



# Sussex Botanical Recording Society

## Newsletter

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### Chairman's Message

About the time you receive this issue of the Newsletter we could have been in woodland near Singleton with Dawn enjoying every new sign of Spring – *Viola reichenbachiana* (Early Dog-violet) would probably have been over but there would have been plenty of *V. riviniana* (Common Dog-violet) still, not to mention candidates for the hybrid x *bavarica* which some Sussex field botanists have suspected to be rather more frequent than has been sometimes claimed. A week later we could also have been in Flatropers Wood with our much-loved Hastings trio in search of *V. palustris* (Marsh Violet) and other treasures. For most of us the restrictions imposed to limit the speed of the spread of the Coronavirus mean that we shall be missing out on some of the joys of Spring and early Summer, and certainly the special pleasure of botanising in the company of fellow enthusiasts will be denied us for the time being. SBRS members are nothing less than resourceful, however, and will find safe ways in which to study plants until life begins to return to something more normal.

In these circumscribed times I have been reminded of Patrick Roper's *The Square Metre*, an experiment in which he demarcated a one-metre square patch of his garden as a nature reserve. Some of you will have enjoyed the fascinating presentation on the project which he gave to the Sussex Biological Recorders Seminar a few years ago, and the patch has featured on national media including *Spring Watch*. A surprisingly large number of species of plant and animal have been recorded since 2003 and I would direct you to Patrick's *The Square Metre* online (and also his *Ramblings of a Naturalist*). He found himself managing the reserve just as he might have managed a full-size one, pruning back vigorous growths and maintaining in miniature a range of habitats. This shows how much pleasure and stimulation from nature can be experienced in even the smallest garden and members may wish to do something similar. A recent initiative by Plantlife in

**continued on page 2**

### Dates for your Diary

#### Saturday 31st October 2020

The Autumn Get-together will as usual be held at Staplefield Village Hall, regulations permitting. The doors will be open from 10.00 a.m. The meeting will start promptly at 10.30 and will include a talk. Please remember to bring a packed lunch. Tea, coffee and cakes will be available. Members are invited to bring books and plants for sale, any items of interest or specimens for display, and digital photographs (captioned, please) to show in the afternoon. Offers of homemade cakes are always welcome.

#### Saturday 6th March 2021

As usual, the Annual General Meeting will be held at 2.00 p.m. at Staplefield Village Hall. After the AGM there will be information on this year's field meetings, and details of interesting records received in 2020. The hall will be available from 1.30 p.m. if you wish to bring any books or plants for sale. Captioned digital photographs of Sussex plants will be included in the programme if there is time. The meeting will conclude with tea and cakes.

### Contents

Chairman's message .....	1
Dates for your diary.....	1
Treasurer's note.....	2
Photo competition 2020 .....	3
Village greens & recs survey.....	3
Lemna gibba .....	4
Churchyard survey.....	4
Journals offer .....	5
Algae new records .....	6
Recording in 2020.....	7
Obituary: Mike Hollings .....	7
Recommended books .....	8
Glassworts research .....	9
Stoneworts of Sussex correction.....	10
Website & social media .....	11
New & interesting records 2019.....	11
SBRS Officers & Committee members...	13
STOP PRESS: VIOLETS! .....	14

## Treasurer's Note

Following preparation of the Society's Accounts for 2019 and their approval at the AGM I may now update you as to the state of the Flora Fund, which stood at 31st December 2019 at £25,776.97. Since then we are expecting soon a further £683 from sales. At the time of writing this we have sold almost 900 copies out of a print run of 1,200 copies. The Committee is considering various publication ventures to use the funds wisely, the first of which, *The Stoneworts of Sussex*, is now for sale at £6 per copy if collected. If you are interested in obtaining a copy please contact either Nevil Hutchinson or me.

Subscriptions for 2020 remain as for 2019 i.e. £8 for an individual and £11 for two people at the same address and receiving one copy of the mailings as they arise. Subscriptions may be sent to me at my home address or paid at the Autumn Get-together in October, assuming we are allowed to gather together by then! If anyone has not paid their subscription for 2019 or earlier, if you are uncertain of your subscription status please contact me and I shall let you know: please now so do if you wish to remain a member.

**Trevor Lording**

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### continued from page 1

2019 also comes to mind. 'No Mow May' encouraged lawns to be left uncut for a month to allow the flowering of plant species helpful to pollinating insects. If you do not already do so, why not allow at least part of your lawn to go uncut and observe how many species make themselves known to you. Elisabeth and I have always left areas of our grass uncut for the whole Summer as a contribution to biodiversity and have been rewarded in many ways, for example in the form of species of butterfly that we would not otherwise have seen regularly in the garden such as Common Blues and Small Coppers. The front 'lawn' supports ten species of grass, the most attractive in my view *Trisetum flavescens* (Yellow Oat-grass). We discovered that a good selection of forbs was also waiting in the wings, with *Ranunculus bulbosus* (Bulbous Buttercup) proving highly ornamental as I write this. Some more species we established from sparingly collected wild seed, such as Strawberry Clover (*Trifolium fragiferum*). You might even discover that you prefer your lawn not to be a manicured monoculture!

I am aware that a proportion of SBRS members will not have gardens and for the duration they will be dependent on their excursions designated for exercise: there are, however, few places in which the botanically inclined cannot enjoy the appearance of the different species in their season, the greeting of the familiar and sometimes the unexpected. Of course, Howard Matcham has for years been demonstrating that there are plenty of exciting finds to be made on one's own doorstep – he details another remarkable discovery later in this issue.

