

# Sussex Botanical Recording Society

## Newsletter

No.61

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

January 2006

### President's Message

At the autumn meeting of the New Sussex Flora Committee, very satisfactory progress was reported, with large numbers of records sent in this year. Those members who had participated in the collection of the records were warmly thanked. As we go to press, the total to date for the new Flora is 108,800 records. Congratulations to all the recorders – and to the VC Recorders who have entered all these. We look forward to another bumper year in 2006?

A particularly interesting record in 2005 was spotted by Ady Symon on an SBRS field meeting on 30th July on Thorney Island. The meeting was led by Anne de Potier of the Chichester Harbour Conservancy, who had arranged access to this MOD property. The plant was *Euphorbia portlandica*, known from the southwestern and western coasts of the British Isles as far north as southern Scotland. But until 1949 it was known only as far east as Hampshire, when in that year Alison Ross (Ceres Esplan) discovered a small colony on East Head. This was the most easterly record in Britain, until in November 1963 in a wild storm the sea broke through to the Lagoon, sweeping away the *E. portlandica* plants. They had not been seen in Sussex since, until last year's sighting – so now once again the most easterly site in Britain for *E. portlandica* is in West Sussex – after 42 years! The SBRS sent an exhibit on this to the BSBI Annual Exhibition Meeting in London, and it will be on display again at our AGM in March for you all to see.

Mary Briggs

**<http://www.sussexflora.org.uk>**

This is the address of the SBRS website. If you have not already visited it, do so if you can - it is simple to find your way around it and it is full of Society news and useful information. Best of all for those who are interested in the progress of recording for the New Flora - there is a regularly updated map showing how many species have been recorded from the year 2000 onwards for each tetrad, and you can print out species lists for any tetrad. All future Newsletters will have this address included between the issue No and Date on the title page.

### Secretary's Note

#### Dates for your Diary

##### **Saturday 11<sup>th</sup> March 2006**

The Annual General Meeting will be held at 2.00 p.m. at Staplefield Village Hall, followed by a showing of members' slides and finishing with tea and biscuits. The hall will be available from 1.30 p.m. Nominations for new committee members or officers, agreed by the nominee, should be sent to the Secretary a week before the A.G.M.

##### **Saturday 4<sup>th</sup> November 2006**

The Autumn Get-together will again be held at Staplefield Village Hall. The doors will be open from 10.00 a.m. and the meeting will start at 10.30 a.m. There will be an illustrated talk, reports of field meetings and interesting records. Please remember to bring a packed lunch; tea or coffee and biscuits will be available. Members are invited to bring books and plants for sale, any items of interest or specimens for display, and slides to show in the afternoon.

Rita Hemsley

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## New Flora of Sussex - So far, so good.

Paul Harmes, Alan Knapp, Mary Briggs & Arthur Hoare

It is now nearly a year since we started the main recording for the new Flora of Sussex and it has been a good year from which three things stand out:

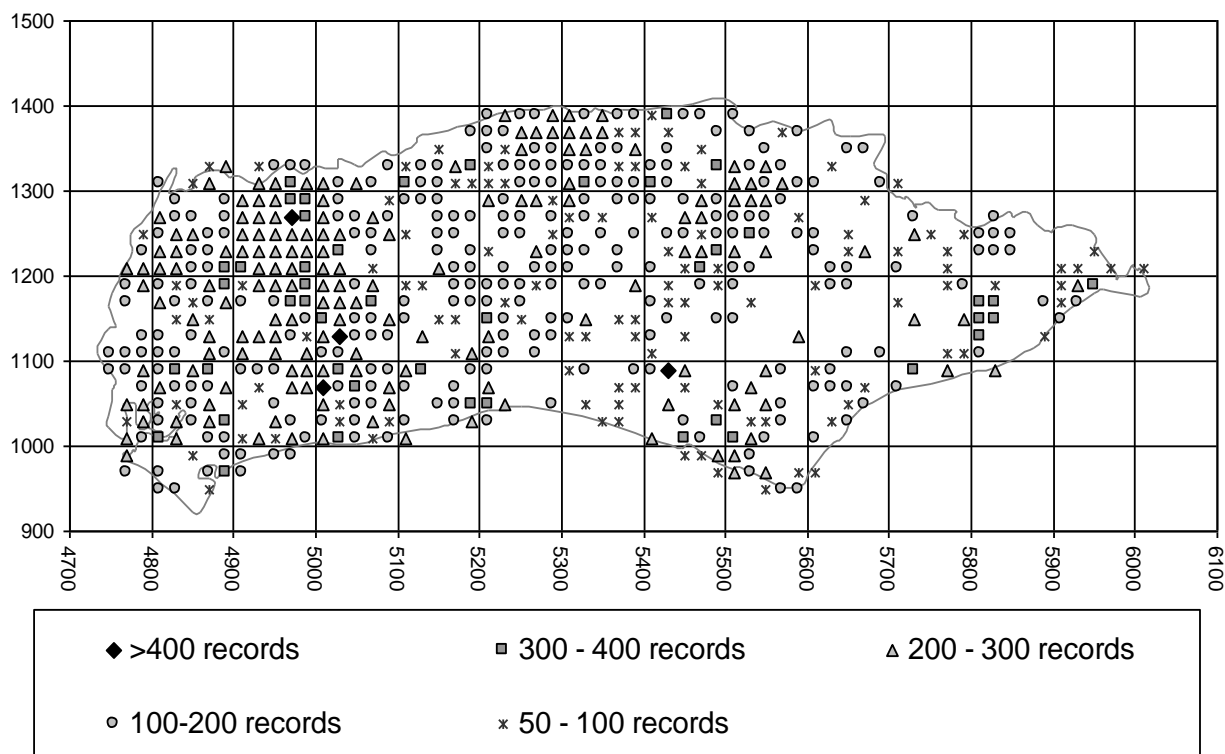
First of all a wide range of SBRS members are contributing. We have records from a number of people who contributed to the recording of the Sussex Plant Atlas and also from several people who have only been members for a year or two. We would like to thank all those who have contributed so far and to encourage other members to get involved; even if you can only send in a small number of records, it all helps.

