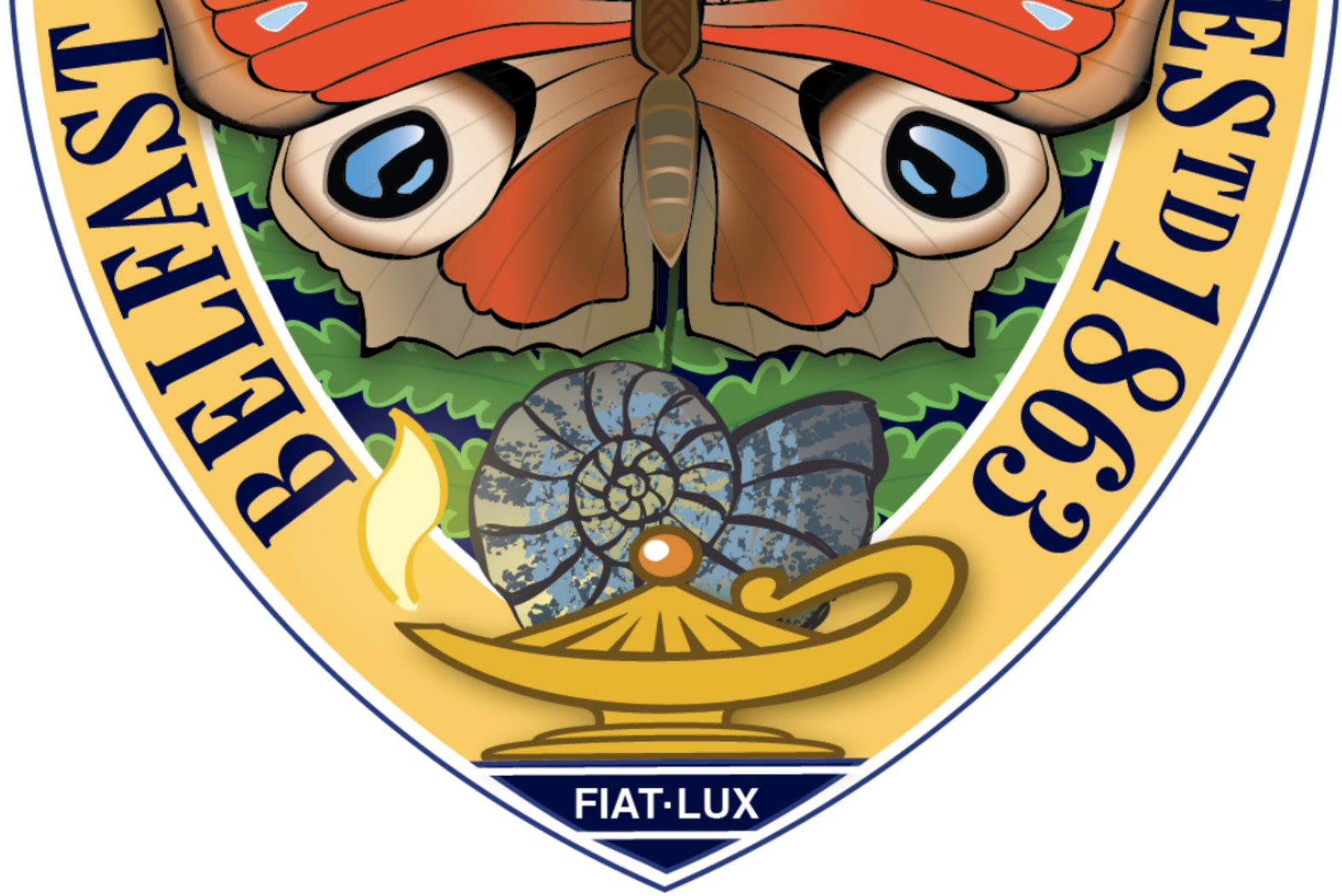
Belfast Naturalists'

Field Club

Field Reports

2011



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Belfast Castle

Leader - Dr Ben Simon **7th May 2011**

Our first field trip of the summer programme heralded the end of the spell of sunny weather so members assembled at *Belfast Castle* with waterproof coats and umbrellas at the ready. Fortunately the rain held off while *Dr Ben Simon* told us about the history of the castle which was built by the *3rd Marquis of Donegal* in the late 1860's. On his death it passed to his daughter the *Countess of Shaftesbury*. Her son the *9th Earl of Shaftsbury* resided in the castle for a time but by the late 1920's it was unoccupied and land on the lower slopes below the castle was sold for housing.

The Belfast Corporation acquired the remaining lands and the castle for a public park in 1934. After some years of neglect the castle was refurbished and reopened for public use in 1988.

We then had a walk around part of the castle grounds where Ben Simon told us about the history of the estate grounds from its time when it was a deer park. He also pointed out the remains of houses on the estate all of which are now in ruins.

We also saw the site of the Shaftesbury children's playhouse. Many of these sites and the stories connected with them are recalled in Ben Simon's book *Voices from The Cave Hill* and many of us took the opportunity to buy a copy and have it signed by the author.

Clandeboye House and Estate

Leader - Fergus Thompson **17th May 2011**

Front of Clandeboye House

Fergus Thompson, Head Gardener at *Clandeboye Estate* showed BNFC members and friends round the gardens on an unexpectedly fine May evening. The estate covers around 2000 acres and contains the largest area of broad-leaf trees in Northern Ireland.

Near the entrance to *Clandeboye House* (left) is a bed of spiky plants, such as *Phormium*, *Tree Ferns* and *Cordylines*, designed to reflect the spikiness of the weapons which decorate the Entrance Hall. Many had suffered from two cold winters but Fergus hoped that the many seedlings from the biennial *Echium canarense* would be flowering by next summer.

200 year old oaks stand among the wild-flower meadows where *cowslips, yellow rattle, buttercups, red clover, ox-eye daisies, knapweed* and native grasses made a colourful display in front of the lake where we spotted a swan with cygnets.

Fergus showed us many exotic trees, including a *Chestnut-leafed oak*, and a Fern-leafed/cut-leafed Beech *(Fagus sylvatica heterophylla)*.

20% of Fergus' seedlings had not reverted to the common species.

We saw a fine collection of pines from across the world and many Southern Beech *(Nothofagus)*. Fergus was growing a *Bristle-cone Pine* from a seed he had collected.

