
Editorial

Welcome to the Autumn 1998 edition of *Parnassia*. Once again, as the season changes, so do the personnel at *Parnassia* H.Q. This edition has very much been the result of a team effort, the team being; Donna Hughes, Jan Hatton, Keith Hatton and myself, Leander Wolstenholme. A few of those names will no doubt be unfamiliar to you so I feel a little bit of an explanation and introduction is in order. All the work for the newsletter is still taking place at the Botany Department of the Liverpool Museum and the Botany Department is supplying all the facilities for its production. However, for better or for worse it has now acquired a distinct flavour of Ness Gardens with Keith Hatton and myself both working there and travelling to the museum after hours to work on the newsletter. At the museum Donna has worked tirelessly, staying late and helping us through the complexities of computers, scanners and databases and generally being indispensable. Jan Hatton has been proof reading and copy editing and has helped solve some apparently intractable problems.

We hope that we have lived up to the high standard of previous editions and would welcome any thoughts or ideas on future issues. Indeed, to this end, you will notice the introduction of a new Notes and Queries section where we have posed a few of our own problems. All members are encouraged to write in with solutions

as well as any queries you have yourself. In addition, everyone is encouraged to send in articles on all manner of plant related topics. The next issue is due out in spring 1999 so

if you could send your material by the end of January, that would be great.

Finally we would like to thank everyone who has contributed an article to this newsletter and hope that you enjoy reading it.

Leander Wolstenholme

News from Liverpool Museum

'Venom' Exhibition

The 'Venom' exhibition originates from the Yorkshire Museum, with supplementary material from NMGM. The main part of the display covers Zoological subjects and to complement that, the Botany department has played a major role in representing 'plants' within the theme of 'poisons'.

The exhibition starts with defining venom, which is a poison that is injected, as opposed to causing an effect when swallowed or absorbed through the skin.



Common Nettle *Urtica dioica*

Many plants have chemicals in their leaves to deter insect attack. Examples of such chemicals provide the active ingredients in tea, tobacco, and many drugs. The exhibition looks at other plants that cause blisters on contact, and plants that actually inject poison – the infamous nettles. That display features a possibly new species of nettle, *Urtica sp.*, from Tibet, which Hugh McAllister has cultivated at Ness Gardens.

One of the most poisonous chemicals known, ricin, is illustrated by a display of castor oil beans along with an umbrella with a rather sharp point! Displaying a specimen of Foxglove, *Digitalis purpurea*, also touches upon the human benefits gained from plant poisons.

'Venom' runs until November this year.

A Caribbean Garden in Liverpool

The National Museums and Galleries on Merseyside are celebrating the fiftieth anniversary of the arrival of

migrants from the Caribbean on the passenger liner *Empire Windrush* with an exhibition and a Caribbean Garden.

The garden and exhibition opened this June at the Museum of Liverpool Life at the Pier Head. The display looks at fifty years of change in the lives of people from the Caribbean, and effects they have had on British culture. The routes taken by passengers from the *Windrush* in British society are traced.

An important exhibit is Dr William Wright's herbarium - a 200 year old book of pressed plants from Jamaica, with notes on their uses as medicines. Many observations in this book show the knowledge and practices of enslaved Africans.

Sarah Bird, Curator of Cultivated Plants in the Botany Department at Liverpool Museum, selected the plants in the new garden. These represent some of the unusual species that Caribbean people grow in Britain today. Allotment holders talk about the adaptation of food plants to British conditions, and we see how some plants from 'bush' or folk medicine have become important industrial products.

The garden will remain open until the 18th October this year.

Place Invaders - alien plants in Britain

There is a new display in the Natural History Centre showing examples of alien plants that can be found in the British Isles.

Alien plants can be thought of as those that are believed to have made their way here as a result of human activities. In some cases the introduction is accidental, such as seeds brought in with foreign cereals and legumes, wool imports or in ships' ballast.

Many alien plants growing wild have occurred as a result of deliberate introductions, either to be grown as crops or as garden plants, sometimes in private collections.

Some aliens are long established or ancient introductions, for example Sycamore, *Acer pseudoplatanus* and Ground Elder, *Aegopodium podagraria* others such as *Buddleja* have arrived more recently.



Sycamore, *Acer pseudoplatanus*

Plants like *Rhododendron* find a suitable home in Britain and spread, establishing themselves widely, others are more casual, appearing intermittently or when conditions are favourable.

Place Invaders will run until mid-autumn.

News from Ness Gardens

Welcome to what we hope will be a new regular feature in *Parnassia*.

By way of introduction we will give you an overview of some of the current and forthcoming research work being carried out at Liverpool University's School of Biological Science's Research Station based at Ness Botanic Gardens in Neston, Wirral.

The largest project underway at the moment is one researching the effects of global warming on a small pond community. This project is currently being set up in a series of 50 artificial outdoor tanks, some of which will be heated to 3°C above the ambient temperature to attempt to recreate the effect of global warming.

This season the plants are being established using a range of water plants including Broad-leaved Pondweed, *Potamogeton natans*, Nuttall's Waterweed, *Elodea nuttallii*, Water-starwort, *Callitriche sp.* and Curly Waterweed, *Lagarosiphon major*.

Another large project underway is the study of genetic variability in natural populations in semi-arid areas using Sage-leaved Rock-rose, *Cistus salvifolius*. This is part of a large E.C. funded model looking at the problems of desertification.

There is also work being carried out on the susceptibility of different willow species to insect attack, whilst they are subjected to various stresses such as drought, waterlogging, different nutrient levels etc. The species under investigation are Osier, *Salix viminalis* clones and *Salix viminalis* x *S. triandra* hybrids. These species have been selected for their fast growing qualities to investigate their suitability for commercial use as a source of re-newable energy. The large scale use of willow for this purpose is just beginning but there have been problems with pest control. The research is backed by the Perry Foundation Trust which supports research into alternative agricultural methods.

This is just a sample of some of the many and varied research activities taking place at Ness Botanic Gardens. We will explore some of these projects in greater depth in subsequent issues of *Parnassia*.

Keith Hatton

Local News

LBS Member Wins Award

We are pleased to report that Liverpool Botanical Society member John Richardson has been awarded the CPRE (Council for the Protection of Rural England) Countryside Medal. This is the first time the medal has been awarded. From now on, it will be awarded annually in each county to

an individual who has made a marked contribution to countryside protection. John was an obvious candidate with his long association with the Lancashire Branch of the CPRE (where he has served as a committee member, Vice-chairman and Branch Chairman) and his extensive knowledge of the countryside and rural matters.

Evening Meeting Reports

Note from Ed: Have you got a mystery plant or a puzzle you want solving? If so, why not send in your problem and we'll see if any or our members out there can come up with a solution.

Mystery Plants Evening October 14th

Members responded in their own way to this title by bringing fresh specimens, pressed plants and slides.