Secondly, we have had a number of excellent new records or refinds of old records in 2005, several of which can be directly attributed to the impetus provided by the New Flora recording. Examples are the discovery of *Sagina subulata* in Flexham Park,

*Euphorbia portlandica* from Thorney Island, *Eleocharis uniglumis* in a pond on Seaford Head, a single spike of *Himantoglossum hircinum* on Beachy Head and a possibly native site for *Mentha pulegium* east of Bolney. Some species thought to have gone have been re-discovered in their original sites, for example *Calamagrostis canescens* in the grounds of Herstmonceux Castle. We also have the discovery of another site for the very rare *Filago lutescens* in a sandy field not far from Midhurst.

Thirdly, and perhaps most important, we are on track in terms of numbers of records. The status for recorded tetrads is shown in the map below (an up-to-date version of which is always available on our web site). We already have **108,800** records, of which just over 72,000 are from 2005, and we still have a significant number to enter.

Post 2000 records - totals as of 21-12-2005



**IMPORTANT: If you still have 2005 records which you have not sent to Paul or Alan please do so as soon as you possibly can**

Following our experiences this year we have some requests regarding record submissions which are given in detail on a sheet included with this Newsletter (and which will be available for download from the website if you lose it). We would ask all recorders to please read this carefully and take note of the requests as their purpose is to make the whole process run more

smoothly and, most important, to improve the accuracy of the information which will go into the Flora. One further request - if you can manage to send in records in one of our standard computer formats please do so - these records are far easier to deal with than those sent on cards or in non-standard computer formats (which, surprisingly, can take more time to deal with than entering data

from a card). If you would like advice on this please contact Alan Knapp.

A brief comment about 2006 recording - we will say a little more at the AGM and publish some notes in the spring newsletter. The main thing is to keep going and, ideally, do one or both of the following:

- Take a look at the map above and try to visit any tetrads which have few (<100) or no records.
- If you are recording specific tetrads try to visit at different times of the year and/or different parts of the tetrad.

However, please remember that all records are welcome and also, even if you think someone else may have sent in records for a site, send in yours as well there will almost certainly be some different species.

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## Help us to remove erroneous records

by Alan Knapp

In the process of collecting and entering records for the New Flora it is an unfortunate fact that, no matter how careful we all are it is 100% certain that some errors will creep in at some point. Some records will be left out and some incorrect records will creep in.

You can help us correct those errors by taking a look at the species lists for any tetrads where you have done a significant amount of recording and letting us know if you see any of the following:

- Species you recorded which are not on the list
- Species which you would not expect to find in that area. Some of these may be correct but others will be errors - for example in one tetrad we managed to get a record for *Phyllodoce caerulea*, an RDB species known from only one site in the Scottish Highlands - it has now been removed!

For those of you with internet access, these tetrad species lists can be downloaded from our website. If anyone else would like such a list please contact Alan Knapp.

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## Sending record cards

by Alan Knapp

If you are sending batches of record cards or specimens of significant weight, please check the weight and size carefully and put on the correct stamps, as we have had several cases this year where excess postage (currently the extra postage plus a £1.00 handling charge) has been charged on arrival. The limit for the standard rate is lower than you might think, and it is no use just putting first class stamps on – you need the right amount.

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## Golden Rod

by Nick Sturt

When I put the question to him, he wasn't sure: exactly how long had he been organising evening field meetings for the Chichester cell of the SBRS? I would guess that Rod has been arranging them for at least 15 years, and in this time a great deal of valuable work has been done, frequently on land not normally open to the botanical public. Did I say work? These meetings are not labour, they are relaxing occasions which have become part of the joy of Summer in western vc13. In latter years, it is true, Rod has gained something of a reputation for attracting rain – for example on a trip to West Stoke in 2004 the company huddled round in a downpour only to see the recording card biodegrade before their eyes. During the 2005 series only Stansted Forest proved damp, and even then we managed to get a very good tally of woodland plants before bad light stopped play. At Wildham Wood near Stoughton we also suffered from a dull evening, but we had a splendid example of *Platanthera chlorantha* (Greater Butterfly-orchid) for compensation, and some unexpected *Carex pallescens* (Pale Sedge) by a forestry track. The proceedings in Selhurst Park, Goodwood, were better illuminated and again a creditable tetrad total was amassed. The last meeting saw us down on the saltmarsh at Apuldrum enjoying such Chichester Harbour specialities as *Limonium humile* (Lax-flowered Sea-lavender) and *Triglochin maritimum* (Sea Arrowgrass). Apart from celebrating Chichester's 'Golden Rod', it is to be hoped that these few

words might encourage members clustered elsewhere in the two vice counties to band together for similar evenings of pleasure and profit.

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## **Obituary: Frank Penfold**

by Mary Briggs

Sadly, as some of you will have heard, Frank Penfold died in November 2005. Born in Arundel, Frank lived his long life of 92 years in Sussex, and he was an outstanding figure in the conservation of wildlife in the Counties. After schooling at Midhurst Grammar School and an engineering apprenticeship, Frank joined his father's business in Arundel supplying agricultural machinery. This gave him a very long association with farmers and the countryside – it was Frank who introduced combine harvesters to Sussex in the 1930s. He became well-known for his active championship of high grade habitats and for his local knowledge of sites of plants of special interest. At his last home in Burpham he found morels on the lawn when moving in, and named the house after them. In recent years he was known for his green mowing regime which allowed a wonderful wild flower meadow to grow, with cowslips and pyramidal orchids.