We all admired a wonderful display of purple *Acers*, red, orange and yellow *Azaleas*, multi-coloured *Rhododendrons* and red Chilean Firebush *(Embothrium)* – one of them a champion tree as it has the largest girth of any in the British Isles. There is a fine collection of *magnolias*, many recently planted – the newer species flower when still quite young.

Courtyard

The intimate walled-gardens have fine *tree peonies, colourful irises, geraniums* and walls covered with *wisteria*.

In the *Bee garden*, so-called because of a bee-house restored from a Victorian original, are old species of *apples, mulberry and peach trees*. In the Conservatory Garden Fergus pointed out a 60 million year old fossilised *Metasequoia* trunk from *Lough Neagh*, akin to the living Metasequoia we had just seen in the gardens.

continued

Clandeboye House and Estate (contd)

Leader - Fergus Thompson **17th May 2011**

Fergus Thompson was thanked for sharing with us his great knowledge of plants and enthusiasm for the Gardens.

Margaret Marshall

Glenarm and Straidkilly

21st May 2011

After the warmest April on record, the weather finally returned to normal, in time for our trip to *Glenarm Forest* and *Straidkilly Nature Reserve*. Fortunately, both venues are well wooded, and we managed to avoid the worst of the wet weather.

Glenarm Forest is now a mixed demesne woodland, which is managed mainly as an amenity area.

There is a prolific ground flora, dominated in many places by dense stands of Wild Garlic *(Allium ursinum),* the scent of which pervades the whole forest. *Ferns* were abundant and we spent some time identifying the different species, especially differentiating between the Male Fern *(Dryopteris filix-mas)* and the Scaly Male Fern, *(Dryopteris affinis)*. The group soon became adept at seeing the faint black spots on the leaves, which are the distinguishing feature of the latter species.

Many of the spring flowers were over, but we managed to find the seed heads of both the Early Violet *(Viola reichenbachiana)* and the Toothwort *(Lathraea squamaria)*. Both Water Avens *(Geum rivale)*, and Wood Avens *(Geum urbanum)*, grow together by the side of the paths, and hybrids between the two species are frequent. We spent some time trying to untangle the three taxa.

After lunch we visited Straidkilly Nature Reserve, which is managed by *The Ulster Wildlife Trust*. The reserve is classified as *Ash wood*, even though this species is in fact absent! *Hazel* is the commonest woody plant.

The lower section of the site has an alkaline soil, derived from the underlying limestone, and is by far the most interesting botanically. Twayblade, *(Listera ovata)* and Common Spotted Orchid *(Dactylorhiza fuchsii)*, were seen in bud. On one steep slope, we counted at least seventeen fully open flower spikes of the Bird's Nest Orchid *(Neottia nidus-avis)*. Other uncommon plants found were Wood Vetch *(Vicia sylvatica)*, Lesser Wintergreen *(Pyrola minor)* and Stone Bramble *(Rubus saxatilis)*. Straidkilly's rarest plant, Yellow Bird's Nest *(Monotropa hypopitys)*, does not appear until August. However, the conductor was able to point out the exact location of the largest colony.

Since the weather was still worsening, it was decided to curtail a proposed visit to the only County Antrim site for Seakale *(Crambe maritima)*.

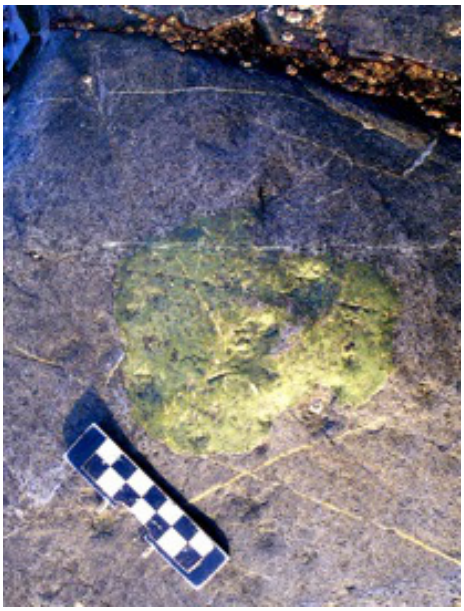
Instead the group finished the trip over tea and scones in *Carnlough*.

Roger Field

Helen's Bay, Horse Rock to Grey Point

31st May 2011

Rhomb-shaped clast (olistolith) of Greywacke, west of Horse Rock



Small olistolith of serpentine in fine siltstone, 30m north of Horse Rock

Leader - Dr Bernard Anderson

This stretch of rocky coastline on the western side of Helen's Bay is an excellent site to study volcanic rocks of the oceanic crust and the overlying oceanic sediments. The geology of this area is the product largely of Plate Tectonics. In the *Ordovician* period the *North American (Laurentian) and European (Gondwana) plates* pulled apart forming the Iapetus Ocean. About 100 million years later, in the *Silurian*, they converged again resulting in the closing of the Iapetus. While the Iapetus Ocean existed deep marine sediments were deposited by turbidity currents deep on the ocean floor forming an extensive belt of sandstones, shales and mudstones. They formed rock and trend northeast to southwest across the counties of Down and Armagh into Monaghan and Cavan and are a continuation of the Southern Uplands of Scotland.

Turbidity currents occur when accumulations of sediments on continental shelves become unstable and slide down the continental slope as a dense current of mixed sediments. When accumulated on the sea floor they are graded from coarse at the bottom to fine upwards and are known as turbidites or greywackes. These deepwater sediments solidify into shales and are folded and fractured by converging continents.

At the same time there was igneous activity on the ocean floor, producing *pillow lavas*. As the name implies they resemble a pile of pillows formed as the moving lava made contact with the cold seawater.

Good examples of these rocks are to be found just west of Helen's Bay, at *Horse Rocks*, just west of a block of apartments at the west side of the beach. Examination of the pillow outlines shows that they are inverted. These examples are classics of their type, probably the best in Ireland.

About 50 meters northwest towards *Grey Point* is a good exposure of laminated shales and turbidites in the form of coarse-grained sandstone, interbedded with thin shale beds and showing well-developed sole markings and graded bedding. With such a good range of rocks and structures this site is a valuable teaching resource.

The BNFC owes a big debt of gratitude to Dr. Anderson for his careful research and compelling presentation.

