Belfast Naturalists'

Field Club

Field Reports

2012

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Bangor Walled Garden

Leaders - David Kirk

5th May 2012

The first field trip of the Summer Programme was a visit to *Bangor Castle Walled Garden*. The *Ward family* designed the Castle Park Walled Garden in the 1840s. It was never open to the public and was considered by many
as a secret garden. *North Down Borough Counci*l has restored the Garden and opened it as a visitor attraction.

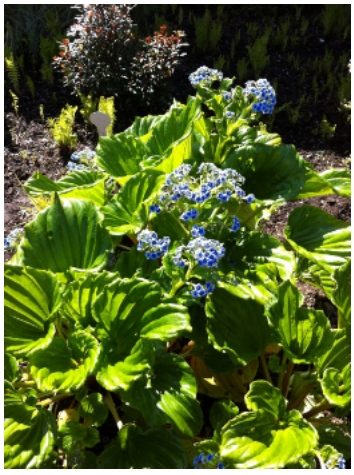
We were met there by ***David Kirk***, gardener North Down Borough council, who conducted us around the newly restored garden. David's knowledge of the planting and his enthusiasm, coupled with his humour, made it a memorable visit. Although it was early in the season and many of the plants had still to flower there was decided wow factor on entering the garden due to its design and layout.

The 2 acre site was originally a vegetable garden in four sections and still retains vegetables in one section. The Victorian planting scheme of single plants in straight rows is gradually being replaced and there was much to admire. It is an ongoing project and we heard about the plans for the development of the site. This includes making the original peach house into an ornamental greenhouse where already an apricot tree is doing well.

As well as the planting there were other items of interest to admire. The bandstand from Pickie has been restored and erected in a corner of the garden, there is a beautiful bronze designed by Diane McCormick and an interesting fountain by Fredrick Normandale depicting the flax flower and the local fishing industry.

David was more than willing to answer questions about the plants and give us tips on cultivation so that we left the garden with information about growing rhubarb and hints on how to move Peonies. Club members vowed to return to see it as it continues to develop.

Joan Semple (Excursion Secretary)



Cavehill Botany

8th May 2012

Leader - Roger Field

During a brief respite in a very rainy week, a large group of members gathered to investigate the spring flora of the *Hazelbank area on Cavehill*, which is situated to the rear of *Belfast Zoo*. As the name implies, this section consists mainly of a steep slope covered by hazel scrub, with a well developed herb layer.

Before leaving the car park, we were treated to a fascinating explanation of the rather complicated geology of the adjacent cliff cutting by James Rutherford, the Hon. Geological Secretary.

Growing beneath the vertical face was a large clump of Giant Knotweed (*Fallopia sachalinensis)*. This closely resembles *Japanese Knotweed*, but does not appear to be as invasive. As we entered the reserve proper, it was apparent that many of the expected woodland plants were well past their best. These included *Wood Anemone, Bluebell* and *Wood-sorrel*, although some flowers were still present. Common Wintergreen (*Pyrola minor*) was seen here by me about thirty years ago, although the exact bank is now completely overgrown by Great Wood-rush (*Luzula sylvatica*).

As we progressed, we were accompanied by various raucous noises, which we discovered to be penguins. Eventually a halt was called, as it was growing dark, but not before several plants of an uncommon grass, Wood Melick (*Melica uniflora*) had been discovered. On turning round, we were a little disconcerted to find ourselves being closely observed by a lion, fortunately on the other side of the fence!

A list of the plant species is available.

Roger Field.

continued

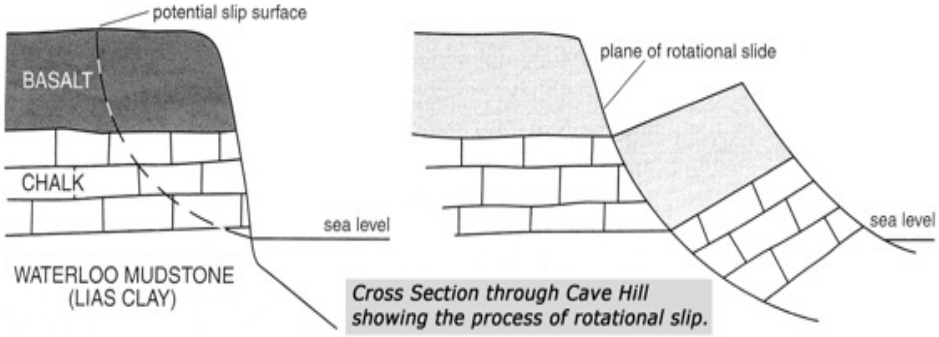
Cavehill Geology

8th May 2012

Cave Hill displays one of the most striking mountain profiles in Ireland and provides a wonderful backdrop to the city of Belfast, giving stunning views over the city and north Down.

The main area of study is the cliffs along the approach road to the zoo and the subject is the relationship between geology, landforms and man.

The rock types that make up Cave Hill are of recent origin in geological terms. They consist of *lias clay*, the oldest, c.180 my., chalk, which is cretaceous c.130 my., followed by the *basalt* 60 my. and finally a thin layer of boulder clay, dating from the end of the last ice age. The characteristics of these rocks are fundamental to the moulding of the landscape.



Cross Section through Cave Hill showing the process of rotational slip.

The main lines of the cliff run nearly horizontally and nearly vertically. The horizontal lines result from the strong bedding in the chalk and the near parallel flows of the basalt; the vertical slopes reflect the numerous fault lines generated by the weak basement of the lias.

The weakness of the lias is accentuated by percolation of surface water through numerous cracks or joints in the chalk and basalt lubricating the liasic surface. This results in rotational slippage carrying down large sections of the cliff under the weight of the rocks themselves and the water, a process known as cliff recession. A series of these slump features lie between the cliff and the lough shore. Dredging of the navigation channel probably accentuated this process. As the slope is unstable there are problems for maintaining roads and housing in the district.

Opposite the zoo car park there is an interesting exposure of chalk and basalt in the cliff. The junction of the two rock types is exposed showing the outline of the chalk surface. Here there are cross-sections of *clints* and *grykes*, and minor dry valleys. There is also some evidence of the chalk having been altered by the hot lava. This contact results in hardening or marbleising of the chalk and also red staining from the chemical reaction with the iron rich basalt. The exposed cliff also reveals how the lava reached the surface. One vent, among many around Cave Hill, was clearly presented, with chilled margins and iron staining. The presence of ***Bernard Anderson*** with his expertise contributed to an interesting occasion.

James Rutherford (Hon. Geological Secretary)

Ormeau Park, Birds and Birdsong

Leader - Dermot Hughes

15th May 2012

Dermot Hughes

Despite the cold weather a good number of members met up with *Dermot Hughes* at the Park gates. He took us on a walk through the grounds choosing paths that were more sheltered from the icy wind. Although the temperatures were low, we saw a large number of birds.

We heard many marking their individual territories especially the Chaffinches *(Fringilla coelebs)* Great Tits *(Parus major)*, Blue Tits *(Parus caerulus)*, Coal Tits *(Parus ater)* and Long-tailed Tits *(Aegithalos caudata)*.

We paused at a group of trees to watch Tree Creepers *(Certhia familiaris)*, aptly named birds, climbing with great agility upwards around the trunks of trees picking food here and there from the bark crevices. When they reached the top they dropped down to the foot of a nearby tree and started all over again!

Moving further we watched a range of species on the ground including Mistle Thrush *(Turdus viscivorus)*, Song Thrush *(Turdus philomelos)*, and Blackbirds *(Turdus merula)*, the latter constantly accompanying us with its fluty varied song.

Thanks to Liam McCaughey for the photographs of the Jay.

Greenfinches *(Carduelis chloris)* and Goldfinches *(Carduelis carduelis)* flitted through the bushes with their characteristic songs. The former a musical jingle of notes and the Goldfinch with its attractive canary-like song.

Next as we looked up to watch Swallows *(Hirundo rustica)* and Swifts *(Apus apus)* in flight we were treated to a wonderful view of a Jay *(Garrulus Glandarius)* noisily calling and flapping its wings to claim a tree top perch from Hooded Crows *(Corvus corone cornix)*.

Turning homewards we were entertained by a flock of Long-tailed Tits as they claimed a large Oak tree from the other small birds and sang as they flitted from branch to branch. These small rotund little birds with their extremely long tails are gregarious flying in single species groups made up of large families.

For me watching the Tree Creepers, Long-tailed tits and the colourful Jay were the highlights of the evening.

Again we are very grateful to Dermot for sharing his extensive knowledge of the birds, their behaviour and song. I learnt to listen to the Wren *(Troglodytes troglodytes)* with its well known loud warbling broken by a vibrant trill and not to mix it up with the trill sound chaffinches can make. Another excellent bird evening!

Pamela Thomlinson

Crawfordsburn Country Park

Botany and Zoology

18th &19th May 2012

A number of members participated in the first *Bioblitz* held by *The Centre for Environmental Data and Recording (CEDaR)*, with support from the *Northern Ireland Environment Agency*.

Murlough Nature Reserve

Leaders - Ted Rolston (Moths)
David Nixon (Butterflies)

25th and 26th May 2012

We set up our moth traps on Friday night with the help of ***Ted Rolston*** and ***Andrew Crory***. *Murlough Nature Reserve* is well known as a species rich area and we looked forward to a good number of moths.

We were joined by *Butterfly Conservation Northern Ireland* members as bright and early on Saturday morning the traps were collected and we started to record from three *Mercury Vapour (MV) traps* and one *Blacklight trap*. We were not disappointed as we started to identify the catch. There were too many species to list here! I will try to give an idea of the variety and list the ones I thought were most spectacular - Elephant Hawk-moth *(Deilephila elpenor)*, Peppered Moth *(Biston betularia)*, Pale Prominent *(Pterostoma palpina)*, White Ermine *(Spilosoma lubricipeda)*, Muslin moth *(Diaphora mendica)*, the beautiful Peach Blossom *(Thyatira batis)*, female Emperor moth *(Saturnia pavonia)* - which laid eggs in Trevor Boyd's MV trap, Clouded Silver *(Lomographa temerata)*, Early Thorn *(Selenia dentaria)* and True Lover's Knot *(Lycophotia porphyrea)* to name but a few. Thanks to *Samuel Millar* (a young enthusiastic BCNI member) for letting us use his photographs in this report. The link below gives you a good indication of the range of fantastic moths we identified.

Flickr: http://www.flickr.com/photos/68576255@N02/sets/72157629932983210/

Peach Blossom

Many thanks to Ted for sharing his vast knowledge, his time and patience to make all of this possible.

We then continued onto the dunes with *David Nixon* as our Leader and again were delighted with the range of species we saw. First was a Cryptic Wood White *(Leptidea juvernica)* and Butterfly Conservation's National Chairman *David Dennis*, who was visiting BCNI for a few days, was delighted as it was his first sighting and it meant he now had seen all the butterfly species in the British Isles!

Then a newly emerged Narrow-bordered Bee Hawk-moth *(Hemaris tityus)*, the wings were still covered in black scales which are shed when it takes it's first flight. Another rare sight, well done again to Samuel whose eagle eyes spotted it in the grass, looking just like a large bee!

continued

Murlough Nature Reserve (contd)

25th and 26th May 2012

Narrow-bordered Bee Hawk Moth

Marsh Fritillary

Thanks to Abigail Dunnes and Samuel Millar for the use of their photographs.

