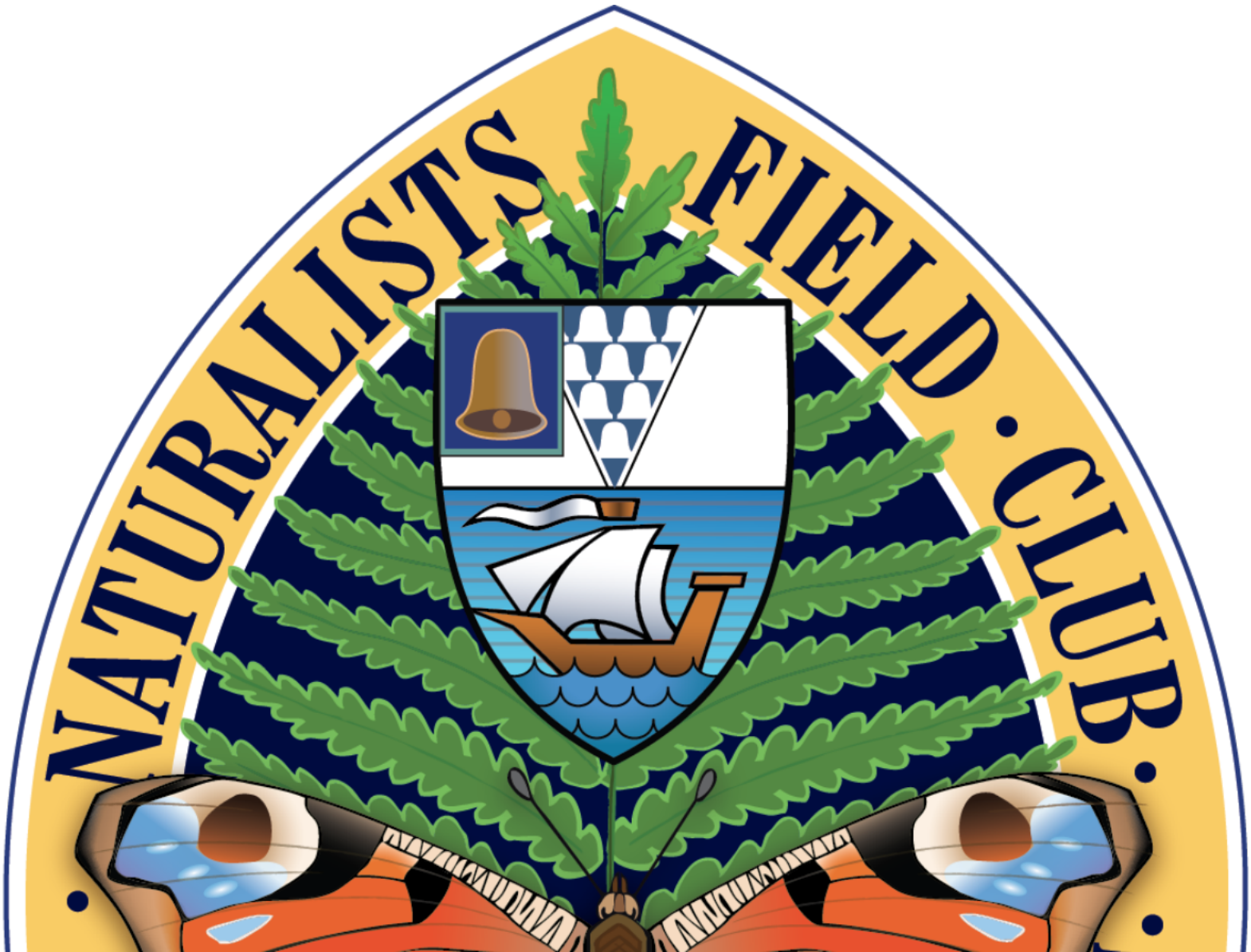
Belfast Naturalists'
Field Club

Field Reports
2009



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Sir Thomas and Lady Dixon Park

2nd May 2009

Our first outing of the summer programme was an afternoon visit to *Sir Thomas and Lady Dixon Park* where the focus was on trees.

Marion Allen and *Joan Semple* had drawn up a programme, which included tree identification and poetry. Marion identified many of the trees in the park while Joan read poems and recounted pieces of folklore associated with the various types of trees.

Members were shown how to estimate the height and age of a tree before being encouraged to form groups and have a go themselves, with interesting results.

The *rhododendrons* and *azaleas* were in full bloom and were a splendid sight in the afternoon sunshine and as a bonus Marion explained how to tell the difference between the two.

Joan Semple

Scrabo North Quarry

Leaders - Marion Allen and Annie Given **12th May 2009**

Industrial Geology

Scrabo Tower

Marion and Annie took us on a walk into history to look for clues to what was once the lifeblood of Newtownards. The name Scrabo is derived from the Irish and means 'Rough or craggy hill'.

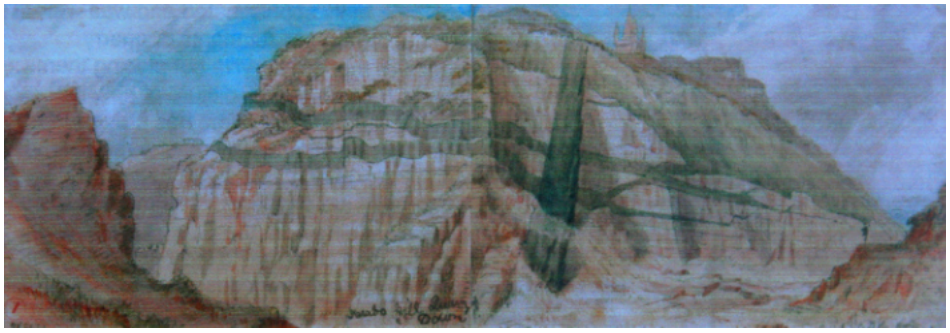
Scrabo stone, a type of sandstone, was formed during the Triassic period some 160 to 190 million years ago, during which time eastern Ireland and the British Isles were part of a vast desert. The Triassic climate was hot, punctuated by intermittent periods of heavy rain which caused erosion, depositing the sand and mud in rivers and shallow lakes, these becoming the marls and sandstones of Scrabo today.

The characteristically red colour of the stone is caused by a coating of iron oxide on the sand particles, the more iron present the richer the colour, also the sandstone was heated by basalt lava which intruded into the sandstone - some of it made its way to the surface where it formed a hard cap which protected the sandstone from erosion by wind and weather, as well as the scouring effect of the ice sheets. These sandstones are now known as the *Sherwood Sandstone Group*. Legend has it that a dinosaur footprint was found, but this can no longer be seen.