James Rutherford

Portmore Zoology

4th June 2011

Zoology

Portmore Lough

John Scovell, the RSPB warden, met us in the newly constructed building and explained the Reserve and the rationale behind the work being carried out there. The new viewing platform gives a wide vista to north and south allowing views of the whole area.

Walking along the new board walk towards the waterside hide immediately gave a view of a wide range of birds, damselflies and plants. The Spring Redtail Damselfly *(Pyrrhosoma nymphula)* was in flight, Speckled Wood butterflies *(Pararge aegeria)* settled on leaves to bask in the sun, Tree Sparrows *(Passer montanus)* were sitting on their second brood in the nest boxes and the hedgerows were rich with a wide range of plants.

In the hide

At the bird hide Great Crested Grebe *(Podiceps cristatus)*, Shelduck *(Tadorna tadorna)*, Mallard *(Anas platyrhynchos)*, Mute Swan *(Cygnus olor)*, Coot *(Fulica atra)* and Gadwall *(Anas strepera)*, were seen. Common Tern *(Sterna hirundo)* were nesting on the artificial rafts along with opportunist Black Headed gulls *(Larus ridibundus)*. This is an important moult site for birds particularly *Coot* and *Gadwall*.

We walked round to see the *Konik ponies* and meet the latest addition, a young male foal born earlier that year. The mare was very protective and the mother and son moved as one making him invisible at times. They are thought to be nearer to the ancient breed of horse and show the remains of zebra banding on the legs and an upright mane. The reserve is grazed by the Konik ponies, a wild hardy breed which can graze the undergrowth stopping any one species from becoming dominant and taking over.

Lapwing eggs

This area is part of the breeding *Lapwing project*, an area of close-grazed wet grassland and customised ditches which support an increasing population of Lapwing *(Vanellus vanellus)* and Snipe *(Gallinago gallinago sp)*. Here we had our first sight of Irish hares *(Lepus timidus hibernicus)* moving through the grass. Adult Lapwings soared over their nests calling to the young to stay low, we were lucky enough to see a nest with three eggs, thanks to young *Arthur Somerville*. Rosalie and I were walking and swinging him over the ground and he landed just beside the nest – a narrow miss but a great find! On then to the dragonfly pits, another trial to encourage dragonfly species from nearby areas to breed on the reserve.

There were over a dozen Four-spotted Chasers *(Libellula quadrimaculata)* in flight and one perched at the water's edge was emerging from the final nymphal stage. An encouraging sign that the pits are suitable for breeding dragonflies and it is hoped they may encourage the Irish Damselfly *(Coenagrion lunulatum)* to breed here as it is close to the *Montiaghs* (pronounced 'Munchies'), an area where they can be found.

Turning back we heard Skylarks *(Alauda arvensis)* singing and saw Gargany *(Anas querquedula)*, Sand Martin *(Riparia riparia)*, House Martin *(Delichon urbica)* and Swallow *(Hirunda rustica)* in flight. Also splendid views of a Buzzard *(Buteo buteo)* and a Heron *(Ardea cinerea)* as they flew over.

continued

Portmore Botany

4th June 2011

By this time, hungry for our late lunch we headed back to the picnic area, the day was now sunny and warm and Small White *(Pieris rapae),* Green-veined White *(Pieris napi)*, Small Heath *(Coenonymphya pamphilus)*, Small Copper butterflies *(Lycaena phlaeas)* and Azure Damselflies *(Coenagrion puella)* were seen along the way.

After lunch it was time to pond dip. Some time was spent sampling and identifying the aquatic life in the ponds. The water yielded an exciting range of species including *common frog, 3-spined stickleback, dragonfly, damselfly, stonefly* and *beetle larvae* as well as *water beetles, water boatmen* and *whirligig beetles*. A fascinating collection enjoyed by all, as always pond dipping is a great activity for all from 9 months to 90 years of age. A most enjoyable day and we are extremely grateful to John for all his time and expertise.

Pamela Thomlinson

Botany

Flag Iris

The RSPB's project to provide suitable habitats for breeding lapwings and snipe has produced close-grazed wet grassland, meadows and fens rich in flowers.

In spite of the dry weather the area was ablaze with large clumps of yellow Flag Iris *(Iris pseudacorus)* and pink Ragged Robin *(Lychnis flos-cuculi)*. "Flos-cuculi" means flower of the cuckoo as it flowers when we should be hearing the cuckoo. One of the English names of *Cardamine pratensis* is Cuckoo Flower for the same reason – how much has been lost since these plants were named!

Two wet-place buttercups were examined –both with English names referring to their distinctive leaves. Spear-wort *(Ranunculus flammula)* has spear-like leaves and the leaves of Celery-leaved Buttercup *(Ranunculus sceleratus)* look like celery. "Sceleratus" means wicked – either because the plant grows in "vile" (i.e. marshy) places or because it can cause ulcerations. Our leader, John Scovell, the RSPB warden, showed us how Marsh Foxtail *(Alopecurus geniculatus)* with its shorter bent spikes differed from Meadow Foxtail *(Alopecurus pratensis)*.

The poisonous Cowbane *(Cicuta virosa)* was growing at the edge of the ditches beside the health-giving Common Valerian *(Valeriana officinalis)*. The bright blue flowers of Water Forgetmenot *(Myosotis scorpiodes)* contrasted with the smaller paler flowers of Tufted Forgetmenot *(Myosotis laxa)*.

In drier areas the berries of Guelder Rose *(Viburnum opulus)* and Spindle-tree *(Euonymus europaeus)* provide winter feeding for birds. Bittersweet or Woody Nightshade *(Solanum dulcamara)* with distinctive purple flowers and yellow anthers, a member of the potato family, was growing in both dry and wet places; it also has red berries which are poisonous to humans but maybe not to birds.

Margaret Marshall

Ballyrobert Cottage Garden and nursery

Leader - Maurice Parkinson **7th June 2011**

Maurice Parkinson, former Director of Belfast Parks and his wife Joy began creating this 6 acre garden from what had been a traditional farm cottage and barn surrounded by rushy fields on heavy soil in 1993. It is now listed among the 100 best gardens of Ireland.

