Welcome to the Spring issue of Parnassia. We had a tremendous response to the last issue and would like to thank everyone who took the trouble to contact us. It really is important for us to get feedback on, what is after all, your Newsletter. Please keep those letters rolling in and, most importantly, any articles, large or small, 'serious' or light hearted, would be most gratefully accepted.

The bulk of the preparatory work on Parnassia is now taking place at Ness Botanic Gardens, where Leander and I slaved through many a dark Winter night over a hot keyboard in a fit of feverish frenzy, while Donna covered things from the Museum end, providing us with valuable advice and assistance.

A special thank you, at this point, goes out to Alan Gelling of Brian Green Office Equipment who has very kindly taken on the responsibility for the printing of Parnassia. This represents a significant financial saving to the Botanical Society for which we are very grateful.

Anyone wishing to get in touch with Parnassia can use the contacts given at the end of this Newsletter. Have a good Summer, see nice plants, and join us again in the Autumn.

*Keith Hatton*

## Professor Brian Fox

We were shocked and very sorry to hear of the sudden death of Professor Brian Fox on Sunday 28th of March. It was just over two weeks since he had given his talk to the LBS on the lichens of Cheshire. Everyone who was privileged enough to have attended that night commented on how much they had enjoyed his fascinating lecture. He had expressed delight at being reacquainted with our society after so many years. There will be an article on Brian's work and achievements in the next issue of Parnassia.

Coverage of the less-visited parts of vc59 continued apace all through 1998, plugging many of the gaps identified following study of data collected up to 1997. A few more people joined in the arduous collection of field data, slogging from tetrad to tetrad, this is really a case of "the more the merrier" and the portents are good for satisfactory coverage of maximum areas both for Atlas 2000 and the new South Lancashire Flora.

Thank you to all the field recorders for passing on so much information. Because of all your good work I have been able to forward lots of data to the Atlas 2000 co-ordinator Dr Trevor Dines. Lists for 10km squares were collated and all plants awarded the status required by the scheme, Native, Planted, Established, Surviving *et cetera*. Just after Christmas 1998 details of 36 of the 10km squares were e-mailed to Atlas 2000; at the end of February 1999 Discrepancy Lists and Verification Lists were received back for 31 of the squares, allowing checking for plants possibly missed and alerting for possible rechecking of newly recorded species. Details of two further squares were forwarded separately by two of the local recorders, Cameron Crook and Peter Jepson, who helped by allocating the plant statuses and receiving the Verification and Discrepancy lists for their squares.

There are now only 4 squares for which no vc59 data has yet been sent to Atlas 2000, these areas have been targeted for the final two seasons of the scheme. As well as forwarding the new data for these 4 squares "top-up" lists will also be sent for any other squares as applicable. Data

collection has not ceased on the submitted squares, there is always the chance of finding extra species by going at differing times of the season and exploring the full network of paths and tracks; collection of plant distribution data is rather like painting the Forth Bridge, it is never really finished!

Good luck and happy hunting for the 1999 and 2000 seasons.

*Peter Gateley*

'Alien Plants in Britain' currently on display in the Natural History Centre will change in May for a new display on Poisonous Plants.

NMGM has signed the Memorandum of Understanding which commits us to supporting the development plan for a 'Local Record Centre', covering Cheshire, Merseyside, Warrington and Halton. It involves nine local authorities, English Nature, the Wildlife Trusts, the National Trust, the RSPB, the NW Naturalists' Union and many other interested parties. LBS member Tony Parker, from the Museum's Zoology department, represents NMGM on the steering group.

Presently the Museum holds over 2,200 Site files. Each file typically contains details of field surveys, species lists for plants and animals, and other environmental data covering a variety of topics such as soils and land use. The creation of this local record centre will be a pilot for a national network of centres; The National Biodiversity Network.

Our President, Angus Gunn, is once again running his very popular 'Wild Flowers' study classes at the Museum on Monday evenings. Five existing LBS members have joined the class. The course has also been a source of new members, with four joining the society from last year and there has already been one new recruit from this year's class. The course, which is sponsored by the Wildflower Society, is fully booked but details of future courses will be available later in the year from Angus and the organisers at the WEA.

In July last year, the Heritage Lottery Fund granted the Museum (along with other NMGM sites) a major award. This is going to provide an exciting and prestigious programme of development. The museum is to be extended by acquiring the lower floors of the adjacent Grade II listed Mountford Building (previously occupied by JM University) and creating a new street-level entrance, leading into a dramatic six-storey atrium at the centre of the museum complex. The Botany department will be moving its collections, including the LBS library and archives, into new specially designed storage areas. Those familiar with the 'Horseshoe' gallery area where the herbarium is currently housed will see this area re-established as an exhibition hall. Obviously there will be some disruption in the department during the preparation of the move but where possible John, Angus, Donna and Claire will still be available to help with enquiries though this will be limited. The Natural History Centre will be moving to temporary accommodation whilst the new improved centre is been fitted out. During this time demonstrators will be available daily (p.m.) to help with botanical enquiries. Unfortunately the redevelopment will mean that the museum will be unable to host the indoor winter LBS meetings at its present site. Other venues are being investigated and we will be keeping all our members informed of future changes.

*Donna Young*

As a new Season dawns and everyone stirs themselves for the onset of a fresh round of field trips, “surely”, I here you cry, “It can’t possibly be as wet as last year !” Well we can’t offer any guarantees on that great unknown, but we can give you some facts and figures on that seemingly never ending rainy year .

At Ness, we are a Met. Office recording station and have kept full daily records of the weather for more than 30 years, so let's look at some facts and figures. In 1998 we had 767.5 mm (30.2 ins.) of rain. This may sound like a lot of rain, and it is in fact a relatively high annual rainfall total for our area. It is not, however, anything exceptional. Over the past 21 years the annual rainfall at Ness has averaged 691.4 mm (27.2 ins.), with a normal range (the normal range being the mean plus and minus the standard deviation) of between 609.1 mm to 773.7 mm (24.0 ins. to 30.5 ins.), so 1998 just falls within the upper limit. The rainfall totals for the past 21 years are shown below in the form of a bar chart, with the mean for this period marked as the blocked line :-

It can be seen that during the last 10 years, we have had some drier than average years (remember all the dire drought warnings of the press), so last year, perhaps, just rectified the balance and gave us the rain that was overdue.

“But I don't believe you!”, I hear you cry, “that was surely one of the wettest years that I remember”. Maybe an explanation of this impression can be gleaned by looking at the following analysis of when the rain fell in 1998. Below is a graph showing monthly rainfall, with the 21 year monthly average marked as a blocked line :-

It can be seen that we had above average rainfall in Spring (March and April), Summer (June and July) and Autumn (September and October), interspersed with shorter drier periods. These periods of higher rainfall coincide with the periods of greatest out-door activity, so we would all be very conscious of the rain as we assiduously go about our botanical way. Also in 1998 we had 205 days on which we experienced rainfall of >0.2mm. The 3 years previously were;

1997, 173 days
1996, 174 days
1995, 162 days

Therefore we had 33 days more rain in the year than averaged during the previous 3 years.