Our leaders showed us a number of illustrations, including a sketch from *George DuNoyer* (a former BNFC member) showing the tuff dyke which cuts through the layers (see below).

The sandstone at Scrabo has been quarried since at least Anglo Norman times; one of the earliest examples of use was the ancient monastery at *Greyabbey* where the oldest structures date from the thirteenth century. The boom period for Scrabo stone was the nineteenth century when *Robert Corry,* the son of a successful timber merchant, recognised the commercial potential of the quarry and leased part of the hill from the *Marquis of Londonderry* in 1826.

The opening of the Newtownards section of the Belfast and County Down Railway in 1850 further promoted the widespread use of Scrabo stone for railway stations and bridges throughout Northern Ireland. Many of these were designed by local architect, *Charles Lanyon* who was a prolific user of Scrabo stone for bridges, buildings and monuments, including *Queen's University*.



Tuff dyke

Especially after the arrival of the railways, quarrying of Scrabo stone was a major contribution to the industry of Newtownards.

Banbridge District - Presidential outing

Leader - Jason Diamond **16th May 2009**

40 Club members and friends met in the recently opened *F.E.McWilliam Gallery in Banbridge* where the day began with welcoming coffee and fresh scones.

The plan was to explore the Banbridge district with a strong emphasis on the literary and arts figures from the landscape. Due to past experience of the area when many members became lost in the maze of small roads, a coach had been hired for the day. We were very fortunate in having *Jason Diamond,* the heritage officer, as our guide.

As the weather was the usual Ulster mixture of sunshine and showers, we delayed our departure by coach to avoid the rain and began by exploring the F.E.McWilliam Gallery. *The Queen and the Duke of Edinburgh* had visited and officially opened the Gallery on the previous Saturday when Jason had conducted the Duke of Edinburgh around the work of both *William Scott* and *F.E.McWilliam*. With such experience Jason both informed and entertained us as he interpreted the paintings and sculptures on display, including the replica studio and sculpture garden. Many members found this one of the most interesting parts of the day, planning to return and felt our guide worthy of "royal approval".

Louise Anson and Joan McCaughey

The coach was then boarded and we set off first for *Magherally Church,* passing the home of *Joseph Scriven*, the hymn writer, on the way. *Helen Waddell*, the medieval scholar, is buried in the grounds of the church and inscribed on her tombstone are the lines " Her English verse made lovely lyrics of their Latin songs". It was also here that *Hugh Brunty* and *Alice McClory*, the grandparents of the *Brontë* sisters, were married in 1776.

Close by is *Kilmacrew House* and gardens, home of *Helen Waddell*, and recently inherited by her great niece, *Louise Anson*. Louise, who was born in *New Zealand*, very kindly met us and, before showing us around the gardens, read out a letter from Helen Waddell describing how she appreciated the peace and beauty she always found in the home of her sister. She also showed us some books written by her grandfather, *William Swainson FRS. FLS* ,who had been a noted naturalist in New Zealand. Louise hopes to restore both house and garden to maintain the literary heritage in the area. Fortunately a heavy shower passed over and allowed us to see something of the interesting trees including ancient beeches, *magnolias, acers, tulip tree, abutilons* and many *rhododendrons* planted there. The President was especially interested in the garden as she had met the late *Miss Mollie Martin*, a keen gardener and aunt of the present owner, and also had gone to *Victoria College* where Helen Waddell had once been a pupil.

continued

Banbridge District (contd)

16th May 2009

We then made our way on through the Brontë homeland to *Drumballyroney Church and School*, the *Brontë Homeland Interpretive Centre*, where we had our picnic lunch. Unfortunately the weather remained cloudy, obscuring the beautiful landscape of rolling hills and the *Mountains of Mourne*.

After lunch Jason gave us a detailed account of the Brontë family relating how the name changed from *Brunty* or *Prunty* to *Brontë*. *Patrick Brunty* was born on St. Patrick's Day, 1777 and it was fascinating to learn how, from such humble beginnings, he went on to *St. John's College , Cambridge*, and became the father of 3 such famous sisters. The church, school and graveyard (see left) were all looked at in detail, noting the grave of one *Squire Walker* as well as that of the Brontë family.

Our tour of the Brontë homeland continued with Jason pointing out the various sites associated with Patrick Brontë and telling us the ghost stories of Squire Walker. The great advantage of travelling together by coach was that it allowed us all to hear snippets of local information while moving, and indeed Jason has a wonderful gift of making the landscape come alive.

We had hoped to make a return visit to the large rath on the *Whyte estate at Loughbrickland*, the Whyte family having lived there for more than 500 years, but time ran out and some members had to be back on time. Many members ended the day with a last look at the Gallery and a cup of tea there before making their way home.

Our thanks to our careful coach driver, to *Louise Anson* for a privileged view of Kilmacrew, and last but not least to *Jason Diamond* who made both history and art come alive for us all.

Joan McCaughey

Brown's Bay

Leader - David McNeill **26th May 2009**

Brown's Bay, Islandmagee was the venue for this evening botanical outing. A good number of club members turned out, despite the threat of heavy showers. One such shower just missed us shortly after the start, but the cold wind continued to bite and forced some of the party to curtail their exploration of the adjoining coastal National Trust property.

Although access to *Skernaghan Point* was on fairly gentle gradients, some of the uneven and boggy ground also presented difficulties. Several contrasting habitats were visited. The best plant of the rocky shoreline was Heath Pearlwort *(Sagina subulata)*, difficult to spot because the flowers do not seem to open in the evening. Other species of this habitat included Early Hair-grass *(Aira praecox)*, English Stonecrop *(Sedum anglicum)* and Wild Thyme *(Thymus polytrichus)*.

Skernaghan Point has some very good coastal flushes. Here, the locally rare Black Bog-rush *(Schoenus nigricans)* made an appearance along with Common Cotton-grass *(Eriophorum angustifolium)* and Ragged Robin *(Lychnis flos-cuculi)*. In one flush, we saw young plants of the beautiful Grass-of-Parnassus *(Parnassia palustris)* and possibly the elusive Slender Spike-rush *(Eleocharis uniglumis)*.

The sandy shore was dominated by the yellow flowers of Sea Radish *(Raphanus raphanistrum ssp. maritimus)*, the pale mauve of Sea Rocket *(Cakile maritima)* and abundant Spear-leaved Orache *(Atriplex prostrata)*.