Meanwhile, I have already received news of some interesting sightings from across the county from members out for their constitutional, for example David Donovan's *Azolla filiculoides* (Water Fern) from a small pond just round the corner from here, Jacqui Hutson's *Ranunculus aquatilis* (the absolutely not common in Sussex Common Water-crowfoot) from Plumpton and Peter Smith's discovery of both *Moenchia erecta* (Upright Chickweed) and *Viola canina* (Heath Dog-Violet) on the Selmeaton cricket field.

For those members connected there are all manner of resources to be discovered online. I have mentioned two blogs run by Patrick Roper but I should certainly direct you to Michael Blencowe's *Corona Wildlife Diary* on the Sussex Wildlife Trust site. Many members will know Michael whose unique style of presentation and fearless use of puns have earned him a wide following. But I would encourage you to sample first, if you have not already done so, our home-grown produce, notably Nevil's *Plant of the Week* which consistently informs and delights; then the SBRS Facebook group and Twitter account provide *fora* where you can interact with other members and post pictures.

And there are (of course!) books to be read. The members of the Committee were asked to nominate books which they felt members would enjoy. When you get to that section of the Newsletter I am sure you will agree they have assembled a brilliant collection of tempting titles to suit every botanical taste.

It remains for me to wish you well and urge you to keep safe and in good heart until we can meet again at an SBRS event.

**Nick Sturt**

## **SBRS Photographic Competition 2020**

**Peter Smith**

We are hoping that the restrictions on our movements due to the coronavirus pandemic will still leave some possibilities for you to exercise some photographic ingenuity. The rules of the competition are much the same as in previous years, but with a change to the categories that you may enter. As last year, Class 1 will be for a close-up of one or more plants. Class 2 will be focussed on one or more weeds in your garden. Please bear in mind that in taking your photos you should adhere to the personal safety procedures specified by the government that are in force at the time. Last year's competition attracted 37 entries. Let's see if we can do better than that this year. Entries are now open and the detailed rules are given below:

### **Rules**

1. The competition is free to enter and open to all SBRS members who are amateur photographers.
2. Photographs must be taken in East or West Sussex but do not have to be taken in 2020.
3. You may enter up to two digital images per category but you don't have to enter both categories.
4. The winners will be selected by a popular vote of those attending the SBRS Autumn Meeting.
5. The plants you photograph may be of any native or alien plants, including flowering plants, conifers, ferns, horsetails, club-mosses, stoneworts or bryophytes, whether casual or established, but not cultivated.
6. The competition is now open and will run until **Saturday October 10th 2020**. Please send your entries to Peter Smith, the Competition Organiser (psmith@sussex.ac.uk) by that date.
7. Please submit the largest possible file sizes, but consult Peter Smith as to how files over 10MB could best be submitted.
8. The photographs should be labelled using the following format: -  
Close-Up: "Photo title (including location) by photographer's name\_Close" e.g. "Buttercup at Woods Mill by Joe Wolley-Dod\_Close"  
Weed: e.g. "Ghost Orchid at Woods Mill by Jane Wolley-Dod\_Weed"
9. Copyright of images will remain with the photographer. However, SBRS claims the right to exhibit the entries, and to use them to further its aims generally and to promote SBRS and its Photographic Competition. This includes publishing them in its publications, on the SBRS website or social media. All published photographs will be credited. SBRS also claims the right to edit or use images in combination with others.

## **Village Greens and recreation ground project update**

**Jacqui Hutson**

In 2019 we made some good progress with surveying village greens in both counties thanks to the efforts of several recorders. East Sussex has 45 registered Village Greens and 37 of these were allocated to surveyors on request. I have results for 30 of these already and four are in progress. Three greens proved not to be worth surveying for grassland vegetation: one was largely woodland, one a shingle beach and another partially destroyed by the construction of the entrance to a vineyard. So there are eight registered greens still left on the list and in need of surveys.

West Sussex has many more registered greens than East Sussex: 81 in total, and by the end of the year 20 had been allocated to recorders. Results have been received for six of these and another six have not been surveyed because they had little botanical interest. So, for eight greens surveys are still in progress and at the end of the year there were 61 registered greens still wanting recorders to volunteer.

There are big gaps in coverage because not all village greens and recreation grounds have been registered with the County Councils. Some surveyors have recorded some of these: 16 in the east and 6 in the west. It is anybody's guess how many more there might be that would be worth looking at.

Unfortunately very few recorders have included DAFOR values in the Comments column as requested, which means that analysis of the findings is difficult. A simple list of taxa by itself is not an indication of grassland quality. I appreciate that when grass is mown short it is difficult to do but it would be really useful if you can take a moment or two at the end of a recording session to contemplate and try to score at least some of the species you find as:

D	Dominant
A	Abundant
F	Frequent
O	Occasional
R	Rare

Enter the appropriate letter in the Comments column of the Excel Record Card v1.8 (2020). The species of most interest are those that are characteristic of MG5 grassland - the most species-rich grassland on mesotrophic soils. In the National Vegetation Classification system, MG5 grassland is a dicotyledon-rich community and is typical of traditionally managed and grazed haymeadows. Loosely termed 'old meadows' they may not have

ever been ploughed, treated with artificial fertilisers or reseeded.