Miss Vincent sent, from Oxford, the Oxford Ragwort, *Senecio squalidus* with details of its history in Britain and subsequent spread. A leaf of London Plane, now so common in our city streets, is a hybrid of *Platanus orientalis* x *P. occidentalis*, an example of east meets west. Specimens of Beech, *Fagus sylvatica* and Roble, *Nothofagus obliqua* were included as north and south specimens of closely related genera.

Mrs Lockwood showed a fresh specimen of Roble, *Nothofagus obliqua* that she found growing in Freshfield.

Mr Gateley produced a large collection of assorted Michaelmas Daisies for subsequent identification.

Vera Gordon

Miss Gordon brought pressed specimens of our three native Lime trees as well as four others that were quite different. These were left with Dr Gunn to check with herbarium specimens. The rare alien Western St. Paul's Wort, *Sigesbeckia serrata* from tropical America was also shown. This used to occur sporadically in the Formby area although it is now a few years since it was last seen. More recently it has been found in plenty as a garden weed in Everton.

A herbarium specimen of Narrow-leaved Water Plantain, *Alisma lanceolatum* was shown. It is a rare plant in vc 58 and vc 59, although it is more frequent in the south. Members may see it growing at one of the 1998 field meetings.

Duncan Rothwell showed a series of slides taken on the newly formed salt marsh on the foreshore at Ainsdale. A good coloniser was shown to be Creeping Bent, *Agrostis stolonifera* though, as with other local salt marshes, Common Saltmarsh-grass, *Puccinellia maritima* should soon follow. A field meeting was requested in this area.

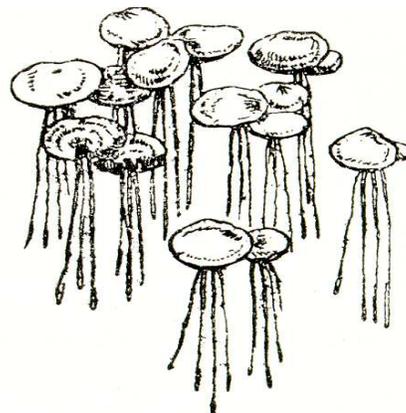
More slides were shown by Mr Gateley and Miss Gordon.

The video microscope from the Natural History Centre was brought into the meeting room so that members could view the specimens magnified on a television screen.

Holiday Exhibits Meeting 11th November

It was regretted that, due to various commitments, most of our usual contributors were unable to take part. A plea was made to other members to bring a photo, a plant or write up a day out or holiday next year.

Miss Gordon showed pressed specimens gathered in Syria and Jordan such as Jagged Chickweed, *Holosteum umbellatum* (an almost extinct species in Britain), *Rumex cyprius* (with large scarlet fruits), *Hypocoum pendulum* and *H. imberbe*, Red *Ranunculus asiaticus* and the large yellow *Ranunculus macrorrhynchus*. In September *Tribulus terrestris* was gathered from waste ground in Lhasa Tibet and *Parnassia nubicola* was still in flower in Yunnan.



Greater Duckweed *Spirodela polyrrhiza*

Many Chinese plants are also common in Britain such as Gallant-soldier, *Galinsoga parviflora*, Procumbent Yellow Sorrel, *Oxalis corniculata*, Canadian Fleabane,

Conyza canadensis, Greater Duckweed, *Spirodela polyrrhiza* and Sea Buckthorn, *Hippophae rhamnoides*.

Slides taken in China included a pink Lady's tresses orchid *Spiranthes sinensis*, three *Impatiens* species, the Himalayan Edelweiss, *Leontopodium himalayanaum*, *Hypericum elodeoides* and a clustered mauve flowered *Clematis acutangula*.

Vera Gordon

Plants in Kazakhstan

9th December

Miss Gordon gave an account of a Green Tours holiday that took place in Kazakhstan in June 1996. The country is more than four times the size of the British Isles and stretches from the Caspian Sea to the Chinese border. It is mainly steppeland and until November 1991 was part of the USSR. Our party visited the extreme south eastern corner where there was some steppeland and the main attraction, the Tien Shan Mountains.

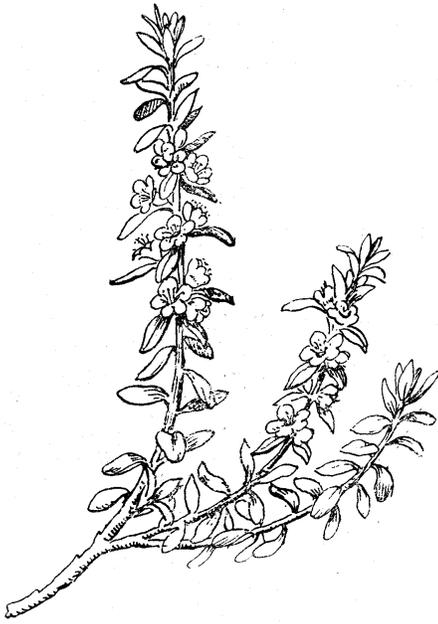
We flew to Tashkent in Uzbekistan, where an ancient bus took our party of 10 plus leader to Dzhabagly village. We stayed in the village houses for the first week and the last four days of the tour. Slides depicted the village, roads and children selling from small tables along the roads in the absence of shops.

En route we stopped for a roadside picnic and I met our first Kazakhstan plants. Frothy white mounds of *Crambe tatarica* bordered the roads. On the bank where we sat were the yellow

and maroon flowers of the Persian Rose, *Hulthemia persica*, deep blue *Anchusa italica*, as well as a few Sage and *Convolvulus* species.

We all breakfasted and dined in one house. We often had to have a candle lit supper because electricity had to be bought from Uzbekistan and was only available between 9pm to 7am.

We visited the Karatau Mountains, an ancient range between the more recent Himalayas and the Tien Shan Mountains. Slides of some of the plants there included the Russian Money Plant, *Megacarpaea orbiculata* which has tiny crucifer flowers but many large flat round pods the size of 50p pieces. Another plant with curious fruits was *Astragalus severzovii* growing to two feet tall, its stems were thick with pods like cotton wool balls 1" across. There was *Phlomis salicifolia* and many species of Onion such as the blue flowered *Allium caeruleum*, *A. karataviense* (which has a sessile head of flowers between two large nearly round leaves) and an endemic *Allium kujukense* found in the Kujuk pass.



Sea Milkwort, *Glaux maritima*



Marsh Mallow *Althaea officinalis*

On a few days we visited the extensive steppelands to examine the varied habitats. There were shallow salty lakes fringed with water plants and marshy ground where salt marsh plants could be found. Some of these were familiar to us such as Sea Milkwort, *Glaux maritima*, Sea Plantain, *Plantago maritima* and Marsh Mallow *Althaea officinalis*. These places were good for the six birders in the party as well. The dry stony ground had prickly cushions of the pink flowered *Acanthophyllum pungens* and thistle like *Cousinias*.