As we walked on, the Marsh Fritillaries *(Euphydryas aurinia)* appeared in good numbers, hopefully showing that this continues to be a good habitat for them. We also saw day-flying Common Heath (Ematurga atomaria) and Cinnabar (Tyria jacobaeae) moths and one Large White (Pieris brassicae) and four Small Copper butterflies,(Lycaena phlaeas).

Then the icing on the cake when David Nixon saw a Green Hairstreak *(Callophrys rubi)* circling a gorse bush. The 'green' colour is due to interference of light within its wing structure and at rest it can be blue or green, for us it was a splendid green which was hard to capture on camera. This is only the third record of this butterfly on this site, first recorded about 1 mile closer to Newcastle in 2011.

A wonderful experience for all of us.

Many thanks to David for giving us a chance to explore this rich habitat with him.

Pamela Thomlinson

The Burren, County Clare

1st-6th June 2012

More than 700 species of flowering plants, conifers and ferns occur in the *Burren*. The limestone pavements are the outstanding feature but there are also areas of acid soils, woodland, hazel scrub and the *turloughs* (lakes that disappear for part of the year, leaving a pasture with grasses, sedges and herbs), these plants have to be able to survive under water for half the year. The first plants to arrive after the end of the Ice Ages were from the Arctic tundra and *Mountain Avens* still grows at sea level alongside *Alpine Spring Gentians*, the *Mediterranean Dense-flowered Orchid* and the tropical *Maidenhair Fern*.

Saturday 2nd June

Fly Orchid

A geological stop gave us a first view of limestone plants – Bloody Cranesbill *(Geranium sanguineum)*, Burnet Rose *(Rosa spinosissima)* and Mountain Avens *(Dryas octopetala)*. Common Spotted Orchids *(Dactylorhiza fuchsii)* were examined in case the white specimens were the O'Kelly sub-species *(ssp.okellyi)* which normally flowers later in the summer and is named after the Burren farmer who first collected it in the 1890s. We picnicked by the marl-encrusted shores of *Lough Bunny* in an acid-area among Butterwort *(Pinguicula vulgaris)*, the Burren speciality Shrubby Cinquefoil *(Potentilla fruticosa)* and Stone Bramble *(Rubus saxatilis)* which has red fruits later in the summer. Purple Early Marsh Orchids were *Dactylorhiza incarnata var.pulchella* with limestone and marl lake-shore varieties *var.hyphaematodes* and *var.haematodes*. The rain was coming on, so no one was enthusiastic enough to get down on their knees to examine the spots on the leaves to confirm the identifications. The convoy of cars managed to keep together up and down narrow twisty roads with grass growing up the middle to arrive at the welcoming tea room of the *Burren Perfumery*, where we visited their herb garden.

Sunday 3rd June

After an low-tide transfer from *Doolin* onto small boats and then to the ferry heaving in the bay, we spent the day on *Inisheer*. Bee Orchids *(Ophrys apifera)* were growing in profusion near the beach – Irish and British Bee Orchids are self-polllinating so do not need their elaborate shape to attract pollinators. The dust-like seeds can be carried for miles in the wind but take up to 8 years to reach the flowering stage. Sea Spurge *(Euphorbia paralias)*, Yellow-wort *(Blackstonia perfoliata)*, a Centaury *(Centaurium erythraea)* with pairs of leaves joined at the base, and Cowslips *(Primula vulgaris)* were growing nearby. Babington's Leek *(Allium babingtonii)* is common on the *Aran Islands* – the bulbils grow in clusters with the flowers. In hollows in the limestone pavements were large cushions of Irish Saxifrage *(Saxifraga rosacea)* which also grow in the mountains of central Europe and Iceland.

continued

The Burren, County Clare (contd)

1st-6th June 2012

Monday 4th June

A botany day and the sun shone. Brian, our bus driver, always managed to stop at the exact spots to find Burren specialities near Black Head - Spring Gentians *(Gentiana verna)* were in flower, in seed and still in bud, Wild Madder *(Rubia peregrina)* and Maidenhair Fern *(Adiantum capillus-veneris)* in the *grikes* or *scailps*, at *Murrough* - Bloody Cranesbill *(Geranium sanguineum)*, Hoary Rockrose *(Helianthemum oelandicum/ canum)* which is a Mediterranean mountain plant, and a profusion of orchids. We picnicked at *Fanore* but never reached the beach as the grassy machair-type area had more gentians, Irish Eyebright *(Euphrasia salisburgensis)*, a parasite on thyme which, as the name implies, also occurs in the Austrian mountains, lots of Pyramidal Orchids *(Anacamptis pyramidalis)* and the strange thread-like parasite Dodder *(Cuscuta epithymum)*. At Poulsallagh, Hemp Agrimony *(Eupatorium cannabinum)* was emerging from the grikes – Eupator was a King of Pontus and cannabinum because of its resemblance to hemp. Mountain Everlasting *(Antennaria dioica)* was growing on rocks along with another mountain plant Spring Sandwort (Minuartia verna), at sea-level.

Tuesday 5th June

Next day was archaeology, but Liam found over 12 Twayblades *(Neottia Listeraovata)* in a grike beside the *Poulnabrone Portal Tomb*. Several of us went to the *Slieve Carron Nature Reserve* where there were at least 50 Fly Orchids *(Ophrys insectifera)* in flower. These strange plants produce a scent which mimics the sex pheromone of a wasp and are pollinated by newly-hatched male wasps of the genus *Gorytes*. Their pseudo-copulation puts them in exactly the right position for pollinia removal and deposition, but once the female wasp emerges , the males transfer their interest away from the flowers.

Poulnabrone Portal Tomb

As always the Burren provided a wonderful combination of interests botanical, geological, zoological and archaeological.

continued

The Burren, County Clare (contd)

1st-6th June 2012

Early Marsh Orchid

Some thoughts on Irish Orchids.

Including hybrids there are about 37 varieties of Orchids in Ireland. Ongoing molecular investigations are moving some orchids into different groups and changing names. The Dactylorchids have always been the most difficult to differentiate, but there are 3 basic groups :-

1.Common Spotted and Heath Spotted - *Dactylorhiza fuchsii & maculata*

2.Early Marsh Orchids - *Dactylorhiza incarnata* with subspecies *coccinea, pulchella, hyphaematodes/cruenta,incarnata*.

3.Broad-leaved, Northern, Irish, Western, Narrow-leaved Marsh Orchids – *Dactylorhiza majalis* with subspecies *occidentalis, kerryensis, purpurella/brevifolia,traunsteinerioides*. This group is a hybrid probably of *D. Fuchsii* and *D.incarnata* and has double sets of chromosomes (*tetraploid*).

Lesser Butterfly Orchid (above and below)

"New Journal of Botany" Vol 2 number 1, 2012 ***Bateman & Denholm*** has 18 pages on *"The Taxonomic reassessment of the British& Irish tetraploid marsh-orchids"*. This appears to reduce the Irish group to *D.kerryensis*, *purpurella* and *traunsteineriodes* with some variants. The authors admit that *"remarkably little consensus is evident among specialists regarding the classification of the tetraploid marsh-orchids"*, so we amateurs can be excused for having difficulties in our attempts to identify the orchids we encounter.

Margaret Marshall

Thanks to Liam McCaughey, Abigail Dunnes and Samuel Millar for the use of their photographs.

Bee Orchid

continued

The Burren, County Clare (contd)

Caherbridge Gardens

1st-6th June 2012

While a garden visit is not usually one of the BNFC's excursion activities, *Carl Wright's Caherbridge Garden* proved to be one of the highlights of our long weekend visit to the Burren.

Here an ecologist has managed to blend over an acre of a plantsman's paradise sympathetically into the surrounding countryside so that each complements the other. The garden is situated beside the beautiful little bridge over the *Caher river* which can overflow into the garden at times but plants are chosen to be able to cope with the occasional flood.

Originally the cottage sat in 8½ acres of *Western Atlantic hazel woodland*, part of which Carl has cleared to develop the garden, but judiciously leaving the occasional native tree and some native ferns which grow on the limestone pavement. A small area near the cottage which favoured more acid loving plants proved to be part of the original turf stack and has been improved with 24 tons of hand sieved peat to allow growth of some ericaceous plants.

Elsewhere Carl has filled pockets in the limestone pavement with 1000 tons of topsoil, all hand sieved again to cut down on future weed control!

Perhaps the hardest work has been the skilful stone constructions such as the moon gate with reflecting pond and patio all made to the same proportions and incorporating beautiful round ball fountains. In this wonderful environment plants both rare and common seem to grow at their best including *primulae, arisaemas*, 85 varieties of fern, corydalis - the list is endless - and the same areas earlier in the year displayed over 200 varieties of snowdrops and hellebores.

The entrance gives an indication of the variety and rarity of the planting with a chimaera tree, *laburnocyctisus,* an uncommon shrub - *Neilia affinis*, among *geums*, *aquilegias*, *geraniums* etc, - all growing where there can be extremes of temperature from -17c to +30c.

It was a real privilege to see this garden still in the making and, to quote Philip Doughty, our geologist on the trip, *"this garden is inspirational"*.

While the whole Burren is like a garden, Carl has demonstrated that even in this harsh environment many of the world's rarest plants can successfully be grown here and displayed sensitively.

Margaret Marshall

Ram's Island, Presidential

16th June 2012

Islands at times involve unpleasant sea travel, but this island lies in *Lough Neagh* within *Sandy Bay* only 10 minutes from the marina yet the majority of our 32 BNFC participants had never been there and moreover this delightful little gem had something for everyone.

On arrival coffee and scones were served in the converted barge *"Sandmartin"*. In spite of a very wet June the day remained dry. After a welcome from the President, *Michael Savage*, an Island Warden, explained the recent development of the island undertaken by, *The River Bann and Lough Neagh Association (RBLNA)* and mostly carried out by volunteers.

Round tower on Ram's Island

Rodent extermination and control of sycamores were the first priorities and a new jetty was built to accommodate larger craft.

Although the RBLNA aim to encourage special interest groups to visit the island this must be done in a controlled manner lest damage to the island's heritage would occur.

Ram's Island is part of *The Lord O'Neill's Estate* and is on lease since 2005. The O'Neill's had a summer retreat on the island but the house is now a ruin. An interesting connection regarding this was explained by one of our new members *Doris Barr*. *The Cardwell family*, caretakers for the O'Neill's, lived on Ram's Island for 50 years in a thatched cottage. They lived by marketing the fish they caught and growing vegetables. Their job was to prepare the summer-house when the Shane's Castle party were arriving. Doris Barr's mother-in-law Sadie, lived on the island with her Grandmother and Great Grandparents for the good of her health. The island air may well have helped as she lived to be a very old lady.

We then had most informative talks from *Philip Doughty* on the geology of Lough Neagh and from Pamela Tomlinson on the place of the *Lough Neagh May flies* in the ecosystem.

Exploration of the island came next. From the former lakebed where we had been standing, a short steep climb took us to the original much smaller "island." Margaret Marshall has submitted a detailed report on the plants growing on the recent shore line and on the established flora of the higher area.