A few hardy souls walked the length of the beach to be rewarded by the sight of the very much rarer Frosted Orache *(Atriplex laciniata)*.
Most amazingly, we also stumbled on a tiny plant of Rose-root *(Sedum rosea)*, which presumably had arrived from a local garden.
Two members of the group spotted more Rose-root plants on the strandline on the way back.

Thanks to everyone for coming and especially my 12-year-old daughter, who said she really enjoyed it.

David McNeill

Divis Mountain

Leader - Dermot McCann **6th June 2009**

Joint outing with Butterfly Conservation NI

It was probably the coldest and wettest day of any outing in recent years with temperatures no higher than 6-8 °C. Given the cold, wet weather it was not surprising that the only butterflies seen were an Orange-tip found by *James O'Neill* (who also found an egg on *Lady's Smock)* and 1 or 2 *Green-veined Whites* which were found by others, all these of course resting. Lady's Smock was abundant.

Plants of interest included Marsh Lousewort *(Pedicularis palustris),* Common Butterwort *(Pinguicula vulgaris)* and Bugle *(Ajuga reptans)* although Orchids seemed surprisingly absent. No doubt had the weather been good we would have seen plenty of *Green-veined Whites*, *Orange-tips* and *Small Heaths* and probably *Painted Ladies* too.

Green-veined White

We were fortunate to have *Dermot McCann* leading us as he provided warmth and shelter in what was an old cowshed and is now beautifully renovated by the National Trust. He showed us a selection of excellent photographs of the fauna and flora found as well as telling us of the work already done and that planned for the future. He also was able to give us details of the interesting archaeological finds in the area.

Trevor Boyd and Pamela Thomlinson

Strangford and Killard Point

Leader - Ivor McDonald **13th June 2009**

Common Tern

BNFC members boarded the *St Bernard*, on a sunny morning, for the trip around *Strangford Lough* with *Ivor McDonald* as our leader. The first highlight was watching the *Sandwich*, *Common* and *Arctic Terns* which were nesting and breeding on the island in the harbour itself.

We watched several 'flares' as the terns were disturbed and wheeled around the island. Another sight was the National Trust nesting boxes which have been attached to the wall of the harbour for *Black Guillemots,* this is the Southern most edge of their range and they are successfully nesting again here this year! As we continued some of our party were lucky enough to see a *porpoise* alongside!

Black Guillemot on nestbox

Next we saw *Bird Island* where two distinct separate colonies of *cormorants* breed. They are the only breeding colonies in *Co Down*. We continued round the Lough seeing *Herring gulls, Oystercatchers, Black headed gulls* and some *Herons*. Then as we continued we saw another island of breeding colonies of all three Tern species with as many as 300 pairs nesting along with Black Headed Gulls who drive off the predatory *Magpies* and *Hooded Crows*.

This was a fascinating outing, watching the variety of seabirds and also seeing the land surrounding the Lough from a very different perspective. Ivor's knowledgeable commentary gave us a real insight into the wonders of the birds living and breeding in the area.

Pamela Thomlinson

Botany Leader - Tom Ennis

Bee Orchid

From spring to late summer the *Killard Nature Reserve* near *Ballyhornan* has a splendid succession of flowering plants. When the BNFC visited on 13th June the predominant colour was yellow from Bulbous Buttercups *(Ranunculus bulbosus)*, Birdsfoot Trefoil *(Lotus corniculatus),* Kidney Vetch *(Anthyllis vulneraria)* and the maritime Wild Pansy *(Viola tricolor ssp curtisii)*.

Other unusual plants included Houndstongue *(Cynoglossum officinale)* and Adderstongue Fern *(Ophioglossum vulgatum)*.
Our leader *Tom Ennis* showed us many of the orchids for which this site is renowned - the Green-winged Orchid *(Anacamptis morio)* is found only here in N.Ireland. We also saw Pyramidal Orchids *(Anacamptis pyramidalis)*, red Early Marsh Orchids *(Dactylorhiza incarnata ssp coccinea)*, Common Spotted Orchids (*Dactylorhiza fuchsii)*, Heath Spotted Orchids *(Dactylorhiza maculata)*, Common Twayblades *(Listera ovata)*, Bee Orchids *(Ophrys apifera)* and Frog Orchids *(Dactylorhiza viridis/Coeloglossum viride)*.
A lovely afternoon against a background of sparkling blue sea.

Margaret Marshall

Lough Neagh and Lower Bann

Joint with Belfast Geological Society and Cookstown Wildlife Trust

27th June 2009

A party of 52 sailed on the *Maid of Antrim* from *Ballyronan Marina* on 27th June 2009. This outing gave us the opportunity to study a complete integrated ecosystem, from microscopic algae to the top predator, Man.

Heron

The *Lough Neagh drainage Basin* presents man with several challenges, which may be summed up as "ecosystem management".
Development began in the MESOLITHIC period (Middle Stone Age). One of the earliest settlement sites in Ireland is to be found close to *Toome Bridge* where a wealth of fish and a good network of water based communications made it an attractive site. Development went on through NEOLITHIC, BRONZE and IRON AGES. This can be observed in the clearance of forest, improving agriculture and spreading settlements. These settlements took the form of *raths, promontory forts* and *crannogs*, all situated on defensive sites. This brings us up to 600 AD. and the beginning of the HISTORIC PERIOD. This saw the founding of ecclesiastical establishments around the lough and downstream on the Lower Bann.

From the early 1600's English influence increased as the new dispensation sought to consolidate its position. At strategic positions around the Lough and downstream along the Lower Bann, new castles were built and others strengthened. Several of these became the nuclei of small urban centres. *Ballyronan* was a later development, having been founded in 1788 by the *Huguenots*, led by *Daniel Gaussen*.

ECONOMIC RESOURCES: Farming has been the mainstay of the economy of the region, supplemented by fishing and working diatomite. Fishing has a long history, going back as far as the earliest settlements. In the years following the plantation it was put on a commercial basis by the new overlords, but became a source of friction lasting for nearly 400 years, and was only settled when the Lough Neagh Fishermen's Co-operative was set up in the 1960's.

The most valuable present day resource is sand and gravel, dredged from the Lough by several firms involved in the building trade. However demand reflects the economic climate, which at present is in recession.

AMENITY VALUE: This is an aspect that should not be neglected. Most of Belfast's domestic water supply comes from the Lough; there is a thriving recreational interest; a site of international importance for over-wintering waterfowl, it has been designated an ASSI. The celebrated plant collector *Dr. Augustine Henry*, has strong associations with *Portglenone*.
We can see that the Lough Neagh Basin presents an intriguing challenge of resource development and conservation.