Then we spent a week in the Aksu Dyhabeigly Reserve, a reserve since 1927, and until four years ago restricted to scientific research. It was 12 kilometres to the mountain hut at 6500 feet. Horses were provided for the party to travel the last 4500 feet, but I decided to walk up in order to see the range of species and the different habitats from 2000 feet to 6500 feet. Some of the plants seen during this walk were a lovely pink flax, *Linum olgae*, a tufted pink flowered succulent, *Pseudosedum longidentatum*, two species of Solomon's Seal, *Polygonatum sewerzowi* and *P. roseum* to name just a few.

Some of the party slept in two yurts made from circles of stakes covered with thick white felt and tall enough to stand up in. As there was no electricity at all we all used candles and washed in the mountain stream near by. Slides showed toilets, hot water and shower facilities fixed up by

the Kazakh horse-men who came with us as well as the two ladies who prepared our meals.

Walks were taken in the Juniper forests below and up in the high mountain valleys, some of which were still holding snow. Slides showed *Tulipa kaufmanniana*, *T. dasystemonoides*, and *T. greigi*, as well as the yellow Juno Iris, *Iris orchidioides* and the orange *Trollius altaicus* and *Anemone protracta* looking similar to the Alpine *A. narcissiflora*.

On the banks of a mountain stream near where we washed grew tall *Codonopsis clematidea* with pale blue bells, *Aquilegia atrovinosa*, *Cortusa turkestanica* and Round-leaved Wintergreen, *Pyrola rotundifolia*.

One day we all went on horseback up a steep climb to a 10,500 foot ridge along which we proceeded on foot. Here we saw clumps of *Paraquilegia grandiflora* and pink *Primula minkwitziae*. Where the snow had recently melted were *Primula algida*, *Colchicum luteum*, a few *Gagea* species and *Pulsatilla campanella*.

Returning to the village for the last few days some flowers had gone over but were replaced by yellow *Eremurus soogdiana*, orange flowered *E. regelii*, tall white spires of *E. turkestanicus* and the blue bells of *Ixiolirion tataricum*.

Vera Gordon

AGM

12th January 1998

The president in the chair was Dr Gunn and 20 members were present. The minutes of the last AGM were read and confirmed. The Hon. Secretary's report gave details of membership and indoor and field meetings during the year. Its adoption was proposed by Mr Palmer and seconded by Miss Bentley.

The Hon. Treasurer, Mr Lockwood presented the balance sheet for 1997, duly audited by Misses Bentley and Davies. Copies of the summary of accounts and balance sheet were given out and duly explained. The accumulated fund had risen from £3,128 at the end of 1996 to £3,338 at the end of 1997. It was pointed out that the cost of the last *Parnassia* had not yet been paid. There was a new item of expenditure this year; travelling expenses for a visiting lecturer. It was resolved that in future visiting speakers would be invited to claim expenses. Adoption of the Treasurers report was proposed by Miss Gordon and seconded by Duncan Rothwell.

The office of Hon. Librarian was still vacant and Miss Hughes who was looking after the library had sent an apology for absence so Dr Gunn reported that the library had not been used during 1997 and still needed work on cataloguing etc. The Flora of Flint was still missing.

Election of Offices followed. Dr Gunn was due to stand down after 2 years as President but there had been no proposals for nomination or volunteers so he agreed to continue for another 2 years. This was proposed by

Miss Vera Gordon and seconded by Miss Bentley. The remaining officers were re-elected en block, namely Vice Presidents Dr Edmondson and Mr Gateley, Hon. Secretary Miss Gordon, Hon. Treasurer Mr Lockwood, Hon. Editors Mr Palmer and Miss Hughes. 10 Council members; Misses Bentley and Davies, Mrs Gateley, Lockwood and Rainger, Messrs Greenwood, Richardson, Rothwell and Smale and Dr Watson. The Hon. Secretary was requested to thank the Museum as usual for their hospitality.

A resumé of field meetings followed. Mrs Lockwood passed round a fresh specimen of Winter Heliotrope gathered in Freshfield. Miss Gordon showed fresh specimens and pressed fronds and a map showing distribution in the British Isles of Hay Scented Buckler fern *Dryopteris aemula*.

Mr Gateley and Miss Gordon each showed slides taken at field meetings of views, botanists and species seen. Extra slides shown were of *Ulex minor* in the planted shrubbery along the canal bank at Litherland and *Myriophyllum aquaticum* in a marl pit near Roby.

Vera Gordon

The Wild Plants of Sherkin, Cape Clear and Adjacent Islands in West Cork

10th February

A Flora, "The Wild Plants of Sherkin, Cape Clear and adjacent Islands of West Cork", has recently been published. It is a full inventory of the

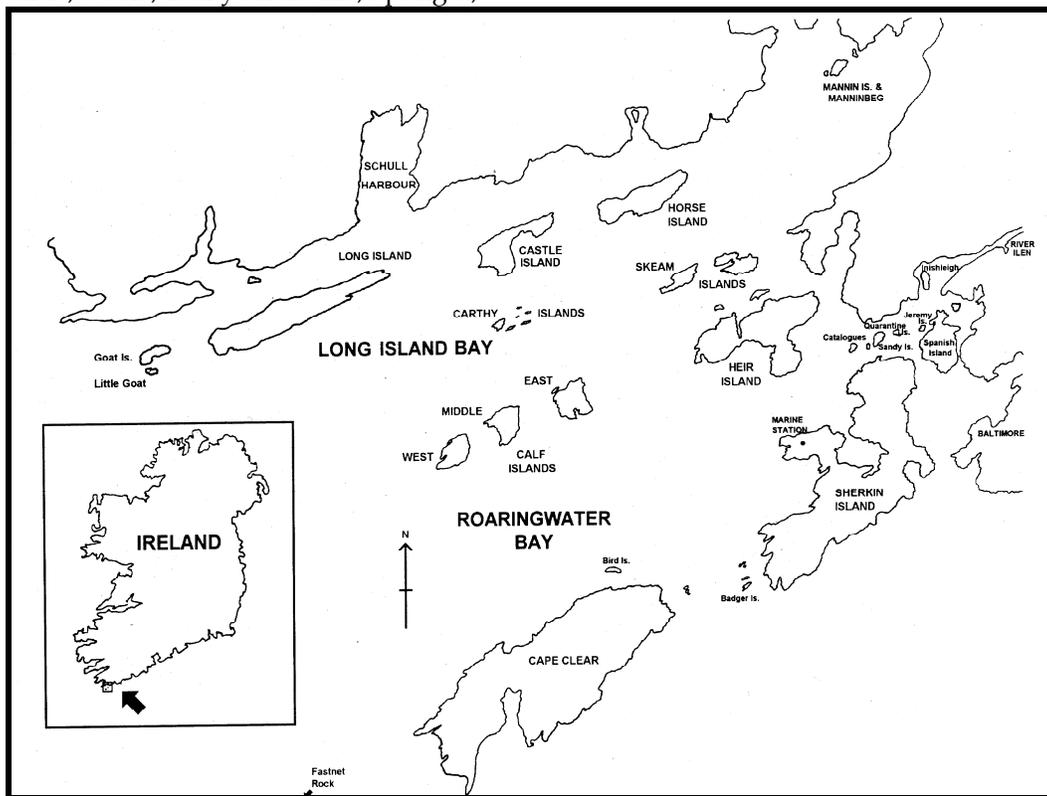
flowering plants, ferns, shrubs and trees of the islands of Roaringwater Bay, Co Cork, Ireland and brings together 20 years of floristic data. A total of 592 species have been recorded for the islands (since the book was published, this has now risen to 601). This number includes a dozen of Ireland's rarest plants (Red Data Book species). A further 22 are considered nationally rare or very local. The Sherkin botanists have added a new species, the Deptford Pink, *Dianthus armeria*, confirmed another, Fiddle Dock, *Rumex pulcher* and added at least one hybrid, another dock, *Rumex x muretii* (*R. conglomeratus* x *pulcher*) and one variety, a fumitory, *Fumaria muralis* var. *britannica* to the known flora of Ireland. When it is considered that the islands of Roaringwater Bay only occupy an area of some 10 km² the results seem quite astonishing. There can be little doubt that this small area is the richest 10-kilometre square in Ireland.