Frank was a founder member of the Sussex Trust for Nature Conservation, now the Sussex Wildlife Trust, and was its Chairman for 25 years. He was also a founder member of the Sussex Flora Society Committee, and its first Chairman from 1966-72. This was the Society which published the Sussex Plant Atlas in 1980, and which became the SBRS. Frank was elected an Honorary Member. More recently, he launched the Sussex Black Poplar Project, surveying all the Sussex specimens and successfully piloting a programme for their conservation by the Sussex Wildlife Trust and the Royal Botanic Garden at Wakehurst. Frank will be sadly missed in Sussex.

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## **The Chi Nats Record Chichester**

by Nick Sturt

It was Mike Goodchild who realised that almost 20 years had passed since George Forster led a series of plant walks around the city for the

Chichester Natural History Society. He proceeded to badger – gently – the committee of that esteemed body and soon the desired result was achieved in the form of four evening meetings: all to start from the Canal Basin but each to sample a different tetrad, with a view to producing data for the New Flora. Interesting in its own right, the project gained additional meaning from reference back to the 1986 meetings, including some differences in the urban environment. Since George's day, halophytes have been beetling down our trunk roads: this was exemplified by a dusty specimen of *Puccinellia rupestris* (Stiff Saltmarsh-grass) by the carriageway of the A27. One or two dilapidated corners of the city have been developed, for example the Market is now the Market Car-park, and the old cattle sheds, which used to accommodate a few tattered ferns, are no more; but in this area, in a length of dislocated gutter, a luxuriant growth of *Saxifraga tridactylites* (Rue-leaved Saxifrage) was flourishing. New finds were made, such as some large and fruitful bushes of *Atropa belladonna* (Deadly Nightshade) in the car-park behind Marks and Spencer and tufts of *Ceterach officinale* (Rusty-back Fern) on an old brick wall in suburban Donnington. But what brought back the memories for the veterans of the earlier campaign (Mike, Judy and the author) were the species which George had pronounced upon in his measured Dundee tones, and none more special than his *Capsella rubra* (Pink Shepherd's-purse), still eking out a meagre existence at the western end of Canal Road. Our thanks are due to Mike Perry, Chairman of the Chi Nats, as well as to the local legend that is Mike Goodchild – who unexpectedly found himself appointed leader on three out of the four evenings.

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## **FIELD MEETINGS 2005: REPORTS**

### **West Sussex VC13**

by Alan Knapp & Nick Sturt

### **Southwater Country Park 2 April (AGK)**

Our first meeting of 2005, organised very effectively by Arthur Hoare, was something of an experiment as it combined an introduction to tetrad recording, covering four different tetrads (TQ12M,N,S & T), with a chance to see how much overlap in recorded species there was between different groups recording the same general area. A large group of over 25 members met on a bright, sunny day and was soon divided

into four smaller groups, each going off to a different tetrad. At lunch time we returned to the car park and, after lunch, each group went off to a different tetrad. We recorded an average of 133 species per tetrad, a very good number considering the early date. Interesting finds included *Ranunculus auricomus* (Wood Goldilocks), *Orchis mascula* (Early Purple-orchid), and *Lathraea squamaria* (Toothwort) in 2 tetrads, with one fine colony on a roadside bank less than 100m from the starting point. The discovery of a small colony of *Serratula tinctoria* (Saw-wort), was especially interesting as it is now very rare in West Sussex. Another pleasing find by a sharp-eyed recorder was a small patch of *Montia fontana* (Blinks) on a damp grassy roadside verge. This species is probably quite widespread but is only visible early in the season and even then is very easy to miss.

Comparing results from the various groups showed just what a difficult business recording can be. Of the species found in a given tetrad, on average **only 51%** were recorded by both groups. The results were very similar for all 4 tetrads, varying between 47% and 53%. This means that about half of the species recorded by each group were not recorded by the other group who visited a very similar area. Although this sounds surprising it is completely in line with other similar studies of recording done in the past and emphasises the value of having more than one recorder or group of recorders visiting a site.

### **The Mens, Saturday 21 May**

(NS)

The propitious conjunction of leader and venue proved irresistible and so it was that 31 eager botanists were soon strung out in a loose concatenation in the damp greenness of The Mens. With Frances out in front we gathered a pile of ancient woodland indicator species, while knots behind her studied *Sorbus torminalis* (Wild Service-tree) and *Crataegus* in variety or pondered over *Carex sylvatica* (Wood-sedge) and *C. strigosa* (Thin-spiked Wood-sedge) in close proximity; and Arthur and Beryl and others gave little master-classes... The pleasant sensation of being lost was only heightened when our leader declared that she was not entirely sure of our precise location! The primitive survival instinct, however, soon brought us to Badlands Meadows for lunch. Frances had arranged treats in the afternoon session. We waded through swathes of a square-stemmed *Hypericum* which turned out to be *H. maculatum* (CTW alerted us to half-clasping leaf-bases) and gazed in awe upon the only two patches in Southern England of

*Alchemilla filicaulis* subsp. *vestita* (Lady's-mantle); for sedge fiends there was a good stand of *Carex pallescens* (Pale Sedge), and the orchidaceous among us duly adored the leaves of *Platanthera chlorantha* (Greater Butterfly-orchid). I can only speak for myself, but when we returned from an unexpected direction to the cars, any insidious doubts about Frances' sense of direction were instantly banished.