The BNFC wish to thank all those who contributed to the promotion of this field study programme, in particular *Philip Doughty, Ian McNeill* and *Pamela Tomlinson*. Also *Con Law* and his team on the Maid of Antrim who included a delicious barbecue in their repertoire.

continued

Lough Neagh and Lower Bann (contd)

13th June 2009

PHYSICAL BACKGROUND:

The drainage system centred on Lough Neagh makes up about 40% of the area of Northern Ireland. Six main rivers flow into the lake and only one flows out, the Lower Bann. To improve drainage of low-lying land the lough level has been lowered several times and is controlled by modern sluice gates at *Toome*.
How was the Lough Neagh depression formed? The most popular explanation is that the extrusion of the vast quantities of lava to form the *Antrim Plateau* left a cavity the roof of which collapsed and the resulting hollow became a central drainage basin. During the Ice Age the hollow filled with ice, possibly a mile in depth and the depression probably sagged further. The ice would have contained vast quantities of eroded material including sand and gravel, now the source of a valuable component of the building industry. The shallow waters of the lough, averaging 10 metres, facilitate the dredging operations in recovering the aggregate.

SETTLEMENT:

There is evidence that large mammals such as *Giant Irish Deer* (sometimes called elk) were present from about 12000 years BP.
Man arrived in this area not long after the end of the *Ice Age*, about 9000 years BP. when the vegetation was mainly open grassland, with small stands of *juniper*. These pioneer settlers were hunters and gatherers, entirely dependent on the food resources of the area eg. small mammals, wildfowl, fish, fruit and nuts etc. Consequently these MESOLITHIC people settled where food was most easily obtained, namely along coasts, rivers and lakes. These sites also had the advantage of easier communications by water and dugout canoes have been found preserved in the peat around the lough-shore. The earliest settlements found so far are along the Lower Bann, especially at *Coleraine* and *Toome* where large quantities of stone weapons and tools have been found along with bones and hazel nut shells. West of *Cookstown*, at *Ballynagilly* in the *Sperrin* foothills, a Mesolithic settlement has been uncovered.

The NEOLITHIC (New Stone Age) succeeded the MESOLITHIC about 6000 years BP. These were the first farmers. They had learned to domesticate animals and cultivate the land and grow crops, usually oats and barley selected from wild grasses. Once crops were being grown, settlements had to be permanent and small villages began to appear in forest clearances. These are found mostly in upland areas where forests were thinner and more easily cleared eg. again at *Ballynagilly* and at *Beaghmore*, west of Cookstown. Weapons and implements were now better made and more efficient. Along with these items pottery was commonly found. Many of these items were found after the lowering of Lough Neagh in the mid 50's. Another notable structure belonging to this period was large stone structures such as ceremonial sites eg. *Beaghmore Stone Circles* and burial tombs, eg at *Ballybriest* and *Tamlaghtmore*.

continued

Lough Neagh and Lower Bann (contd)

13th June 2009

The BRONZE AGE: 2000 BC- 500 BC.

Buildings were now more substantial, farming more efficient and population was increasing. Unfortunately very few copper artefacts have been found in the area under study.

The IRON AGE: 500BC- 600AD.

Iron implements and weapons were coming into general use. This is thought to result from small groups of craftsmen moving into the country. Agriculture increased in importance. Defensive settlements were becoming the norm; eg. *hill forts or raths* are to be found on hilltops and promontories. These are best seen as fortified farmsteads. Just about every townland had at least one rath. On wet lowlands artificial islands, *crannogs*, were built in shallow lakes and linked to the mainland by stepping-stones. It is estimated that there are 30,000 raths in Ireland.

This brings us to what is known as the HISTORIC PERIOD and is generally associated with the coming of CHRISTIANITY. Monks settled along the shoreline of the lough and the Lower Bann; *St. Colman* founded *Ardboe* in the 6th century on the west side of the lough; the well-known high cross was added in the 9th or 10th century; an ancient church and holy well, dedicated to *St.Olcan* are found at *Cranfield* on the north side. There are round towers also at *Antrim* and *Ram's Island*, and other ecclesiastical remains at *Portmore*, *Maghery*, and on *Church Island* in *Lough Beg*
The *Vikings* used the lake for raiding and trading. They came into conflict with the *O'Neills* around 1000AD when the latter transferred their power base to *Tullyhogue*. Many surnames of the west shore date from this time, eg. *Devlin*, *O'Hagan, Donnelly*.
On the domestic scene, with iron being the main metal, farming and forest clearance accelerated, the population expanded and settlements became larger. The extensive forest of *Glenconkyne*, to the north west of the lough, with large percentages of *oak* and *elm*, was exploited extensively especially following on from the plantation. There was great demand for timber not only in Ireland but also in Great Britain for the iron industry, shipbuilding and construction.

SETTLEMENTS:

As already mentioned, settlement was predominantly rural, taking the form of extended family groups in fortified raths or villages. A few outgrew the others because of the advantages of their position at natural route centres such as river crossings eg. Toome and Antrim, and we have seen that the site of Toome has been occupied since 9000 years BP. These two towns are important bridging points on the Lower Bann and *Sixmilewater* respectively and after the plantation had defensive castles added. Castles were also constructed at several points right around the lough - *Salterstown, Mountjoy, Dungannon*, and *Castlecaulfield*. Defensive bawns were also constructed, *Bellaghy* is a good example and fortunately it has been sympathetically restored. *Portglenone*, on a commanding riverside location, was fortified by a castle by *John de Courcy* in 1197.

continued

Lough Neagh and Lower Bann (contd)

13th June 2009

Ballyscullion House Coat of Arms

Here we stopped for our lunch break at the landing stage at the forest. While the passengers disembarked to stretch their legs and to discover the memorial grove to the celebrated plant collector, *Dr. Augustine Henry*, a native of *Portglenone*. When we returned to the jetty half an hour later we found that the crew of the Maid of Antrim had prepared a real gourmet barbecue, most generous in the variety and quantity of delicious meats and salads, with wines available from the boat; some would say the highlight of our trip. Just across the river at this point was *Ballyscullion House* (see left), a huge mansion built by the wealthy *Bishop of Derry* and *Earl of Bristol*. It was started in 1787 but never finished. It was built of very expensive materials, including Italian marble. It had 365 windows and a huge picture gallery. The Bishop died in 1803 but the upkeep was too much for the inheritors, never mind finishing it. The final straw was the introduction of a window tax to pay for the *Napoleonic War,* so it was gradually dismantled, the grand portico going to the façade of *St. George's Church* in High Street, Belfast.
Ballyronan is an interesting small town. It is the newest town on the edge of the lough and is a *Huguenot* settlement, founded by *Daniel Gaussen* in 1788. An ambitious man, he had a distillery going by1824, and a brewery in 1830. A small port was soon developed and regular sailings were operating to and from *Belfast* via the *Lagan Canal*. In the modern era a well-equipped marina attracts several of the yachting fraternity, and there is a popular caravan park.