In spite of heavy rain, the aftermath of a thunderstorm, hardy BNFC members gathered at 7pm to be shown around the garden by Maurice Parkinson. Near the entrance is a fairy thorn and the entrance pillars are copies of the traditional *Ballyearl* area type, one has a flat top for the fairies to dance on, but more practically they have nest holes for blue tits and other birds.

Mixed woodland of native trees is *planted* in clumps to encourage wild life. Specimen trees, many of them *Acers*, form a backdrop to the large mixed beds of herbaceous perennials- species of *Hostas* resistant to slugs, *Rodgersias*, a lovely crimson *Astrantia* "Roma", elegant *Lupins*, colourful *Irises*, exotic *Alliums* and the unusual *Roscoea*. *Azaleas* of many colours were still in bloom.

The *apple trees* in the orchard had been planted on raised mounds of rich compost to encourage growth.

The stream which eventually flows into the *Six Mile Water* has been dammed to create a lake, established mainly for wild life.

The formal gardens have beds edged with *box hedges*, one area in the shape of a Celtic Cross, and contain a wide variety of unusual plants.

It was too wet to investigate the nature trails through the old fields but many of us hope to visit again; apparently paths through the long grass and rushes are cut in spirals visible from planes coming in to land at Aldergrove. We dried out over tea and scones.

Maurice and his son, Hugo, were thanked for a very pleasant excursion and some of us went home with purchases from the nursery of plants for our own gardens.

Margaret Marshall

Inishowen - Long Field trip

27th-30th June 2011

Inishtrahull

Donagh Cross

The long field trip this year was to the Inishowen Peninsula, an area the club last visited in 1998. This time we were based in the *Ballyliffen Spa and Golf Hotel* and although we revisited some sites there were new ones included in our itinerary; not least among these was a trip to *Inishtrahull*.

We commenced our excursion programme on Monday 27th with a historical visit to *Carndonagh* and ended on Thursday 30th with a botanical visit to *Inch Level*. Between these visits we had more botany, archaeology/history, geology and zoology.

Thanks go to our sectional secretaries, Margaret Marshall *(botany)*, Jim Rutherford *(geology)* and Pamela Thomlinson *(zoology)* who helped organise the programme and shared their expertise with us.

We are grateful to *Bernard Anderson* for his expert input to the geology of the region.

We are indebted to *Andrew Sides* for facilitating the trip to Inishtrahull and also to NPWS warden *Emmet Johnstone* who accompanied us and was an excellent guide to all aspects of the social and natural history of the island. As usual the final evening was devoted to a conversazione at which an amazing variety of exhibits were displayed by the ever-resourceful Field Club members.

Inishowen Archaeological report

The excursion secretary used the following publications to assist her in planning the archaeological/historical visits; *The Heritage of Inishowen: Its Archaeology, History and Folklore by Mabel R. Colhoun, Inishowen: a journey through its past revisited by Neil McGrory* and *Ancient Monuments of Inishowen, North Donegal by Sean Beattie*.

Our first visit was to *Carndonagh*, which in early Christian times was an important ecclesiastical site. The monastic complex was located where the present day Church of Ireland stands. First we viewed the *Donagh Cross* and its attendant stone slabs which now stand at the side of the road on a specially built platform within an open shelter. The cross is believed by some authorities to date from the last quarter of the 7th century and is important in the development of the cross form slab, from where the carving of the cross is completely contained in the slab, to that where the rudimentary arms of the cross extend beyond the carvings, and beyond the stone itself until it reaches the stage as in Carndonagh where the cross is completely free standing.

The *Marigold Stone (left)* situated in the church graveyard was part of the original monastery and depicts three crosses of different origins and geometric design. The state of the carving was compared with the photos (taken more than 20 years ago) in Mabel Colhoun's book and this started a discussion which continued for the whole of our visit to Inishowen: "what should be done about these monuments which are obviously deteriorating by weathering?

continued

Inishowen (contd)

27th-30th June 2011

Inishtrahull

Clonca Cross

On Tuesday those people who were not willing to undertake the boat journey to Inishtrahull were conducted around the local area by our vice president Pat Rutherford. The first visit was to *The Isle of Doagh Famine village*. The Famine Village is an outdoor museum that tells the story of life in the area from the Famine back in the 1840s, through the 1900s to the present day.

This was followed by a look at the nearby *Carrickabraghey Castle*. The first castle built on this site was in the late sixteenth century and it was occupied by *Phelemy Brasleigh O'Doherty*. The castle is referred to locally as "Doherty's Castle". In 1665, it is recorded that it was unoccupied. At that time it had an oval bawn or stone enclosure and seven towers with a square keep. The oldest part of the building is the square keep, which still stands today.

Later in the day they visited *Straid Church* near *Clonmany*. Built in 1772, it was in use until 1925. The graveyard is an unusual place with ancient grave slabs tiered in rows almost making a crude pavement, most of these are unmarked. The graveyard was found to be very overgrown.

The group travelling to Inishowen had time to stop off at *Clonca Monastic Site*. This 17th century planter's church ruin is believed to have been built on the foundation of an earlier church associated with a monastic site founded by *St Morialagh* in the 6th Century. On an inside wall of the church is a grave-slab erected by *Magnus MacOrristin* (possibly a Scotsman) with a sword and a hurley stick on it. The monastery was one of the most important foundations in the development of Christianity on Inishowen. It's proximity to *Carrowmore* and another monastic site founded by *St Boudan in Culdaff* made this area a great seat of skill and learning. Only two high crosses remain - an upright tall cross with one reconstructed cross arm, and the head of another cross. In the same field west of the High Cross, is the head of a 12th century wheel cross lying prostrate with a large base next to it. While we were examining the upright cross and trying to identify the carvings we were closely observed by a cow in an adjoining field.

Man's occupation of Inishtrahull dates to the *Mesolithic* period as confirmed by the flint tools found on at least two sites. There is not a great deal of evidence for occupation in the period between the Mesolithic and the modern era. However, a cross-inscribed stone which could date to any period from the 7-9th Century AD was reportedly excavated in 1900 when the modern lighthouse was being constructed. A fishing community of about 100 people was there in, at least, the 19th Century and was abandoned in 1929. We viewed the school house, field boundaries and houses on the centre of the island before walking out to the new lighthouse. The majority of the party also explored the ruins of the old lighthouse on the NE side of the island.

continued

Inishowen (contd)

27th-30th June 2011

The group came together on Wednesday for a trip to *Malin Head* stopping en route to look at *Doon bridge* (opposite) which is the longest stone bridge in Ireland. Of historical interest at Malin Head was *Banba's Tower*. It was originally built as a Martello Lookout Tower during the *Napoleonic Wars*. The British Admiralty constructed the present tower in 1805. Weather reports, which were so important to local and international shipping, were first recorded at Malin Head in 1870. It then became a *Signal Tower for Lloyds of London* using semaphore to connect with ships at sea and the lighthouse on Inishtrahull.