The centre of the island was of great interest for its archaeology namely an Irish Round Tower fairly well preserved around which there had been a Monastic Settlement. Claire Foley gave us a most interesting talk on the tower and the possibilities of what a "dig" might produce.

Even in its state of ruin we could appreciate that the O'Neill summer - house had been an idyllic spot. Finally walking along the narrow "tail" of the island we came to where the Cardwell's cottage had stood. The old jetty is still there as is the stone revetment which once protected the house from the winter Lough Neagh waves.

continued

Ram's Island, Presidential (contd)

16th June 2012

Barn owl

By 3pm the group had arrived in Crumlin at Talnotry Avian Care Trust known as TACT. This centre, which is run as a charity, cares for injured birds, even unwanted pets, such as the beautiful European Owl which we greatly admired. If possible the birds are released back to the wild. Hopefully the Buzzard chicks are now soaring somewhere in Co Antrim.

Small mammals also intrigued us, especially the fox, which had a special relationship with his carer (see opposite). Although captive animals are not what we would wish to see, we appreciate that this dedicated work springs from a genuine love for animal welfare.

The Vice President Philip Doughty expressed a vote of thanks to the President.

Patricia Rutherford, President.

Ram's Island Geology

The *Lough Neagh* story probably began around 320 million years ago during the *Carboniferous period*. The area now Ulster, was positioned on the equator at the time when the great limestone seas were giving way to changing conditions. It was a time of violent tectonic activity and extensive lines of fractures, major faults, carved the bedrock creating two landlocked basins of which more later.

The next significant events occurred much later, about 62 million years ago during a period called the *Palaeocene*, when there was volcanic activity on a vast scale. The lava fields from this upheaval extended from *Greenland* in the west to the *Norwegian* coast in the east. Enormous thicknesses of lava flows were heaped one on top of the other over a period of 2-3 million years with only brief periods of quiescence. The area covered by this mass exceeded 4 million square kilometres and the Antrim Basalts that floor most of Co. Antrim today are a fragment of this outpouring. To give some idea of the volume of lavas in this area, a borehole at *Langford Lodge* proved a thickness of 780m.

As the volcanic activity eased during the time that followed, a period called the *Oligocene*, the crust began to sag creating two large depressions, one now occupied by Lough Neagh, the other, underlying *Ballymoney*. Both captured the local drainage, forming extensive fresh water lakes, in fact twice the size of the present lough and they filled with sediments, particularly sandy clays, from the surrounding land. As time passed the lakes became massive swamps with prolific vegetation which, as it decayed, starved the water of oxygen leading to the formation of peats on an exceptional scale. Together these sediments form the *Lough Neagh Group*. Time and Earth processes have now converted the peat to lignite, a resource difficult to ignore.

continued

Ram's Island, Presidential

Ram's Island Geology (contd)

16th June 2012

The lignites in the Ballymoney basin have a total thickness of 177m with one seam over 100m thick and there are substantial thicknesses underlying and on the eastern shore of Lough Neagh. They have a very low sulphur content making them an attractive fuel but in the present political environment, with constraints on fossil fuels that create global warming gasses and with local opposition to the scale of mining likely to be involved, there are doubts as to whether they will ever be worked.

Lough Neagh hones! Lough Neagh hones!
You put 'em in sticks, and you take 'em out stones.

Veronica and her ferret

The ancients believed that the waters of the lough had petrifying properties and pieces of silicified Oligocene wood were much favoured as sharpening stones. We now think that hot sinter springs survived the volcanic period and were responsible for this phenomenon.It is also worth mentioning the occurrence of small globules of amber that floated to the surface of wells in the area, almost certainly derived from the peats.

There is some debate about why the Earth's crust subsided to create the basins. Some maintain that it was caused by the reactivation and consequent subsidence on the great faults of the Carboniferous period. The alternative explanation relates to the great volume of lavas that migrated from magma chambers to the surface of the area. It is argued that such a volume would have inevitably led to crustal sagging on a large scale. It seems likely that the truth lies in a combination of the two.

In 1986 a local teacher, looking for fieldwork sites for his students, examined a trial pit at *Aghnadarragh* on the eastern shore opposite Ram's Island. It had been excavated by *BP Coal* to test the slope characteristics of the overburden covering the lignite. He recovered some large fossils that were identified in the *Ulster Museum* as woolly mammoth teeth. Subsequently the site was examined by museum geologists and it was realised that an important sequence of sediments in the overburden represented a succession of events seen nowhere else in Ireland. The sequence was capped by boulder clay so the deposits had to precede the last glaciation, a realisation that prompted the museum to excavate the site. The resulting findings led to the founding of a new Pleistocene event, the *Aghnadarrian Interstadial* and significant among the vertebrate finds was a first record of the musk ox in Ireland. The age exceeds the maximum range of carbon dating which is 60 million years.

Deposits on the bed of the lough, largely sands and gravels, have been dredged as construction materials for many years and remains of reindeer and the giant Irish deer, Megaloceras, have been recovered from them representing faunas of early post-glacial times.

Philip Doughty, Vice President.

continued

Ram's Island, Presidential

Ram's Island Botany

16th June 2012

Monkshood

Jellyear

When the O'Neills built their summer house, a *cottage orné*, in the19th Century, many exotic trees and plants were introduced. We were shown Walnut *(Juglans regia)*, Lime *(Tilia)* and Beech *(Fagus sylvatica)*. Naturalised garden escapes included Spanish Bluebells *(Hyacinthoides hispanica)*, Few-flowered Garlic *(Allium paradoxum)* whose bulbils were scattered on the ground and Monkshood *(Aconitum napellus)*. I remember seeing Monkshood growing on the banks of the *Lower Bann* on the BNFC excursion from *Ballyronan to Portglenone* in June 2009, so maybe the seeds are carried in the water.

Butcher's Broom *(Ruscus aculeatus)* looks like a prickly bush but is actually a member of the Lily family – the tiny flowers grow in the middle of what appear to be spiny leaves but are actually flattened stems. Jelly Ear *(Auricularia auricula-judae)*, a pink rubbery fungus was found on the dead branches of Elder *(Sambucus nigra)*; it is edible but does not look enticing although it is apparently a great delicacy in the Far East.

The island increased in size when the water level of Lough Neagh was lowered and Willows *(Salix spp)* and Alder *(Alnus glutinosa)* grow along the shore along with Marsh Marigold *(Caltha palustris)* and Water Mint *(Mentha aquatica)*. A colourful patch of Red Campion *(Silene dioica)* was spotted near the Barge and everywhere were the pretty blue-violet coloured flowers of a relative of *Dead Nettle*, Ground Ivy *(Glechoma hederacea)*, which sends out creeping runners just like Ivy.

New to many was Bittersweet *(Solanum dulcamara)* a shrubby climbing plant with purple flowers and yellow anthers of a similar shape to the flowers of its relatives the Potato and Tomato. Its red berries are poisonous as are many parts of this family.

The *Ram's Island Heritage Group* organise Himalayan Balsam *(Impatiens glandulifera)* bashing days to try to halt the spread of this invasive plant whose explosive seeds are carried along our waterways.

We are grateful to the group who are working so hard to preserve this island and all its history.

Margaret Marshall.

Minnowburn

Leaders - Craig and Lorna Sommerville 19th June 2012

Botany

On a fine mid-summer evening, members gathered at *Minnowburn* to enjoy this 52 hectare stretch of the *Lagan Valley Regional Park*, a blend of riverside, woodland and meadow walks.

Craig Somerville, National Trust Manager for the Belfast area, described the work the Trust has been doing to preserve and enhance the area. We walked along the banks of the Minnowburn, where *kingfishers* sometimes nest, to the pond, cleaned out by the National Trust to encourage wildlife. A platform had been constructed for pond-dipping, but unfortunately some misguided person had disposed of unwanted terrapins in the water. The terrapins had consumed a lot of the native pond-life.

A willow bird-hide had been planted on the edge of the pond and we admired tree -trunk sculptures of a bear with a honey-pot and a mythical creature, which had been designed by local school-children.

We crossed the picturesque old stone *Minnowburn Bridge* to visit the *Minnowburn Meadows*.

BNFC had planted trees on the road-side banks in November 2007 and these were flourishing. Craig explained that 3 wild-flower meadows reaching from Minnowburn to *Shaw's Bridge* were being developed.

Dock Beetle

At the end of the summer after the flowering plants had seeded, the grass was mowed and removed to impoverish the soil and halt the re-growth of grasses that would choke the flowering plants.

Lorna helped us identify many of the flowers and grasses. The yellow of Meadow Buttercups *(Ranunculus acris)* and Yellow Rattle *(Rhinanthus minor)* was the dominant colour. The botanical name means "nose-flower" from the shape of the flower and the common name from the rattling sound made by the ripe fruit in the inflated sepals. It is a hemi-parasite on grass so it has an important role in weakening otherwise dominant grasses.

Flowering grasses included Meadow Foxtail *(Alopecurus pratensis)*, Smooth Meadow Grass *(Poa pratensis)* and Timothy (Phleum pratense).

Lorna and Craig were thanked for showing us this special place, so near the city but still so rural.

Margaret Marshall

Botany at Howth

Leader - Declan Doogue

23rd June 2012

On Saturday 23rd June, 8 members of the BNFC travelled by train to *Howth* for a joint excursion with the *Dublin Naturalists' Field Club* under the expert leadership of ***Declan Doogue***. Members put the train journey to good use identifying moth photographs and discussing plans for a *Federation of Irish Field Clubs*. The Vice-president had his geological eye on the varying landscape we passed through between Belfast and Dublin.

Declan Doogue is a leading Irish botanist with a particular interest in habitats and "plants in their place". In his *"The Wild Flowers of Ireland"* (2010) he deals with differing habitats from gardens and their weeds to bogs and heaths.

We met Declan and DNFC members at Howth Dart station and within a few yards were examining the habitat of a limestone wall with the Mediterranean Red Valerian *(Centranthus ruber)*, which can be white and pink as well as red, flourishing in the heat and shelter of the wall. Wall Barley *(Hordeum murinum)* with long awns that stick to clothes is a plant of the Dublin area, new to us. Damper parts of the wall had various ferns such as Wall-rue *(Asplenium ruta-muraria)*. An area of sandy beach and shingle had developed in a bay between the harbour and an outcrop of rock. Salt marsh plants like Common Saltmarsh Grass *(Puccinellia maritima)*, Annual Seablite *(Suaeda maritima)* and Lesser Sea-spurrey *(Spergularia marina)* had established themselves on a shingle outcrop. Seaweed provides nutrition for plants like Spear-leaved Orache *(Atriplex prostrata)* to develop. Sea Rocket *(Cakile maritima)* a lilac-coloured crucifer with fleshy leaves and Sand Couch-grass *(Elytrigia juncea)*, with leaves that can roll inwards to retain moisture and can survive in sandy areas. Declan showed us how the invasive Lyme Grass *(Leymus arenarius)* forms a matted wall of vegetation which prevents the natural formation of open dune systems.