The most frequent grasses are *Festuca rubra* (Red Fescue), *Cynosurus cristatus* (Crested Dog's-tail) and *Agrostis capillaris* (Common Bent) with another three - *Anthoxanthum odoratum* (Sweet Vernal-grass), *Dactylis glomerata* (Cock's-foot) and *Holcus lanatus* (Yorkshire-fog) - being less frequent. In good examples of this sort of grassland dicotyledons comprise a substantial proportion of the herbage, even up to 95% cover. Species to look out for especially are: *Lotus corniculatus* (Common Bird's-foot-trefoil), *Plantago lanceolata* (Ribwort Plantain), *Trifolium repens* (White Clover), the most frequent components, with *Trifolium pratense* (Red Clover) and *Centaurea nigra* (Common Knapweed) being usually less frequent. Other characteristic species are *Ranunculus acris* (Creeping Buttercup), *R. bulbosus* (Bulbous Buttercup), *Rumex acetosa* (Sorrel), *Hypochaeris radicata* (Common Cat's-ear), *Achillea millefolium* (Yarrow), *Prunella vulgaris* (Selfheal) and *Scorzoneroideis autumnalis* (Autumn Hawkbit). The constituent species vary depending on whether the soil is more or less base-rich.

Other species of interest are, of course, *Chamaemelum nobile* (Chamomile), *Montia fontana* (Blinks), *Ophioglossum vulgatum* (Adder's-tongue) and orchids, and you may come across other interesting plants. While lovely flower-rich grasslands are our main focus, other features such as ancient trees and well-managed ponds are also worth telling us about.

As I write this (at the end of March), I have now received offers from members to survey more sites. On the website you will find updated tables of the recording status of registered greens. There is also a table of the unregistered greens that members have either surveyed already or have offered to do so this year. I will update them as the year progresses but rather than ask our busy webmaster to keep changing them on the website I would ask you to either request updated tables from me if you were thinking of offering to survey any greens or just email me if you had a particular one in mind to discover whether or not it had been allocated already. Current restrictions on activities due to the Coronavirus outbreak will mean that I don't expect much recording will be possible but I look forward to hearing from you and receiving any results at the end of the season.

## **Lemna gibba – look again!**

**Frances Abraham**

Last year Matthew Berry received an interesting email from the Irish botanist Dr Micheline Sheehy Skeffington, who had visited West Sussex in November. She writes:

'I was staying in Chithurst Monastery, near Midhurst and did not aim to record, but recently have been alerted to my misidentification of *Lemna minor* by Richard Lansdown. He tells me that a lot of *L. minor* records (not just mine - even his!) are likely to be *L. gibba*. This latter does not have to be fat (gibbous) it seems. A diagnostic character is the unique reticulations visible when viewed from above, created by large air sacs that can cause the swelling. Where I confidently see these reticulations under a good mike, I now record the plant as *L. gibba*.

So when I saw a pond in the monastery woods green with *Lemna*, I collected some. Quite tiny fronds, I thought they might be *L. minuta*, but on returning home, those reticulations were very visible under the mike. I see on DDb that *L. gibba* has not been recorded for SU82 since Mary Briggs recorded it for Atlas 2000.'

*Lemna gibba* (Fat Duckweed) has indeed been seldom recorded in Sussex in recent years and *The Flora of Sussex* (2018) indicates that it has declined greatly. However, perhaps we should inspect our duckweeds more carefully!

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## **The churchyard project 2019-2020**

**Helen Proctor**

A total of 395 churchyards and cemeteries have now been recorded with two or more visits in different seasons. 42,600 records were collected by the 53 members who took part. These figures exclude a few sites which need further visits.

The site records as files with the visits combined have been forwarded to the SxBRC and entered on Recorder 6. Vernacular names have been added and the indicator species marked. Thanks are due to Helen Dignum for her help with this work. The records are freely available from the SxBRC. Individual files per visit have also been entered on Mapmate as tetrad records for the SxBRC and BSBI.

The SxBRC have agreed to digitise the records obtained for the SBRS's 1980s churchyard survey, enabling comparisons to be made more easily with the recent 21st century records.

### Recording in 2020

While we are not able to record at present, it is just possible that we may be able to do so later in the season. Thank you to the members who agreed at the AGM to record more sites. The list below shows the sites not yet taken.

Bognor Regis cemetery  
Chalcraft cemetery, North Bersted  
Sayers Common, Christchurch  
Broadwater, St. Mary  
Whitehawk, St. Cuthman  
Woodingdean Natural Burial Ground  
Rye, St. Mary the Virgin

If you know of any cemeteries or churchyards, especially in the coastal towns, which may have been overlooked, please check with me first.



West Lavington Churchyard  
Photo: Helen Dignum

Please do continue to send survey forms if you have not already done so. Please include notes on:

1. Habitats and how the grassland is managed. Is it cut frequently or occasionally, cut short with a mower or strimmed? Are the arisings collected?

2. Information, if available, on how the land was previously managed in the newer, Victorian churchyards. Was it arable, market gardening, grazed pasture, or hay meadow? Any anecdotal information would be welcomed.

3. Have Waxcaps been seen in the churchyard or cemetery?

Good quality photographs would be greatly appreciated! If the lie of the land allows, the best composition would include native flowering plants in the foreground with an image of the church in the background. If this is not possible, the church notice board would identify the church. Otherwise, gravestones or another churchyard or cemetery feature is acceptable.

If you are new to electronic recording, please read the notes on the website at:

<https://www.sussexflora.org.uk/get-involved/recording/>

Happy botanising and above all, keep safe and well!

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### Journals free offer

New home wanted for old issues of *BSBI News*, *Watsonia* and the *Wildflower Society Magazine*. I have the following to give away:

#### *BSBI News*

A complete run from issue 48 (April 1988) to 2020, including Year Books back to 1994.

#### *Watsonia*

1958	Vol 4	February and November
1961	Vol 5	April, July and December
1966	Vol 6	Part 4
1972 to 2010 Vols 9-28 Complete set with Indexes		

#### *Wildflower Society magazine*

A complete run from issue Spring 1988 except for Summer 2007 and Spring 2019, though the latter two may be mis-filed and turn up!