Dunree Military Museum

Our first visit on Thursday was to *Fort Dunree Military Museum* (opposite) which was first opened to the public in 1986. Here we were shown a video film presentation about Fort Dunree and its history. Then we were given a conducted tour of the fort including the underground bunkers which house a collection of artefacts that give meaning and insight into the day to day operation of the Fort. We had time to examine the museum exhibits and in an adjoining exhibition centre we were delighted to discover a photographic exhibition about *Sentry Hill*.

We rounded off our historical visits in Fahan at the site of the ancient *Abbey of St. Mura*, founded in the early 7th century. It has been used for religious activities for over 1000 years. Sited in the graveyard is the interesting *St. Mura's Cross Slab* which unfortunately is badly weathered. Once again we were able to compare it with the photographs in Mabel Colhoun's book. Located in the walls of the graveyard are two artefacts associated with the old abbey, an inscribed Greek cross and a stone thought to be a holy water font.

Legible marked graves date from 1652 and include the names of the early plantation settlers to the area. A grave which aroused great interest was that of *Agnes Jones*, a nursing colleague of Florence Nightingale, who died in 1868. Our botanical sectional secretary produced a pair of shears and began to tidy up one plot which turned out to be the grave of her uncle and his family.

While at Dunree fort we had been told about the sinking of *H.M.S. Laurentic* which was lost on January 26th 1917 at the mouth of Lough Swilly. 68 victims of this tragedy are interred in the grounds of the Church of Ireland Church so we were able to visit this large grave and memorial. This church has associations with *Cecil Frances Alexander*, who wrote *'There is a Green Hill Far Away'*, *'All Things Bright and Beautiful'* and *'Once in David's Royal City'*, while living in the rectory.

Inishowen Geology Report

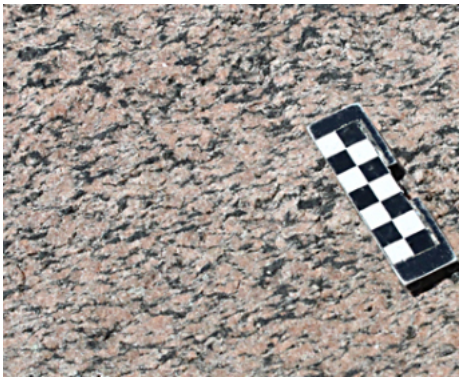
27th-30th June 2011

Leader: Dr. Bernard Anderson

Memorial to victims of the sinking of HMS Laurentic

The 28th June was a truly memorable day when members of one of the oldest natural history societies in Ireland met the very oldest Irish rocks! To achieve this members of the party boarded two high-speed M Inishowen Boating Company ferries at Culdaff Quay for a one-hour journey to the uninhabited island of Inishtrahull, an isolated rock, about 1.5km by 1.0 km, which lies about five miles north-east of Malin Head.

The island is almost entirely composed of gneiss, a banded crystalline rock of high metamorphic grade which crystallised some tens of kilometres down in the earth's crust. Until recently the *Inishtrahull Gneiss* (opposite) was regarded as equivalent to the *Lewisian Gneiss* which composes most of the Outer Hebrides and a coastal strip on the NW edge of Scotland. However, in the last two decades, new research, largely by staff at the *University of Aberystwyth*, has persuaded most geologists that Inishtrahull is not Lewisian but the Irish extension of the *Rhinns Group gneisses* which compose the fault-bounded *Colonsay–West Islay block*.



The gneisses on the Rhinns of Islay, Colonsay and Inishtrahull are syenitic with an age of about 1780 million years and not the 2900 Ma of the generally *granodioritic Lewisian*. (A U-Pb zircon crystallisation age of 1779 + 3 Ma has been obtained for Inishtrahull Gneiss, corresponding very well with an age of 1782 + 5 Ma for zircon from similar rock on Islay). So the Inishowen Gneiss is certainly old, at least as old as any other Irish rock, but not quite as old as we once believed, and it is almost certainly not Lewisian.

Dolphin watching at Culdaff

From our own observations during some four hours of sunshine on the island, Inishtrahull Gneiss, a very distinctive, banded and deformed, coarse-grained, salmon-pink and black, *syenitic gneiss*, comprises some 90% of the exposed rock. (Syenite is a coarse-grained intermediate igneous rock composed essentially of alkali feldspar or felspathoid with amphibole and/or pyroxene.) The Inishtrahull syenitic gneiss consists predominantly of pink alkali feldspar and black hornblende (both easily recognised with a hand lens), with minor plagioclase, biotite, chlorite and very little quartz. The dominant foliation is defined by millimetre-scale mafic/felsic (dark and light coloured) compositional banding.

continued

Inishowen Geology (contd)

27th-30th June 2011

A Grey Seal watches the observers

The Inishowen Dalradian rocks belong to the two youngest Dalradian Groups. The Argyll Group forms the NW part of the peninsula and consists of the sediments up to and including the *Culdaff Limestone* (the Culdaff limestone is the equivalent of the Scottish Loch Tay Limestone, the Dungiven Limestone and the Torr Head Limestone). To the south-east the Southern Highland Group includes all of the Dalradian rocks younger than the Limestone. The whole Inishowen sequence was laid down between about 650 and about 500 million years ago and so is very much younger than the gneisses seen on Inishtrahull. All the rocks are metamorphosed to low or medium grade schists, quartzites and marble with numerous intrusions of metamorphosed dolerite.

The second stop at Banba's Crown, the Martello Lookout Tower on the extreme northern tip of Ireland, allowed us to examine typical Slieve Tooey Quartzite. The hard creamy quartzite is very resistant to erosion. It and other similar Dalradian quartzites form Ireland's outer defences against the Atlantic and also most of Donegal's highest mountains. The hill top viewpoint allowed the party to recall the previous day's boat journey to Inishtrahull (clearly visible some 6km to the NE) and also to trace two/three recent raised beaches, known as the Ballyhillin beaches, across the bay to the east. These are the product of the melting of the massive ice sheet from about 15 000 BP. As a result the land rose by as much as 30 metres.