### **Maysleith, Saturday 18 June**

(NS)

Having processed at dignified pace behind Bruce's car from the farmyard rendezvous, we found ourselves deep in rolling, unimproved, acid grassland alep with grasshoppers. Delights such as *Dactylorhiza praetermissa* (Southern Marsh-orchid) and *Filago vulgaris* ('Common' Cudweed) were almost underfoot as we climbed out of our vehicles. The slope we worked interspersed dry areas of bank supporting *Filago* and *Trifolium arvense* (Hare's-foot Clover), with muddy seepages harbouring a contrasting flora. Sedge highlight of the day was *Carex laevigata* (Smooth-stalked Sedge), which flourished wherever conditions were damp enough. We very happily covered little ground in the morning and began the afternoon by drifting along the bank in the opposite direction, where Bruce warned us that the profusion of Marsh-orchids could be dangerously exciting. It was. Then for the last part of the meeting we moved on to Iping Marsh, where we inspected some pleasantly soggy fields and studied *Dactylorhiza* species including *D. maculata* (Heath Spotted-orchid) and what looked to be *D. x grandis*. Our pleasure was somewhat ruined, however, by one irritating voice speculating about *D. x hallii*. To which query there was at length an answer but not, alas, one couched in the language of academe. From this skeletal account of the day, the member not privileged to have been one of the thirteen present will gather that this was another of Bruce's specials.

### **Thorney, Saturday 30 July**

(NS)

A strange fact: in the haul of more than 200 species bagged for the incomplete SU70Q tetrad, conspicuous only by their absence were the allegedly ubiquitous *Bellis perennis* (Daisy) and *Taraxacum* agg. (Dandelion). But how to do justice to this remarkable day in the field? The sunshine, blue sea and floristic richness of the maritime vascular flora were intoxicating. The few of those attending who had set foot on the sand of Pilsey before confirmed that the dune area had expanded as we admired quantities of

*Calystegia soldanella* (Sea Bindweed), *Crithmum maritimum* (Rock Samphire) and *Carex extensa* (Long-bracted Sedge). The Evening Primrose scattered about was determined as *Oenothera cambrica*, known also on neighbouring East Head. These and many other delights detained us until it was time for lunch. We then set off westwards along the footpath around the edge of the peninsula, steadily gathering further plant records including *Lotus glaber* (Narrow-leaved Bird's-foot-trefoil), *Oenanthe pimpinelloides* (Corky-fruited Water-dropwort) and *Carex distans* (Distant Sedge). The find of the day was made by Ady – and what a find! A storm in 1963 swept off nearby East Head the only colony of *Euphorbia portlandica* (Portland Spurge) in the county: forty-two years later its prettily garish coral-pink stems have been seen again in the county. Before they dispersed, the 27 members were justifiably lavish in their praise of Anne for organising a truly wonderful day.

### **Verdley Wood, 9 October** (NS)

The hardy members of the society do not stop recording at the first mist of Autumn, especially when there is a new Flora to be produced. The sun shone all day on the hybrid proceedings - the general tetrad recording of vascular plant species harmoniously joined with the sampling of the bryological flora. The first focus was SU82Y, a tetrad so far untroubled by the recording card, and we started in the lane and cleared woodland by the cars. In October the recognition of species can be rather like the work of a forensic scientist, as patient examination eventually decodes skeletal pieces of stem and limp portions of green material. Flowering *Sedum telephium* (Orpine) offered no such challenge and was the highlight here. A pleasantly early lunch in the woods near the remains of Verdley Castle, and Bruce diverted the company with the tale of how the last Brown Bear in England had perished on a hunting expedition launched from that very spot. In the afternoon the expertise of Rod and Howard was to the fore as we headed for the SSSI and its treasures. The mossy duo were delighted with such gems as *Pohlia wahlenbergia* and *Philonotis arnelliae*, but a steep scarp slope produced even better – *Bazzania trilobata*, a representative of the Atlantic element in our native flora. While we admired the tiny three-lobed leaf tips of the latter and also the distinctive capsules of *Tetraphis pellucida*, Frances and Bruce waded through the sea of *Dryopteris dilatata* Broad Buckler-fern) lapping at the trunks of the chestnut coppice in the quest for *Dryopteris aemula* (Hay-scented Buckler-fern)... alas, not to be revealed on this

occasion. We were by now in SU92C which already had a tally of 214 vascular plant species. We were able to add 14 to these, Judy's hawk-eyed detection of *Isolepis setacea* (Bristle Club-rush) taking the prize. Back at the cars, all 11 members agreed that this had been a highly successful day. As a postscript, Howard telephoned later with the news that another *Pohlia* species turned out to be *P. drummondii*, only the second county record, and not seen since 1950 when Alan Crundwell and Ted Wallace found it in North Park Copse – no great distance away.

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## **FIELD MEETINGS 2005: REPORTS**

### **East Sussex VC14**

by Pat Donovan, John Hicks, Alan Knapp,  
Rachel Nicholson, Paul Harmes and  
Helen Proctor

### **Powdermill Wood, 7 May** (JH)

This was a tetrad survey, including two nature reserves, both managed by John Hicks. John led the meeting, so that we had full access to all parts of Powdermill Wood. The Powdermill Stream with its floodplain runs through the middle of the wood, providing a wet habitat with high humidity.

We found seven species of fern, including *Athyrium filix-femina* (Lady Fern), *Blechnum spicant* (Hard Fern), *Dryopteris affinis* ssp. *affinis* (Scaly Male-fern) and *D. carthusiana* (Narrow Buckler-fern). On the open areas we found *Hypericum humifusum* (Trailing St John's-wort) and *Aphanes arvensis* agg. (Parsley-piert). There were large swathes of *Chrysosplenium oppositifolium* (Opposite-leaved Golden-saxifrage) and *Ranunculus ficaria* ssp. *ficaria* (Lesser Celandine), with patches of *R. ficaria* ssp. *bulbifera*. In the water we found *Callitriche obtusangula* (Blunt-fruited Water-starwort) and where the canopy was broken there were scattered plants of *Euphorbia amygdaloides* (Wood Spurge).