ECONOMIC RESOURCES:

The following is a summary of what *Philip Doughty* told us about *Diatomite*. Diatomite or "Bann clay" is found in a limited area around Lough Beg and along the Lower Bann as far down as Portglenone. This is a white deposit, one meter thick, formed of the siliceous skeletons of some forty species of microscopic diatom (alga) which flourished after the end of the Ice Age. It was extracted manually on a small scale, and stacked to dry. When dry it is a friable, white, chemically inert powder with a variety of uses including the manufacture of explosives, a filler in paint, an abrasive in polishes including toothpaste, an absorbent in animal litter, the manufacture of plastics and rubber, in insulation and in production of medium grade building bricks. We had a good view of a derelict brickworks north of *Newferry*. Extraction ceased in the 1960's.
Fishing is associated more with the region than any other occupation. Fish have been an important part of the local diet since Mesolithic times and communal fishing rights have existed for many centuries. However, the coming of the plantation brought about fundamental changes, communal rights were lost and the fishery was taken over by the *Donegall* and *Shaftesbury* families and put on a commercial basis. This lasted for over 300 years but became the source of much friction as this resource became more valuable, as improved transport made the British market more accessible.
Eventually by the 1960's it began to be realised that strict control was impossible and after a protracted period of litigation the *Lough Neagh Fishermen's Co-operative* was set up.

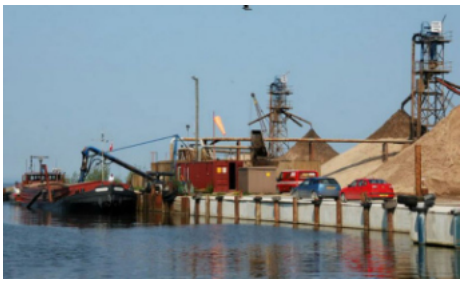
continued

Lough Neagh and Lower Bann (contd)

13th June 2009

Eel fishery, Toome

The main function of the fishery is the trade in eels which are marketed mainly in London, Holland and Germany. However, a problem seems to be looming. Fewer and fewer young elvers are making the return journey to the lough. There are several possible causes for this but so far no consensus has been found. An ongoing problem is water pollution. Discharge from sewage works via the six converging rivers flowing into the lough has now been largely eliminated but the leaching of phosphates from farmland continues. This results in enrichment of the water and growth of algae, seriously reducing the oxygen supply. Near the Toome Canal the presence of some dead fish in the water was an indication on a small scale of what can happen.



Gravel extraction, Lough Neagh

SAND and GRAVEL. These are the basic raw materials of the building trade and Lough Neagh is their single most important source in Northern Ireland. Since there are no major rivers entering the lough their most likely origin is the glaciers of the Ice Age. Their extraction is by a fleet of 17 barges owned by six different businesses. The shallow nature of the lough enables the materials to be sucked up into the barges, each of which is operated by one man, and taken on-shore where it is sorted into gravel for making concrete (60%) and building sand (40%). The greater demand is for the gravel but it is unfortunately in shorter supply. Output is variable and depends on demand. In the years following the millennium demand reached its peak at 3 million tonnes per year and has now been greatly reduced due to the recession and most output goes into storage. As output is in the hands of several firms, output figures are not accurate and this figure is what might be called an 'educated guess' by one of the managers of one of the largest operators.

AMENITY VALUES of the AREA. In addition to the economic developments in the region, it lends itself to providing many recreational activities, especially those based on the water. Modern marinas and caravan sites have been developed at Ballyronan, Antrim and Oxford Island to manage this rapidly expanding part of the economy. More passive activities are also given prominence in order to promote environmental education eg nature trails, and this area is world famous for its huge numbers of wintering wildfowl making it a Mecca for bird watching.

CONCLUSION

The Lough Neagh and Lower Bann region presents an intriguing and absorbing example of an ecosystem in transition. It has a fascinating history of how man has interacted with the environment through the millennia in his quest to meet his basic needs, initially, and as time moved on, to maximise its potential, and finally to combine development with resource conservation.

The BNFC wish to thank all those who contributed to the success of this field study programme, in particular *Philip Doughty, Ian McNeill, Pamela Thomlinson*, and *Con Law* and his team on the *Maid of Antrim*.

James Rutherford.

Castles of County Louth

Leader - Richard Clarke **1st August 2009**

Owing to the sudden illness of *Brian McElherron, Richard Clarke* conducted the excursion, essentially as planned.

Castle Roche

We met at *Carrickdale Hotel* before reassembling at our first site, *Castletown Motte or Dun Dealgan*. This was erected in 1189 by *Bertram de Verdon* on a commanding site above the *Castletown River*, probably on top of an earlier iron-age fort as testified by the remains of a *souterrain*.

The most conspicuous feature now is the 18th century house on the top, built by *Captain Patrick Byrne*, of which a tower and wall still remain. We moved on to *Castletown Tower House*, now incorporated into *St Louis' Convent and School*. It is a typical fortified building of c1472 erected by *Richard Bellew* on the site of an earlier *Verdon castle*, with four corner towers, one of which has a spiral staircase and one has garderobes. We were not able to see inside, but were hospitably received by some of the ladies in residence.

The final visit of the morning was to *Castle Roche*, a superb ruin on a limestone escarpment some four miles north-west of *Dundalk*. This is another site of the Verdon family, probably not built by *Rohesia de Verdon* but by her son *John Bellew* c1260 and said to have been finally destroyed by *Cromwell*. The curtain wall and twin-towered gatehouse survive, with a rock-cut ditch once crossed by a drawbridge. Inside is the ruin of a two-storied hall, the upper windows of which have window seats. After an 'unintended detour' around the small border roads we had a late lunch in a pub near *Hackballs Cross*.

The last stop was *Killincoole tower house* and like most of the 25 similar structures in the county, the owners were unwilling to allow us access to the interior. However, we could view it at close quarters, with its two diagonally opposite towers, one for garderobes and the other for a staircase. It has suffered from modifications over the centuries but at least retains its crenellations and a roof.

In conclusion, the excursion secretary thanked the conductor and we all wished Brian McElherron a speedy recovery.

Somme Centre

Leader - Noel Kane **11th August 2009**

It is hard to write about this - an outstanding memorial to the men and women, of both traditions in Ireland who served and in very many cases died in the Great War.