Finally on this subject, we bring you the Top 21 wettest years in the period under observation with 1998 in 4th position, confirming again (as if we didn't know!), that last year, although not abnormal, was nevertheless a wet one :-

| | Year | mm | inches |
|---|---|---|---|
| 1 | 1981 | 835.3 | 32.9 |
| 2 | 1987 | 779.8 | 30.7 |
| 3 | 1978 | 778.7 | 30.7 |
| **4** | **1998** | **767.5** | **30.2** |
| 5 | 1993 | 756.9 | 29.8 |
| 6 | 1983 | 742.1 | 29.2 |
| 7 | 1988 | 731.2 | 28.8 |
| 8 | 1980 | 729.1 | 28.7 |
| 9 | 1994 | 728.1 | 28.7 |
| 10 | 1979 | 717.5 | 28.2 |
| 11 | 1992 | 704.7 | 27.7 |

| | | | |
|---|---|---|---|
| 12 | 1986 | 702.7 | 27.7 |
| 13 | 1995 | 699.3 | 27.5 |
| 14 | 1984 | 688.3 | 27.1 |
| 15 | 1982 | 650.7 | 25.6 |
| 16 | 1990 | 632.0 | 24.9 |
| 17 | 1989 | 618.8 | 24.4 |
| 18 | 1997 | 613.6 | 24.2 |
| 19 | 1985 | 607.7 | 23.9 |
| 20 | 1996 | 565.1 | 22.2 |
| 21 | 1991 | 471.1 | 18.5 |

All this talk about the weather leads us nicely to the Global Warming research project currently underway at Ness. As mentioned in the last issue of Parnassia, we had been busy trying to establish the water tanks that we use, in order to re-create a series of 'natural' ponds, some of which were to be heated. Of the plants that we introduced last autumn, Curly Waterweed, *Lagarosiphon major*, Nuttall's Waterweed, *Elodea nuttallii*, and Broad-leaved Pondweed, *Potamogeton natans* have all established well but the Water-starwort, *Callitriche* sp. has failed to survive. We will not try to re-introduce this plant, but will let the experiment run with the 3 species that are doing so well. The heating control has performed well over the Winter and vast quantities of data are now being produced, although it is still too early to draw any conclusions from this.

Another item of interest is the possible discovery of a distinct species of Birch, *Betula* sp. This is an high altitude Birch of South East Tibet that would previously have been referred to as *Betula utilis*. On a visit to Tibet, Dr. Hugh McAllister noticed that there appeared to be a morphological difference between the single trunked, larger leaved more typical *B. utilis* and a multi-stemmed shrubby variant. Seeds were collected and reared here at Ness, from which cytological examination appears to indicate that a distinct diploid species exists in what would previously have been referred to as the tetraploid species, *B. utilis* .

*Keith Hatton*

# Ness Events

**April**

Saturday 24th Early morning bird watch in Ness Botanic Gardens followed by cooked English breakfast. 5:30 a.m. start. (Limited to 40 persons ). £10.00, children £6.50

PRE-BOOKING ESSENTIAL

**Mr C.Wells (Warden, RSPB Dee Estuary Bird Reserve)**

**May**

Monday 3rd Spring Plant Sale 10.00 a.m.

Saturday 15th Morning bird watch on Dee Estuary RSPB Nature Reserve followed by coffee. 9.00 a.m. start. Meet at Ness Botanic Gardens carpark - (Limited to 20 persons) cost £5.80, children £2.50.

PRE-BOOKING ESSENTIAL

**Mr C Wells (Warden, RSPB Dee Estuary Bird Reserve)**

Thursday 20th Course : "Getting in close". An introduction to plant photography with special reference to plant portraits.

10:00 a.m.- 4:00 p.m. £19.00.

PRE-BOOKING ESSENTIAL

**Mr P.Cordall**

**June**
Saturday 12th Garden Festival : Ness Botanic Garden Season Ticket Holders £1.50
& Sunday 13th RHS, Friends of Kew and Northern Horticultural Society £3.00

Sunday 13th World Environment Day Celebration
( As part of the Garden Festival)

Saturday 26th Concert: Evening - picnic in style (bring your own chairs ) whilst enjoying the music.
(cost to be announced )

**July**
Open Air Theatre by ' Off the Ground Production Theatre
(cost and date to be announced)

**September**
Sunday 12th Friends of Ness Gardens Event :
9:00 a.m. Car Boot Sale

Tuesday 14th Course: How to enjoy your herbaceous perennials . Including mid-morning coffee
9:30 a.m.-noon cost £6.50
PRE-BOOKING ESSENTIAL
**Ness Gardens Staff**

Thursday 23rd Hot Pot Supper followed by Gardeners Question Time
7:00 p.m. cost £10.00

**October**
Sunday 3rd Lecture : Seeing Red - Are red flowered plants an asset or a liability ? 2:00 p.m.
**Mr P L Cunnington**

Sunday 10th Lecture : The History and Work at Hilbre Island Bird Observatory 2:00 p.m.
**Mr J. Gittens**

Saturday 16th Friends of Ness AGM, 10.00 a.m.

Sunday 17th Lecture: Iran, Land of Darius and Shah Abbas 2:00 p.m.
**Mr J. Irons**

Sunday 24th **RHS Regional Lecture :** 'Making the most of your Greenhouse'. 2:00 p.m.
**Mr R.Waite**

Sunday 31st Garden Walk: Autumn Trees and Shrubs. 2:00 p.m.
**Ness Gardens Staff**

## Caergwle 18th April

(Leader: Vera Gordon)

The party of 29 which included 6 of Dr Gunn's botanical course met at Caergwle railway station and on the way down the railway path some spring ephemerals attracted attention. All with small white flowers and looking superficially similar they included; Thale Cress, *Arabidopsis thaliana,* Hairy Bitter-cress, *Cardamine hirsuta,* Common Whitlowgrass, *Erophila verna* and Rue-leaved Saxifrage, *Saxifraga tridactylites.* Nearby there were clusters of Common Cornsalad (Lamb's Lettuce), *Valerianella locusta.*

Then we had to admire the Hornbeam, *Carpinus betulus* in flower before going along to the

stone packhorse bridge over the River Alyn to see the root parasite Toothwort, *Lathraea squamaria* which was still in flower hidden among Ramsons, *Allium ursinum.*

Butterbur, *Petasites hybridus*

On the river bank Butterbur, *Petasites hybridus* had finished flowering and the leaves were pushing up among the elongating stems of the female flowers.

The hedge banks of the track towards Cefn y bedd were bright with Greater Stitchwort, *Stellaria holostea* and Lesser Celandine, *Ranunculus ficaria.* Lunch was enjoyed in the meadow above the woodland bank of the river down which some of the party went to see the Alternate–leaved Golden-saxifrage, *Chrysosplenium alternifolium,* which had almost finished flowering, growing among the more common Opposite-leaved Golden-saxifrage, *C. oppositifolium.* Here, also, was plenty of Moschatel (Town Hall Clock), *Adoxa moschatellina.*

Along the path were Wood Anemones, *Anemone nemorosa* and Wood Sorrel, *Rumex sanguineus* and the two Wood Violets; Common Dog-violet, *Viola riviniana* and Early Dog-violet, *V. reichenbachiana.* Among the so many spring flowers were Cowslips, *Primula veris,* Garlic Mustard, *Alliaria petiolata,* Marsh Marigold**,** *Caltha palustris* and some early flowers of Lords and Ladies (Jack in the Pulpit), *Arum maculatum.*

*Vera Gordon*

## Hapton 23rd May

(Leaders: Peter Gateley and Vera Gordon)

This venue was specifically chosen to fill gaps in the tetrad recording of vice county 59. A turn out of 13 members meant it would be much more useful to split the meeting with one group of 7, led by Vera Gordon, recording in the northern tetrad SD83B and Peter Gateley taking the other group south into SD83A. We all arrived at the station, in SD73V, about 11.30 and were immediately drawn to a very vigorous plant growing through the tar-paved path in places. There were few clues so early in the season but the previous years dead flowering stems told us that it grew to between 60 and 70cm in height, the mystery plant turned out to be Dittander, *Lepidium latifolium,* which was subsequently found also in square SD83B. The full party headed north to the Leeds and Liverpool canal and after lunching together on its banks we set off in a westerly direction, recording species en-route. After looking at, and smelling, a clump of Sweetflag, *Acorus calamus* at the canal edge the southern party split off across the M65 and started recording in the north-western corner of SD83A.