Sandy land near the sea has often been left fallow and plants have survived from Neolithic times. Above the shore line we saw White Campion *(Silene latifolia),* Rest Harrow *(Ononis repens)* whose tough woody stems "arrest" harrows and Haresfoot Clover *(Trifolium arvense)*. Its tiny flowers are obscured by the calyx teeth which give it a downy appearance, hence its English name. Yellow crucifers like Eastern Rocket *(Sisymbrium orientale)*, Hedge Mustard *(Sisymbrium officinale)*, Annual Wall Rocket *(Diplotaxis muralis)* and Wild Radish *(Raphanus raphanistrum and ssp.maritimus)* can be distinguished by their very different seed-pods. Rock Samphire *(Crithmum maritimum)*, edible and mentioned by Shakespeare as being gathered halfway down cliffs, was growing on a wall near the beach. Pellitory of the Wall *(Parietaria judaica)*, a relative of the nettle, once used for fevers and urinary infections, is generally found on old castle walls like *Carrickfergus Castle* but was widespread on the sea-wall.

continued

Botany at Howth (contd)

23rd June 2012

Bee Orchid

On a sandy dune area the photographers were down on their knees in front of Bee *(Ophrys apifera)* and Pyramidal Orchids *(Anacamptis pyramidalis)*. The fleshy leaves of stonecrops enable them to survive in dry sandy conditions and we saw large clumps of bright yellow Biting Stonecrop *(Sedum acre)* and White Stonecrop *(Sedum album)* a garden escape. Declan demonstrated how the withered-looking Sandhill Screwmoss *(Tortula ruralis)* could be turned green in a minute by sprinkling water on it. Here too were invasive plants like *Cotoneaster, Valerian*, a *Palm* and a species of *Rosa rugosa,* probably planted to stabilise the dunes but now spreading.

Howth is noted botanically for the diversity of its habitats and has the largest area of lowland dry heath in Ireland. After lunch Dublin Field-club members drove us to the cliff and heathland area near *Kilrock* where a thin layer of soil over rocks was dominated by Western Gorse *(Ulex gallii)*, Ling Heather *(Calluna vulgaris)* and Bell Heather *(Erica cinerea)* as well as the bright blue flowers of Sheepsbit Scabious *(Jasione montana)* which is actually a member of the *Campanula* family. In a damp disused quarry were large patches of the rare Variegated Horsetail *(Equisetum variegatum)*, many Common Spotted Orchids *(Dactylorhiza fuchsii)* and Hemp Agrimony *(Eupatorium cannabinum)*. We had no time to visit the high cliffs, limestone areas where Bloody Cranesbill *(Geranium sanguineum)* grows, the woodlands or the raised bog area, so must return another time. A boat trip to *Ireland's Eye* would be an interesting expedition.

Declan and the Dublin Field-club members were thanked by our President for sharing their expertise and company.

An incident on the line delayed our return train journey at Newry for nearly 2 hours while buses were found to bring us on to Belfast. The botany at Newry station was limited to more *Red Valerian* and clumps of Ox-eye Daisies *(Leucanthemum vulgare)* and rain did not encourage exploration away from the platform.

Margaret Marshall

Thanks to Shiena McCracken for the photograph of Bee Orchid.

Murlough Bay, County Antrim

Leader - Peter Millar

30th June 2012

Drive to sea level by the very steep and twisty road (suitable for cars but not larger vehicles). Park at the small car park, just where you reach sea level *(ID 1955 4228)*. Walk along the lane southeast. Continue beyond the last house through rocks to where there is a small sandy beach: here descend to the shore *(ID 2003 4186)*.

The grey, hard rocks here belong to the *Dalradian Supergroup*. These are sediments which were deposited in a long-vanished ocean which existed from 1200 to 600 million years ago. They were compressed and pushed deep into the crust in the *Ordovician Grampian orogeny*, about 500 million years ago, and metamorphosed by heat and pressure. The clays became *schist*, the sands *quartzite* and, and the limestones *marble*. The conspicuous "layering" is actually foliation produced by pressure but with a little imagination bedding can just about be discerned running at an angle to it. Sometimes the bedding is indicated by lines of weathered-out hollows. The foliation is partly due to flaky *mica crystals* which grew in the rocks under pressure and these give the rocks a rather attractive lustre in the sunlight

Also conspicuous are masses of *white vein-quartz*. After the initial compression there was a phase of relaxation and cracks opened in the rocks. The quartz, which must have originally been disseminated through the rocks, migrated to fill the voids. Later a further period of compression folded and sheared these veins, turning them into streaks and blebs of quartz.

The rocks dip to the northwest. The *Torr Head Limestone* – just a few km south - is an important marker as it is believed to be equivalent to the *Loch Tay Limestone* and therefore the sediments on one side must be *Argyll Group* and the other the overlying *Southern Highland Group*. It is therefore crucial to find which way up they are. This is done by looking for "way up" structures in the sediments. Unfortunately these are hard to find because of the type of sediment and of the extreme alteration. The general opinion is that the rocks are upside down which would imply that these *Murlough Bay schists* north of Torr Head are *Argyll Group* and therefore the *oldest rocks in County Antrim*.

Retrace your steps to the house. There is a dramatic change here on the shore from the hard grey *Dalradian* rocks to soft yellow or red *Lower Carboniferous sandstones*. These are about 330 million years old. They are folded only very gently: they dip west towards *Fair Head*. The sudden change is because the Carboniferous sediments have been faulted down to the north some 400 metres by a very large fault, the *Great Gaw*.

Grid references used are for the Irish grid system.

continued

Murlough Bay, County Antrim (contd)

30th June 2012

The fault itself is not seen but its position can easily be deduced to within a couple of metres *(ID 1995 4195)*. The Great Gaw runs south of Fair Head and strikes east-west: it re-emerges on the coast near *Bath Lodge*, just east of *Ballycastle*. The exact age of this faulting is uncertain: it may have actually been going on at the same time as the sediments were being deposited.

The sediments were deposited in the deltas of rivers flowing off a continent which lay to the north in Carboniferous times. Cross-bedding, characteristic of deltaic sediments, is very obvious as are patches of pebbles washed in by faster currents.

Most of the pebbles are *white quartzite* and almost certainly were derived from the Dalradian rocks, which must have been exposed and eroded by Carboniferous times. The red colour is due to oxidised iron and is characteristic of continental or continent-derived sediments. The harder dark lumps are iron concretions formed around washed-in plant fragments. The sandstones contain *feldspar* which does not survive exposure to the elements for very long so the material must have been eroded and deposited very rapidly.

A short distance northwest there is a group of large dark-coloured stacks, just below the cattle grid on the lane *(ID 1986 4206)*. These are of *basalt lava*. A large part of County Antrim is of course underlain by basalts of *Palaeogene* age (about 57 million years ago). However these *Murlough Bay Basalts* are much older and in fact are contemporaneous with the Carboniferous sandstones. They have more mineral veins and are more altered and sheared than the usual Antrim basalt. The base of the first flow can be seen resting on the sandstones at high water mark on the east side of the largest stack. There is a very small amount of ash below the flow. Go round to the west side of this stack. Here there are vague round structures in the lava.

These were interpreted by the Russian geologist *Tomkieff* as *lava pillows* (submarine lava structures) but this is not generally accepted.

continued

Murlough Bay, County Antrim (contd)

30th June 2012

Fig 1 - Drumnakill

Fig 2 - Spherical concretions

Fig 3 - Fair Head

Fig 4 - Arched mine

The stacks themselves are typical of many on the Antrim coast in that they were formed about 8500 years ago, along with the raised beach, when the sea level was higher than now. The smaller northern stack has a cave in it but this faces inland – not where one would normally expect to find a sea-cave.

Continue northwest along the lane. On the left side of the lane is a very well constructed *lime kiln* of with typical twin arches. The kiln is mainly constructed of *sandstone*. Blocks of the very pure *Ulster White Limestone* or "chalk" are conspicuous in the landslip slopes above the lane.

The chalk and coal would have been loaded into the top of the kiln in alternating layers and burnt. This produced *quicklime* (calcium oxide) which was removed through the stepped arches at the bottom along with the ash. The quicklime could be mixed with water to produce *slaked lime* (calcium hydroxide). Lime had many uses – among them the manufacture of mortar and cement, the treatment of fields to neutralise acid soils and the lime-washing of stone houses to waterproof the walls. As the west of Scotland is deficient in limestone there was a considerable potential export trade.

Return to the car park, cross a small stream and go northwest. You come to a promontory [fig 1] formed by a jumbled mass of rocks (ID 1955 4252). This is *Drumnakill*: it is made of material from the *Fair Head* dolerite sill. The sill itself is far above this level but this whole mass has come down as a large landslip. Here you can inspect the dolerite at close quarters. Through a hand lens you can see the pale greenish-yellow crystals of *olivine*.

A sill is a horizontal sheet of igneous rock intruded into other rocks. When magma comes up from a deep magma chamber it can eventually burst out on the surface forming a lava flow. However sometimes it reaches a level where the pressure in the magma is greater than the weight of the overlying rocks: and in that case it can spread out sideways, jacking up the overburden. Being well insulated, a sill takes a lot longer to cool than a lava flow and so develops larger mineral crystals – well seen here. Dolerite has essentially the same mineral makeup as basalt: the only difference is the crystal size.

Igneous masses form joints perpendicular to the cooling surface as they cool and contract. ("Joints" are cracks which show no movement, unlike faults). Both in the case of a lava flow and of a sill, the cooling surfaces are horizontal and so the joints are vertical, giving the well-known "columnar jointing". Although they are now rather jumbled and have mostly tipped over on their sides the columns are very clear at Drumnakill.

continued

Murlough Bay, County Antrim (contd)

30th June 2012

Proceeding northwest along the coast you have the choice of tramping across some very wet muddy slopes or scrambling along a very bouldery shore, eventually joining a grassy track. The Carboniferous sandstones are well seen along this stretch: there are also *shale horizons* representing marine incursions and some spectacular large spherical concretions [fig 2] *(ID 1932 4270)*. These are patches within the sandstone where carbonate has become concentrated by some sort of migration process, making the rock that bit more resistant to erosion. At this end of Murlough Bay there were *coal seams* and these were extensively mined in the past and you will pass the ruins of miners' cottages.

From here Fair Head is a spectacular sight [fig 3] and can clearly be seen to have two components: the main sill and the lower, thinner, *Binnagapple* sill.The track ends at the *Arched Mine* [fig 4], with its twin adits, now closed *(ID 1885 4317)*. (An "adit" is a horizontal tunnel).

Beyond the mine is the block scree, a great apron of truly gigantic blocks which runs right round the base of Fair Head.

Following the track southeast 100m from the mine there is a small dump where you can find samples of coal *(ID 1889 4308)*. The *Ballycastle coals* are *Lower Carboniferous* and so older than the major coalfields of England. The Ballycastle coal seams were thin – none thicker than four feet – and were high in sulphur, which limited their usefulness for some industrial purposes. Drainage in the mines was also a perennial problem. In this rather inaccessible spot, the coal would have been loaded directly onto small boats for shipping out. Return by following the track which angles up to the south and joins the metalled road at the "middle car park" *(ID 1917 4255)*. This involves a bit of uphill walking but is easier than the scramble back along the shore.

Fig 5 - Jumbled landslip

Drive up to the top car parks – these are just where the road levels out *(ID 1909 4179)*. On the way the road winds round many large chalk blocks – all this material is landslip.