We then moved eastwards to the second reserve, which had *Hypericum pulchrum* (Slender St John's-wort). In the centre of the reserve there was shallow water with a large area of *Carex paniculata* (Greater Tussock-sedge) with *Lysimachia vulgaris* (Yellow Loosestrife), *Alisma plantago-aquatica* (Water-plantain) and *Iris pseudacorus* (Yellow Iris). We crossed the boardwalk and came back to the dry end, where

there was a large colony of *Listera ovata* (Common Twayblade). In the afternoon we walked back along the track, finding *Pentaglottis sempervirens* (Green Alkanet).

The total for the day was 194 species.

### **Stockland Farm, 5 June**

(PD)

Bob and Ann Spencer, owners of this High Weald farm, are very keen on its flora. The habitats are varied and include old, overgrown coppiced woodland, unimproved meadows (one an SSSI), a Wealden ghyll, three ponds, and the river Uck on the north boundary, where *Claytonia sibirica* (Pink Purslane) grows. In the adjoining meadow *Hypericum maculatum* ssp. *maculatum* (Imperforate St John's Wort) was abundant, along with *Festuca pratensis* (Meadow Fescue). In the old coppice there was *Neottia nidus-avis*, (Bird's-nest Orchid) and, following recent coppicing, two spikes of *Platanthera chlorantha* (Greater Butterfly Orchid) have appeared; a few seedlings of *Epipactis helleborine* (Broad-leaved Helleborine) were soon polished off by the local deer. Species typical of old meadows included *Lathyrus nissolia* (Grass Vetchling), *Rhinanthus minor* (Yellow Rattle), *Silaum silaus* (Pepper Saxifrage) and *Briza media* (Quaking-grass). At the end of the meeting tea and delicious cakes were served and Rita fed two greedy lambs which demanded their bottle too.

### **Cuckmere Valley, 25/26 June**

(AGK & HP)

The purpose of the meeting was to introduce members to plants special to the lower Cuckmere Valley, and to record for the new Sussex Flora. Twenty members of the BSBI and SBRS assembled at the Seven Sisters Country Park at Exceat, and heard a short introductory talk by the Park Manager, Robin Thorpe. The Country Park lies in four tetrads, which necessitated close attention to detail with the GPS!

As the party left the car park, a large plant of *Centaurea calcitrapa* (Red Star-thistle) was noted. Possibly native in Sussex, it occurs frequently on disturbed ground in the Park and by the Cuckmere river, as far inland as Litlington. Large amounts of *Ruppia cirrhosa* (Spiral Tasselweed) were found in brackish water – the only known site in East Sussex. Also uncommon in Sussex, *Carex distans* (Distant Sedge) had colonised the bank of a ditch.

A detour was made up the hillside to study an area of *Bromus erectus* (Upright Brome) chalk

grassland which had benefitted from winter grazing. *Phyteuma orbiculare* (Round-headed Rampion) was just coming into flower. Twelve plants of *Orchis ustulata* (Burnt-tip Orchid) were seen, together with *Gymnadenia conopsea* (Fragrant Orchid) and *Anacamptis pyramidalis* (Pyramidal Orchid).

The route took the party along a raised footpath through saltmarsh near the river, where several plants of *Raphanus raphanistrum* ssp. *maritimum* (Sea Radish) and *Crithmum maritimum* (Rock Samphire) occurred. *Crambe maritima* (Sea Kale) and *Glaucium flavum* (Yellow Horned-poppay) were abundant on the shingle. Patches of formerly grazed turf had a varied flora including *Sagina maritima* (Sea Pearlwort), *Lotus glaber* (Narrow-leaved Bird's-foot-trefoil) and *Geranium columbinum* (Long-stalked Crane's-bill). This area just behind the shingle bank had been swept clean by a storm in 2000.

On Sunday, members met at High and Over, and walked downhill to see *Marrubium vulgare* (White Horehound). About 20 plants of *Hyoscyamus niger* (Henbane) were also seen here. Scattered *Ranunculus parviflorus* (Small-flowered Buttercup) in fruit occurred in short turf. The party then crossed the road to Cradle Hill, where a dewpond contained several aquatics, including *Stratiotes aloides* (Water-soldier), *Ranunculus trichophyllus* (Thread-leaved Water-crowfoot) and *Callitriche obtusangula* (Blunt-fruited Water-starwort). Long-established chalk grassland on steep slopes produced a large list of typical plants, including two colonies of the late-flowering form of *Orchis ustulata*. Many hundreds of plants of *Thesium humifusum* (Bastard-toadflax) were seen. Lower down, former arable had reverted to chalk grassland, allowing a comparison to be made of the flora of the two areas. Two plants of *Valerianella dentata* (Narrow-fruited Cornsalad) were found here.

The meeting was blessed with dry, mild weather on both days. A total of 562 records were collected.

### **Bedelands Farm, 13 July**

(AK)

A group of nine people met at the football field in the north of Burgess Hill on a beautiful, warm summer's evening in mid July for a survey of part of Bedelands Farm LNR (tetrad TQ32A). We set off toward a woodland area but were soon diverted by some large piles of soil which proved to have a number of interesting species, including *Galega officinalis* (Goats Rue) and a mass of

*Lepidium campestre* (Field Pepperwort). Perhaps the most unusual find on the soil heaps was a small patch of *Torilis nodosa* (Knotted Hedge-parsley) which, although fairly frequent along the coast, is uncommon inland. Our leader, Rita Hemsley, eventually dragged us away toward the woodland and meadows, passing on the way a line of planted *Sorbus torminalis* (Wild Service-tree). A number of woodland species were recorded, including *Lamiastrum galeobdolon* subsp. *montanum* (Yellow Archangel), *Euphorbia amygdaloides* (Wood Spurge) and *Epipactis helleborine* (Broad-leaved Helleborine); the latter illustrated the value of many pairs of eyes as only the last group of 2 or 3 people saw it after the rest of the party had walked straight past. Also in the woodland were some interesting ponds with *Ceratophyllum demersum* (Rigid Hornwort) and a narrow leaved pondweed which was later confirmed as *Potamogeton berchtoldii* (Small Pondweed). Although we were a little late in the year to fully appreciate them, it was clear that the meadows are very attractive as they have vast quantities of *Rhinanthus minor* (Yellow-rattle) and, in a couple of places, some nice patches of *Genista tinctoria* (Dyer's Greenweed). One meadow also contained a stand of *Geranium pratense* (Meadow Crane's-bill), an introduction but perhaps more welcome than most. We finished by thanking Rita for a very enjoyable evening which produced an excellent total of 178 records for the tetrad.