Most of us had relatives who were involved, and in the tour, led by *Noel Kane,* we were given some insight into conditions in the trenches, as well as the munitions factories back home.

We left in somewhat subdued mood; the war to end all wars was truly horrific, but have we learnt?

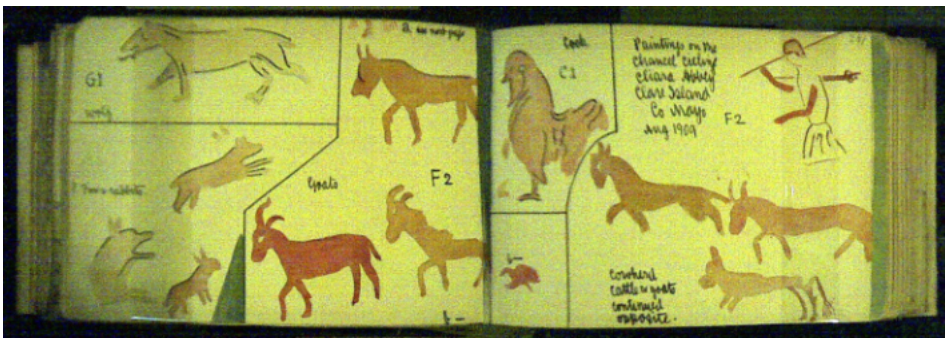
Darwin, Praeger and the Clare Island Survey

Royal Irish Academy, Dublin **25th August 2009**

Twelve BNFC members braved railway disruptions and were rewarded by a very interesting visit to the *Royal Irish Academy Library* to view an exhibition titled *Darwin, Praeger and the Clare Island Survey* and also to attend the first in a series of lunchtime lectures connected with the survey.

The exhibition celebrated the role *Robert Lloyd Praeger* played in organising the *Clare Island Survey* and the influence of *Charles Darwin* on Praeger's desire to demonstrate the existence of an Irish Flora and Fauna that was different from that found in England. *Petra Scnabel*, who curated the exhibition gave us a conducted of tour the display cases and panels. The meeting room in the *Academy library*, which housed the exhibition, is a fascinating room with Members' benches and chandeliers from the old *Irish House of Lords* among its treasures. There was also an opportunity to consult publications, including historic maps in the library.

The lecture was given by *Conleth Manning* on *Clare Island Abbey* and its Paintings. This was of special interest to those of us who had visited Clare in July 2008. Conleth Manning spoke about the history of the building and the rarity of the medieval wall paintings. He explained about *Thomas J. Westropp's* account of the Abbey and its wall paintings, which was published in the 1909 survey. We learnt that an attempt to preserve the paintings at this time did as much damage as good. The roofing over of the chancel in 1952 helped to preserve the paintings for a few more decades but a major conservation programme in the 1990's has saved them for the future. It was during this conservation work that many new images were uncovered. We were shown images of these paintings and given an interpretation of what they represented. It was an interesting and informative lecture and well worth the journey to attend it.



Members of *Dublin Naturalists' Field Club* were also present at the lecture and a group photograph was taken of the members of the two clubs. We look forward to a return visit on Thursday 1st October when *Declan Dooge*, Dublin Naturalists' Field Club will deliver a lecture - *Assembling the Home team: from A.G.More to R.Ll.Praeger*.

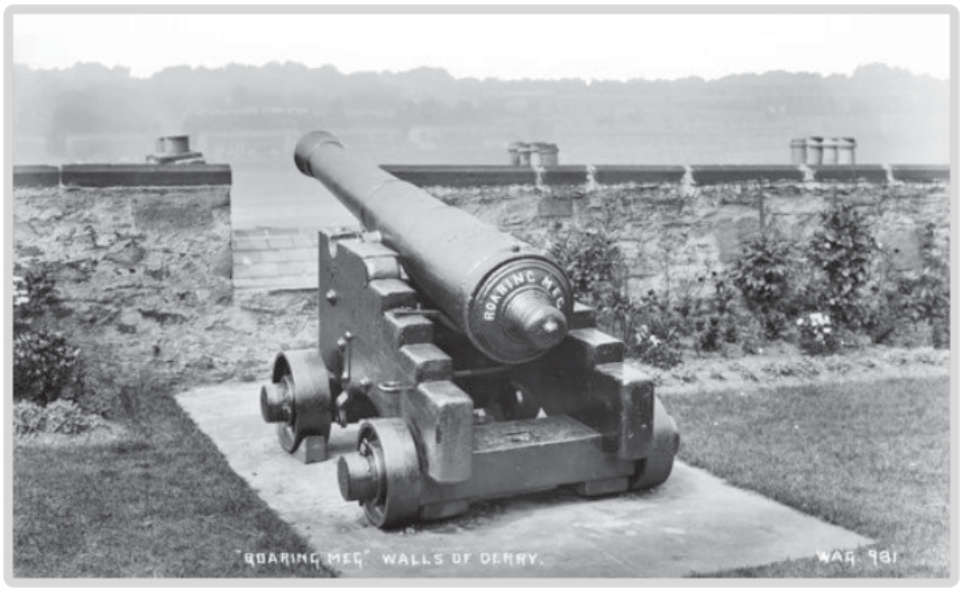
Derry's Walls

5th September 2009

On a promising morning on 5th September fifteen enthusiastic people boarded the train at various stops trip to *Derry/Londonderry* led by *Claire Foley*. The comfort of public transport was somewhat muted by the crowded train as our event coincided with the *Portrush Airshow*.

However, on arrival in Derry we set out on a clockwise visit along the top of the town walls commencing at *Orchard Street*. Many of the group had not been in Derry before or at least not in recent times and all were impressed by the scale of the wall and its capacity to withstand cannon fire. Claire explained that the first defence was actually an earthen bank which survived inside the later stone construction. Copies of 17th century maps provided insight into its construction and the development of the city from the early 1600s. The features of the wall, gunloops, turrets, the seven gates and conservation of the wall and nearby historic buildings were observed and discussed.

A visit to *St Columb's Cathedral* was greatly facilitated by an excellent audio-visual display. The construction of this church (1628-30), the first post- reformation church in Ireland and its later extension and alterations in *Bishop Hervey's* day were explained. A fine soup and sandwich lunch at the *Verbal Arts Centre* was followed by a view to the *Long Tower area*, just south of the walled city, where St Columba founded the monastery in the 6th century. Unfortunately no remains of this site have been found so far in the many excavations which have taken place across the city since the 1970s.