One of the most remarkable features of the flora of Roaringwater Bay is that many of these plants remained undiscovered until intensive studies were undertaken in the 1980s and 1990s by botanists at Sherkin Island Marine Station under the expert guiding hand of Dr John Akeroyd and the funding and motivation of Matt Murphy.

Sherkin Island Marine Station was founded in 1975 by Matt and Eileen Murphy. They were bewildered by the official neglect of this ecologically diverse area and set up the Marine Station in a, highly successful, attempt to rectify this situation. The Marine

Station has been recording plankton, birds, otters, rocky shore life, sponges,

seaweeds and flowering plants and



ferns ever since and each summer Matt Murphy brings together a group of young biologists on the island to continue the recording and research.

Roaringwater Bay lies immediately west of Baltimore in West Cork. Sherkin Island and Cape Clear are the two largest islands in an archipelago of fifteen or so smaller islands. Cape Clear is the southernmost point in Ireland. The flora of Roaringwater Bay can, therefore, be considered to be so Atlantic that it's actually in the Atlantic! Indeed, with the area's mild moist climate, it's no surprise that typical Atlantic species such as Western Gorse, *Ulex gallii*, Rusty Willow *Salix atrocinerea*, Bluebell, *Hyacinthoides non-scripta*, Green-ribbed Sedge, *Carex binervis* and English

Stonecrop, *Sedum anglicum* are abundant.

The underlying rock is Old Devonian

Red Sandstone. This also underlies the Mizen, Sheeps Head, Beara and Iveragh peninsulas. Robert Lloyd Praeger, the great Irish botanist and naturalist, described these great promontories as Old Devonian Butresses. The sandstones form the dramatic cliffs that overlook the Ocean on the southern side of Sherkin and Cape Clear and outcrop frequently on heathy ground. The Old Red Sandstone gives rise to acidic soils and the flora is mostly acidic in nature.

Many botanists of note have recorded in the islands including, James Drummond (1784-1863), Revd Thomas

Allin (d.1909) and Robert Albert Phillips (1866-1945) (who recorded Spotted Rock-rose, *Tuberaria guttata*, on East Calf and Heir Islands). Oddly enough, Robert Lloyd Praeger who covered most of Ireland appears to have by-passed Roaringwater Bay. He had obviously visited and enjoyed his visit as he wrote in *The Way I Went* (Praeger 1936): "You stay on Sherkin Island...or Cape Clear Island...and you walk and boat and fish and lounge and bathe, and enjoy the glorious air and sea". It seems that Roaringwater Bay was where this legendary naturalist spent his days off!

The first major inventory of the flora of Sherkin and the other islands was that of Oleg Polunin (1914-1985). He visited Sherkin in the summers of 1948-51. His work on the flora and vegetation of Sherkin has been the basis for all the subsequent Marine Station studies. Each summer during this period he would stay for an extended period at Lough Hyne or Sherkin with his family and some of his pupils from Charterhouse School, Surrey. He published his finds in Volume 1 of *Watsonia*, the then new journal of the Botanical Society of the British Isles.



English Stonecrop *Sedum anglicum*

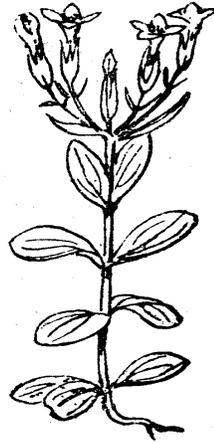
Following Polunin no further work was carried out on the islands until the exhaustive studies of the Sherkin Island botanists. Lucy Wright, who was on Sherkin in the autumn of 1981 and for much of 1982, was the first person to compile a comprehensive species list since Oleg Polunin. Her meticulous surveys of the vegetation, her species lists and herbarium inspired all subsequent botanists at the Marine Station. Her single most important plant discovery was Slender Centaury, *Centaureum pulchellum*, on Horse Island, its first confirmed record in Co. Cork since Drummond had found it in 1818.

In 1990, Jennifer Shockley, from America, prepared a detailed checklist which provided a reliable basis and skeleton for the systematic survey of this present Flora. 1992 proved to be a very exciting year. Another American botanist, Karen Clarke, together with John Akeroyd tracked down several of the rarer plants and they added many new records. These were documented in a paper in *Watsonia* in 1993. They discovered the Deptford Pink, *Dianthus armeria*, a species and genus

never before reported as truly wild in Ireland, during a cold, wet afternoon's excursion on Horse. John rediscovered *Rumex pulcher* in two small colonies at the eastern end of Sherkin. This confirmed reports from the area by Polunin and earlier workers and demonstrated that the Fiddle Dock had persisted on Sherkin for at least 100 years. It, therefore, has a strong claim to be native in Ireland and not merely "casual" as described by Perring and Walters (1976). Karen Clarke rediscovered Spotted Rock-rose, *Tuberaria guttata* on East Calf, a record alluded to by Praeger but not confirmed until 1992. She added Babington's Leek, *Allium ampeloprasum* var. *babingtonii*, to the flora of Sherkin, the most significant extension of its recorded range for over a century. The Sharp-leaved Fluellen, *Kickxia elatine*, a very rare, sub-maritime plant in Ireland was discovered on open peaty ground on a south-facing slope above the sea. Oleg Polunin described this plant as "frequent on cultivated ground" in 1949. It is only occasionally found on disturbed ground today.