A wide range of species typical of acidic areas was recorded, with a particularly rich mix in the area of Bentley Wood Green. Also found were species typical of lane-side banks and hedgerows and disturbed urban land. Within Bentley Wood Green the array of acidic and wetland plants included both Hare's-tail and Common Cottongrass, *Eriophorum vaginatum* and *E. angustifolium,* both very obvious with their white fruiting heads. In full flower were clumps of Ragged-Robin, *Lychnis flos-cuculi* set off by the last flowers of the Marsh-marigold, *Caltha palustris* and many of the distinctive seedheads. Altogether 172 taxa were recorded in SD83A, and 200 in SD83B, a valuable addition to the database for both Atlas 2000 and the new South Lancashire Flora project.

*Peter Gateley*

## Ainsdale 18th June

(Leader: Vera Gordon)

A party of 17 set off in fine drizzle to see a spreading colony of a hybrid Knotweed, *Fallopia* x *bohemica* (*F. Japonica* x *F. sachalinensis*). It was useful to find some Japanese Knotweed, *Fallopia japonica* nearby to compare the difference. We crossed a field which used to be quite marshy where there were many clumps of both the Narrow Buckler Fern, *Dryopteris carthusiana* and the Broad Buckler Fern, *D. dilatata.* One plant of Yellow Bartsia, *Parentucellia viscosa* was seen in flower but towards the end of the walk we visited a spot where we saw more. Attention was drawn to a hedge of Elm, an *Ulmus minor* which had corky flanges on its twigs (*see article on pg.13Ed.*).

A short detour was made to see Shepherd's cress, *Teesdalia nudicaulis* which, though its main flowering season is April and early May, there were some flowers for us to see. Along the edge of the Pine wood in one place common Twayblade, *Listera ovata* was just in flower.

Continuing over dunes and slacks the rain became heavier so we made for a large solitary spreading pine which sheltered all of us while we ate our picnic. We then crossed a long boardwalk over a large slack which can be knee deep in water but is more often quite dry nowadays. Here we visited a large area of matted thick roots and stems of Bogbean, *Menyanthes trifoliata* which had finished flowering. In this slack was plenty of maroon flowered Marsh Cinquefoil, *Potentilla palustris* and Purple Loosestrife, *Lythrum salicaria.* The abundant sedge here was the Brown Sedge, *Carex disticha* and a recently cut down Bay Willow, *Salix pentandra* which we were happy to see was sprouting fresh twigs and leaves and we hoped would be flowering again in a few years if spared.

Dune slacks nearest the beach had shorter vegetation where Bog Pimpernel, *Anagallis tenella* showed its pretty pink flowers. There were plenty of orchids, the Early Marsh Orchid, *Dactylorhiza incarnata* in flower and Marsh Helleborine, *Epipactis palustris* with curved heads of buds. On the dunes we admired Wild Pansy, *Viola tricolor* ssp. *curtisii* and two dune grasses were pointed out, Sand Catstail, *Phleum arenarium* and Dune Fescue, *Vulpia fasciculata.*

Further on in a nearly dried out slack Shoreweed, *Littorella uniflora* carpeted the ground looking so distinctive only about 5cm tall yet with long 2cm stamens blowing in the breeze. Lesser Water Plantain, *Baldellia ranunculoides* and Lesser Marshwort, *Apium inundatum* were in flower in what little water was left.

Shoreweed, *Littorella uniflora*

During the walk we saw two willow hybrids. *Salix* x *friesiana* (*S. viminalis* x *repens*) was seen in a few places but the rare *Salix* x *doniana* (*S. purpurea* x *repens*) was only visited in one place.

Before returning up the Fisherman's Path we visited a slack where Adderstongue Fern, *Ophioglossum vulgatum* has grown for years though it is now less abundant there and also the Yellow Birds-nest, *Monotropa hypopitys* which varies in abundance every year. Then on the final stretch was the tiny Birds-foot, *Ornithopus perpusillus* and we were shown leaves of Pennyroyal, *Mentha pulegium* probably introduced when the track was repaired and grass seeds planted in bare patches alongside.

*Vera Gordon*

## Orrell & Billinge 11th July

(Leader - Peter Gateley)

The party met up at Orrell Water Park, close to the railway station, on what turned out to be quite a rare dry day for the summer of 1998. The artificial water bodies at Orrell hold quite a wide range of marginal species, many of them planted but also many arriving naturally. There was the opportunity to compare the garden escape Dotted Loosestrife, *Lysimachia punctata* with the native Yellow Loosetrife *L. vulgaris*. As well as the general form of the plant and disposition of the flowers the calyx teeth were observed by hand-lens revealing the bright orange margins of Yellow Loosetrife, compared with the plain green of Dotted. From the water park the party headed south towards Longshaw Bottom and then climbed in a westerly direction reaching the plantation woodland of Billinge Plants. The most notable feature of the groundflora, under the quite dense canopy here, is the almost ubiquitous carpet of the silver-variegated garden form of Yellow Archangel, *Lamiastrum galeobdolon* ssp. *argentatum*.

Dyers Alkanet, *Genista tinctoria*

Proceeding through the wood the party came out onto the short acidic sward around the top of Billinge Hill. The grassland is dominated by Common Bent, *Agrostis capillaris*, but there is also Moor Mat-grass, *Nardus stricta*, Heath Rush, *Juncus squarrosus,* and Heath-grass, *Danthonia decumbens*. In the most severely worn areas of sward at the top of this local view point there were quite large populations of the small annual grass Early Hair-grass, *Aira praecox*. The rest of the walk took place along footpaths through the farmland on the western flank of Billinge Lump, as it is known locally. Amongst the expected range of acidic and agricultural plants some species of a more local distribution were noted. Some of the cropped fields held scattered specimens of the Large-flowered Hemp-nettle *Galeopsis speciosa*, looking its best in full flower amongst a bean crop. There was also a small population of Slender St John's-wort, *Hypericum pulchrum* along the edge of the former quarry at Pimbo Bushes and a single clump of Dyer's Greenweed, *Genista tinctoria* on the slopes of a section of the path in a shallow cutting. The walk ended at Upholland Station where members caught the trains back to Liverpool, Orrell and, in one case, to Manchester.

*Peter Gateley*

## West Kirby July 25th 1998

(Leader: Joan Duerden)

Twenty members met at West Kirby on a warm, sunny day for a visit to the salt marsh and dunes north west to Hoylake. Sea Aster, *Aster tripolium* was just in flower, Lesser Sea-spurrey, *Spergularia marina* and Sea Purslane, *Atriplex portulacoides* were among many salt marsh plants. There were splendid specimens of Sea-holly, *Eryngium maritimum* on the dunes while near the shore were patches of Strawberry Clover, *Trifolium fragiferum* in flower. Although not of botanical interest, small rare Natterjack Toads were seen here.

Near Red Rocks, Soapwort, *Saponaria officinalis* was almost in flower while in the marshy area nearby, Southern Marsh-orchid, *Dactylorhiza praetermissa* and Wild Angelica, *Angelica*

*sylvestris* were present. Back on the dunes there were many Burnet Roses, *Rosa pimpinellifolia* and Harebells, *Campanula rotundifolia* in flower. The Duke of Argyll's Teaplant, *Lycium barbarum* also grows here.

An extension to the walk was not needed as there was enough of interest to occupy our time.

*Joan Duerden*

## Everton 8th August 1998

(Leader: Vera Gordon)

Anyone who remembers the old Everton Brow of narrow steep streets of terraced houses would hardly believe the transformation now. We left our meeting place on busy Great Homer Street and walked through tree lined paths to the Everton Park Nature Garden which is open Monday to Friday for school Education trips. We were very grateful to the warden who came to open it on the Saturday especially for our visit.