The group completed the circuit of the walls along the west side, examining the restored cannon including *'Roaring Meg'*, and discussed the importance of the topography of the *Bogside* in both recent and historic times.

A visit to *St Augustine's Church* enabled the group to understand that this is on the site of a 12th century Augustinian foundation and the surviving church was used as the parish church in the newly established city while St Columb's was under construction.

The tour of the walls ended at the *Tower Museum* where members visited the excellent exhibits at their own pace before returning to the train for the restful journey home.

Castle Espie

19th September 2009

Castle Espie was officially opened as a Wildfowl and Wetlands Trust centre by Lady Scott on 4 May 1990. The site had previously been a limestone quarry, and also had a brickworks, pottery and lime kilns for producing lime from limestone, as well as part of a farm.

In September 2007, the Heritage Lottery Fund awarded a grant of £2.96 million towards a major wetland restoration project at Castle Espie, the largest investment in biodiversity in Northern Ireland. At the heart of the project, costing £4m in all, was the restoration and improvement of intertidal and freshwater habitats along the shores of Strangford Lough to encourage more species and greater numbers of waterbirds to feed, roost or breed at Castle Espie, as well as restoring important habitats.

Lime Kiln hide

We had hoped to time our visit to catch the tide as it brought the birds near the hides, however we unfortunately arrived a little late and a dog was being walked along the shore. We watched the birds from the two hides,
enjoying the sheltered comfort of the new Lime Kiln Observatory and the extensive view from the balcony.

This site provides an early wintering site for almost the entire Nearctic population of *Pale-bellied Brent Geese*. Numbers are high again this year, with the best part of 30,000 birds arriving, but this year there has been a significant difference. Whereas in 2008 some 25% of the birds that made their way down from the Canadian Arctic were juveniles, this year that number has plummeted to just 0.4%! Although percentages of juveniles can fluctuate, this extraordinary dichotomy in figures suggests that the birds must have suffered a shocking breeding season.
On this visit we saw about 2,000 Brent geese and noticed how few juveniles there were among them.

Brent Geese

The salt marsh had attracted *Redshank* and *Dunlin*. On the Lough there were *500 Eider*, *200 Shelduck*, *35 Oystercatcher*, *2 Black Tailed Godwit*, *4 Red-Breasted Merganser*, *30 Dunlin*, groups of *Lapwing*, *250 Great-crested Grebe* and a lone *Grey Plover* on the estuary.

Redshank

As the weather changed to rain, we were happy to make our way to the refurbished centre to the opening of Michael Bennington's exhibition in the Graffan Gallery.

Pamela Thomlinson

continued

Castle Espie (contd)

19th September 2009

cephalopod Reyonoceras espeyense

The *limestones* at Castle Espie were laid down in the *Carboniferous* about 320mya. They are pinkish in colour with fossil molluscs, brachiopods, corals and trilobites. The presence of the *Brigantian foraminiferan Loeblichia parammonoides* dates the rock and also tells us this was once a warm tropical sea. It was a shallow marine lagoon on a carbonate platform. Do not forget Castle Espie's own special fossil, the giant *cephalopod Reyonoceras espeyense*.

Clays

The clays are probably derived from recycled local drift. What is a clay? Clay is the common name for a number of fine-grained, earthy materials that become plastic when wet and are almost always laid down in water. Brick is a ceramic structural material that is made by pressing clay into blocks and firing them to hardness in a kiln.
Bricks in their most primitive form were not fired but were hardened by the sun. Sun-dried bricks were utilised for many centuries and are used even today in regions with an appropriate climate. Examples from approximately 5,000 years ago have been discovered in the *Tigris-Euphrates basin* and the people occupying this region may have been the first users of brick.
Most clays will make reasonable bricks. Once clay has been dug out, it is ground and mixed with enough water to allow it to be shaped to form "green" bricks. These are then dried slowly, and then fired in a kiln at somewhere between 1,000 and 1,200°C.

At these high temperatures, the clay is "metamorphosed", all the water is driven off, new minerals are formed which are stable at high temperatures. Where does the colour come from? Most natural clays contain iron minerals, iron can exist in two forms: - ferrous iron in clays yields a dark grey colouration. After firing, however, this iron may be oxidised to the ferric state, which forms the red-brown iron oxide *haematite*.

Castle Espie Hoffmann kilns (now covered over)

Hoffmann Kilns

Friedrich Hoffman filed the patent for his kiln in Danzig in 1858. In traditional kilns, the material to be fired was placed above the fire with the gases leaving through a vertical flue above. Hoffman, turned the process on its side and instead of placing the material to be combusted into the furnace, he moved the fire itself to the material. The Hoffman downdraught kiln was the result, which gives a continuous operation.
In the British Isles there are probably only three or four Hoffman kilns remaining. The Hoffmann was the most common kiln used in production of bricks and some other ceramic products. It had a domed roof and a perforated floor under which ran a flue leading to the chimney stack.
A circular main fire passage connected several small rooms each containing a pallet of bricks. In the main fire passage there was a "fire wagon" that held a fire that burned continuously.

continued

Castle Espie (contd)

19th September 2009

The Crannog

Each room was fired for a specific time, until the bricks were properly vitrified and then the fire wagon was rolled to the next room to be fired. The kiln was a closed oval loop and the fire travelled continuously round the circuit, returning to its starting point. Each room was connected to the next room by a flue carrying hot gases from the fire. In this way, the hottest gases were directed into the room that was being fired. The gases then passed into the next room to be fired where the gases preheated and dried the bricks. As the gases passed through the kiln circuit, they gradually cooled; this is essentially a counter-current heat exchanger, which made for a very efficient use of heat and fuel. The draught was induced by a tall chimney.
In addition to the inner opening to the fire passage, each room also had an outside door, through which recently-fired brick were removed, then replaced with wet brick to be dried and then fired in the next firing cycle. Castle Espie was the queen of kilns at 20 chambers and was the largest in Europe. There were also Newcastle Kilns at Castle Espie.
A Newcastle kiln was a horizontal-draught kiln, where the fire was horizontal to the ground and material was loaded over the fire. Flues ran under the floor to the chimney at the back. It had a production capacity of 100,000 bricks per week.

Limestone kilns

The burning of lime is a very ancient craft. Lime kilns abounded in the 18th and 19th century. Lime was used to make mortar, as a flux in iron foundries and to raise the pH of peaty, or acidic, soils in agriculture. Limestone was placed into the kiln as 3"-5" lumps. This was layered with coal/coke/wood. A small fire was started in the arched fireplace at the bottom. Temperatures had to reach at least 1,000°C and some achieved 1,400°C. These temperatures helped fuse the brick and carbon dioxide and water were driven off. Quicklime remained.
It emerged as soft friable lumps and was dug out of the kiln and loaded into large pits about 18" deep and then covered in water.
This was a very reactive process and a lot of heat was generated as the excess water was driven off as steam. Lime putty, or slaked lime, was left and dug out of the pit. It was then mixed with sand and gravel for building purposes.
The top of the limestone kiln has been made into a magnificent bird spotting place and is the best place to see the Hoffman kiln.