In 1993, Nick Rowe was able to add Little Robin, *Geranium purpureum*, to the growing list of Red Data species from a shingle strand on Long Island. Pat Hatch and Mike Robinson found Sea Kale, *Crambe maritima*, on Middle Calf and discovered new stations for Spotted Rock-rose, *Tuberaria guttata*, Lanceolate Spleenwort, *Asplenium obovatum* subsp. *lanceolatum* and Sharp-leaved Fluellen, *Kickxia elatine*, in 1994. In 1995 Beth Milner was able to add Sea Pea, *Lathyrus japonicus* subsp.

maritimus to the list of Roaringwater Bay rarities.



Slender Centaury *Centaureum pulchellum*

The islands are a patchwork of vegetation, much of it open and broken rocky ground. The extensive coastline in the islands makes for a range of habitats: cliffs, rock, sand and shingle strands. Typical coastal plants such as Sea Pink, *Armeria maritima* and Common Scurvygrass, *Cochlearia officinalis*, form a blaze of colour in early summer. In places short coastal grassland becomes dominated by Sea Plantain, *Plantago maritima*, and Buckshorn Plantain, *Plantago coronopus*. This community comes close to the Plantago Sward that Praeger first described as forming "a shining green carpet...as smooth to the hand as a newly-ironed table-cloth." On exposed cliffs an open vegetation develops with tussocks of grassland species, Sea Campion, *Silene uniflora*, Rock Samphire, *Crithmum maritimum* and Sea Beet, *Beta vulgaris* subsp. *maritima*.

Salt rich and shell-rich beach sand reduces the acid nature of the coastal grassland soils and is home to calcicoles such as Pyramidal Orchid, *Anacamptis pyramidalis*, Bird's Foot Trefoil, *Lotus corniculatus*, Kidney Vetch, *Anthyllis vulneraria* and Crested Hair Grass, *Koeleria macrantha*. The variant of Kidney Vetch, *Anthyllis vulneraria*, that grows in the bay is very distinctive. The stems are 10-30cm, decumbent to ascending or rarely erect, the leaves inequifoliate, the calyx usually red-tipped, rather hairy; the corolla is cerise-pink, cream or sometimes pale (rarely bright) yellow. Some plants on Heir have almost crimson flowers, whilst those of plants on Cape Clear are mostly pale yellow. They are close to subsp *lapponica* which is widespread in Scandinavia and Scotland and the Roaringwater Bay plants probably deserve varietal rank.

There are a small number of shingle strands on the islands. These are often populated by Curled Dock, *Rumex crispus*, and Goosefoots, *Atriplex prostrata* and *Atriplex glabruiscula*. More colourful plants of this unstable habitat include the Yellow Horned Poppy, *Glaucium flavum*, with large yellow flowers and the Common and Tree mallows, *Malva sylvestris* and *Lavatera arborea*, both with striking pink flowers.



Kidney Vetch *Anthyllis vulneraria*

Shingle strands are home to three of the Roaringwater Bay Red Data rarities Little Robin, *Geranium purpureum*, is found on a broad shingle strand at the west end of Long Island. The only other Irish stations for this plant are in and around Cork City, where it survives precariously at several sites, mostly on old walls. Sea Kale, *Crambe maritima*, grows on a shingle strand on Middle Calf and the Sea Pea, *Lathyrus japonicus* subsp *maritimus* has been seen on Castle and Heir Islands. In Ireland this plant is restricted to four sites: two in Kerry and one in Donegal. It has an intermittent existence in Ireland and it is possible that the seeds may drift here from North America.

Small areas of freshwater marsh are frequent on the islands and here plants such as Yellow Flag, *Iris pseudacorus*, Water Mint, *Mentha aquatica*, Purple Loosetrife, *Lythrum salicaria*, Common Fleabane, *Pulicaria dysenterica*, and Lesser Spearwort, *Ranunculus flammula*, form a colourful

and aromatic mixture. Polunin noted that loughs and pools were used in pre-machine days to wash clothes.

Pollen analysis of the largest fresh water lake on Sherkin, Lough Ordree, has shown that the White Water-lily, *Nymphaea alba*, has been flourishing there for 10,000 years.

Most of the rare plants of the islands are either heathland species or weeds of cultivation. Perhaps, because of the difficulty and cost of transporting heavy agricultural machinery to the islands and because of the rocky terrain and de-population, the islands are, in comparison to the mainland, free from intensive agriculture. They, therefore, have a remarkable weed flora that is of national significance. Red Data species such as the Lesser Snapdragon, *Misopates orontium*, and the Sharp-leaved Fluellen, *Kickxia elatine* can be found on disturbed ground. Polunin observed the traditional mixed agriculture of the islands: livestock, with fields of potatoes, oats, barley, rye, turnips, mangolds and fodder beet, cabbages and species-rich hayfields. Little large-scale tillage survives today - only garden vegetable plots. However, where ever there is a small area of cultivated land, or disturbance through building, weeds persist and sometimes flourish.

Fumitories form an interesting component of the weed flora. Purple Ramping-fumitory, *Fumaria purpurea*, grows on Sherkin, Long and Horse. It is of special interest as it occurs only in Ireland and Britain. Common Ramping-fumitory, *Fumaria muralis*

subsp *boraei* is sometimes abundant on cultivated ground. Plants just south-west of Trabawn Strand on Sherkin Island are more slender with smaller sepals and have been determined as var. *britannica*. This variant has not been previously reported from Ireland in the literature.



Navelwort *Umbilicus rupestris*

Heathlands are an extensive, conspicuous and floristically rich element in the vegetation of the islands. The typical coastal heaths of Roaringwater Bay are covered by a low, dense growth of Dwarf gorse, *Ulex gallii*, Ling, *Calluna vulgaris*, and Bell heather, *Erica cinerea*, together with the grasses Common Bent, *Agrostis capillaris*, Creeping Bent, *Agrostis stolonifera*, and Sheep's Fescue, *Festuca ovina*, and other plants such as Tormentil, *Potentilla erecta*. Some sedges such as Carnation Sedge, *Carex panicea* and Green-ribbed sedge, *Carex binervis*, are prominent in this community, as are extensive patches of Creeping Willow, *Salix repens*. Heathland looks its best in late

summer when the main species are in full bloom. Rare species associated with heathland or, more specifically, the rock outcrops that frequently occur are the Spotted Rockrose, *Tuberaria guttata*, Pale Heath Violet, *Viola lactea*, Bird's-foot, *Ornithopus perpusillus*, and Hairy Bird's Foot Trefoil, *Lotus subbiflorus*. Roaringwater Bay is the Irish headquarters for these four Red Data species. The thin soils of the rock outcrops dry out during the summer, thus preventing encroachment by more vigorous species and allowing the plants themselves to die down and their seeds to ripen. Most of this group of plants are annuals more characteristic of southern Europe and the Mediterranean region and also includes clovers such as Bird's foot clover, *Trifolium ornithopodioides* (which is even harder to pronounce than it is to spell!), Hare's-foot Clover, *Trifolium arvense*, Knotted clover, *Trifolium striatum*, and Slender Trefoil, *Trifolium micranthum*.