Dr. Bernard Anderson.

The BNFC wishes to thank Dr. Anderson for making this study so enjoyable and successful.

James Rutherford
(Geological Secretary)

Inishowen - Botany

Scot's Lovage on Inishtrahull

On Tuesday 27th June we braved the Atlantic to visit *Inishtrahull*, north of Malin Head. Until 1929 about 100 people lived on the island and the outline of their potato fields are still evident; there are 4 hinds and plenty of rabbits so the grass is kept short. We were led round the island by *Emmet Johnston*, the *National Parks warden for Inishowen*, and my nephew, *Andrew Sides,* who works for the *Loughs Agency*, which covers *Lough Foyle*.

Inishtrahull, like Tory island, is a site for Scots Lovage *(Ligusticum scoticum)* - see opposite, a rare umbellifer, which grows on cliffs and rocks near the sea; Emmet climbed down a steep slope to collect a leaf from rocks. We were mystified by plants with shiny bright green leathery leaves and large pink umbels, the size and shape of heads of broccoli, emerging from sheaths. When I described this plant to *Con Breene, BSBI recorder for Westmeath*, he showed me a photograph of a similar plant on *Inishmaan*. It was Angelica *(Angelica sylvestris)* and he explained that on exposed islands and headlands Angelica does produce these tough basal leaves. Emmet explained that even nettles had been damaged by salt spray in the May gales. In an area, which is normally damp, Tormentil *(Potentilla erecta)* and Marsh Pennywort *(Hyrdrocotyle vulgaris)* were growing along with Heath-spotted Orchid *(Dactylorhiza maculata ssp ericetorum)*, Heath Bedstraw *(Galium saxatile)* and Ling Heather *(Calluna vulgaris)*.

continued

Inishowen (contd)

27th-30th June 2011

Marsh Orchid

The dominant colour on the grassland was the yellow of buttercups but pink Centaury *(Centaurium erythraea)* and white Sea Campion *(Silene uniflora)* provided a contrast. The yellow, pink and blue flowers of Changing Forgetmenot *(Myosotis discolor)* were examined with hand lenses.

The landlubbers had reported that Doagh Isle (fortunately for them not an island) was botanically rewarding, so on Wednesday while the geologists examined the rocks on the sea shore, the botanists walked over the grassy headland opposite the *Famine Museum*. At least 32 named orchid taxa occur in Donegal but this includes hybrids and subspecies, so we were pleased to be able to identify at least 7 in a short visit. Molecular studies are resulting in many species of orchids being re-named which complicates identification. There were masses of Pyramidal Orchids *(Anacamptis pyramidalis)*, Common Spotted *(Dactylorhiza fuchsii)*, a group of Frog Orchids *(Dactylorhiza viridis/Coeloglossum viride)*, Common Twayblades *(Listera/ Neottia ovata)* and a Butterfly Orchid, probably the Greater *(Platanthera chlorantha)* in bud. At least 2 species of deep purple Marsh Orchids (opposite) were seen here and in other sites during our Inishowen visit – Broad-leaved Marsh Orchids *(Dactylorhiza majalis/purpurella/occidentalis)* had solid angled stems and Early Marsh Orchids *(Dactylorhiza incarnata var.pulchella)* hollow stems.

Our President found the white-woolly Mountain Everlasting *(Antennaria dioica)* and colour was added with Yellow Rattle *(Rhinantus minor)*, Lady's Bedstraw *(Galium verum)*, Blue Milkwort *(Polygala vulgaris)* and Eyebright *(Euphrasia agg)*.

Malin Head

Our geology expert, Bernard Anderson, told us that the underlying rocks were rich in magnesium and calcium and so provided a rich habitat. Pyramidal and Marsh Orchids were also plentiful on the dunes at *Culdaff*.

Windswept Malin Head has low growing heathers–Ling *(Calluna vulgaris)*, Bell *(Erica cineraea)* and Cross-leaved Heath *(Erica tetralix)* and the Crowberry *(Empetrum nigrum)* in fruit with the black berries that give it its name.

Marion Allen relaxed in a "field" of orchids while others braved the gales on the summit. We did not stop at *Lag and Back Strand*, where there are some of the highest dunes in Europe, as the Botanical Secretary had reconnoitred and found the area fenced off and very over-grazed. Golf courses and overgrazing have caused the deterioration of much of the Inishowen machair.

On our way home, we had a brief visit to the *Inch Level*s where we walked over marsh land with Ragged Robin *(Lychnis flos-cuculi)*, Brooklime *(Veronica beccabunga)*, Meadowsweet *(Filipendula ulmaria)* and many other wetland plants. We agreed we should return for a longer visit.

Praeger described Alpine plants on *Bulbin Hill* and *Slieve Snacht* but we did not have an opportunity to mountain climb this time.

Margaret Marshall

Dundrum Coastal Path

Leader - Graham Day **27th July 2011**

Graham Day

On a sunny morning, members assembled under the leadership of *Graham Day, Botanical Society Recorder for Co.Down*, to walk towards the *Blackstaff Bridge,* recording shore and trackside plants.

The *Dundrum Coastal Path* is a 1.6 mile stretch of disused railway line, part of the *Lecale Way*. The semi-natural habitats have herb-rich grassland, marginal scrub, scrub woodland, brackish pools and sea-shore plants on the rocks, sand and salt marsh of Inner Dundrum Bay. Sea-shore plants included Common Scurvygrass *(Cochlearia officinalis)*, Sea Milkwort *(Glaux maritima)*, Annual Seablite *(Suaedea maritma)* and Common Saltmarsh Grass *(Puccinellia maritima)*. Common Cord-grass *(Spartina anglica)* has often been planted on mudflats to stabilise wet mud but it smothers Eel-grass *(Zostera marina)* on which *Brent Geese* and other wintering birds feed. Rock Samphire *(Crithmum maritimum)* which has been recorded here was not re-found.