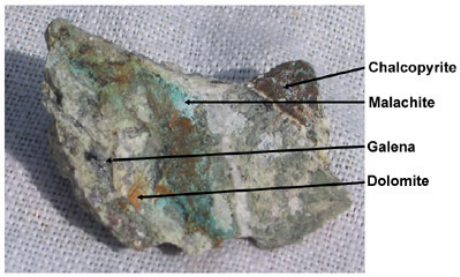
Conlig minerals and rocks.

At Castle Espie, the brick and lime industries were founded on sedimentary rocks. At Conlig mineralisation in *Ordovician* and *Silurian metasediments* led to the creation of the ore minerals.
Ordovician greywacke about 450mya is the host rock. It is an impure and impermeable sandstone deposited by turbidity currents on the continental slope of the Iapetus Ocean.

continued

Castle Espie (contd)

19th September 2009



There were two events, the first in the early Caledonian *(Ordovician/Silurian)* about 440mya when the *quartz* and some *pyrite* and *chalcedony* were formed. The main event was in the Carboniferous about 350mya when most of the minerals were deposited.

Calcite was laid down later again, in the Palaeocene, about 60mya when a dolerite dyke intruded the mineral lode. Veins of galena-bearing baryte are found within the dolerite and calcite is the principle mineral veining the dolerite.
The first white veins of quartz and calcite were formed when hot watery solutions moved through fractures in the greywacke that had been caused by earthquakes. In the main event, the volcanic fluid was sulphur-rich. This resulted in dolomite-cemented breccias containing an amazing collection of sulphide minerals.

Chalcopyrite $CuFeS_2$ Often found in *dolomite* and *baryte*. The exposed surfaces usually oxidized giving an iridescent coating; the colour is brassier than pyrite.

Malachite $Cu_2CO_3(OH)_2$ Green mineral.

Galena or lead sulphide. PbS Cubic with grey metallic lustre. It is often included in baryte.

Dolomite $CaMg(CO_3)_2$ It can be colourless, grey, white, pink or brown and is the most abundant hydrothermal mineral. The red to pink colours are probably due to traces of *haematite* (iron rich).

Sphalerite ZnS Cubic dull grey but without the metallic lustre of galena. It appear as dark brown to nearly black specks. This is an uncommon mineral here.

Baryte $BaSO_4$ Forms in hydrothermal veins, white and very heavy.

Chalcedony SiO_2 Forms in cavities at relatively low temperatures.

Other minerals found here include:-

Calcite $CaCO_3$ Crystallized after baryte and dolerite. The crystals often rhomboid, flat looking.

Pyrite FeS_2 Rare here but occurs in all 3 rock types below.

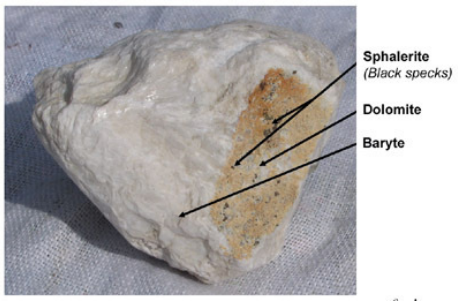
Quartz SiO_2 Frequently found in mineral veins and infills cavities, forming hexagonal prisms.

continued

Castle Espie (contd)

19th September 2009

The rocks



Breccia: this rock consists of angular fragments of any rock type. They are set in a fine to medium matrix, often of sandstone.

Dolerite: forms as igneous intrusions, dykes and sills. It is related to basalt but with a medium grain and dark in colour.

Greywacke: a marine sediment formed from a slurry dumped in the deep ocean from fast-flowing currents. It precipitated quickly forming a poorly sorted rock consisting of a great variety of different sediment types.

Then there is a conundrum:

Tufa: This is mostly *calcite*, pebbly and drapes over the substrate. It forms where *calcium carbonate* is precipitated from lime rich waters. It is only seen on the steep bank on the *Somme Centre car park* but where are the lime rich waters coming from? There are no limestone deposits anywhere near here. It seems to be migrating from the adjacent landfill.

Marion Allen

Peatlands - Fungus Foray

Leader - Ronnie Irvine **26th September 2009**

Around twenty members of Belfast Naturalists' Field Club met at *Peatlands Park* for a Fungus Foray led by *Ronnie Irvine*. It is always difficult to choose a fungus foray date as their fruiting depends on a combination of light, moisture and temperature often notoriously difficult to anticipate.

In general 2009 has not been a particularly good year for fungi and hopes were not high for a wide range of specimens, even though Peatlands Park is usually an excellent environment for a good collection. Nevertheless, the group spent an interesting morning wandering at a leisurely pace along the paths, along the peat truck railway line and around small lakes in a park, which is always excellently maintained. An interesting range of specimens was found as shown in the accompanying photographs.

These included: *Amanita fulva, Amanita muscaria* (Fly Agaric), *Amanita rubescens* (The Blusher), *Coprinus comatus* (Shaggy Inkcap), *Cortinarius hemitrichus, Laccaria laccata, Lactarius hepatica* (Liver milkcap), *Lactarius pubescens* (Woolly milkcap), *Lactarius torminosis, Leccinum scabrum* (Birch bolete), *Lycoperdon perlatum, Phallus impudicus* (Stinkhorn), *Russula carulea, Russula drimea, Scleroderma citrina* (Earthball), *Trametes versicolor* (Turkeytail).

One very interesting find was *Phaeolepiota aurea* (Golden web cap) which has rarity and protection status in N.Ireland although it would seem to be rather more common in Mid-Ulster than other parts of the Province.

Amanita-muscaria

Amanita-rubescens

Leccinum-scabrum

continued

Peatlands Fungus Foray (contd)

26th September 2009

Lycoperdon perlatum

Ronnie Irvine

Amanita fulva

Cortinarius hemitrichus

Coprinus comatus

Lactarius torminosis

Phaeolepiota aurea

Phallus impudicus

continued

Peatlands Fungus Foray (contd)

26th September 2009

Laccaria laccata

Russula carulea

Russula drimei

Scleroderma citrinum

Lactarius hepatica

Lactarius pubescens

Trametes versicolor