The other Irish stations for the Spotted Rock-rose, *Tuberaria guttata*, are all on islands or peninsulas in the extreme west, on the coasts of West Mayo and Connemara, just to the north of Roaringwater Bay on Sheep's Head and in several places around Three Castles Head and Crookhaven, West Cork. The glacial and post-glacial history of the region has had a great influence on the present flora. It is possible that a few sites in western Ireland remained ice-free on the periphery of the glaciers. Such sites, known as nunataks, may have been refuges for certain plants such as the Spotted Rockrose. The present distribution of this plant in Ireland,

restricted to a few promontories and islands supports this view. The Roaringwater Bay plants are mostly small in stature, with many bracts amongst the flowers. Such plants, similar to those from Wales and Three Castles Head, have been called subsp. *breweri*, but the variation between these and plants from the continent is continuous.

Other plants on the islands have a Lusitanian distribution (i. e. being also found in north-west Portugal and Spain). These include include Irish Spurge, *Euphorbia hyberna*, the Red Data Species Lanceolate Spleenwort, *Asplenium obovatum* subsp *lanceolatum*, Hay Scented Buckler Fern, *Dryopteris aemula*, Navelwort, *Umbilicus rupestris* and Wild Madder, *Rubia peregrina*.

Another West Cork speciality found on the islands is Yellow Centaury, *Cicendia filiformis*. This is locally common on damp, open, peaty and gravelly ground, often near the sea. It is often found growing in association with the liverworts *Fossombronia dumortieri* and *Archidium alternifolium*.



Carnation Sedge *Carex panicea*

The islands have suffered massive depopulation. In the 1840s both Sherkin and Cape Clear had a population of over 1000. Nowadays Sherkin has a population of 90 and Cape Clear 130. The islands are littered with derelict cottages and ruined farms: an evocative reminder of once-thriving communities. This long history of human occupation and cultivation has enriched the soil, created more habitats and introduced numerous plants. Plants associated with human habitation include Alexanders, *Smyrniolum olusatrum*, Parsley, *Petroselinum crispum*, and Horse-radish, *A Armoracia rusticana*. These three are associated with the O'Driscoll castle on Sherkin Island. The O'Driscoll clan dominated this part of West Cork for some centuries prior to 1602 (when the English invaded). Their ruined tower-house castles are a feature of the countryside. When travelling to Sherkin Island on the ferry from Baltimore, the first building to catch the visitor's eye is the Abbey (strictly a friary). This was founded in 1460 by one of the O'Driscolls and has a similar flora to the castle. Near to the castle on Sherkin grows Hemlock, *Conium maculatum*, a poisonous plant found to be associated with 18 out of 20 Norman Castles in East Central Ireland. It is also associated with several of the ruined cottages on the other islands, e.g. Heir. The medicinal herb Elecampane, *Inula helenium*, was noted on Cape Clear by Dr C. Smith, a Cork City physician in 1750 and it still grows there today as well as on Sherkin and other islands in the Bay.

Ireland has few areas where wild plants are concentrated. This is in contrast to Britain, which possesses a more varied landscape and vegetation. In Britain, certain special localities have long attracted botanists: Scotland's Ben Lawers and Glen Clova for their Arctic-Alpine floras, the Breckland of East Anglia for a group of steppe plants, and the Lizard peninsula in Cornwall for Mediterranean plants at the edge of their range.

Roaringwater Bay alongside the Burren and the Galway Bay region, can certainly be described as an Irish botanical "hotspot" like those of Britain. If it had not been for the work of Sherkin Island Marine Station and Dr John Akeroyd the floral treasures of Roaringwater Bay would probably have remained a secret. The lesson is obvious, we need more detailed, long-term studies of small areas of countryside. Without up to date, reliable, accurate data the evaluation of nature conservation value or potential is impossible and could severely hinder our attempts to protect our rarest plant species.

Leander Wolstenholme

The Wild Plants of Sherkin, Cape Clear and adjacent Islands of West Cork, Ed. John Akeroyd is published by Sherkin Island Marine Station and can be ordered from Matt Murphy, Sherkin Island Marine Station, Sherkin Island, Co. Cork Island for £20.00 plus £3.00 postage

Rev. Henry Higgins, a local Victorian Naturalist

10th March

The Ravenhead site at Thatto Heath near St. Helens was first exposed when the cutting was made for the Liverpool to St. Helens Railway in 1869.

The Reverend Henry Hugh Higgins (1814-1893), a keen amateur naturalist and president of the Liverpool Naturalists' Field Club who worked as a volunteer at Liverpool Museum, was notified of the site in May 1870. He began collecting fossils with his family, finding that as the site was developed more fossils became available.

As activity on the site increased, Higgins became so concerned about the amount of material being removed, and the amount of fossils being lost as a result, that he began to train and pay the railway constructors to search for fossils.

Several months later a large amount of material had been collected, and Higgins used his botanical knowledge to select the fossil plants which showed particular features. The Ravenhead collection was mentioned at the 1870 British Association Meeting as being of high enough quality to allow the identification of associated plant parts. Higgins, however, was not an expert and was unable to identify most of the fossils he had collected.

On December 9, 1870 the Liverpool Naturalists' Field Club held a meeting during which a talk was given by Prof. W.C. Williamson. He described the characteristics of *Lepidodendrons* and their classification as club mosses, but

was unclear about *Stigmaria* and *Sigillaria* (we now know that these are parts of *Lepidodendron*). He also mentioned the classification of *Calamites* (*Equisites*). About a month later Higgins exhibited some of the *Calamites* collected from the Ravenhead site to the Field Club. The collection was featured again in Higgins' presidential address in 1871, when he used Williamson's classification.

A new display of the Ravenhead material was constructed. This is indicated by old display labels and the fact that some of the people who had helped in the excavation of fossil plant material had visited the museum to view the collection.

The Ravenhead collection was first described by F. P. Marrat, who described 60 species of fossil fern in his 1872 paper. Marrat found that many of the species did not correspond with the descriptions of previous authors. He attributed this to the large number of intermediate forms, and to the possibility that fragments of the same plant may have been described separately.