A new find was Lesser Swine-cress *(Coronopus didymus)*, a plant of the Americas. On the old railway line, plants new to some members were the bright yellow Common Toad-flax *(Linaria vulgaris)* - common in England but less so in Ireland, and Field Scabious *(Knautia arvensis)* which is scarcer than Devilsbit Scabious *(Succisa pratensis)*. Wood Vetch *(Vicia sylvatica)* appears white in the distance but while the keel and wings are creamy white, there are purple veins on the lilac-coloured standard. Brookweed *(Samolus valerandi)*, a relative of the primrose, was growing in damper sites. Samolus is a Celtic Druid name.

Progress halted for a short time in the afternoon, as we walked out into *Dundrum Bay*, the tide being out, to watch the Red Arrows make a spectacular display at the Newcastle Air Show.

Graham was thanked for his informative excursion and for introducing many of us to new plants and habitats.

Margaret Marshall

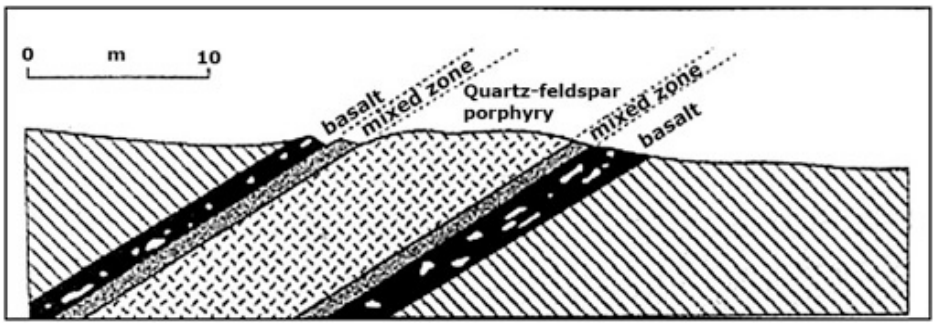
Field Scabious

Common Toad Flax

Wood Vetch

Geology of The Mournes

Leader - David Kirk **13th August 2011**



Cross section through Glassdrumman composite sheet (Paul Lyle)

This study began at *Glassdrumman* and proceeded northward to *Bloody Bridge*. The short section of shoreline at Glassdrumman opens a window on the beginnings of the violent tectonic events that tore a continent apart and eventually created the Mourne Mountains.

Walking north from the access lane we found a shore consisting of almost vertical *Silurian shales* (usually known as greywackes). They were formed on a deep sea floor which was compressed, folded and turned on end more than 400 million years ago in the collision between two wandering crustal plates.

Water sculpted pink granite rocks

We then came to a dramatic outcrop of *pink granite rocks* (see left) beautifully water-sculpted, emerging from the sand in a cluster of sensually curved shapes and distinctly varied in its textures, from very fine to patterned with large crystals—some up to 25 mm across---of quartz and feldspar. This is a *porphyritic micro-granite* and it forms the floor of the core of a 16m thick "ring" that cuts through the shales and encircles the Mourne granites and which marks the beginning some 60mil years ago of the tectonic turbulence that led to their huge granite masses, and the Atlantic Ocean, being created.

Sharp junction of basalt and granite

The ring - not continuous because of later earth movements - can be traced in small exposures at various places round the mountains, but none show the structures as clearly as here. Following a lengthy period of stretching and fracturing of the crust, as pressure split the continental mass, and which is evidenced by the hundreds of dykes around the Mournes, upward pressure of the magma chamber forced the kilometres of rock above to rise, causing a circular fracture which spread upwards and outwards. Molten rock, first basalt and then successive pulses of granitic magma forced their way up through it at enormous pressure, melting and remelting and mixing with each other to create what we now see at Glassdrumman. The result is an inverted cone, with its point of origin an estimated 5 km below the present surface. At the time it was emplaced there were probably at least another 3 km of granite above the present surface---including the deposits of later periods---Triassic, Jurassic, and Cretaceous.

Granite meets Greywacke

The Bloody Bridge River

The bed of the river displays the structural details of the greywackes and granites. Here we were mainly interested in the junction of the two rock types. This junction is to be found 600m upriver from the bridge and displays the changes in the greywacke shales when they were in contact with the hot magma as it surged upwards 56 million years ago. The shales have been baked by the heat making them hard and splintery. The granite itself is different as it cooled more quickly at this point against the cold shales making its crystals smaller than in the main body of this rock.

continued

Geology of The Mournes (contd)

13th August 2011

Here the dyke is softer than the shales

Coastal Dyke Swarms

Between *Newcastle* and *Annalong* there are some 130 dykes along the 10 miles of coast. This demonstrates the level of violent tectonic disturbance in this area. In fact it has been calculated that the aggregate thickness of all the dykes represents a stretching of the earth's crust by 2.5%.

Their minerals show a greater variety than other dyke swarms, producing *basalts*, *andesites* and *granites*. Some of the dykes are multiple (different intrusions of the same magma) and composite (intrusions of different magmas through the same vent).

Some dykes are harder than the host rock so they stand proud and sometimes they are softer and are eroded away leaving dramatic gullies, eg. at *Maggie's Leap*.

Here a basalt dyke thrusts up through the weaker silurian shales

Glacial Deposition

Finally, parallel to the coast are extensive deposits of *glacial till* and *moranic material*. These are moulded at several points into raised beaches. They are products of changes in sea level. Immediately after the retreat of the ice, sea levels were higher in relation to land surfaces and with little or no vegetation cover, wave action rapidly eroded this unconsolidated material left behind by the ice sheets. Gradually freed of its ice burden the land rose - isostatic lowering of sea-level - until land and sea were in their present relative positions.

The BNFC is indebted to *David Kirk* for compiling and conducting this interesting field study. Many thanks David.

James Rutherford (Geological Sectional Secretary)

Sheepland Coast ASSI Zoology

Leader - David Nixon **20th August 2011**

Wall

The area is of special scientific interest because of its coastal flora and fauna and earth science features.

Sheepland Coast is a rocky coastline in County Down, with cliff vegetation and other grassland communities. It includes pockets of saltmarsh and strandline along sheltered inlets.

We are particularly interested in finding the *Wall butterfly*. Historically, this species has been found fairly widely across Northern Ireland, but it has undergone a severe decline in the last 20 years. By 2001 the only known populations remaining were on the Down coast. The species is a colonial species found in open habitats with sparse vegetation and bare ground. They choose food plants growing along a vertical edge, such as a wall, in warm, sheltered locations. The commonest food plants are tall grasses such as *cock's-foot* and *Yorkshire-fog*.