I would rather not split the individual collections up, so if you want specific issues you would need to take them all. However, if you just want one set that is fine. Please contact me to arrange collection from my house, or from one of the SBRS indoor meetings.

Mike Shaw

[mshaw@doctors.org.uk](mailto:mshaw@doctors.org.uk)

## Interesting Freshwater and Terrestrial Algal Records

Howard Matcham

In *Adastra* 2018 pp.7-8, I discussed finding the desmid *Cosmarium pericymatium* Norstedt in an ephemeral pool that had filled with rainwater after a geoarchaeological survey had removed topsoil to a depth of approximately 60cm. Returning in late December 2018 I collected a few specimens of the desmid *Penium margaritaceum* Brébisson, and sent them to Chris Carter for photomicrographs: the sample was forwarded by him to David Williamson who remarked that he had found a single zygospore, which David subsequently illustrated.

On 10 February 2019 I revisited the site at Maudlin and collected more material which proved to contain an extraordinary number of individuals with zygospores: as far as I can ascertain by perusing numerous literature, zygospores have not been seen from this species in Britain since mentioned by Ralfs in *British Desmidiaceae* (1848) p.150, [sporangia] in a collection by the author from Dolgelley and a further collection by a Mr. Thwaites, from Bristol. Unfortunately, dates of these collections are not given but obviously before 1848, the date of publication. Therefore it is possible that zygospores of *Penium margaritaceum* were last seen in Britain over 171 years ago.



Xygospore of *Penium margaritaceum*  
Photo: Dr Chris Carter

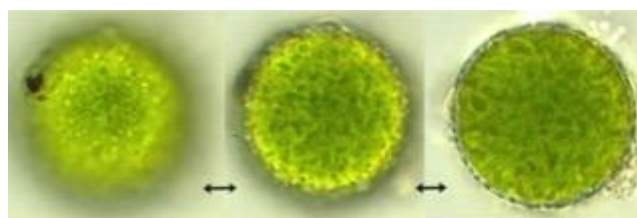
As mentioned above, this species and *Cosmarium pericymatium* were collected from rainwater that had filled shallow depressions left when topsoil had been replaced after a geoarchaeological dig carried out prior to the laying of a sewer. The substrate exposed may derive from local Aldingbourne Raised Beach, "This is a marine formation from between c. 400,000 and c. 200,000 years ago - a complex formation which may relate to many different marine incursions. The sand is likely either intertidal, or more likely marine proper." (E. Blinkhorn, *pers. comm.*). Ephemeral pools are not the normal habitat for the fairly frequent desmid *Penium margaritaceum*, which is usually

found in *Sphagnum* bogs. I thank Dr Ed Blinkhorn, Senior Geoarchaeologist, Archaeology South-East, Portslade, Sussex for explaining to me the geology at the site.

Not having transport we travel to our local supermarket by bus, which can be booked in advance both for pick up at home and return from the supermarket. I had noticed a green covering over damp concrete by the supermarket bus stop where water constantly dripped onto the concrete from the bus shelter roof. The following week I took a sample bottle with me and a small plastic ruler and scraped the algae into the bottle (not a good idea to wander round the supermarket carrying a knife; "I use it to scrape up algae, officer, Heh-Heh. Gulp)."



Under the microscope were numerous filaments of the common alga *Microspora amoena* var. *gracilis*, which is found both in aquatic and terrestrial habitats, and intermingled with it were numerous minute unicellular alga approximately 16-26µm in diameter, covered in spines. I puzzled over this species before eventually identifying it as *Trochiscia hirta*, my identification later confirmed by Professor David John (NHM). The genus in Britain is poorly known and only the four most widespread species are described in *The Freshwater Algal Flora of the British Isles* (John *et al.* 2011). *T. hirta* has not been seen recently as far as I can ascertain, nor has it been imaged previously. I thank Dr Chris Carter for his superb photomicrographs: all four species mentioned can be viewed on [www.algaebase.org](http://www.algaebase.org).



*Trochiscia hirta*  
Photo: Dr Chris Carter

[Ed's note: Howard's discoveries are wonderful examples of how much can be achieved in these times when we are forbidden to travel far from home]

## Recording news

Nevil Hutchinson & Nick Sturt

As some of you may already be aware, there have been changes to the way recording is organised.

### 1. Excel Recording Card (ERC)

A new version of the ERC has been developed by Mike Shaw and is available on the Recording page of the website. The main change is that recorders choose names from a drop-down list rather than inputting initials. If there are more than three recorders '*et al.*' is added after the third name or 'SBRS' selected instead of individuals.

Please, please, please read the updated **Instructions for Excel Record Card** document. A version incorporating the Stace 4 names is planned for the 2021 season.

Much of the work of 'processing' records stems from people not following the instructions laid out for adding species not found on the ERC. In particular the format of *Dates* and *Grid References* are frequently incorrect, even when submitted by very experienced recorders. *Comments* are invariably required for such records and more rather than less detail is helpful.

All new vice-county records require verification by an expert, either within the society or by a BSBI referee. This applies to experts and beginners equally.

### 2. Submission of records – Village Greens & Recreation Grounds

These should be submitted directly to Jacqui Hutson as per her instructions. These can be found on the website.

### 3. Submission of records - Churchyards

These should be submitted directly to Helen Proctor as per her instructions. These can also be found on the website.

### 4. Submission of records - All other records

All other records should be submitted to me ([nevilhutchinson@gmail.com](mailto:nevilhutchinson@gmail.com)) with 'SBRS' in the subject heading of the email. Verification will still occur 'behind the scenes', with input from Matthew Berry, Nick Sturt, Paul Harmes and Mike Shaw. Any queries will be fed back to recorders as necessary.