Walk back down the road for 150m. Ascend the knoll on the right *(ID 1919 4178)*. This has got to be one of the finest geological viewpoints in Ireland. Far below are the basalt sea-stacks and the sandstones.

Above the shore is a huge amphitheatre filled with hummocky, jumbled landslip [fig 5] – very typical of many of the slopes round the Antrim Coast. It is thought that these vast landslips occurred about 18 000 years ago when the major *Quaternary ice sheets* melted and left the over-steepened slopes unsupported.

Further up is a small grey cliff which is made of the *Dalradian sediments*. Just above this is a conspicuous deep red formation – this *Sherwood Sandstone* which is a terrestrial desert deposit of *Triassic age,* about 240 million years old.

continued

Murlough Bay, County Antrim (contd)

30th June 2012

Fig 6 - Ulster White Limestone

Overlying this, and most conspicuous of all, are vertical cliffs in the *Cretaceous Ulster White Limestone* ("chalk") [fig 6], representing a return to marine deposition 90 million years ago. These are the source of the many white blocks seen on the drive up. Since the Jurassic system normally comes between the Triassic and Cretaceous systems this means that the entire Jurassic is missing here. Was it never deposited, or was it deposited and then completely eroded before the late Cretaceous? A small stream emerges at the base of the chalk: the water can easily pass through the much fissured chalk, but cannot so easily pass through the Trias.

Beyond the range of white cliffs is a rounded ridge. This is almost entirely made of the Dalradian rocks, but there is a small flat cap of chalk on top which is much greener than the rest of the hill, because of its better drained and less acid soil. This rests directly on the Dalradian, so that the Carboniferous and even the Trias are missing at that locality. The Dalradian mountain is an expression of the "Highland Border Ridge", which extends to the south-west and disappears under the Antrim basalts. It seems to have been a recurrent axis of uplift throughout geological time. The same feature can be seen 20km to the north-west across the *North Channel* where it forms the *Mull of Kintyre*. The Mull lighthouse is clearly visible.

Looking west of course is the Fair Head sill, already mentioned, of Palaeogene age, and 57 million years old. It is very obvious from here that although it dips in general to the south (left) it also steps up periodically. This is quite characteristic of sills. Just across the road (on the west side) are some small pits *(ID 1914 4187)*. This is where the sill finally peters out at its eastern extremity. In these pits both the dolerite of the sill and chalk can be seen in a rather complicated arrangement. At one point the chalk in contact with the dolerite is seen to have been altered by the heat from the sill: it has a grey sugary appearance quite unlike the usual pure white chalk. This demonstrates that the dolerite is indeed an intrusion – and not just a very thick lava flow – and also that it is later than the chalk.

In the course of this excursion to a limited area you will have seen rocks of a variety of types and of a range of ages which can scarcely be equalled anywhere else.

Peter Millar

Cookstown Area - Ardboe and Brookend

Leaders - Ronnie Irvine and Ian McNeill 4th August 2012

BNFC members were joined by members of *Cookstown Wildlife Trust* for this excursion led by local botanist ***Ronnie Irvine*** on one of the rare sunny days in the wet 2012 summer. *Ardboe* (from Irish: Ard Bó meaning "height of the cows") dates back to St Patrick's time as a religious centre and the 9th/10th century *High Cross* was part of a monastic site on the shore of *Lough Neagh*. The site is noted botanically for a Mediterranean plant, Milk Thistle *(Silybum marianum)* – the white blotches and veins on the leaves are supposed to refer to the Virgin Mary's milk. Could the seeds have been brought back to Ireland by a pilgrim? Our president has grown it successfully in her garden from seeds collected here.

Ardboe graveyard

A tree in the churchyard had coins hammered into the trunk (see left) – apparently the Parish Priest had a previous such tree removed regarding this as a pagan practice. Ronnie Irvine and the botanical secretary had each seen a tree trunk with hammered coins at *Malham Cove in the Yorkshire Dales*.

Ian McNeill, BSBI recorder for Co Tyrone and author of the recently published *"Flora of County Tyrone"*, showed us 3 different species of *Deadnettle* near the ruins of the medieval church – the common Red deadnettle *(Lamium purpureum)*, Cut-leaved Deadnettle *(Lamium hybridum)* and Henbit *(Lamium amplexicaule)*; Amplexicaulis means "embracing the stem" which its leaves do.

A large amount of soil dumped in the field next to the churchyard had good shows of Corn Marigold *(Chrysanthemum segetum)*, now generally only seen in "wildflower" mixtures, Dog /Ox-eye Daisies *(Leucanthemum vulgare)*, Scarlet Pimpernel *(Anagallis arvensis)* and the rarer Lesser Swine-cress *(Coronopus didymus)*, an American plant. A wet area had 2 buttercups - Lesser Spearwort *(Ranuculus flammula)* has spear-shaped leaves and Celery-leaved Buttercup *(Ranunculus sceleratus)*; sceleratus means "wicked" and it can cause ulceration.

Yellow Loosestrife

We walked along the Lough shore where we compared 2 Nightshades – Bittersweet/Woody Nightshade *(Solanum dulcamara)* with purple flowers and yellow anthers and Black Nightshade *(Solanum nigrum)* with white flowers and black berries; both are members of the same family as the potato and tomato, and like them poisonous in parts.

continued

Cookstown Area (contd)

Leaders - Ronnie Irvine and Ian McNeill 4th August 2012

Konik ponies

Marsh Woundwort

The showy purple-pink flowers of Great Willowherb *(Epilobium hirsutum)* contrasted with the blue of Water Forgetmenot *(Myosotis scorpoides)* and the yellow of Nodding Bur-marigold *(Bidens cernua)*. It is surprising how an ordinary-looking field can produce such an array of interesting plants.

Ian Mc Neill retrieved aquatic plants from the lough, including Fennel Pondweed *(Potamogeton pectinatus),* Canadian Waterweed *(Elodea canadensis)* which arrived over 100 years ago and Rigid Hornwort *(Ceratophyllum demersum)* which only appeared in Co.Tyrone in the 1980s.

We picnicked at the *Battery harbour* where Trailing St John's Wort *(Hypericum humifusum)* was spreading on the mown grass and by various routes the group re-assembled at *Brookend Nature Reserve*, where *Polish Konik* ponies prevent rough vegetation taking over. Our main quest was for Irish Lady's Tresses *(Spiranthes romanzoffiana)* a North American orchid, first found in Europe by *Praeger at Brackagh Bog, Co. Armagh* in 1892. Orchid seeds are tiny and numerous - could they have been carried across the Atlantic by the prevailing winds? Most years several plants appear at Brookend but we found no sign this year. However we enjoyed a great variety of wetland plants. New to many was Skull-cap *(Scutellaria galericulata)* with pairs of bright-blue flowers. Widespread in the marshland was Sneezewort *(Achillea ptarmica)* which grows in wetter places than its near relative Yarrow *(Achillea millefolium)* and has larger disc florets. *'Ptarmica',* a Greek onomatopoeic word, means "causing sneezes" and it was once used as a substitute for snuff. *'Wort'* is an old English word for plant and is often used in the names of medicinal plants. Members wondered about the name Marsh Woundwort *(Stachys palustris)* and Liam McCaughey has found a reference to it in "Mrs.Grieve's Herbal"; it was used to staunch bleeding, as an antiseptic, anti-spasmodic and to relieve gout and joint pains. Gipsywort *(Lycopus europaeus)*, a relative of Mint, was reputedly used by gipsies to stain their skin. Among other colourful plants were Purple Loosestrife *(Lysimachia salicaria),* Yellow Loosestrife *(Lysimachia vulgaris),* Creeping Jenny *(Lysimachia nummularia)*, deep-pink Marsh Lousewort *(Pedicularis palustris)* and Marsh Cinquefoil *(Potentilla palustris)* with its dark-purple star-shaped flowers.

Ronnie and Ian were thanked for sharing their great botanical knowledge and enthusiasm with us in an area new to many BNFC members.

In May we had visited the *Bangor Walled Garden* walled garden and admired the sculptured urn designed by *Diane McCormick*, so our President had arranged for us to visit her in her studio in *Brookend Road* to see more of her acclaimed ceramic work, the wildflower meadows, lake and lovely garden. It made a special end to a very rewarding day.

Margaret Marshall

Stone and the City

Leader - Dr Joanne Curran

7th August 2012

Sinclair Seamen's Church

Geology and buildings have a very close and complex relationship and there are many types of stone that might be used by the builder. The stone chosen will have a big influence on the character and status of the town/city and types of stone are almost endless. Many factors will influence the builder's choice for example; its aesthetic qualities, sources of the material, it's reaction to weather and ageing, cost, transport and many others. ***Dr. Curran*** took a sample of Belfast's best known buildings around the central area to illustrate these relationships.

Our perambulation started at *Sinclair Seamen's Church*, a very attractive structure in *Italian Lombardy style*, built by *Charles Lanyon* (1858). It is built of rough cast *Scrabo sandstone*. It has deteriorated badly in the high pollution levels in the CBD combined with salt from Belfast Lough. Attempts to replace pointing with cement has made the situation worse. (The same applies to the *Assembly Building in Wellington Place*.)

Albert Memorial Clock

The Albert Memorial (1865) built of the same material, has similar problems but a massive renovation programme has given it a new lease of life, but at huge cost, at least for the short term.

Two other well known buildings are the *Custom House* (1854) and the *Harbour Commissioners' Offices* (1854 and extended in 1895) both built of sandstone but of much superior quality, imported from the Glasgow district. These have weathered well.

However the *Albert Memorial* and the *Custom House* have another problem. They were built on *sleech*, a muddy material found close to the *River Lagan* ie. cheap sites. They are supported by wooden piles that have been unable to take their weight and subsidence inevitably has taken place. Vast sums have been spent on renovations.

Our last stop was the *City Hall*, one of the most striking buildings in Belfast. It is a large rectangular building in Baroque Revival style, built of *Portland Limestone* (1896), this attractive stone makes excellent building material and as well as being attractive, it weathers well in the polluted atmosphere of the CBD.

Custom Square, Belfast

City Hall, Belfast

This was a most interesting evening walk and everyone realised that there was a lot more to be learned from the built environment than we had anticipated.

We send our thanks to Dr. Curran for a very stimulating and well structured outdoor seminar.

James Rutherford (Hon. Geological Secretary)

Far side of Lough Neagh

Leader - Brian McElherron

11th August 2012

About 20 members travelled to our first destination in *East Tyrone* by luxury coach, where we were joined by 4 more members travelling independently. The idea was to visit some ancient sites near the western shores of *Lough Neagh*. These included three castles of similar dates but different designs, and two High Crosses.

The first site was *Castle Caulfield* (grid ref: H755626). *Sir Toby Caulfield* arrived in Ireland in 1598 in command of a troop of horse. He was put in charge of *Charlemont Fort, Co. Armagh*, in 1602, and administered the *O'Neill* lands in Co.Tyrone after the *Flight of the Earls* in 1607. The three-storied mansion at Castle Caulfield was built between 1611 and 1619 on the site of an earlier *O'Donnelly castle*. The oldest part of the existing building is the gatehouse which has Tudor-style doorways, murder-holes and gun-loops. The Caulfield arms appear over the entrance. The main house was originally half H in plan but the NW wing is now missing. The building has many large mullioned windows and tall chimney stacks. The castle was burned in the rebellion of 1641 but was repaired and reoccupied by the *Caulfields* until the 1660s. *St Oliver Plunkett* is known to have held a service at the castle in 1670 and *John Wesley* preached there in 1767.