### Rotherfield, 16 July

(RN)

About twelve members met on a very hot day with the aim of surveying in three tetrads for the new Flora. After starting in an open access pasture (hedgerow, grazed grass and stream), we moved into a heathy area and then on to a shady lane verge. In the afternoon the surviving members walked along a grassy track to two large set-aside fields where we hoped to find some arable weeds.

Notable plants found were *Rosa rugosa* (Japanese Rose) established in the field hedge, *Oreopteris limbosperma* (Lemon-scented Fern) along the heathy ride and *Mentha requenii* (Corsican Mint) somehow holding on in a gateway. The set-aside produced *Anthemis cotula* (Stinking Chamomile), *Ranunculus sardous* (Hairy Buttercup) and, surprisingly in this acid area, *Carduus nutans* (Musk Thistle) and *Origanum vulgare* (Marjoram). We wondered if the latter two had come in with railway ballast or the stones used to shore up the nearby river bank.

### Pevensey Levels, 13 August

(PD)

Eighteen members gathered at the Sussex Wildlife Trust Reserve to be met by the Warden, Alice Parfitt, who had generously given up her Saturday to be there. Alan was hoping for a good *Potamogeton* count but was somewhat disappointed: the ditches were choked, with very little clear water, perhaps due to the warm summer and the fact that they had not been cleared for about four years. Nevertheless, most of the typical ditch plants could be found, even the delicate *Hottonia palustris* (Water-violet) and *Ranunculus baudottii* (Brackish Water-crowfoot), with plenty of *Berula erecta* (Lesser Water-parsnip). There were one or two spikes of *Butomus umbellatus* (Flowering Rush) and *Ranunculus lingua* (Greater Spearwort). One bonus of the tall vegetation was the chance to see the nationally rare Great Raft Spider (*Dolomedes plantarius*). Two mud 'scrapes' have been made for wintering birds which have, in turn, provided the right habitat for *Rorippa palustris* (Marsh Yellow-cress) and *Veronica catenata* (Pink Water-speedwell).

A bit of light relief before lunch was provided by the Red Arrows, their display being part of the Eastbourne Air Show. Later in the afternoon two pondweed species were finally found (*Potamogeton natans* and *P. lucens*), in the only ditch with clear water, one that is cleared annually by the Environment Agency.

### Northiam, 27 August

(PAH)

A bright morning saw a good number of members assemble in the main village car park in Northiam. The object of the day was to complete the first round of recording in tetrads in the TQ82 10km square. Attendees split into small teams of two or three and went off to the various highlighted tetrads, armed with a map and recording cards. We were to re-convene in the car park for lunch, before setting off again in the afternoon to the same tetrads, but with each group going to a different one from their morning visit. This way we got good coverage in seven tetrads, and everyone visited two.

One of the places we were admitted to was the grounds of the Frewen Estate, to the south of the village. This was arranged by Patrick Roper. One of the interesting finds here was a very large colony of *Aira caryophyllea* (Silver Hair-grass), scattered all along the walls of the gardens. As



this was thought to be a diminishing species during Atlas 2000 recording, it was a very rewarding find. Secondly, there was also *Mentha requenii* (Corsican Mint). Some disturbed soil on the verge of the High Street produced a good number of *Chenopodium* species, including *C. rubrum* (Red Goosefoot), *C. polyspermum* (Many-seeded Goosefoot), *C. ficifolium* (Fig-leaved Goosefoot) and *C. album* (Fat-hen), as well as *Amaranthus retroflexus* (Common Amaranth) and *Persicaria maculosa* (Redshank). All the tetrads visited produced good numbers of records, and two had over 200 species each recorded.

Outstanding non-botanical records were Otter (seen by Arthur Hoare and Alan Knapp), Dark Dagger Moth caterpillars and Dark Bush Cricket (Paul Harmes), and Long-winged Conehead and *Araneus* spider (Tony Spiers).

This format for a 'Flora' recording meeting worked very well, as did the similarly organized Southwater meeting. Therefore it is proposed to try the system again next year.

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## The Sussex Flora Fund

by Henri Brocklebank (Sussex Biodiversity Record Centre)

I don't think any of us involved in producing Mary Briggs' book *Sussex Wild Flowers* imagined that all 3000 copies would be sold within a year! I'm sure this is exceptional for a small 'local interest' botanical text. What is also exceptional for a book of this nature is the amount of money that it has raised.

Whilst searching for printers who could offer the best value for money for the book Gemini Press from Shoreham astounded us! They offered to print the book for FREE! It would only cost us the price of the paper, which was estimated at £3000. This was exactly the sum that had already been raised from the *Sussex Rare Plant Register*.

Mary wrote such marvellous text for this book and the photographs contributed by local amateur photographers were first rate. Richard Cobden from the Sussex Wildlife Trust brought them all together in a modern, stylish format. Everyone provided their skills for free. This meant that all

proceeds could be put directly back into Conservation!