### 5. Identification queries

These can be sent to [nevilhutchinson@gmail.com](mailto:nevilhutchinson@gmail.com) with 'ID query' in the subject line. I will endeavour to enlist appropriate assistance and respond as quickly as possible.

## A Note on iRecord

At the moment the Society is not officially reviewing records submitted to iRecord. I say officially because Mike Shaw has been reviewing a proportion of *iRecord* records for West Sussex, so some are being verified. An analysis of West Sussex records show that there are a significant number from SBRS members. If possible, we would encourage members to submit using the ERC as we lack the wherewithal to enter *iRecord* records into our database.

At present it is difficult for the Society to know what to do about *iRecord* records. On the one hand, it is a very popular method of recording employed by many people interested in natural history whom we'd love to encourage to take more of an interest in botany; on the other, our database and records-processing methods are not configured for it, there are a lot of unreliable records, and it is incredibly time-consuming to review them all. If anyone has any thoughts about how we might deal with this issue, or thoughts about how we might adapt our own recording to the digital era, please get in touch.

### And finally...

Whilst botanising far afield isn't possible under the current circumstances, members might like to consider the latest garden-based initiatives from the BSBI. A garden wildflower hunt. Enter the link into your browser to find out more: <https://gardenwildflowerhunt.org/app/list/survey/welcome>. And Kevin Widowson is researching *Jacobaea* and *Senecio* species and invites people to contribute here: <https://bsbi.org/ragwort-study-project>.

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## Obituary: Michael (Mike) Hollings

1923-2019

Nick Sturt

Mike Hollings provided the close-up photograph of *Petrorhagia nanteuillii* (Childing Pink) for the cover of the *The Sussex Rare Plant Register of Scarce and Threatened Vascular Plants, Charophytes, Bryophytes and Lichens*, an SBRS project published in 2001. Mike was a world authority on plant pathogens and his capacity for precision shown by the photograph was put to good use in his work at Glasshouse Crops Research Institute at Rustington where he operated – or 'drove' as he playfully described it – the scanning electron microscope. His senior officer there was none other than his wife Olwen (obituary January 2015 Newsletter), whom

outside the office he loved to call 'the smallest botanist in the UK'.

Mike was arguably first and foremost a birder and he played a major role in getting the Sussex Ornithological Society off the ground. His knowledge of wild plants was fostered by Olwen, however, and the two formed a key partnership in the SBRS; in the early years of recording for the Flora they covered a large number of tetrads in the lower Arun valley and the adjacent Downs. Their scientific studies continued well into their retirement. I recall a particularly memorable paper on *Zizania latifolia* (Manchurian Rice-grass) which they found to be well-established in Patching Pond (TQ00X) and took into cultivation. The illustrations included a photograph of the dagger-like rhizomes which enabled the species to spread at a great rate so that Mike was apt to describe this alien as a 'thug'. Mike and Olwen also spotted the return of *Rumex maritimus* (Golden Dock) to Patching Pond following dredging in 2005. In his presentations to the society Mike's technical skill did not always extend to the slide projector which he repeatedly put into reverse when he was describing to members the appearance of *Silene noctiflora* (Night-flowering Catchfly) in an arable field near Whiteways Lodge. Mike was at great pains to describe the precise location of the plants, something which involved first finding a dumped milk crate, but unfortunately much of the subsequent detail was lost to the audience when he kept 'advancing' to the previous slide and sending Olwen into fits of uncontrolled giggles.

Mike and Olwen were intrepid travellers and brought back amazing pictures of their adventures in remote parts. A series of these portrayed the dung of exotic animals and by the time they gave up foreign travel they had amassed a vast pictorial record of examples. They were equally enthusiastic attenders of SBRS field meetings, always impeccably dressed in safari-wear and formidably well-equipped, including tropical-issue water-bottles and secateurs for opening up overgrown rights of way. Mike had been in the RAF in WW2 and his gaze would wander up from the ground when he recognised the engine of a distant Spitfire. He had joined up when technically under age, learned to fly in Canada, and flown many missions with Bomber Command. I was favoured with a glimpse of his flying career when we found ourselves on the end of a runway during a field meeting on Thorney Island: he proceeded to relive for me his forced landing there in dense fog at the controls of a Lancaster.

Olwen died in May 2014 and soon afterwards Mike began to find it difficult to manage the house on the

Ham Manor Estate in Angmering. He spent his declining years in a nursing home, one hopes among a multitude of happy recollections of his birds and plants and travels with Olwen. We have lost a good companion in the field and a great character.

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## Books recommended by the members of the SBRS Committee

### Trevor Lording

H. J. Noltie: *Wild Flowers: a sketchbook by Charles and John Raven*.

D. A. Ratcliffe: *In Search of Nature*.

Or if wanting a break from plants (!) Robin Moore: *In Search of Lost Frogs*.

### Jacqueline Hutson:

W. H. Hudson: *Nature in Downland*

Richard Jefferies: *Wild Life in a Southern County*

### Nevil Hutchinson:

Mine would be the same as Jacqui's, with the caveat that one really ought to read Gilbert White before either of them and *The Peregrine* by J A Baker afterwards!

### Helen Proctor:

Martyn Baguley: *Wildwood Legacy, What our native trees did for us*

Roy Moxham: *The Great Hedge of India*

Tom Hart-dyke and Paul Winder: *The Cloud Garden*

### Brad Scott:

Andrea Wulf: *The Invention of Nature: The Adventures of Alexander von Humboldt*

Fredrik Sjöberg: *The Fly Trap: A Book about Summer, Islands and the Freedom of Limits*

David Beerling: *The Emerald Planet: How plants changed Earth's history*

Jonathan Silvertown: *Demons in Eden: The Paradox of Plant Diversity*.