We first went to the herb garden where there was a good show of many plants including tall Fennel, *Foeniculum vulgare*, Blue flowered Chicory, *Cichorum intybus* and a cut-leafed bramble, *Rubus laciniatus* which was completely without prickles. A bed of Chamomile, *Chamaemelum nobile* was of particular interest to some of own party. It is found in southern Britain and does not grow wild in our area. So often we see a very similar daisy in our arable fields which is sometimes called a Chamomile because it is very aromatic. This plant is Scented Mayweed, *Matricaria recutita* so it was good to see the differences. On a steep slope for lime loving plants Hoary Plantain, *Plantago media* with its long mauve stamens was still in flower. Another hillside was colourful with pink flowered Musk Mallow, *Malva moschata*, reddish-purple flowers of Greater Knapweed, *Centaurea scabiosa*, Black Knapweed, *C. nigra*, some with radiate outer florets, Oxeye Daisies, *Leucanthemum vulgare* and mauve Field Scabious, *Knautia arvensis.*

In a shallow pond there was Amphibious Bistort, *Persicaria amphibia* and the Curly Waterweed, *Lagarosiphon major*, an alien from South Africa first recorded in Britain in 1944 and now spreading rapidly. The larger lake had a good show of Greater Spearwort, *Ranunculus lingua* still in flower, Yellow Flag, *Iris pseudacorus* and Bulrush (Reedmace), *Typha latifolia* as well as some sedges and submerged plants which we felt we could not dredge to look at more carefully. This is where the children do their pond dipping.

Leaving the nature garden, very impressed with it and with the mosaics of coloured pebbles depicting insects and plants of the area, we crossed steep grassy slopes to some open strips of common plants. Here we saw large one metre tall and broad plants of Perennial Wall-rocket, *Diplotaxis tenuifolia* not seen very often in our area.

The warden then left us and we climbed a hill to take our lunch where there was a nice breeze and good views of the two cathedrals, Liver Buildings, River Mersey and Wirral beyond. Despite the nearby high rise flats we had this all to ourselves and enjoyed the peace.

Then downhill to some sandstone outcrops where I had previously seen a patch of Mind-your-own-business, *Soleirolia soleirolii* hiding behind a plant of Meadowsweet, *Filipendula ulmaria*.

This plant was re-found and it appeared to have grown to twice its size in a few months, and then a smaller patch was found on another outcrop. In June this red sandstone had looked splendid with patches of Yellow Biting Stonecrop, *Sedum acre* in flower (later on we found more *Soleirolia* on a brickwork along the canal).

We then proceeded down hill through the modern Eldonian Village to the Leeds and Liverpool Canal. The canal bank had been tidied up recently and tall plants slashed down so the Russian Mustard, *Sisybrium volgense* was not at its best but a few flowers and a side branch with a couple of leaves had escaped mutilation. It is only found in a few widely scattered waste places in England usually near flour mills.

Some of the party rested while others had great fun throwing a grapnel on a long string into the water and sometimes getting plants. These were mainly a Stonewort, *Chara* sp. which has not yet been identified. It should really have been kept in a liquid preservative as when dry they become very brittle. Further along the canal what appeared to be another species was pulled out but it proved even more brittle than the first one.
The canal had been well cleared the previous autumn so the usual good show of Fringed Water-lily, *Nymphoides peltata* was missing except for an odd plant or two. However the hybrid Bulrush (Reed Mace), *Typha* x *glauca* (*T. latifolia* x *angustifolia*) had not suffered and it fringed the canal in many places with neither parent present. Dwarf Gorse, *Ulex minor* was not yet in flower in a planted shrubbery.

By now most members were almost satiated with all they had seen but still tried to add species to the tetrad record cards. Eventually the party went ashore at Bootle New Strand, some to get a bus and others for the train.

*Vera Gordon*

## Along the River Alt from its Source

**29th August**
(Leader: Vera Gordon)

From Huyton Railway Station it was a short walk to the playing fields and then down to the "Wetland Park" designated as "an area of nature conservation and recreation" since 1988. Footpaths and boardwalks have been added and in places wild flowers planted.

Bristle Club-rush, *Isolepis setacea*

Some time was spent in the source of the Alt which in winter is a large pool but most of summer just wet ground and short vegetation of mosses and sedges etc. The best find for this district was Bristle Club-rush,
*Isolepis setacea.*

The infant Alt appeared from a culvert beneath the road more like a field ditch, the water invisible because of the dense growth of Fool's-water-cress, *Apium nodiflorum.* Reaching some houses the Alt again was culverted and negotiating a couple of roads it re-appeared a little larger in a green valley.

We walked between the river and planted shrubberies where a few bushes of Alder Buckthorn,

*Frangula alnus* were seen in fruit. On the river banks was Indian Balsam, *Impatiens glandulifera* and Japanese Knotweed, *Fallopia japonica* and in the river was the Bulrush (Reed Mace), *Typha latifolia* and Yellow Flag, *Iris pseudacorus* in fruit.

Lunch was taken alongside a wild flower meadow where in spring Cowslips, *Primula veris,* may be seen.

Further along the river bank became less steep in a wide expanse of wet ground. In places it was blue with Water Forget-me-not, *Myosotis scorpioides* and the water choked by Brooklime, *Veronica beccabunga.* There was Water-plantain, *Alisma plantago-aquatica* and then the plant we most wanted to see, Narrow-leaved Water-plantain, *Alisma lanceolatum* distinguished by its narrow lanceolate leaves and when in flower by its slightly larger and pink flushed petals. The former species is said to flower in the afternoon while the latter in the morning. We were not able to confirm this as we saw them at mid-day. Other plants in this area were Purple-loosestrife, *Lythrum salicaria*, more Bulrush, *Typha latifolia* both abundant, Common Club-rush, *Schoenoplectus lacustris* and Great Willowherb, *Epilobium hirstum.* Alongside the path on top of the riverbank a small patch of Buttonweed, *Cotula coronipofolia* also found growing on a bare patch of clay.

The river appeared again. It crossed a colourful meadow with fine plants of Musk-mallow, *Malva moschata* as well as other wild flowers planted but apparently regenerating. We passed the place where the TV soap "Brookside" is filmed and then entered Croxteth Park by a wooded track. One member found some Beef Steak fungus on a tree stump. We saw the Alt again on its way to the estuary at Hightown. We admired the splendid parkland trees especially the Sweet Gum, *Liquidamber styraciflora* a native of America from New York to Florida and Texas. Its identification was confirmed when one member was able to reach a fruit, a hanging pale green spiky ball.

We took advantage of the facilities offered here, buying ice cream, visiting the shop where a book was bought and leaflets describing and illustrating a walk round the estate more or less following the River Alt.

Then we continued through the park until we split into two parties, one to West Derby village for a bus to Liverpool and others to Norris Green for a bus to Bootle and a train on the Northern Line.

*Vera Gordon*

## Chester Canal 19th September

(Leader: Dr Keith Watson)

The party met at Chester Station on a fine and quite warm day, walked to the Shropshire Union canal and towards the Northgate locks. Notable was an abundance of ferns on the City wall with Welted Thistle, *Carduus crispus* and Skullcap, *Scutellaria galericulata* on the canal bank near the Visitor Moorings and dry dock. We there entered hectad SJ36, a square I am helping to record for the BSBI Atlas 2000. I would like to thank everyone for their help, a total of 27 new records were found during the day. There were some good plants on waste ground by the canal on its way down to the Dee including Field Madder, *Sherardia arvensis,* Common Stork's-bill,

*Erodium cicutarium,* Red Goosefoot, *Chenopodium rubrum* and California Brome, *Ceratochloa carinata.* We had lunch at a pleasant spot with a view along the Dee towards Shotton and some of us remembered a previous LBS meeting in 1993 when we walked from Shotton to Chester. We then walked along the Dee towards the Welsh border to see notable Cheshire plants such a Spiny Restharrow, *Ononis spinosa,* Meadow–rue, *Thalictrum flavum,* Black Mustard, *Brassica nigra,* White Bryony, *Bryonia dioica* and Traveller's-joy, *Clematis vitalba.* A search for Broad-leaved Ragwort, *Senecio fluviatilis,* found in 1993, was not successful on the way back to the canal.

