you would like to send in your plant records, please see the Hants Plants website:

<http://www.hantsplants.org.uk> for information, including downloadable forms, or contact your relevant vice-county Recorder:

VC11: Martin Rand

3 Kings Close, Chandler's Ford, Eastleigh, SO53 2FF

Tel: 07531 461442, e-mail: VC11recorder@hantsplants.net

VC12: Tony Mundell

38 Conifer Close, Church Crookham, Fleet GU52 6LS

Tel: 01252 614516, e-mail: argmundell@gmail.com



Flora Group at charophyte workshop, 21 October 2018 (Catherine Chatters). See p. 8.

If you would like to join Hampshire & Isle of Wight Wildlife Trust and become a member of the Flora Group please contact our Membership Team on 01489 774400 or visit our website for further details: www.hiwwt.org.uk. Visit us on Facebook under *Hampshire Flora Group*.

Company Limited by guarantee and Registered in England and Wales No 676313
Registered Charity No 201081
Beechcroft House, Vicarage Lane, Curdridge, SO32 2DP

**Hampshire &
Isle of Wight**
Wildlife Trust 