### Peter Smith:

Dave Goulson: *The Garden Jungle or Gardening to save the Planet*

Peter Wohlleben: *The Hidden Life of Trees*.

### Nick Sturt:

Virtually anything by Richard Mabey, but I recently enjoyed *Weeds* (2010).

Wilfrid Blunt: *The Compleat Naturalist: A Life of Linnaeus*

John Clare: *The Shepherd's Calendar* or any collection of his poems.

**Frances Abraham:**

Charles Darwin: *The Voyage of the Beagle*

Richard Fortey: *The Wood for the Trees*

Karl Sabbagh: *A Rum Affair: a true story of botanical fraud*

Niko Tinbergen: *Curious Naturalists*

**David Streeter:**

Richard Fortey: *Dry Store Room No.1 - The Secret Life of the Natural History Museum* (great fun and very revealing)

Oliver Rackham: *The Ash Tree* (just 180 pages of classic Rackham stimulated by the *Chalara* Ash

Disease and published just before he died in 2015); while on Rackham, anyone not familiar with his classic *The History of the Countryside* might like to take the opportunity of making its acquaintance now (although rather out of date in some details it is still probably by far the best introduction to the subject). For a really enjoyable piece of pure British botanical twitching if you didn't read Peter Marren's *Chasing the Ghost* when it came out a couple of years ago, catch up with it now; in an autocratic society David Beerling's *The Emerald Planet* would be required reading!

## Investigations into the response of glassworts to increased levels of salinity

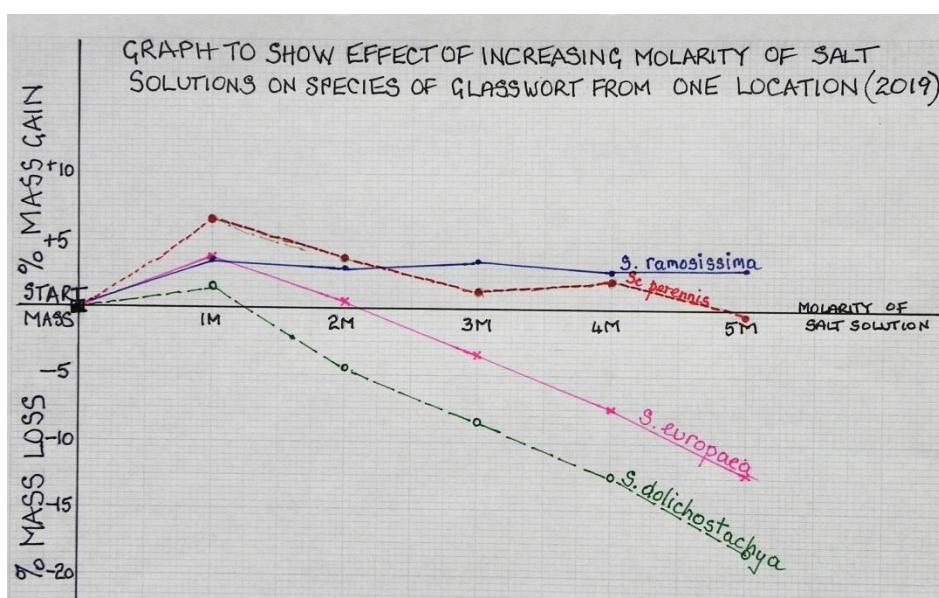
### Elisabeth Sturt

In the Autumn of 2018 I carried out a series of experiments on several different species of Glassworts from a site near Bosham in Chichester Harbour to investigate their resistance to different concentrations of salinity by measuring changes in their mass. The strategy involved separate samples of the chosen species placed in a wide range of salinities for the same period of time, their change in mass being recorded and turned into percentage change plus or minus. The graph produced from these results, whilst not entirely smooth, showed that there was a distinct difference in the resistance shown by those species usually to be found in different zones of the shore: *Sarcocornia perennis* and *Salicornia ramosissima* were seen to be far more resistant than *S. dolichostachya* and *S. europaea*.

The 2018 method adopted by which the specimens were being introduced abruptly to the solution, which in extremes could be as much as 5 molar (5M),

obviously had some drawbacks so in 2019 when the Glassworts reappeared I repeated the investigation using an improved technique. To my delight the same trends were seen but a much improved graph of the results was obtained.

In the 2019 experiment single, larger samples of the species (including their roots) were used and they were moved gradually through the range of concentrations starting at 1M and progressing at 8 hour intervals through to 5M. All the specimens shared the same solution in a large washing-up bowl and the solution strength was increased each time by the addition of an appropriate mass of salt. Specimens were weighed wet with only gentle blotting to prevent loss of material. Using a large sample of each species minimised the proportion of experimental error incurred during the blotting and weighing.



The graph shows very clearly a distinct difference in the responses of the four species of Glasswort. *Sarcocornia perennis* and *Salicornia ramosissima* both gained mass and maintained it throughout, whereas *S. europaea* and *S. dolichostachya* after an initial gain of mass lost mass fairly quickly and continued to do so. The initial gain in mass by all species is interesting. Normal seawater is approximately 0.6M so even a 1M solution is abnormally strong and most plant cells would lose mass in that situation due to loss of water by osmosis. An increase in mass suggests either that the specimens actively took in salt to enable them to withstand the stress and to avoid losing water from their cells, or that they were already hypertonic to 1M and took on water by osmosis. It seems that as the two resistant species continued actively preventing themselves from losing water it is likely that the former represents the best reason for the initial gain in mass. It was noticeable in handling the two resistant specimens that they were not losing turgidity even by the extreme 5M point. In contrast *S. europaea* and *S. dolichostachya*, which both quickly lost mass, were becoming more flaccid during the course of the experiment.