Funds raised from *Sussex Wild Flowers* have been split into two. Firstly a great head-start of over £7000 for the fundraising that will be required for the new Sussex Flora, but secondly a new fund called (after some persuasion) the Mary Briggs Fund. This fund of £2000 will be launched at the Sussex Biological Recorders Seminar on March 4th 2006. It is to be made available for Sussex Biological Recording Publications. Not all subjects have the 'charisma' of wild flowers and cannot expect such huge readership, therefore a slush fund to encourage publications with limited circulation on other topics will be very welcome.

To book a place at the Sussex Biological Recorders Seminar on 4th March 2006, please call Penny Green at the Sussex Biodiversity Record Centre on 01273 49752.

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## Notes on Keeping *Wolffia arrhiza* (Rootless Duckweed) in Captivity

by Michael and Olwen Hollings

Way back in July 1998, following a kindly tip-off from Frances Abraham, we pottered along the footpath beside the east bank of the River Arun. From just below Amberley Castle the path runs to the river bank opposite the former Bury Ferry crossing, then south with the river. We scanned with binoculars all the ditches feeding to the river, looking for duckweeds. At the third ditch which we came to, at TQ018124, we found a ditch emptying into the river, but held back by a hinged sluice. Here duckweeds in abundance had piled up behind the sluice; the surface was choked with them for at least 5m back from the sluice bar.

An empty cocoa tin on a length of twine brought us a sample from the middle of the patch, and we tipped it into a large white plastic tray. There were abundant *Lemna minor*, numerous *L. trisulca*, fewer *Spirodela polyrrhiza*, and a few *Wolffia arrhiza* – the latter clearly discernible with an ordinary magnifying glass. This was The Place, we exulted. A search of other nearby stretches of ditch, mostly heavily overgrown and with few duckweeds to be seen, confirmed this. We carefully removed the other species of duckweed to a separate container and made a rough count of the *Wolffia*: well over 250. If our

single sample were typical of the duckweed mass, there must have been at least a million *Wolffia* individuals at this spot.

In 1998 Frances had found *Wolffia* at TQ025138, which is on the opposite side of the R. Arun; and in 1997 at TQ026132, which is on the footpath just below Amberley Castle. As the crow flies, this last site is just about 1km from our spot, and about 1.4km along the network of drainage ditches. The plants could possibly have been floated along in the slow moving waters.

Meanwhile, back at the ranch, the various cultures were flourishing, multiplying rapidly. Initially we tried flat, white plastic 'butter packs' 17x17cm, 5cm deep, which seemed ideal for the job. We also tested rather flat, wide-mouthed clear glass jars used for fruit preserving. Into each container we put c.500ml of filtered water from our garden pond (pH 6.5). Every two weeks we added 10ml of a solution (5g/litre) of Phostrogen, a very bland inorganic fertiliser containing all major and most minor nutrients. On 12 July we put 50 *Wolffia* 'units' into each of five containers; the easiest way to transfer them individually was with fine forceps, the tips wedged 1.5-2.0mm apart. Surface tension seemed to lock each 'unit' into a small drop of water, and each then dropped out when the forceps were dipped into the culture jars.

Three containers (two plastic, one glass) were put outside in full sunlight (Weston Meter readings 150-1600 foot-candles in shade and full sun respectively) under a wire netting fruit cage (with nylon netting top) to exclude birds, who not unreasonably might assume that the jars were for their use. The other two containers (one glass, one plastic) were kept indoors on a south-facing windowsill (Weston meter readings 60-150 foot-candles).

On 30 July (18 days culture) we counted the lot. The two plastic containers outside held 166 and 183 *Wolffia* units, many in mid-budding. The other plastic container (windowsill) had 144 units. The glass jar outside yielded 364 *Wolffias*, the one indoors held 333. We now had nearly 1200 *Wolffias*. Those kept outdoors had increased 4.75 times, those indoors 4.77 times: no apparent difference. Those kept in plastic containers, however, increased by 3.3 times, whereas those in glass multiplied 6.97 times. It looked as if glass was far better than plastic, although all cultures (especially those outdoors) had developed unwelcome growth of green algae (*Cladophora* etc.). But in a subsequent repeat trial, 264 units

multiplied to 954 by 12 August (x3.6 in 13 days), against 200 units put into glass jars which had reached 596 *Wolffias* (x2.89 in 13 days). Both treatments used sterilised tap water (pH 6.8), and were kept on the windowsill in the hope of avoiding algal contamination. All cultures were given 10ml of Phostrogen solution weekly.

Although the initial growth in plastic trays seemed much better than in glass, as the days passed the green algae developed in both cultures, and crowded out the *Wolffias*; budding slowed down and, instead of normal oval to spherical bright green cells, increasing numbers of much larger (c.1.5mm) thick-walled structures appeared, many apparently lacking chlorophyll, and showing no signs of budding. After five weeks the cultures were in very poor shape, and green algae had almost taken over.

Preventing algae from overwhelming *Wolffia* became our main concern. Although we tried putting *Wolffia* into containers with *L. minor*, *L. trisulca* and *Spirodela polyrrhiza*, the results were inconclusive. Another series of experiments had suggested that *Lemna trisulca* combated algal growth, so it was *Lemna trisulca* that we decided to back. Even with *L. trisulca* present in the 'butter packs', 100 *Wolffia* units introduced on 30 July had become 291 by 13 August, and 318 by 3 September, giving multiplication values of x2.91 in 14 days and x3.18 in 35 days. But by 4 October (66 days), there were only 11 'normal' *Wolffia* individuals, with 67 large spherical bodies, of which 56 were colourless – apparently totally lacking chlorophyll. In another similar plastic box, 260 *Wolffia* introduced on 30 July had become 954 by 12 August (x3.67 in 13 days), but by 4 October there were only 16 'normal' forms plus very many large spherical bodies. By 24 January the following year we could see no *Wolffia* in these two containers, but masses of green algae. So we tipped the whole lot into our garden pond - and never saw any of them again!