We then walked north towards Backford and found Orange Balsam, *Impatiens capensis* in good flower and Bristly Oxtongue, *Picris echioides.* At teatime, taken below the railway bridge, Pale Toadflax, *Linaria repens* was found. We carried on along the canal to Knolls bridge, and leaves of Spiked Water-milfoil, *Myriophyllum spicatum* were found in the canal. The Bindweeds (*Calystegia* sp. and ssp.) were interesting on this walk, *C. sepium* ssp. *sepium* and *C. silvatica* ssp. *silvatica* were quite common and a possible hybrid, *C.* x *lucana* was found near the lunch site. However, near Knolls bridge a convincing specimen of the newly described *C. silvatica* ssp. *disjuncta* was found. Finally, the party followed paths away from the canal, through fields towards the Countess of Chester Hospital where Root Beet, *Beta vulgaris* ssp. *vulgaris* was a crop relic, in contrast to Sea Beet, ssp. *maritima* on the Dee. The walk ended at Chester Bache station.

*Dr Keith Watson*

**Rainford 17th October**
(Leader - Peter Gateley)

It was already pretty wet and grey when members assembled at Rainford Junction for the last field trip of the season. One of the purposes of this trip was to collect data for SD40 hectad, looking particularly at the wide-open flat farmland, largely derived from drained mossland and specked with small scattered collieries, long since abandoned. We started off looking at low colliery waste tips along the northern edge of the railway in tetrad SD40R, dominated by a birch/willow mix over a thin Wavy Hair-grass, *Deschampsia flexuosa* sward typical of local acid coal shales. We proceeded westwards to the much larger colliery site at Siding Lane, this has been developed by St Helens Council into a most attractive small country park and picnic site. The naturally regenerated woodlands have been left with minimal management intervention, the former shafts capped and grassy glades created. Diversity is added by retention of the small square reservoir which once supplied water for the steam-powered pit winding engines. It now supports a range of marginal plants and aquatics including Greater Spearwort, *Ranunculus lingua* and Fringed Water-lily, *Nymphoides peltata*, both probably brought here from local angler's garden ponds. Some of the old walling surviving from the colliery structure supported some large clumps of Hart's-tongue Fern, *Phyllitis scolopendrium* and a single clump of Common Polypody, *Polypodium vulgare* agg.. Not many plants were still flowering here and the expected fungi were rather thin on the ground but a range of mosses and liverworts were looked at.

After the comparative shelter of the wooded area there was a very noticeable change when we struck off into the flat wind and rain-swept tracts of farmland typical of tetrad SD40L. Heads down and getting wetter and wetter quite a good list of arable weeds was recorded, including some fine stands of Small Nettle, *Urtica urens* and scattered Field Woundwort, *Stachys arvensis,*

Cut-leaved Dead-nettle, *Lamium hybridum* and Large-flowered Hemp-nettle, *Galeopsis speciosa*. However the rain just got heavier and we looked around despondently for somewhere half suitable to stop for lunch.

Common Polypody, *Polypodium vulgare*

Eventually it was decided that the best thing to do was head straight back for the station where there was at least some shelter. After eating under the railway bridge and in the platform shelter the rains continued on into the afternoon and we decided to call it a day. It is not often that weather conditions curtail the LBS field trips, but in this case we had been to L and back!

*Peter Gateley*

## Corky Elms

On our Ainsdale field trip Vera showed us an elm with the young branches strikingly ridged with corky protuberances. This character is not mentioned in the current floras so, back at the museum, I had a trawl through some of the older literature to see what they say.

Going all the way back Smith's *English Flora* (1828), the second of the elms to be described was the Common Cork-barked Elm, *Ulmus suberosa* having "Bark when a year old covered with very fine dense cork, in deep fissures." In modern continental treatments the tree is known as *U. carpinifolia* var. *suberosa* and in Hegi's *Illustrierte Flora von Mitteleuropa*, (1981) there is a good, if small, illustration of this form. Incidentally, Stace (1997) is a bit ambivalent about how to treat *U. carpinifolia*, describing it both as a synonym *of U. minor* ssp. *minor* and as a distinct form.

The hybrid of *U. minor* with *U. glabra* also shows this characteristic, often in an even more pronounced form and it is probably this plant that we saw at Ainsdale. This hybrid is well known and goes by the name of *Ulmus* X *hollandica* Mill.; the Dutch Elm. The cultivated form "Hollandica" (synonyms - *U. major*, *U. hollandica* var. *major*, *U. hollandica* cv. "Major") is probably the commonest cultivated Dutch Elm in England and is especially prone to forming these corky ridges. Smith (1828) called this tree the Dutch Cork-barked Elm and said that, according to Miller, this species was *"brought from Holland during King William's reign, and being recommended for its quick growth, was a fashionable tree for hedges in gardens, but afterwards fell into disuse."* You can of course still get this tree and according to the *European Garden Flora* (1989) it is the suckering shoots which are corky.

As a postscript, there are some American species of elm which also show this character, *U. thomasii* and most strikingly, *Ulmus alata* - the winged elm - so called because of the pair of very pronounced corky ridges which run along the branchlets.

*Dr Angus Gunn*

## Heading south in search of *Cistus*

For the last three years I have been working on a EC project studying the effects of global warming on natural Mediterranean vegetation, through studies of population genetics and drought tolerance. Climate change predictions for this area are for more severe summer drought and increased winter temperatures. As this area is classed as semi-arid many plant species may already be living at the limit of their geographical range, therefore changes in the climate may cause major changes in the vegetation of this area. One major advantage of working on Mediterranean plants is that as the UK autumn starts it's time to head south to the sun, for the start of the growing season for the Mediterranean plants.

So as the nights were getting dark again in October, we were landing once again at Almeria airport, in southern Spain. This was my third trip in the last two years, but the landscape still seemed amazing, it is so different to Britain. As we came in to land two things were very obvious, the terracing on all the surrounding mountains, much of which dates back to the times of the Moors, and what looked like large areas of water. Unfortunately Almeria has a typically warm and dry Mediterranean climate, and what looked like large lakes of water from the air are really massive areas covered with polythene greenhouses, producing salad crops for British (and other) supermarkets. Although these cash crops are big earners for the farmers, they are being irrigated with ground water, which is decreasing at an alarming rate.

On previous trips to Spain we had studied, and collected the Sage-leaved Rock-rose, *Cistus salvifolius, Stipa tenacissima*, a perennial tussock grass which covers vast areas of the mountain side, and various winter annual grasses. This trip we needed to sample *Stipa tenacissima* from high altitude populations, an excellent excuse to visit the foothills of the Sierra Nevada, and to look for the Grey-leaved Rock-rose, *Cistus albidus*.

*Cistus albidus* has white tinged leaves and nice distinct pink flowers, unfortunately it was too early in the season for it to be flowering. What's more our instructions for where we might find it were vague. Very vague.

'Turn right out of the Rambla Honda, then take the old road to Senes, it might be growing up there,' we were told.

Oh, well only about 10 km of road to search. So on a glorious autumn morning, with the sun shining brightly, we found ourselves driving along the twisting old road to Senes. Surprisingly, a pair of binoculars are a vital piece of field equipment for botanists. As I drove, my companion, Olga, leant out of the window and scanned the hillsides for possible *Cistus albidus* plants with the binoculars. On spotting a likely patch of paler plants we hastily pulled the car off the road, and clambered up the hillside to investigate. Unfortunately *Cistus albidus* is not the only pale leaved Mediterranean plant, and by one o'clock we had identified several populations of *Helichrysum stoechas*, but the *Cistus* still alluded us.