Odontopteris sp. & *Pecopteris* sp. Collected by Higgins from Thatto Heath

At the time that the Ravenhead collection was being assembled fossil plant taxonomy was in turmoil and major developments were taking place. The first description of plant fossils was Brongniart's (1770-1847) who described coal measure plants in 1828. His classification system was as follows: Cryptogams, being mainly ferns: *Equiseta* (Horsetails); *Lycopods* (Club Mosses) and Flowering Plants. He identified 225 species. However, a problem arose in 1832 when Brongniart examined a branch of a *Lepidodendron* that did not have thickened wood. He separated the classification of the plant and labelled the bark and branches as different species. Therefore a *Lepidodendron* branch was classified as a Cryptogam, and the bark, *Sigillaria*, was named as a Gymnosperm

William Crawford Williamson, F.R.S, F.G.S. (1816-1895) pointed out that Brongniart had used only external

features for his identifications and realised that some *Lepidodendrons* took a long time to develop a woody stem. Dissatisfied with the previous works on fossil plants, Williamson began his own investigations into Palaeobotany, observing their internal features and microstructures, using over 300 thin sections of fossil plant structures, which allowed him to investigate them on a different level. For example he was able to examine some fossil cone structures and establish that they were the fruit of *Calamites*, though this was difficult to prove.

At the time that the Ravenhead material was being collected, Williamson wrote the first part of his memoir and sent it to the Royal Society in November 1870. However, it was refused, the society claiming that they would be obliged to publish all of the following parts. In fact, there was a major disagreement over Williamson's work as it opposed the ideas of Brongniart. Eventually Williamson's paper and the second part soon followed. Gradually, during the 1880s Williamson's ideas became recognised in Europe and by 1890 everyone except Brongniart's pupils had accepted them

However, Williamson's technique of using microstructures had not been accepted in the early 1870's, so Marrat had to rely on identification using external features for the Ravenhead collection. Many of the fossil plants were just fragments, or had lost their distinctive features during fossilisation, making identification difficult. In addition, the number of monographs and papers available to

assist in establishing the identity of plant fossils was very limited. Identification of the Ravenhead collection would therefore have been difficult for Marrat, for example, in the 1872 paper, written mainly by Marrat, it can be seen that there were seven different descriptions for the genus *Sphenopteris* and two for *Pecopteris*, also the fern genus *Cyclopteris* was defined as two by Brongniart, who named the other *Nephropteris*. Marrat pointed out that most authors named them all *Cyclopteris*, apart from Lindley and Hutton who refer to it as *Neuropteris*. The paper was criticised by the British Museum Botanist, William Carruthers, but it did serve to notify other palaeobotanists about the Ravenhead collection.

The problems encountered with the classification of the Ravenhead material were sorted out by the Scottish Palaeobotanist Robert Kidston F.R.S., F.G.S. He visited the collection on two occasions, in 1886 and 1887, and borrowed specimens to examine in Stirling. Kidston named one of the ferns after Marrat (*Sphenopteris marratii*) and accepted Marrat's new species *Sphenopteris coriacea*. Problems with taxonomy were still evident in Kidston's 1889 paper. He listed a large number of synonyms attached to the descriptions of each species.



Sphenopteris coriacea Marrat
Collected by Higgins from Thatto Heath

The fossil plants of the Ravenhead Collection were featured again by Kidston when he wrote his memoir on Fossil Plants of the Carboniferous Rocks of Great Britain, published in 1923. Since then several other authors have featured material from the Ravenhead collection, the most recent being in 1981.

Wendy Simkiss
Illustrations: Donna Hughes

Articles

The National Wildflower Centre in Knowsley

In August we were invited by Paul Christie, the Development Manager, to visit the new National Wildflower Centre in Court Hey Park, Knowsley. This, we eagerly accepted and hurried down the M62 to Court Hey Park to

see one of Merseyside's most exciting floral projects.

The first phase of the Centre was opened in April 1998 and is being developed with the backing of The Millennium Commission as a 3.4 million pound project proposed by a team which includes Landlife , The Acorn Venture Farm , Forget-Me-Not Cancer Appeal, Friends of Court Hey Farm and Knowsley Borough Council.

The Centre has been established at the 35 acre Court Hey Park, formerly the home of the Gladstone family. The existing buildings, known as " the stables " due to their post-war use for cattle passing through the port of Liverpool, have been refurbished. These will provide a permanent home for Knowsley Rangers and for Landlife. An exhibition hall and small conference /classroom are also planned for these buildings as well as Landlife's seed processing, packaging and distribution unit. There are also future plans for a Visitor Centre, and wildflower planting in the Park itself is already being organised to ensure colourful displays from the year 2000 and onwards.

In the Autumn months of 1997, a team of volunteers and local residents in conjunction with Landlife, planted Bluebell bulbs, *Hyacinthoides non-scripta*, and sowed perennial woodland wildflower seed amongst the mature trees lining the entrance to the Park. These woodland flowers will provide the first impact of Spring colour which will meet visitors to the Centre. Each year the displays should

become more spectacular as the wildflowers become established.

The Bluebell bulbs will play an important part in the Bluebell Recovery Programme, which aims to halt the decline in Bluebells due to loss of habitat and also due to the illegal theft of Bluebell bulbs from existing woodland.

Future plans include the " Forget-Me-Not Garden ", which will be based around the original formal rose garden. As a part of the Forget-Me-Not Cancer Appeal's promotion of "healthy living in a healthy environment", the Garden will show links between the plants and medicine, particularly where individual plants such as Yew, *Taxus baccata*, the source of the new cancer drug " Taxol", help in the prevention and cure of particular cancers. The Garden will also provide a quiet place for remembering loved ones .

The aims of The National Wildflower Centre are summed up in its Mission Statement: "To increase our wildflower resources for future generations by promoting the creation of new habitats that have economic, environmental and ecological benefits for the nation." Whilst the creation of new wildflower habitats may seem to be at odds with traditional conservation ideals, the landscape has been subject to many upheavals caused by changes in agriculture e.g. when hedgerows were first formed they were regarded as eyesores, but now are seen as important wildlife habitats and are regarded as a natural part of the British countryside.

These new habitats should be established on sites which presently have little ecological value, however the Centre stresses the importance of doing a thorough survey of the area before commencing any alteration to the environment, to ensure that existing habitats are not disturbed.

There are many areas of wasteland in Britain which provide suitable sites for this type of " Creative Conservation." The Centre is able to offer help and advice on these projects, for example, it is important to use only seeds of native British origin, which are suited to the soil type of the area. Whilst this may introduce new species to an area, this may happen naturally, for example in St. Helens, where glass waste supports maritime communities and Orchids are thriving on spoil heaps, both these habitats are valued by botanists and by the local residents. Some " Creative Conservation " sites qualify as Sites of Special Scientific Interest .

The National Wildflower Centre is also keen to promote local community involvement in these projects and is supported by many local businesses including North West Water, The Royal and Sun Alliance and Glaxo Welcome . Further information may be obtained from Paul Christie or Christine Darbyshire on 0151 728 7011.