Donaghamore High Cross

About 4km NW of Castle Caulfield is *Donaghmore* (grid ref: H768654), where St Patrick is said to have founded a monastery. The *Bell of Clogher*, which is associated with the monastery, is now in the *National Museum, Dublin*. The churches and refectory were burned in 1195 and it was a parish church in 1306. The ruins of the old church were still standing in the 19th century, but there are now no visible remains. In the centre of the town is a *High Cross* which is made up of parts of two crosses. It is richly decorated with biblical scenes. On the east side the *New Testament* subjects include the *Adoration of the Magi, the Miracle at Cana, the Multiplication of the Loaves* and *Fishes and the Crucifixion*. On the west side are the *Fall of Man, Cain and Abel, and the Sacrifice of Isaac*. It probably dates from the 10th century. It is said to have been thrown down in the 17th century and re-erected in the 18th century. A modern copy has been erected in the nearby graveyard, where there is also a large boulder with a deep *bullaun*. Also in the graveyard is a tall memorial cross which lists the names of many members of the *O'Neill Clan*.

continued

Far side of Lough Neagh (contd)

11th August 2012

At about this time the lack of a suitable comfort station created an urgency which meant a rapid drive towards *Cookstown*. We were fortunate to find a friendly garden centre which served our purpose, and the car park proved to be an excellent picnic site. An early lunch was taken.

Roughan Castle

Carved mask, Roughan Castle

The idea of a circular tour was now abandoned and we retraced part of our route, through *Newmills*, to *Roughan Castle* (grid ref: H824683), on the outskirts of *Coalisland*. This castle was built in 1618 by *Sir Andrew Stewart*, after whom *Stewartstown* is named. It belonged later to *Sir Phelim O'Neill*, executed for his rebellion in 1653.The walls are aligned with the cardinal points. It is a small square building with four large drum flanking towers. The entrance is through the tower at the NW corner. This tower also housed the spiral stairway of which there are fragments. At the South wall the flankers are connected by an arch at the top level. This arch has a murder-hole. The building is three storeys high with evidence of a gabled attic storey. There are string courses at second and third floor levels. Inside there were large square rooms at each level of the main building but the floors are now missing.

There are fireplaces in the N wall at first and second floors. There were small round or square chambers at each level of the flanking towers except the NW tower which had the stairway. The tower at the SW corner was vaulted above the ground floor room. All the rooms at the lower level had small square musket loops with good splays on the inside. The larger windows at the higher levels do not have mullions but the holes for the glazing bars are evident. There is a carved mask on the wall at the second floor level in the SE corner. There is a scar on the outside of the SW flanker indicating that an attached wall once ran westwards from the castle. This is the only evidence of the former presence of a bawn. In the small lake close to the castle there is a crannog.

continued

Far side of Lough Neagh (contd)

11th August 2012

Gun loop, Mountjoy Castle

From *Roughan Castle* we travelled through *Coalisland* and northwards to *Mountjoy Castle (left)* (grid ref: H901687). It stands in *Magheralamfield* townland on a hill overlooking Lough Neagh. It was built by *Frances Roe* for *Lord Mountjoy* in 1602 and is a typical *Elizabethan fort*. It is a two storey brick building and the lower storey is stone-faced on the outside.

It consists of a central rectangular block with four spear-shaped angle towers with gun loops. The north west tower is partly demolished and the west curtain wall destroyed. The entrance was on the south side of the east curtain wall. On the first floor there are some wide windows. It was taken by *Sir Phelim O'Neill's* troops in 1641 and evacuated and burnt by them in 1642. Retaken by British forces in that year, it was burnt two years later, before Sir Phelim's troops again regained possession. Granted to *Lord Dartmouth* in 1683, it was garrisoned as a military station under James II and William III.

Brian McElherron

Our last visit of the day was to *Ardboe High Cross* (grid ref: H966756). It stands in *Farsnagh* townland and is a tall slender object with only one portion of the ring missing. The Cross is a typical *Scripture Cross* with many carved panels with figure sculpture. Some panels feature geometrical and other decoration. Many of the panels are greatly weathered and unclear. A decorated panel encircles the shaft about three-quarters of the way up. On the west side below the decoration there are four figure panels. The top panel shows the *Flight into Egypt*, but the others are not clear. Above the decoration a panel with three figures possibly represents the *Arrest of Christ* and there is a *Crucifixion* at the cross. On the east side the bottom panel shows *Adam & Eve*.

Above this is *Abraham & Isaac*. At the cross is the *Last Judgement* or possibly *Christ In Glory*.

The bottom panel on the south face shows *Cain & Abel*. The church nearby is a simple rectangular structure measuring 19m by 6m, with a north doorway and a pointed east and west window. There are two windows in the north and south walls. The walls are 1m thick. It probably dates from the early 17th century. The memorials in the churchyard range from 18th century to modern. *Ardboe Cross* marks the site of a monastery associated with *St Colman* and founded perhaps in the 6th century. The monastery was burned in 1166 but later emerged as a medieval church site. In a field about 200m north east of the cross is an overgrown rectangular ruin measuring about 12m by 7m. A short distance to the north are three sides of a substantial structure. These buildings may be part of the early monastic settlement.

Brian McElherron

Island Magee

Leader - Andrew Gault

18th August 2012

The picturesque small fishing harbour of *Portmuck* can trace its origins to a medieval grange owned by *Inch Abbey* in County Down. The site of a medieval church, known as *Portmuck Abbey*, is located in the *'Kirk Field'*, a small way inland from the harbour. The first firm reference to this church dates to the early 14th century (1306), however there is evidence to suggest that it sits on the site of an earlier ecclesiastical site dating perhaps to the 6th or 7th century.

Portmuck Abbey (NISMR Ref: Ant 041:004)

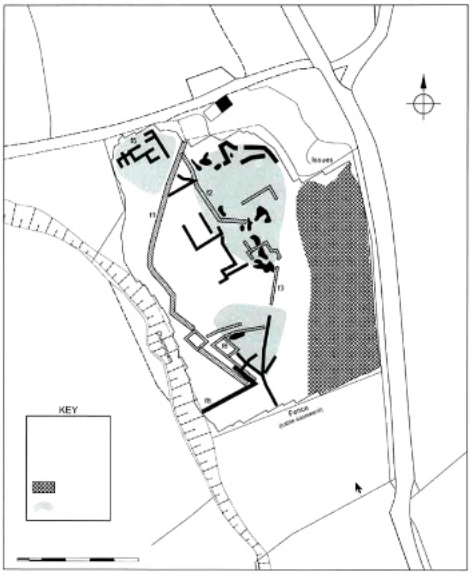


Fig. 1 Interpretation diagram of results of geophysical survey at the Kirk Field, Portmuck (from: Sue Anderson & Alastair Roy Rees, 'The Excavation of a Medieval Rural Settlement Site at Portmuck, Islandmagee, County Antrim'.

UJA Vol 63 (2004), 76-113.)

The Kirk Field contains no remaining above ground traces of this medieval church; however portions of the east gable stood into the 19th century when there are descriptions of the field being improved and the foundations cleared away. They were recorded to be some 60 feet long and 20 feet wide.

We know archaeological remains of the church continue to survive beneath the ground due to the results of a geophysical survey of the field in 2001 (Fig 1) which showed the outlines of several buildings, including the church itself, a precinct wall enclosing the church and graveyard, and a network of trackways.

Around the church and graveyard traces of medieval settlement have been found, both shown on the geophysical survey and discovered during excavations in advance of an electricity inter-connector trench being dug in the southern end of the Kirk Field in 2000. This excavation revealed several buildings, probably byre-houses of the local medieval peasants, along with mettled tracks and rubbish pits. It seems the area from the Kirk Field to the harbour was a nucleus of medieval settlement activity. Interestingly the locals were using pottery fired at the medieval kiln in *Carrickfergus*.

An excavation at the north-eastern edge of the Kirk Field in 2001 uncovered 64 burials from the church cemetery. Radiocarbon dates indicate that the earliest burials, which tended to occur in graves lined with substantial chalk slabs, date from the late 6th to mid 9th centuries AD. This would indicate an early monastic origin for the site. By the post-medieval period this peripheral area of the cemetery had become a *cillin*, used for the burial of unbaptised children.

continued

Island Magee (contd)

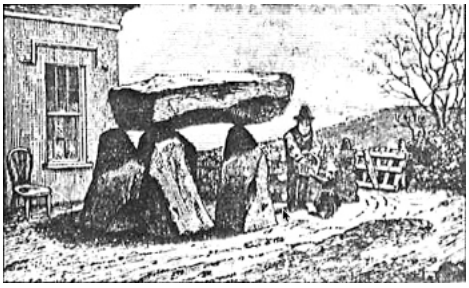
Leader - Andrew Gault

18th August 2012

Portmuck Castle (NISMR Ref: Ant 041:003)

This site is described in PSAMNI (1940) as a stump of a castle gatehouse, 12-15ft high with a barrel vault over the ground storey. A sallyport built up the side of the cliff would give access by ladder to the sea. Originally the walls ran from the gatehouse to the cliff edge, but the structure has been much robbed of stone. The OSFR refer to it as "the keep of an ancient castle... believed... erected in C11th".

The earliest firm reference to Portmuck Castle can be found in maps dating to the mid-late 16th century and it is likely that the castle was built to control the harbour at Portmuck shortly after the Reformation when the lands at Portmuck would have transferred from church to secular control. The *Magees of Islandmagee*, under the overlordship of the *Clandeboy O'Neills,* may have been responsible for its construction.



Nineteenth-century ink sketch of Ballylumford Dolmen (JRSAI 16,1883-4)

Ballylumford Dolmen in 2012

Ballylumford Dolmen (NISMR Ref: Ant 041:004)

Situated in front of an Edwardian house on the summit of a steep sided N/S ridge. The megalith consists of three angular basalt orthostats on which is set a substantial capstone which tilts down to the distal end. Within the chamber is a recumbent slab.

In the past this type of tomb was often known as 'Druid's altar', after which the adjacent house was named the *Druid's Cottage*. This single-chambered tomb is probably the remains of a *portal tomb,* dating to the early *Neolithic* period (c.4000-3600 BC) when the first farming communities were becoming established in the area. This is one of the finest examples of a megalithic tomb surviving in East Antrim, the majority of others cleared away during land improvements. Ironically, this site has been protected within the curtilage of the Druid's Cottage.

There have been several recorded discoveries of *Early Bronze Age* gold ornaments from the neighbouring fields and Bronze Age burials between here and *Larne Lough*, showing that the tomb remained a focus of burial and ritual activity for many hundreds of years after its initial construction.