It is tempting to suggest that these contrasting responses reflect the relative positions of these species on the shore as *Sarcocornia perennis* and

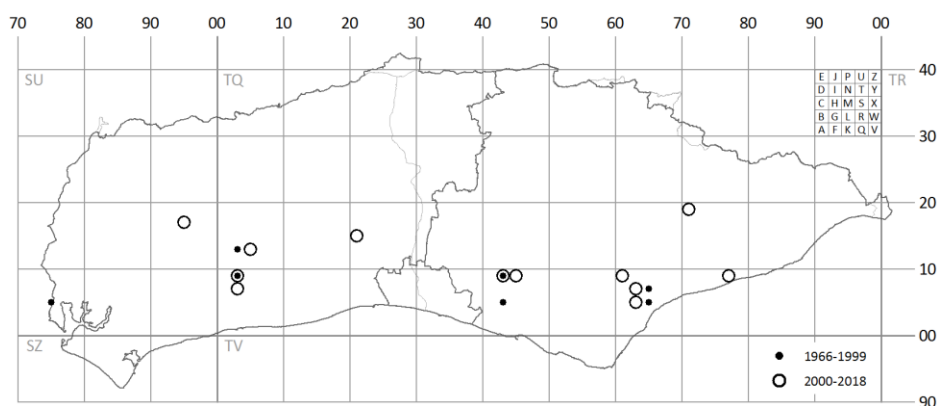
*Salicornia ramosissima* are normally found higher up the shore than the other two. This will result in them receiving longer periods of exposure to the drying effect of the air and the sun before the sea returns, and at the neap tides they could even be exposed for two or three days. Being normally found further down the shore the other two species are more likely to be submerged in sea water twice every 24 hours. Of course it will not only be the aerial parts of the plant that suffer stress because once exposed the effects of the air and temperature will be to cause water to evaporate from the mud and thus the soil solution will become more concentrated; this will have the effect of making it difficult for the roots to absorb water, and thus the plants by actively absorbing minerals, could attempt to maintain a superior osmotic potential and prevent water loss.

[Note: A mole is the SI unit of measurement used to measure the number of molecules of a substance. Molarity is a unit of concentration used in chemistry, measuring the number of moles of a solute per litre of solution. A one molar solution (1M) means there is one mole of substance (in this case salt) per one litre of solute (in this case water), a two molar solution (2M) being two moles of substance per litre, ie twice as concentrated.]

## Stoneworts of Sussex: correction

Frances Abraham

If you have acquired a copy of *Stoneworts of Sussex*, thank you, and I hope that when we are released into the countryside again it will encourage you to take up your grapnel, hunt for stoneworts, and let me know what you find. Meanwhile, here is an embarrassed confession and apology: the lower map on page 17 is wrong. Here is a copy of the correct map for *Chara vulgaris* var. *papillata*:



## Website & social media

Nevil Hutchinson

The website is not only a fantastic resource for members, it is also the public face of the society. Practically everyone curious about botany in Sussex wanting to find out more is likely to search online and encounter [www.sussexflora.org.uk](http://www.sussexflora.org.uk).

It is important that the website reflects the Society and remains accurate. We can all help by visiting it regularly. Members are encouraged to peruse the nooks and crannies of the site to check for inaccuracies or anachronisms. Any broken links or factual errors should be flagged to Brad via the website email: [webmaster@sussexflora.org.uk](mailto:webmaster@sussexflora.org.uk).

Equally, any suggestions for new material, whether that be a short report of an interesting find or a longer piece about something you're passionate about, are welcomed. Links to online resources, whether other websites or documents that you've created yourself, are useful to everyone.

Recently we have started a regular *Plant of the Week* feature. This focuses on relatively common plants and is aimed primarily at people new to botany in the hope that their interest may be sufficiently piqued to join up. There is usually also something of interest to more experienced botanists, with links to journal articles or historical information.

The society also has an increasing presence on social media. The Facebook group, which was set up by Brad in 2016, now has 132 members. Many people post photos and share their botanical experiences on this forum. It is a 'private' group, so you can only join it by applying and having your application approved by Brad. Everything posted can only be seen by other members.

There is also a Flickr group. This too was started by Brad and is the source of the photos that appear on the front page of the website. What this means is that people who use Flickr, an online photography site, can apply to join the group and then share any photos of interest to it. Anyone thinking of doing so should read the instructions of how to do so carefully as, besides the labelling format, the licensing needs to be set correctly and photos designated as 'Public'. There are only nine members currently so if any members are already using Flickr we'd encourage you to join and share some Sussex plant pictures.

At the end of last year Nevil started Twitter and Instagram accounts (both @sussex\_botany) to complete our online presence across the common social media platforms. We currently have 509

followers on Twitter after 434 tweets and 107 on Instagram after 30 posts.

If anyone would like to get more involved with this side of the society then please get in touch with Brad or Nevil, otherwise please join in with following the society as best you can.