We put 240 *Wolffia* units into a large flat glass jar with glass lid and with plenty of *Lemna trisulca* on 30 July; by 13 August these had become 2042 – and counting was a real chore. This was about the highest multiplication rate (x8.5 in 13 days) we observed. This culture survived until late September and algal growth seemed noticeably less than in uncovered containers. But the *Wolffia* multiplied more slowly as the summer turned into autumn, and by the end of the month only the large spheres were visible.

There are clearly several different factors that control growth and multiplication, and survival, of *Wolffia*. Over the longer term, glass containers were better than plastic, sterilised tap water better than pond water, because algal growth seemed to develop more slowly. From mid-July to mid-August multiplication under favourable conditions was most rapid, but slowed up inexorably by late August, with increasing numbers of the large spherical bodies appearing. If these are over-wintering resting forms, they have not so far turned up again the following spring – presumably we have not yet discovered the right over-wintering conditions for them.

To our surprise, we found less difference than we expected in multiplication between open sunlight outdoors and a south-facing windowsill. Growing *Wolffia* with *Lemna trisulca* was consistently helpful, and went some way to preventing algae from taking over. With shortening days as summer turned to autumn, growth and multiplication of *Wolffia* stopped; this seasonal decline was not due to ‘staling’ of the growth medium, for when we sub-cultured ‘normal’ *Wolffia* individuals to fresh medium in September, they rapidly developed into the large spherical forms. Extra lighting, for example with

high-pressure mercury vapour lamps as used in horticulture, might have some effect, as it does with many cultivated plants. But we simply do not know how best to sustain *Wolffia* over the winter, or even whether the thick-walled spherical bodies are indeed over-wintering forms.

Under field conditions, life in a drainage ditch is somewhat fraught; a thirsty Dobbin or herd of cattle could swallow the lot and not notice. The 1:25000 OS map clearly shows the drainage ditches connected up, and leading to the R. Arun and thence to the sea. Many ditches have a hinged sluice flap where the final ditch empties into the river, and at one spot certainly this was where a high concentration of duckweeds, including *Wolffia*, occurred. But a sudden downpour could sweep all of them over the rim of the sluice and into the river; they must surely have safer refuges for over-wintering. From a conservation standpoint, it is easy in July/August to turn a few hundred *Wolffia* units into many thousands, which could be restored to sites that have lost them. If only we knew how to tide them over winter!

## FIELD MEETINGS 2006

<b>Sun 16 April</b> Dawn Nelson	<b>Early Spring woodland in the far West.</b> Meet at SU773168, entrance to Forestry Commission track on W side of B2146, S. of entrance to Uppark. We may move on after lunch.
<b>Sat 6 May</b> Paul Harmes <b>10.00 am start</b>	<b>TQ51/61 multi-tetrad extravaganza</b> , starting at <b>Herstmonceux Castle</b> (where <i>Calamagrostis canescens</i> should be seen). Turn off Wartling road and park at Science Centre, TQ653103.
<b>Sat 20 May</b> Arthur Hoare	<b>Roman Woods, W. Sussex:</b> 2 miles E of Rudgwick, park at TQ119333, in layby on A29 near junction with A281. In the afternoon we will move to <b>Walliswood Reserve, Surrey:</b> park opposite pub at TQ118381. Joint meeting with Surrey Flora Society.
<b>Sun 28 May</b> Pat Donovan	<b>St Dunstons.</b> A return visit to this special unimproved farm of the High Weald near Punnett's Town. Turn off minor road at TQ612190 and park at TQ610197.
<b>Sat 3 June</b> Alan Knapp	<b>TQ11:</b> groups to explore tetrads in a relatively under-recorded area of this 10km square. Meet at TQ136165, in short dead end road off E. side of small roundabout on E. side of A24 at Ashington. Please park well to side of road to avoid impeding access to farm.
<b>Sun 11 June</b> Bruce Middleton	<b>Ambersham area:</b> exploring heaths and acid grassland with one of our most popular leaders! Meet at Hoyle crossroads SU910190.
<b>Wed 21 June</b> Rita Hemsley <b>6.30 pm meeting</b>	<b>Burgess Hill:</b> evening meeting to record tetrad TQ32F near Burgess Hill. Meet in car-park at Wivelsfield Church, Church Lane TQ339208.
<b>Sun 25 June</b> Rita Hemsley	<b>Plumpton Agricultural College.</b> Rita rides again! An invitation to record the College estate. Park in main College car-park, TQ359135.
<b>July</b>	One further meeting is being planned in each of vc13 and vc14. Details will appear in the May Newsletter.
<b>Sat 12 August</b> Alan Knapp	<b>Iden area: tetrad recording.</b> Meet at Rectory Lane, Iden, TQ915238. Ample parking on lane verges just W. of church, but watch out for drainage channels. In the morning we will split into groups, but after lunch unite to record around Iden village.
<b>Sat 19 August</b> Rachel Nicholson	<b>Possingworth Park.</b> Private woodland and lake, including Plovers Mead and the possibility of shy <i>Sibthorpia</i> . Turn S. off B2192 through pillared entrance, drive left past lodge and park at end of track, TQ537213.
<b>Sat 2 September</b> Judy Wilson & Nick Sturt	<b>Selsey/Church Norton</b> , surveying coastal plants. Meet East Beach car-park at SZ866934: on entering village turn left off main road into Beach Road and follow signs past parade of shops.
<b>Sun 1 October</b> Rod Stern	<b>Hollycombe area. Bryophytes</b> (as well as general vascular plant recording) in the NW of the county. Meet at Highfield School SU854308, N of Hollycombe - follow directions to park.

**All meetings start at 10.45 am unless indicated otherwise.** Since some of the venues have limited parking, and for environmental reasons, members are encouraged to share cars whenever possible.

**Those attending SBRS field meetings do so at their own risk.**