St John's church, Ballyharry (NISMR Ref: Ant 041:017)

St John's Church, founded in 1595, may occupy an earlier site. The OS memoirs record finds of "human bones with many silver coins" within 200yds of the church. There is now no local knowledge or tradition of an older church here. The existing church is a rectangular building, with a modern extension at the W end. The original construction is not now visible as it has been coated.

continued

Island Magee (contd)

Leader - Andrew Gault

18th August 2012

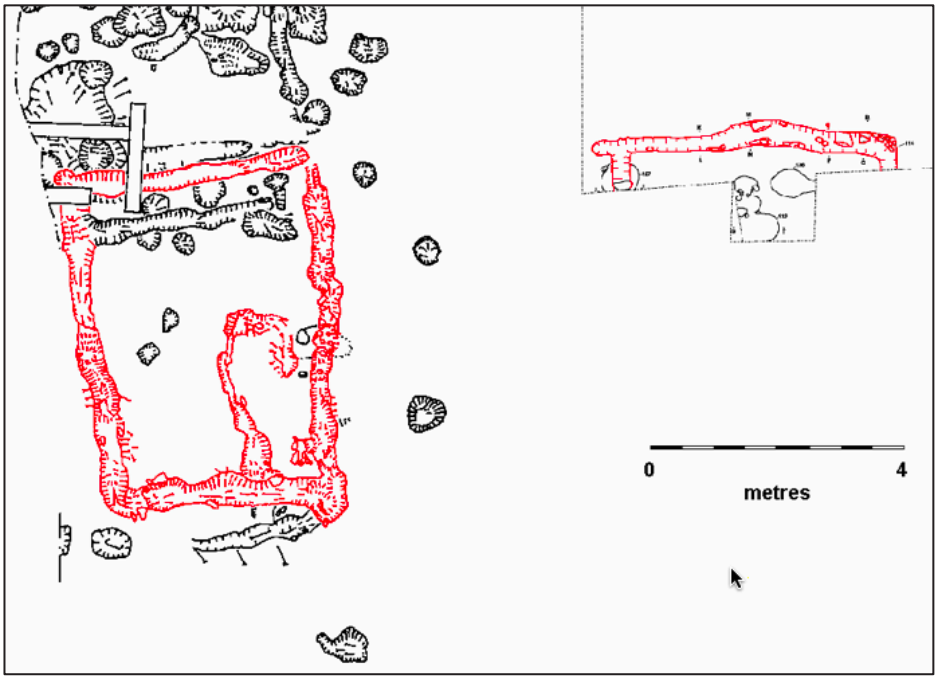


Fig. 2. Post-excavation plans of Neolithic houses discovered in Ballyharry townland, uncovered during gas pipeline excavation (right) and in advance of house construction near St John's church (right). (from CAF Data Structure Report CAFDSR27

http://www.qub.ac.uk/schools/CentreforArchaeologicalFieldworkCAF/PDFFileStore/Filetoupload,180986,en.pdf)

According to the *Ordnance Survey Memoir* of the parish (1830s), prior to 1828 the church measured 88 feet by 28 feet and there was an aisle or transept attached to the west end of the north side. In that year the aisle and 28 ft of the main body of the church were removed. The compiler of the Memoir commented, 'The original church must have at one time been a building of some consequence, to judge from the superior quality of the white oak and that of the cut sandstone sold on its alteration'.

An arched wall recess built into the wall of the house W of the church looks very much like part of a window & probably came from this remodelling of the church.

In advance of construction of the new house immediately to the west of the graveyard a rectangular *Neolithic house* was discovered (Fig2). Two more similar Neolithic houses were found upslope and to the east of the church during installation of the gas pipeline in the late 1990s. This area was clearly a focus of early Neolithic settlement activity.

Castle Chichester

Castle Chichester, Whitehead (NISMR Ref: 047:025)

Castle Chichester is believed to have been built around 1604 by *Sir Moses Hill* and named after his landlord, *Sir Arthur Chichester*, then *Governor of Carrickfergus*. The castle is recorded as being roofless by 1683. This is the oldest building in *Whitehead* and predates the predominantly Victorian and Edwardian seaside town by over 200 years. The local townland name, *Castletown*, is called after this site.

The building measures at the base 8.2m E-W x 8.1m N-S and is approx 11m high. It is built mainly of basalt boulders with some old (C17th?) brick and originally consisted of three storeys with intra-mural stairs connecting the floors. The entrance, on the seaward side is now bricked up for safety, leaving no access to the interior. There are narrow windows on the 1st and 2nd floors and one incorporates a reused piece of moulded stone. The castle would have been positioned within a defensive walled yard or bawn, traces of which appear to survive in surrounding property divisions to this day.

continued

Island Magee (contd)

Leader - Andrew Gault

18th August 2012

The castle was positioned to control trade from the nearby *Port Davy*, located ½ mile to the north-east (beyond the modern harbour).

This was one of the main historic ports of travel between this area and Scotland. The castle would have functioned as a *Customs House* and there are records from the later 17th century of trading tokens being issued from here.

Glynn Old Church (NISMR Ref: Ant 040:010)

Suggested as the site of a *Patrician foundation Glenn Indechta*. Now substantial ruins of medieval parish church, but no early material *(Hamlin, 2008)*. The ruins sit on a sharp, localised rise on the South bank of the *Glynn River*, surrounded by a post-medieval graveyard. The first firm documentary reference to Glynn comes from the *Taxation of Pope Nicholas* in 1306.

The church ruins are aligned ENE-WSW & consist of a nave and chancel. It is clear from the styles that the latter is a later addition - most local churches were built without a chancel. The church was entered by a door in the W of the S wall, leading into the nave. A round-headed chancel arch standing 10 ft high and 6 ft wide would have separated the nave and chancel.

The nave represents the parish church mentioned in 1306 and likely constructed during the 13th century. Interestingly the fabric of this earlier portion of the church appears to contain re-used stone from an earlier stone building, perhaps an earlier church on the site. The wicker-centring employed in the construction of the fine pointed gothic east window, along with the apparent simple 'switch-line' tracery it contained, would indicate a 14th century date for the addition of the chancel.

Recent conservation works revealed more detail from the building's construction phases, including a small splayed medieval window in the south wall of the chancel which was infilled during the insertion of a later window when the church was partially renovated at the start of the 17th century.

The ruins stand NE of the present C of I parish church, itself a Listed Building built to the designs of Charles Lanyon in 1838.

Andrew Gault

Bats at Crawfordsburn

Leader - Robin Moffitt

21st August 2012

Robin Moffitt gave us a talk about bats and we learned a great deal. Bats are the only mammal capable of true flight and fossils of them have been found dating back over 65 million years.

Here in Northern Ireland we have eight different species, ten in all Ireland but worldwide there are about one thousand species all shapes and sizes.

All British bats eat flying insects and our smallest bats, the pipistrelles, can eat up to three thousand five hundred midges every night! Bats are our natural pesticide.

When it gets colder and the midges die off in the autumn the bats go into hibernation to save energy. They go somewhere cold like an old stone wall or bridge and sleep until the spring arrives. In order to survive the long sleep the bats have to put on an extra third of their body weight or they will die.

Come the spring the bats emerge and the females start to look for a nursery roost. This is when they may come into our houses. They usually roost under the soffit in the weatherboard. The babies are born mid summer when the midges are in abundance. Bats in this country have only one baby and not every year. Born blind and bald the babies are on the wing and hunting for themselves in five or six weeks.

We heard that the old myths about getting tangled in your hair are untrue and of course bats are not blind. They can see as well as we can but no better than we can in the dark.
They use a sophisticated form of echo-location to get about in the hours of darkness. We cannot hear these calls with our ears but can use an electronic bat detector to pick up the bats signals and we can even determine which species of bat is flying near us.

The talk over, Robin led us on a guided walk through the country park using the detectors.

We all had a go at listening in to the bat calls and through the evening we picked up the calls of two species, the common (*Pipistrellus pipistrellus*) and the soprano pipistrelle (*Pipistrellus pygmaeus)*.

Pamela Thomlinson

Quoile - Downpatrick

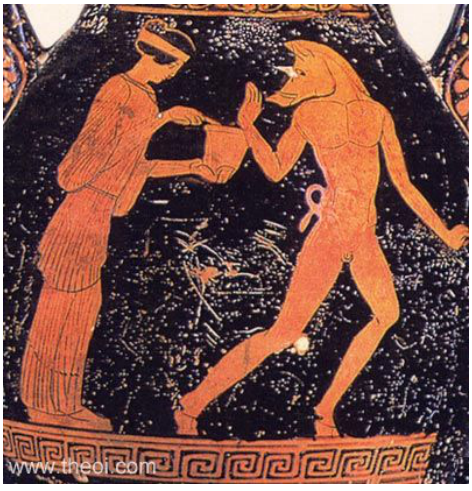
Leader - Graham Day

25th August 2012

Members assembled at the *Quoile Countryside Centre* for a botanical walk along the path beside the *Quoile Pondage Basin*. The Barrage was built in 1957 to prevent flooding in *Downpatrick* at high tides, so it is now a freshwater habitat and noted for its birdlife in the winter.

Enchanter's Nightshade
This is named after the Greek goddess Circe, and early botanists apparently believed that this was in the potion which Circe used to charm Odysseus' companions and then turn them into pigs.

(See the redware pot picture below).



Graham is the *Botanical Society of the British Isles Recorder for County Down* and has embarked on a plant list for the county by 1 kilometre squares. As it has been a very wet summer the water levels were very high so Wellingtons were useful. Some of the Angelica *(Angelica sylvestris*) plants were over 2 metres tall and we compared various other umbellifers *(Apiaceae)* – the coarser Hogweed *(Heracleum sphondylium)*, Cow Parsley *(Anthriscus sylvestris)*, the finer Hedge Parsley *(Torilis japonica)* and plants growing in water such as the poisonous Hemlock Water Dropwort *(Oenanthe crocata)*, Fool's Watercress *(Apium nudiflorum)* and Lesser Water Parsnip *(Berula erecta)*. Fortunately there was no sign of the aggressive alien from Asia, Giant Hogweed *(Heracleum mantegazzianum)* which can make the skin photosensitive. Many of our vegetables such as carrots and celery and herbs like parsley and dill belong to the umbellifers but other species are deadly poisonous. Our ancestors must have learned to distinguish them by trial and error.

The rare Wood Vetch *(Vicia sylvatica)* was growing in a hedge along with Bush Vetch *(Vicia sepium)* and the bright purple Tufted Vetch *(Vicia cracca)* and yellow Meadow Vetchling *(Lathyrus pratensis)*. Graham fished out of the water Common and Greater Duckweeds *(Lemnae minor & polyrhiza)* and the invasive sub-tropical American Water Fern *(Azolla filiculoides)*. Although the Quoile is now a fresh water area, there was a large clump of Sea Club-rush *(Bolboschoenus maritimus)* growing at the water edge along with Bulrush *(Typha latifolia)* and Common Reed *(Phragmites australis)*.