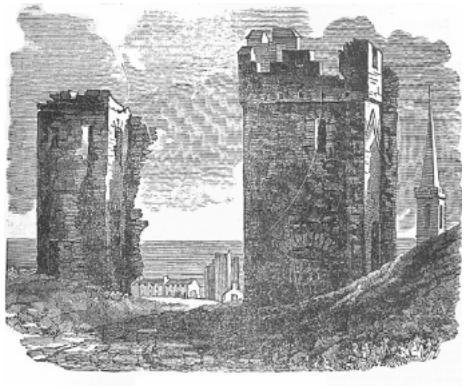
Ardglass Heritage Trail Archaeology and History

Leader - Finbar McCormick

Ardglass and Sheepland Coast Area

Meeting at Jordan's Castle, Ardglass, Finbar McCormick gave us a historical tour of the Ardglass area. We started at Ardglass Castle which is normally kept locked but our Archaeological/Historical sectional secretary had arranged to have it opened for us.

Ardglass Castle



Ballintoy Harbour Geology

Leader - James Rutherford **3rd September 2011**

The site with so much basic geology to offer in easy steps:

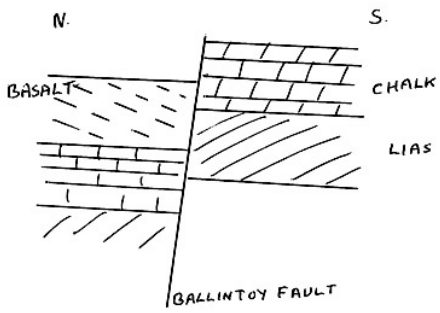
Ballintoy Harbour is not just an impressive North Coast beauty spot, it is also a Mecca for anyone who is tuned in to ROCKS; in fact these two aspects enhance each other. Here the forces of erosion expose the spectacular geology clearly and in an accessible setting, encouraging the student to investigate.

We began with the landscape as viewed from the top of the lime-kilns. The two main formations, the *chalk* and the *basalt*, were easily identified. We noted that these rocks occurred at different levels, a sure indication of faulting.

We could define the major fault, the *Ballintoy fault (Fig 1)*, running westwards through the harbour, across *Whitepark Bay* to *Portbraddan*.

To the north of this line the basalts are at sea level, while to the south the chalk is on top; in other words the structures to the north are downthrown in relation to those to the south, a vertical movement of some 100 metres.

Just to the east, above the harbour it was observed that the near horizontal bedding in the chalk begins to dip northwards. This is the result of the friction generated by the downthrow to the north and is known as *"fault drag"*.



Behind the kiln we examined a minor *dolerite dyke* (averaging 1.5 metres wide). Being a small dyke the heating of the chalk was limited to about 15 cm. but the marbling effect was clear enough. In the car park we examined a sea cave, now clearly well above sea level. This results from the rise in sea level when the ice melted, and the recovery of the land, which followed later. The cave was eroded out along the line of weakness on the fault line. The movement along this line resulted in shattering the chalk on both sides of the fault. This is known as *"fault breccia"*.

A short way west of the cave the raised beach displays several *sea stacks* composed of basalt and now stranded above sea level. Farther west there is a good example of *rotational slip* (a common feature along the Antrim coast road). Part of the chalk cliff has broken away and slipped down on to the raised beach. Rain percolates down through the joints in the chalk, lubricates the impermeable *Lias clay* below and part of the cliff slides away under its own weight. The bedding planes in the displaced member are now steeply tilted.

continued

Ballintoy Harbour Geology (contd)

3rd September 2011

Balllintoy blow-hole

Belemnite fossil

Opposite the two cottages a layer of reddish material is visible between two lava flows. This results from oxidising of the iron content, a common element in basalt. Adjacent is a small volcanic vent. The erupted material is shattered and contains fragments of basalt, chalk, lias and greensand. Unfortunately fresh sand has been added in a vain attempt to replenish the beach but the vent is now partly obscured.

Finally we turned our attention to the part of the beach east of the harbour. Here the two features of interest are the Bendoo plug and the effect of sea erosion on a low chalk cliff. The dolerite plug is roughly cylindrical, is some 350mm across and shows examples of rough hexagonal columns. A contact metamorphic zone is present, but on this occasion it was covered by beach sand. On the seaward side of the plug is the chalk cliff. On its surface is a dwindling number of small belemnite fossils (vandalism) and one large specimen of an ammonite 50 cm across. On the seaward side are some good examples of sea erosion features. The sea has concentrated on joints to open up narrow trenches, in some instances ending in blow-holes. A high tide and a rough sea can generate impressive explosions as the sea is driven into the joints and the water spurts upwards, drenching the unwary.

Quite a lot of geology in a small area.

James Rutherford

Nendrum

24th September 2011

Leader - Ken Neill of NIEA Built Heritage

There is no full report so the following is from the joining instructions

Meet at 1.30 pm at Nendrum car park. Grid ref J 5244 6363.

Nendrum is generally regarded as the best example of a pre-Norman monastic site in Northern Ireland that still has ruins from the original buildings.

Ken Neill, an archaeologist with NIEA : Built Heritage has agreed to lead the group to Nendrum and area. There will be a new exhibition on display by then, which will be good.

Nendrum Monastery, picture from Young Archaeologists Club- - www.yac-uk.org

Rosemount, Greyabbey Fungus Foray

24th September 2011

There is no full report so the following is from the joining instructions

Leaders; Debbie Nelson and Matthew Porter

Joint excursion with N. Ireland Fungus group.
Montgomery Estate, Greyabbey.

Meet at 11 am with a packed lunch.
In Greyabbey village turn left at mini-roundabout and then right at the T-junction on to the Ballywalter Road. As you drive out of the village you pass the village church and the entrance to the Abbey ruins on your right, then follow the estate stone wall on your right until you come to the gateway. J590 681, or N54.536 W5.542
Park inside at Riding Trail carpark.

We will then walk on the trail (no vehicles should drive on it!) which goes immediately into the woods leading to the slate quarries. Someone from the Estate will meet us and explain where we should not go because of pheasant pens, etc.