As we drove further on the road twisted, yet again, giving a north facing slope. These northern slopes are often favoured by plants and normally support higher densities of vegetation than their more exposed southern counterparts. Out of habit I slowed the car again, maybe it was a hunch, but it was the most suitable habitat we had found yet, it was even favoured with a nice wide

verge to park on. Olga lowered the binoculars and grinned, we opened the car door, and there at the side of the road was the first *Cistus albidus* plant! It was growing up the hillside in front of us, some under the shade of Holm Oak, *Quercus ilex*, and was obviously a well established population with many large bushes. Success at last, so when the work was finished we celebrated with a late lunch in the tiny village of Senes.

*Dr Rebecca Farley*

## E. Margaret Wood

Have you ever wondered where the illustrations in "Parnassia" come from or who actually draws them? Unfortunately we cannot afford an illustrator so, instead, we scan pictures in from a book. This is not as straight forward as it seems. In order to avoid copyright problems, we need to find a book written by an author who has been dead for more than fifty years. The book we have chosen is "Flora of the Liverpool District" edited by C. T. Green. I'm rather ashamed to admit that we have found it all too easy to take these beautiful illustrations for granted without giving much thought as to who actually drew them originally. However, I was rummaging amongst the books in the Library at Ness Gardens and tucked into a copy of "Flora of the Liverpool District" was an article written by Norman. F. Ellison on the the illustrator. Her name was E. Margaret Wood. I thought you would be interested in the article:

"Emily Margaret Wood was born in Calcutta in 1865 and came to this country when she was six years of age. Her girlhood was passed with her parents in Kent until in 1885 when the family removed to Liscard, Cheshire. Every aspect of natural history appealed to her, but she excelled in botany. She soon joined the Liverpool Naturalists' Field Club, at that time predominantly a botanical society with some of the most eminent botanists in the area among its members. Yet in 1893 she was elected joint botanical referee to the Club, a responsible position she filled with great success up to her death.

From time to time she exhibited her plant studies locally, until at last her talent was recognized by a commission from the National Museum at Washington to paint a series of illustrations of the Blatschka models of coelentera (stinging invertebrates such as sea-anemones, jellyfish, corals, etc.) then in the Liverpool Museum. Some years later came another commission from the United States to adapt for English students the celebrated text-book, First Studies of Plant Life by Professor Atkinson of Cornell University. The completion of this task earned her the warmest congratulations. At home she contributed a special report to the Victoria County History of Lancashire and, from 1895 onwards, compiled the annual Botanical Report of the Field Club showing the work done in the previous year. It is generally agreed that if she had written nothing else, these Annual Reports would entitle her to a place in the first rank of writers on natural history subjects. All who knew her spoke warmly of the enthusiasm she infused into her lectures and teaching; above all, they admired her kindly and helpful disposition. Never in robust health, the straitened circumstances of her later years told upon her, and with no chance to have the rest she so urgently needed, she died at the lamentably early age of forty-two. She rests in the Rake Lane Cemetery, Wallasey, under a marble cross erected by her many friends."

Primrose, *Primula vulgaris*
Illustrated by E. Margaret Wood.

## *Vicia lutea* – Is it still on Caldy Hill?

Also in the back of the same copy of Green's "Flora of the Liverpool District" is a typed article entitled "Reappearance of *Vicia lutea* in Chesire". It is signed Norman. F. Ellison and is dated "West Kirby 3.7.45:

"Green in his Flora of the Liverpool District (1933) gives no existing stations of *Vicia lutea* L (yellow vetch), but in the Appendix refers to a note in the Flora of Liverpool published by the Liverpool Naturalists' Field Club in 1872, which reads as follows:- "*Vicia lutea* was found in 1862 by Miss Grundy on the banks of the river Dee near to West Kirby, where the chances of its being introduced were very improbable and had it still existed in the locality we should have had no hesitation in entering it as indigenous, but, unfortunately, during the heavy storms of February 1863, the bank for a long distance was swept away, and all traces of the plant lost." The writer cannot trace any record of the plant having been found in the Merseyside area since then.

On 23rd June 1945 during the field meeting of the Liverpool Naturalists' Field Club on Caldy Hill, West Kirby, one of the members, Miss M. B Hewlett, B.Sc., discovered and identified *Vicia lutea* L. in flower on Caldy Hill. This new station, high up on the Hill, overlooking the river Dee, is nearly half-a mile from the present bank of the river. The few plants comprising this small colony are hidden by bracken, and this would possibly account for their being overlooked by other Botanists. Specimens were submitted to Mr. H. E. Green who confirmed the identification.

Bentham & Hooker state: "In Britain *V.lutea* is found chiefly near the sea in Southern England, and again on the rocky coasts of Eastern Scotland."

This note is sent for record at the request of Miss Hewlett."

This article appeared in "The North Western Naturalist" Vol. XX. March-June, 1945

In the Flora of Chesire (1971) by Alan Newton *Vicia lutea* is recorded as being apparently extinct. Graeme Kay, the vice county recorder for Chesire, VC 58 tells us that he was not aware of this record. He knows of two records in Chesire, one on a road verge at Tarvin and a seeded bank in Stockport. But, both of these are clear introductions.

Given that it is a very difficult plant to spot, we have a hunch that it may well still be growing in the vicinity of Caldy Hill. The game is afoot!

*Leander Wolstenholme*

## Altcar Rifle Range and Rimrose Orchids

### Green-winged Orchid at Altcar Rifle Range, Hightown (SD2804)

I checked the number of flowering spikes in May 1998 and found a large increase since the last full count in 1989, a testament to the practice of leaving the ranges unmown until July to allow flowering and seed setting. It really is a wonderful spectacle!

**Green-winged Orchids**, *Orchis morio*

**I Range at Altcar Rifle Range**

This is a flower-rich meadow with over 30 plant species per square metre. Over 120 species are known from this small grassland including Adder's-tongue Fern, *Ophioglossum vulgatum* Early Marsh, *Dactylorhiza incarnata,* Southern Marsh, *D. praetermissa* and Northern Marsh, *D. purpurella* orchids, Common Twayblade, *Listera ovata* (which is abundant), Quaking Grass, *Briza media* and Variegated Horsetail, *Equisetum variegatum*.

Cowslip numbers are increasing after a decline; they are set out in the table below.

**Cowslip**, *Primula veris*

**Rimrose Orchids**

Monitoring continues of the orchids in the Rimrose Valley, Crosby (SJ3399) with numbers being similar to 1987, good to see increases in the rarer species, though the decline of Northern Marsh Orchid
(see table below).

*Steve Cross*

## Cornfield Flowers at Ness

In Autumn 1995 demonstration plots of the main British cereal crops were laid out alongside some of the attractive cornfield flowers that have become rare due to the use of modern herbicides. These provide both an attractive and an educational feature. Very few of the children in visiting school parties can recognise wheat, barley, oats or oilseed rape, so we use these plots for teaching purposes. However, we hope that they are also of interest to all our visitors.

With the school parties, we introduce them to the original straw (i.e. a cereal straw - not a plastic one!) through which they can blow, or suck up their lunch time drinks. When the grains are ripening they can extract and winnow the grains, and we encourage them to take some back to school to grind in a coffee grinder to make flour, which can be sieved to separate the bran.

Another useful teaching point which can be made for older pupils is the contrast between the uniformity, especially in height, of the stands of wheat, barley, and oats which are self-compatible, inbreeding and therefore largely homozygous, and the variability in the self-incompatible, outbreeding, heterozygous rye.