Graham showed us how to identify ferns by examining the leaflets and spores of Male Fern *(Dryopteris filix-mas),* Golden-scaled Male Fern *(Dryopteris affinis/borreri)*, Broad Buckler Fern *(Dryopteris dilatata)*, Hard Shield Fern *(Polystichum aculeatum)* and Soft Shield Fern *(Polystichum setiferum)*. There were large patches of Fragrant Agrimony *(Agrimonia procera)* with its spikes of yellow flowers – it was used to treat cataracts. *The Steam-boat Quay* from where cross-channel boats used to set off provided a different habitat. In the mortar crevices were lime-loving plants like Field Madder *(Sherardia arvensis)* and Wall Rue *(Asplenium ruta-muraria);* the ivy on the wall was the Irish sub-species *Hedera helix ssp. hibernica*. A magnificent stag on the other side of the water at *Finnebrogue* was admired.

continued

Quoile - Downpatrick (contd)

Leader - Graham Day

25th August 2012

Bee on Knapweed

We picnicked in sunshine in the gardens at the Quoile centre where *Peacock, Large White, Small Tortoiseshell* and other butterflies were enjoying the many flowering plants and the Moth experts identified species recently photographed. In the afternoon we walked towards the old Harbour. A road verge had a variety of wild-flower meadow plants with Yellow Rattle *(Rhinanthus minor)*, Knapweed *(Centaurea nigra)* and Orchids *(Dacytloriza fuchsii)* in seed. By this time the rain was becoming heavy, so we returned to the car-park.

The President thanked Graham for a very informative and rewarding visit to a variety of habitats.

Margaret Marshall

After the Ice

Leaders - Tony Bazley & James Rutherford **1st September 2012**

The *Ballinderry River* rises in central *Tyrone* at the watershed dividing the drainage flowing to the west and east. The actual source is in *Cam Lough* at 200m. and flows eastwards into *Lough Neagh* at 20m. a distance of 24 miles. The valley is very shallow and resembles a *peneplain*, the product of glacial erosion. The surface features are the product of glacial deposition with outcrops of residual harder rocks usually of granite (eg. *Craigballyharky* mt. at 234m.) or *metaphosed schist* (eg. *Corvanaghan mt*. at 250m.)

The main purpose of this field study was was to examine the features of glaciation deposition. *The Ballinderry valley* was chosen as it is the most extensive area of this material in the north of Ireland and the numerous sand quarries give access to examine its content and there are numerous examples of *eskers, deltas, kettlehole lakes* and *moraines*. The location of these features shows the retreat of the ice is from west to east, from Cam Lough to the Lough Neagh basin. Thus it is logical to work from west to east.

We began with the *eskers*. These are subglacial ridges of sand and gravel washed out of the ice sheet by melt water streams and deposited in ridges in the stream bed under the ice, and the finest material (fine sand and silt) is washed out into the temporary lake, that forms at the edge of the ice, where it builds up into a *delta*. These deltas are the main source of good quality aggregate for the building trade. When the ice sheets melt the eskers stand out as sinuous ridges, sometimes used as good dry foundations for roads eg. the *Davagh* and *Knockaleery* ridges, the latter being a good example of a *beaded esker* (results from pauses in the retreat of the ice sheet). There are several fine examples of deltas in the valley. These are easily identified. They occupy prominent positions, have level surfaces and usually a steep slope on the downstream side, indicating a minor surge of the ice sheet (usually referred to as the ice contact slope).

Large quarries have been developed near *Sultan, Evishanoran,* and *Killucan*, at the western end of the valley, and nearer Cookstown at *Drumshambo* and *Knockaleery*. They display many of the typical features of deltas, eg. *foresets* and *topsets* with cross bedding.

continued

After the Ice

Leaders - Tony Bazley & James Rutherford **1st September 2012**

Kettlehole lakes are another striking and numerous feature of the valley. These occur when large lobes of ice are buried in the till, and when they eventually melt the till subsides and the hollow becomes a lake, eg. *Lough Bracken* and sometimes occur in clusters as found around Cam Lough. They enhance the scenery and are sometimes adapted into fish farms.

Prolonged large-scale extraction has had advantages and disadvantages. It has become a valuable secondary source of income in a region of marginal farmland. The *Evishanoran deposits* have a potentially high educational value, and there may be benefits for tourism. However if the extraction of sand and gravel proceeds on this scale it will seriously detract from the scientific, aesthetic and tourist value of the area. Consequently as sand and gravel are a finite resource it is important to draw up plans to protect this valuable landscape before active working encroaches any further.

Toney Bazley and *James Rutherford* (Geological Sectional Secretary)

Clifton House

Leader - Rosie Ford-Hutchinson

4th September 2012

Bust of Mary Ann McCracken

Water pipe made from Elm

A small group of members attended this evening event guided by *Rosie Ford-Hutchinson*. *The Belfast Charitable Society,* dating back to 1680, founded a poorhouse and infirmary here with 22 Presbyterian Board members in 1771 and established *Clifton Street graveyard* to serve it in 1796. It was designed by *Robert Joy*, on land granted by *Lord Donegall* and contributions for the development were received from Belfast merchants.

The institution was self-sufficient in food production growing enough on the adjacent land and keeping some farm animals. Various skills were nurtured here, including coffin making, and spinning skills were taught to children by *Mary Ann McCracken* in the basement.

The society took on a range of wide-reaching work including the certifying of street beggars, laying water pipes in the city and inoculating against smallpox.

The house has been in continuous use since its foundation although only one wing, to the west, remains of the original structure. In 2002 the Society decided to refurbish the house at a cost of £2m and build a new retirement home in *Carlisle Circus*. When these works were completed the east side of the building resumed use as a retirement home and the west side was given over to *HELM housing*. The central area, including the original Board Room, remains in public use for visitors, conferences and other events.

A number of interesting pieces of furniture and other items are displayed in the elegant front hall, corridors and stairway including two fine 18th-century sideboards, the original bell of *St George's Church*, then in use as the Corporation church and two grandfather clocks.

An exhibition on the history of the house and the people associated with it is displayed in the back hallway and stairway and includes a sample of a 19th century Belfast water pipe of elm, an iron coffin cage to prevent grave-robbing and a strong box, said to be from the *Spanish Armada*.

Upstairs we visited the *Board Room* with its reproduction table and chairs (the originals were sold off before the 2002 refurbishment) and many interesting portraits and documents around the walls. The nearby archive room has a fine display including the original minute books and copies of various maps of Belfast from 1685.

Claire Foley.

How to Moth

Leader - James Carroll

23rd September 2012

Joint event with Butterfly Conservation Northern Ireland

A group of keen BNFC and BCNI members met with ***James Carroll*** in the *Belfast Hills Partnership Office*s.

We made six groups of keen people ready to learn how to make their own moth traps and learn how to use them.

James led us through his set of instructions (as shown on the main homepage of the BNFC website) and demonstrated each step to us.

With his able help we soon had the circles cut in the lid of the large plastic box lid. Next we drilled several drainage holes at the corners and then outside to heat the cutter with a blow torch – taking care as this can be dangerous!! The heated cutter then could cut a drainage hole in the centre of the plastic floor.

We covered this hole with some canvas and taped it in place.

Next James helped us to cut baffles, fit them together and screw them in place.

Then finally we assembled the light, holder, rain guard and baffle together so that they could be fitted unto the top of the trap.

At last with more tips and guidance we were sent home to set up our new traps in our gardens.

Next morning we gathered at 10 am to open our traps. The weather had been cool but we still were delighted to find some moths and learn their names.

Another set of potential 'mothers' left with their own traps and enough knowledge to start mothing!

Despite the cool weather we had fourteen species of moths in the five traps including two Angle Shades *(Phlogophora meticulosa*), Black Rustic *(Aporophyla nigra)*, Pink-barred Sallow *(Xanthia togata)* and Green-brindled Crescent *(Allophyes oxyacanthae)*.

Clearly showing that James' trap design works really well.

A very successful two days' work.

Pamela Thomlinson

A separate PDF with instructions and diagrams is available in the Resources page of the BNFC website.

Fungus Foray, Belvoir

Leader - Alistair McCracken

29th September 2012

Our leader, *Alistair McCracken*, is a plant pathologist so his expertise extends to microfungi such as blights, rusts and moulds as well as *macrofungi*. In Belvoir Forest he showed us *Lawson Cypress* trees killed off by the blight *Phytophorum lateralis* which originated in *Oregon* and is spread in soil, so it's important to clean one's boots after contact. The related *Phtyophorum ramorum*, first detected in trade plants, affects *larch* and *rhododendrons* and is spread through the air. *Chalara Fraxinea,* which is threatening to destroy our native Ash *(Fraxinus excelsior)* has been detected on plants imported from Europe. As Ash trees seed so prolifically, one wonders why nurseries have to import them. Alistair showed us *chestnut trees* cut down because of cankers caused by a *Pseudomonas bacterial infection* and powdery mildew on Oak leaves. The black spots *(Rhytisma acerinum)* on sycamore leaves, are more common in areas of clean air and do not appear to harm the trees. Rust is common on *Blackberry leaves* – the Botanical secretary had photographed, in the Canary Islands, a green Tree Frog *(Hyla meridonalis)* with camouflage red spots – the frog was almost invisible on a rust-covered bramble leaf.

Honey Fungus

The fungi we see are the fruiting bodies of *saprophytic mycelia* which can spread over vast areas underground. The largest living organism in the world is a 2200 year old *Mycelium* covering 2400 acres in eastern Oregon. Mycelia play a vital role in the decomposition of plant matter. The *mycorhiza* - a name given to the type of fungus which forms a symbiotic, usually mutualistic relationship with other plants, notably orchids, help them take up nutrients from the soil. Thus many fungi, such as the Larch Bolete *(Suillus grivellei)* and the Beechwood Sickener *(Russula mairei)* are associated with particular trees.

Jew's Ear

On a fine morning we assembled first in Belvoir Forest where we soon found many fungi associated with woodland. Clumps of yellow Sulphur Tufts *(Hypholoma fasciculare)* and Honey Fungus *(Armillariella mellea)* were photographed.

We handled the moist, rubbery Jelly Ear *(Auricularia auricula-judae)*, growing on dead *Elder*; it is also known as *Jew's Ear* because Judas was supposed to have hung himself on an Elder tree.

continued

Fungus Foray, Belvoir (contd)

Leader - Alistair McCracken

29th September 2012

Orange Peel Fungus

Orange Peel fungus *(Aleuria aurantia)* is edible but tasteless. Candle-Snuff Fungus (Xylaria hypoxylon) grows on decaying wood of broad-leaved trees – "xylon" means wood.

In the afternoon we set off from *Shaw's Bridge* over the *Barnett Demesne* meadows looking for *Wax Caps* – Orange Wax Caps *(Hygrocybe aurantia)* were growing near Fairy Ring Mushrooms *(Marasimius oreades)* – these add nitrogen to the soil so the 'fairy ring' is greener than the surrounding grass.

Penny-bun *(Boletus edulis)* is a main ingredient of mushroom soup.

Distinctive fungi included the Amethyst Deceiver *(Laccaria amethystea)* and the shiny Porcelain or Slimy Beech Tuft *(Oudemansiella mucida)*. There are over 100 species of Russula – *R.emetica* has the effect its name suggests. The only Puff-ball to grown on dead wood is *Lycoperdon pyriforme* which means "Pear-shaped wolf's dung"!

Candle Snuff

Members examined and photographed many Bracket Fungi including Artist's Fungus *(Ganoderma adspersum)* on which one can scratch drawings, and *Tramites/Coriolus versicolor* with layers of banded velvety brackets. We took it in turns to go inside a hollow beech tree to admire Brackets growing all the way up the 3 metre hollow.

Examples of some of the fungi found were displayed at the Conversazione. Alistair was thanked for sharing his expertise with us on a very pleasant and productive excursion.

Margaret Marshall

Thanks to Jim Rutherford for the use of the photographs.