Janice Hatton

***Deschampsia parviflora* (or
D. cespitosa ssp. parviflora),
an under-recorded plant.**

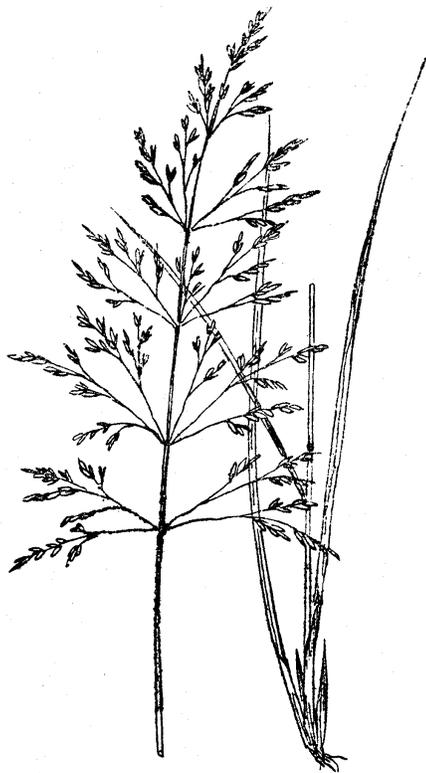
The variant of tufted hair grass, *Deschampsia cespitosa*, with small spikelets was recognised as a distinct taxon by Hubbard in his Penguin book on British grasses, but the omission of any mention in CTW (Clapham, Tutin and Warburg) led to it being largely ignored. It is however recognised in the second edition of Stace's New Flora of the British Isles. The distinctness of this taxon, whether recognised as a separate species or as a subspecies under *D. cespitosa*, now seems unquestionable, at least within the British Isles, as a result of cytological work.

Chromosome counts by several people have shown that in England and south Scotland there is a clear ecological and morphological distinction between a large tetraploid of largely open habitats and an often smaller diploid of ancient woodlands.

The plants found to be tetraploid ($2n=52$) formed the typical large tussocks with dark sea-green leaves and large spikelets over 3mm long.

In contrast, plants found to be diploid ($2n=26$) all had small spikelets, less than 3.5mm and usually 3mm or less and bright, grass-green leaves. These were only found on clay soils in or adjacent to ancient woodlands. Many of these woodlands had been much altered by man, perhaps even clear-felled at some stage, and often had been planted with introduced tree species. However, it was usually obvious that the ground had never been ploughed up and after any disturbance had always been allowed

to regenerate. This was evident in that many sites were on very steep ground, often on river banks, and the woodland contained such ancient woodland indicator species as Wood Anemone *Anemone nemorosa*, Dog's Mercury, *Mercurialis perennis*, Bluebell *Hyacinthoides non-scripta*, and the speedwell *Veronica montana*. This indicated that the native flora had persisted through any period of disturbance.



Tufted Hair-grass, *Deschampsia cespitosa*

Locally *D. parviflora* occurs in the steep wooded gullies in North Wales at Loggerheads, Halkyn, Treloggan and along the Menai Straits. It probably also occurs on clay soils on the Wirral.

It can look almost like 'typical' *D. cespitosa* forming large tussocks

producing tall panicles. However, these can be distinguished by their small spikelets and the light green colour of their leaves. Populations of this stature occur at Loggerheads throughout the woodland and especially by the path along the Leet. Only *D. parviflora* occurs here. However, on poorer soils *D. parviflora* can look like *Agrostis capillaris* with small tussocks bearing panicles.

Ecologically it is very distinct in being very shade tolerant and seems only to occur on clay. In ancient woodlands on thin humic soils over hard rock or sandstone the *Deschampsia* present is always typical tetraploid *D. cespitosa*.

To me *D. parviflora* is as distinct from *D. cespitosa* as *Agrostis gigantea* is from *A. capillaris* or *A. canina* is from *A. vinealis* and is similarly distinguishable by its different ploidy level (chromosome number differing by a multiple of a base number). This means that the pairs of related taxa cannot normally interbreed and exchange genes and therefore remain distinct.

Typical *D. cespitosa* south of the Scottish Highlands is tetraploid and a plant of open habitats or thin woodland. Its natural habitat is probably wet grassland on mountains and seaside cliffs and upper mudflat situations but it is a very 'weedy' taxon that rapidly invades any poorly drained soils when seed is available. The large panicles are very conspicuous and in situations with heavy grazing pressure from sheep flowering may be rare as the sheep take the developing culms. Locally

this plant is common on Moel Famau and on waste ground on Wirral.

Hugh A McAllister

Notes and Queries

Is there an easy way to distinguish between *Tripleurospermum inodorum*, *Matricaria recutita* and *Anthemis cotula*? Are all three species common in our area?

What is a cryptogam?

Are there any Red Data Book species in vice county 59?

... And Finally

In the "Mystery Plants Evening" article, mention was made of Western St Paul's-wort, *Sigesbeckia serrata*. This brought to mind an anecdote that I came across in the "Systematics of Flowering Plants" by Patricia Mann (1952).

In his early student days, Linnaeus was working against an early 18th Century background, where only the appearance and structure of plants were known to scientists. They had little idea of the physiology or seed forming mechanisms of plants and Linnaeus tried to investigate this problem.

He reasoned that since fruit was never formed without flowers being first

present, then flowers must be responsible for fruit formation. He further realised that since fruit could be formed without petals, petals were merely accessories before the fact. In other words, stamens and carpels were the essential parts of a flower for fruit formation, petals and sepals being non-essential.

As Linnaeus put it: "... the petals only serve as bridal beds, furnished with such noble wrappings and perfumed with so many sweet odours...". The mechanism of pollination he explained as the bending down of the stamens to touch the stigma.

To those who still held that the truth about Nature could only be understood by careful study of Greek and Hebrew texts in the Bible, such a suggestion was regarded as almost heretical. He was severely criticised by his countryman Siegesbeck, who stated: "God never would, in the vegetable kingdom, have allowed such odious vice so that several males should possess one wife in common or that a true husband should, in certain composite flowers, besides its legitimate partner have near it illegitimate mistresses. "

Linnaeus, whose custom it was to name newly discovered plants after his friends, chose the name *Sigesbeckia orientalis* for what he considered a "viscid, stinking weed."

The story goes on that a friend of Linnaeus, crossing out the name on a packet of seed, wrote instead *Cuculus ingratisimus* (the most ungrateful cuckoo), which packet falling later into

the hands of Siegesbeck himself caused much trouble.

Keith Hatton

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Evening Meetings

A reminder for autumn 1998:

13th Oct. *Fungi Video Evening*

10th Nov. *Holiday Exhibits.*

8th Dec. *Recording in South
Lancashire for Atlas
2000.*
Peter Gateley.

12th Jan . *Annual
General Meeting*

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