With the introduction of the plant hormone auxin type of weed killer in the 1950's it became easy to kill the susceptible broad-leaved (dicotyledonous) 'weeds' in crops of the non-susceptible

grasses. The same selective weed killers are used to kill daisies, dandelions, etc. in lawns. As a result, formerly common, attractive, cornfield 'weeds' such as Corncockle, *Agrostemma githago*, Corn Marigold, *Chrysanthemum segetum*, Common Poppy, *Papaver rhoeas* and Cornflower, *Centaurea cyanus* have become rare and in some cases almost extinct. This, of course, has greatly increased the crop yield and quality of most cereals that previously were contaminated with seeds of these 'weeds.'

A side effect has been the increase in importance of grass weeds and a few broad-leaved weeds which are either resistant or have evolved resistance to the weed killers. A lot of research is currently under way to deal with these problems, both investigating potential new weed killers and methods of cultivation.

Like the cereals themselves, most cornfield weeds are quite different from their wild ancestors having evolved under the conditions provided by man's cultivation for thousands of years. This can be seen in the thin, tall, upright habit of especially Cornflower and Corncockle, characteristics suitable for growing in cereal fields but quite unsuited for growing alone in decorative gardens where they readily flop over.

Weeds are naturally plants of disturbed habitats where the disturbance prevents the establishment of a dense vegetation of perennial species. Before man had a significant impact on vegetation, these species would be confined to river banks, strand lines, animal watering holes, land slips or Mediterranean climates, where summer drought prevented the establishment of perennial vegetation .

Because of the temporary nature of many of these habitats, these species evolved strategies to survive periods between the disturbances, which allowed their populations to flourish. Perhaps the chief strategy was to evolve long-lived seeds which could remain viable when buried for many years, germinating when some disturbance brought them to the surface. Some seeds have been known to germinate after burial for hundreds of years .

Poppy seeds can survive burial for many years, and this is why they were so common following the destruction of the vegetation by the passage of armies in the First World War. During both World Wars, the ploughing up of pasture to grow arable crops for the first time for decades - if not hundreds of years - often resulted in the re-appearance of weed species not seen in that area for a very long time. These species grew from viable seeds that had lain dormant under the pasture turf since the last time the field had been ploughed up. This behaviour is, of course, the reason for the well-known gardeners' saying 'One year's seeding, seven year's weeding .'

The species that has probably suffered the most and become extremely rare is the Corncockle, *Agrostemma githago.* It has always been said that this species has no seed bank but with no account of what happens to buried seed. A recent project carried out at Ness has shown that, no matter how deeply seed is buried, it germinates in the Autumn following ripening. If the seed has been too deeply buried for the seedling to reach the soil surface, the seedling dies. Corncockle can therefore only survive in a continuously disturbed habitat such as a field used every year for arable crops. A single year during which seed production by the Corncockle was prevented through e.g. the field being put down to a grass ley, would more or less eliminate the species from that field. Survival of the species could only occur if plants were able to set seed in

headlands or hedgerows. The insertion of a pasture stage in crop rotation could eliminate Corncockle. As it is a poisonous plant whose seeds are much the same diameter as those of wheat, and therefore difficult to separate from the grain, it was a serious weed in the past .
Probably the rarest 'weed' grown at Ness is the grass, Interrupted Brome, *Bromus interruptus.* This species is closely related to the common Soft-brome, *Bromus hordeaceus,* differing most obviously in the clumping of the spikelets in the panicle, which gives an interrupted appearance to the panicle. This species used to be a weed of Sainfoin, *Onobrychis viciifolia*, fields in East Anglia and the Low Countries but became extinct. However, a researcher on the Soft-brome species complex had a three-year-old packet of seed in his office in Edinburgh and, from this, the species has been re-established in cultivation.

At Ness we have found that most of these weed species grow best when treated as Winter annuals. They germinate from late September onwards following the sowing of Winter cereals, grow through the Winter, and flower and ripen their seed at much the same time as the cereals. Spring sowings of both the cereals and the weeds have been spectacularly unsuccessful because of the early onset of dry conditions in the Spring in most years.

*Hugh McAllister*

This article was adapted from one that first appeared in Wirral Wildlife, the newsletter of the Wirral Group of the Cheshire Wildlife Trust, in November 1995 .

## Bitter about Greenhouse Weeds

Are you aware of New Zealand Bitter-cress, *Cardamine corymbosa*? We certainly are at Ness Gardens where it has invaded our greenhouses, flower beds, plant pots, nooks, crannies and pavement cracks. It is not mentioned in the first edition of Stace's "New Flora of the British Isles" but it is mentioned in the second, 1997 edition. It is, as its name suggests, from New Zealand where it is represented by a complex of coastal, lowland and montane-subalpine races. It may have come to Britain via the same routes as the New Zealand Flatworm and, according to Stace, it was first recorded here in 1985. However, it has been known from the Rock Garden in the Royal Botanic Gardens, Edinburgh since 1975. It is spread as a horticultural contaminant and first appeared in the greenhouses at Ness in the early nineties. It closely resembles both Hairy Bitter-cress, *Cardamine hirsuta* and Wavy Bitter-cress, *Cardamine flexuosa.* Like *C. flexuosa* it has six stamens but whereas *C. flexuosa* has conspicuously pubescent leaflets, *C. corymbosa* is glabrous to sparsely pubescent. At first glance the most distinguishing feature is its large, single white flowers (or small umbels). In fact it was previously known as *C. uniflora* although this name is now illegitimate. It has a small number of light green leaves (0 to 3) and a small number of leaflets per leaf (3 to 7) and frequently appears trifoliate. It is almost perfectly adapted to a weedy lifetyle and, unlike *C. hirsuta* and *C. flexuosa*, it is very hard to pull out of pots due to its roots gripping the soil very tightly at the base of the rosette of leaves. Also, it frequently forms plantlets at the terminal pair of leaflets enabling the leaves to act as stolons and allowing *C. corymbosa* to spread rapidly. It may well be naturalised in our area and it would worthwhile keeping an eye out when recording.

You may be wondering what other weeds we have in our greenhouses. Well, Mind-your-own-business, *Soleiriola soleriolii*, Maidenhair Fern, *Adiantum capillus-veneris*, various *Epilobium* species, Ivy-leaved Toadflax, *Cymbalaria muralis*, Procumbent Yellow-sorrel, *Oxalis*

*corniculata,* Krauss's Clubmoss, *Selaginella kraussiana* and the bryophytes, *Marchantia polymorpha* and, on the greenhouse roof, *Campylopus introflexus.* In fact our collection of weeds is so extensive I bet you're wondering if we ever do any weeding at all. Well, why would we want to get rid of such a unique and diverse weed flora? Oh, all right then we hardly ever do any weeding but...tomorrow, yes, we'll definitely weed tomorrow…no question!?

*Leander Wolstenholme*

## Parnassia Hits the Headlines !

In the 'Mystery Plants Evening' article in the last issue of Parnassia, a botanical hornets' nest was stirred by the inclusion of Western St.Paul's-wort, *Sigesbeckia serrata.*

We were first contacted by Mr. Eric Hardy who told us, that far from being a 'mystery plant', its occurrence in this area was well documented. He informed us that the plant was first noted in 1928 by F.W. Holder and R.Wagstaffe of the Southport Scientific Society (as reported in Nature 12/10/1940), at a site in Freshfield, West Lancashire. They described the find of :-

" ...an alien composite with small yellow flowers ..... which Druce afterwards identified as Siegesbeckia orientalis, fairly widespread in the southern hemisphere, but not previously recorded in Britain ."
The article then goes on to say that :-

"In the 12 years (since 1928), the species has firmly established a colony of plants at the Freshfield station and J.D.Massey, in a communication with the Liverpool Botanical Society, has pointed out that it differs from Ridley's description of the species in the 'Dispersal of plants throughout the World' in growing much taller (5-6 ft.), in always possessing five long narrow bracts instead of four, and has glands on the leaves and stem as well ".