## New and interesting records 2019

Selected by Nick Sturt and Mathew Berry

### West Sussex VC13

Species	Location	Tetrad	Status	Notes	Rec.
<i>Cardamine occulta</i>	Storrington	TQ01S	C	Conf. Tim Rich. Popped up in Sue's garden	DES
<i>Cephalanthera longifolia</i>	Singleton	SU81R	N	Living Museum, apparently known for some years	HMD
<i>Chamaemelum nobile</i>	Lindfield Common	TQ32M	N	Recorded during a survey for the Village Green project	MPIL
<i>Cuscuta europaea</i>	Stopham	TQ01J	N	A notable re-find.	DNE, JOA, DES
<i>Dipsacus laciniatus</i>	Littlehampton	TQ00G	C	3 plants, River Road. Probably from birdseed	DMD
<i>Eryngium maritimum</i>	Elmer	SU90V	N	A good stand later admired by local SBRS group	Clive Chatters
<i>Euphorbia prostrata</i>	Fontwell	SU90N	C	On gravel, Denmans Gardens, 1 <sup>st</sup> W Sx record	MMS
<i>Euphrasia tetraquetra</i>	Church Norton	SZ89S	N	Gravelly bank. First discovered by Ian and Gill Twyford, det. Chris Metherell	DTS, NJS
<i>Gnaphalium luteo-album</i>	Elmer	SU90V	C	Here and there in residential Elmer, sometimes in quantity	SBRS
<i>Gnaphalium sylvaticum</i>	West Dean Woods	SU81M	N	Continues to appear sparingly after coppicing	West Dean Group
<i>Hypopitys monotropa</i>	West Harting Down	SU71T	N	A few plants under Beech	N&ES
<i>Juncus compressus</i>	Heyshott	SU81Z	N	Known here to Francis Rose	SBRS
<i>Oenanthe pimpinelloides</i>	Wiston	TQ11N	U	Not necessarily native, see below	DBA
<i>Oenanthe pimpinelloides</i>	Westbourne	SU70P	U	Edge of cricket field, perhaps introduced with hay for horses in adjacent field	SBRS
<i>Pittosporum tenuifolium</i>	Walberton	SU90S	E	3 seedlings near parent tree. Very rarely reported.	DMD
<i>Poa infirma</i>	Selsey	SZ89R	N	An easily overlooked early species	DNE, JOA, DES
<i>Polypodium cambricum</i>	Amberley	TQ01G	N	Garden wall. Long known in the village but good to have a recent record	FA
<i>Potentilla recta</i>	Pagham	SZ89Y	E	4x4m patch on shingle	MMS
<i>Valerianella dentata</i>	Charlton	SU81W	N	Fallow arable. Known here for several years.	FA

### East Sussex VC14

Species	Location	Tetrad	Status	Notes	Rec.
<i>Cuscuta campestris</i>	Brede	TQ81J	C	First E. Sussex record	Tim Waters
<i>Diplotaxis erucoides</i>	Hastings	TQ81A	C	Possibly increasing	HBG
<i>Eragrostis curvula</i>	Eastbourne	TV69E	C	Second Sussex record?	MBE

<i>Erodium trifolium</i>	Mount Pleasant	TQ40L	C	First Sussex record?	MBE
<i>Eryngium amethystinum</i>	Hastings	TQ81F	C	Rare Sussex alien	JVC
<i>Hypericum x inodorum</i>	Hastings Old Town	TQ80J	C	Rare Sussex alien	JAR
<i>Isotoma axillaris</i>	Brighton	TQ30G/L	C	First Sussex record?	AS
<i>Najas marina</i>	Darwell Reservoir	TQ72A	U	Second Sussex record, first for E. Sussex. Conf. Tim Pankhurst.	Kathy Friend
<i>Neotinea ustulata</i>	Ellman's Coombe	TQ40N	N	New tetrad record	Dave Harris/Sue Cross
<i>Oryzopsis miliacea</i>	Eastbourne	TV59Z	E	First Sussex record?	MBE
<i>Polypogon monspeliensis x P. viridis</i>	Newhaven	TQ40K	C	Interspecific hybrid apparently new to Britain. Found 2018, confirmed in 2019.	ACL/MBE
<i>Ranunculus parviflorus</i>	Cow Wish	TQ40M	N	New tetrad record	Dave Harris/Sue Cross
<i>Rostraria cristata</i>	Winchelsea Beach	TQ91I	E	First Sussex record?	HBG
<i>Rumex cristatus</i>	Eastbourne	TQ60F	E	New tetrad record	MBE
<i>Rumex x schulzei</i>	Bewl Water	TQ63V	N	Under-recorded hybrid	SBRS
<i>Salix x holosericea</i>	Bewl Water	TQ63V	U	Under-recorded hybrid	SBRS
<i>Tephrosia integrifolia</i>	Cradle Valley	TQ50A	N	Important refind	JMR/CLB
<i>Verbena hastata</i>	Newhaven	TQ40K	C	First Sussex record?	MBE/JMR

### Recorders' initials

ACL	Alan Leslie	HMD	Helen Dignum
AS	Tony Spiers	JAR	Jacqueline Rose
CLB	Christopher Brewer	JMR	Janice Reynolds
DBA	David Bangs	JOA	Jill Oakley
DES	Sue Denness	JVC	Judy Clark
DMD	David Donovan	MBE	Matthew Berry
DNE	Dawn Nelson	MMS	Mike Shaw
DTS	David Streeter	MPIL	Margaret Pilkington
FA	Frances Abraham	N&ES	Nick & Elisabeth Sturt
HBG	Hastings Botany Group	NJS	Nick Sturt

## STOP PRESS – VIOLETS!

The Chairman's Message on page 2 mentions Peter Smith's recent find of *Viola canina* (Heath Dog-violet) on the cricket field at Selmeston. Here is his photo:



And, also within the current restrictions for exercise, Jacqui Hutson has found thirteen plants of *Viola lactea* (Pale Dog-violet) on Pound Common at Chailey (det. Paul Harmes, conf. Mike Hardman). Chailey is now the species' only known site in Sussex, and it had not been seen there for some years, despite searches by several botanists. Photo: Paul Harmes.