In reply to this article, a letter was published in Nature 23/11/1940, by Eric Hardy, stating that he had:-

".....been able to add to my herbarium a specimen from a new station at Rufford, twelve miles inland westwards, and it is of further interest that some of the flower heads have six bracts."

The letter goes on to state that the Rufford colony had been growing for some years in a sandy, wild garden but was only identified after work on the local flora for the Rufford Village Museum exhibit. It was believed that the plants may have been introduced with poultry food and there is the possibility of birds or hares transporting seeds adhering to sticky bracts from the Freshfield site.

Nearly 60 years later and prompted by the mention in the last issue of Parnassia, Eric Hardy writes in his Country article in the Daily Post of 03/10/1998 :-
"The Botanical Society kindly sent me their interesting Newsletter, with a specially interesting reference to the 'mystery' of the rare tropical American weed, Western St.Paul's Wort, in an Everton garden.

There's no mystery about this tiny yellow composite flower on its tall, branching plant with large winged leaves, now called Sigesbeckia serrata. Over 50 years ago, before it was separated from the related *orientalis*, I sent a local specimen to the British Museum herbarium and in the scientific journal Nature, 23 November 1940, I published a note on its distribution here.

In 1935, the late Massey and I began experiments introducing its virile seed to Tuebrook, Wavertree, Formby, Freshfield, etc., and put a Wavertree specimen in Liverpool Museum herbarium. Several years ago, when I tutored a W.E.A. class in Everton, we introduced it to Everton Hill. In a 1932 lecture to the Botanical Society, on birds and seed-distribution, I mention goldfinches and sparrows feeding on it's seeds, but I didn't find Sigesbeckia germinating when I planted these birds' droppings."

According to Stace (New Flora of the British Isles , 2nd edition), *Sigesbeckia serrata* is an introduced, locally naturalised in South Lancashire, weed of waste and cultivated ground, whereas *Sigesbeckia orientalis* is an introduced, occasional wool-alien , NOT naturalised .

Could we have occurrences of both species in this area ? I am sure someone will let us know !

*Keith Hatton*

## Replies

## What is a cryptogam?

The dictionary defines a cryptogam as [Fr, cryptogam. Mod. L cryptogam (sc. *Plantae*) fem. Pl. of cryptogamus adj., f. as CRYPTO-+ Gk *gamos* marriage: so called because means of reproduction was not apparent]. Any plant of the Linnaean division Cryptogamia (now disused), which embraces all non flowering plants, as ferns, mosses, algae, fungi, etc. (opp. PHAEROGAM). Now rare exc. As vascular *cryptogam*, any plant of the group that includes ferns and their allies (eg. horsetails and clubmosses), which resemble flowering plants in possessing a vascular system.

Well that's the dictionary definition a simpler explanation is a plant, which reproduces by means of spores or gametes rather than seed. These are the bryophytes, pteridophytes and alga.

Next question – **What's a spore?**

A spore is a small round cell with a thick wall from which a whole new plant is produced. In bryophytes, pteridophytes and spermatophytes spores are haploid and produced by the sporophyte. In bryophytes and pteridophytes dispersal is achieved by spores. In angiosperms the spores develop into small gametophytes in the ovules and pollen grains. In all these plants spores are produced as a result of meiosis (cell division that produces haploid sex cells from diploid cells).

Let's take a look at ferns as an example and follow through the cycle from spore to new plant.

We will all be familiar with fern fronds and have no doubt looked beneath at the underside and seen the sori (sing.sorus) or spore cases. Sometimes these will be covered with a cap, which is known as the indusium. If you were to look at the sorus with the aid of a lens you would see small brown coloured balls, these are the sporangia with many spores inside. It is within the sporangium body that meiosis takes place. The indusium may have exposed the sori; these are ready for dispersal. They will be transported on the breeze and if they land in a suitable place the spores will germinate and produce a young gametophyte (haploid). The gametophyte will mature and produce the Archegonium, which contains the egg (n), and the Antheridium, which produces the spermatozoid (n); the sperm actively swims to the egg and upon fertilisation will form a zygote (2n). Cell division via mitosis ensues producing an embryo followed by a stage known as prothalli, which looks like a liverwort. These will eventually produce young sporophytes (2n) these will mature into recognisable fronds, which will begin the whole process over again.

There are two other common plants classed, as cryptogams. These are liverworts and mosses, both of which are bryophytes. Liverworts differ from mosses in having less differentiated cells in the gametophyte and in having elaters in the dehiscent capsule. The gametophyte is either thalloid or leafy. The thalloid liverwort has a flat gametophyte, more or less undifferentiated. About 20% of liverworts are thalloid
The leafy liverwort's gametophtye has a simple stem, growing from the apex and bearing small leaves in rows along it. About 80% of liverworts are leafy.

Mosses differ from liverworts in having more differentiated cells in the gametophyte. In mosses they are borne on leafy stems which are sometimes branched. The capsule of the sporophyte is also more differentiated in mosses, and the spores are released through the peristome (the sort of pepper pot sieve at the end of the seta).

*Keith Marshall*

## New Queries

In lichens, when does the fungal partner meet its algal counterpart? Following on from this, when a lichen produces spores, are they purely fungal spores or are both algal and fungal partners involved?



# Editorial
# Liverpool Museum News
# Field Meetings
# Articles
# Contacts

**President:** Dr Angus Gunn

**Vice-Presidents :** Dr John Edmondson
Peter Gateley

**Hon. Secretary :** Vera Gordon
23 Alder Grove
Waterloo, L22 2AL

**Hon. Treasurer :** Douglas Lockwood
13 Stanley Road
Formby
Liverpool, L37 7AN

**Hon. Editors :** Keith Hatton & Leander Wolstenholme
Ness Botanic Gardens
Ness, South Wirral
E-mail ljw@liverpool.ac.uk

**Hon. Librarian :** Donna Young
Botany Department
Liverpool Museum
William Brown Street
Liverpool L3 8EN
Tel: 0151 478 4373

Claire Smith
Botany Department
Liverpool Museum
William Brown Street
Liverpool L3 8EN
Tel: 0151 478 4369

# Vice-County News
# News from Ness Gardens

Strawberry Clover, *Trifloium fragiferum*

| Date | No. of flower spikes |
|---|---|
| **May1985** | 30 |
| **27/5/1986** | 445 |
| **19/5/1989** | 1146 |
| **15/5/1998** | 4200 |
| **Date** | **No. of flower spikes** |
| **27/5/1986** | 1800 |
| **3/5/1989** | 850 |
| **15/5/1998** | 990 |

Corncockle, *Agrostemma githago*

# Notes and Queries

| **Rimrose Orchids Number of flower spikes** | **1987** | **1988** | **1989** | **1990** | **1991** | **1992** | **1993** | **1994** | **1995** | **1996** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Southern Marsh** | 15851 | 6142 | 2664 | 2089 | 2000 | 1629 | 2282 | 3264 | 1565 | 1927 |
| ***C.S.* x *S. =grandis*** | 213 | 38 | 24 | 1 | 0 | 10 | 8 | 34 | 39 | 48 |
| **Common Spotted** | 85 | 2 | 7 | 5 | 0 | 1 | 0 | 3 | 1 | 13 |
| **Early Marsh *incarnata*** | 1 | 2 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 1 |
| **Early Marsh *coccinea*** | 31 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| **Northern Marsh** | 160 | 190 | 83 | 91 | 0 | 1 | 1 | 37 | 1 | 11 |
| **Bee Orchid** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Common Twayblade** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total Orchids** | 16341 | 6381 | 2781 | 2187 | 2000 | 1643 | 2291 | 3338 | 1606 | 2001 |

## Orchids Monitored at Rimrose Valley, Crosby 1987-1998