

Belfast Naturalists'
Field Club

Field Reports
2019

Field trip to County Offaly
9th–13th June 2019

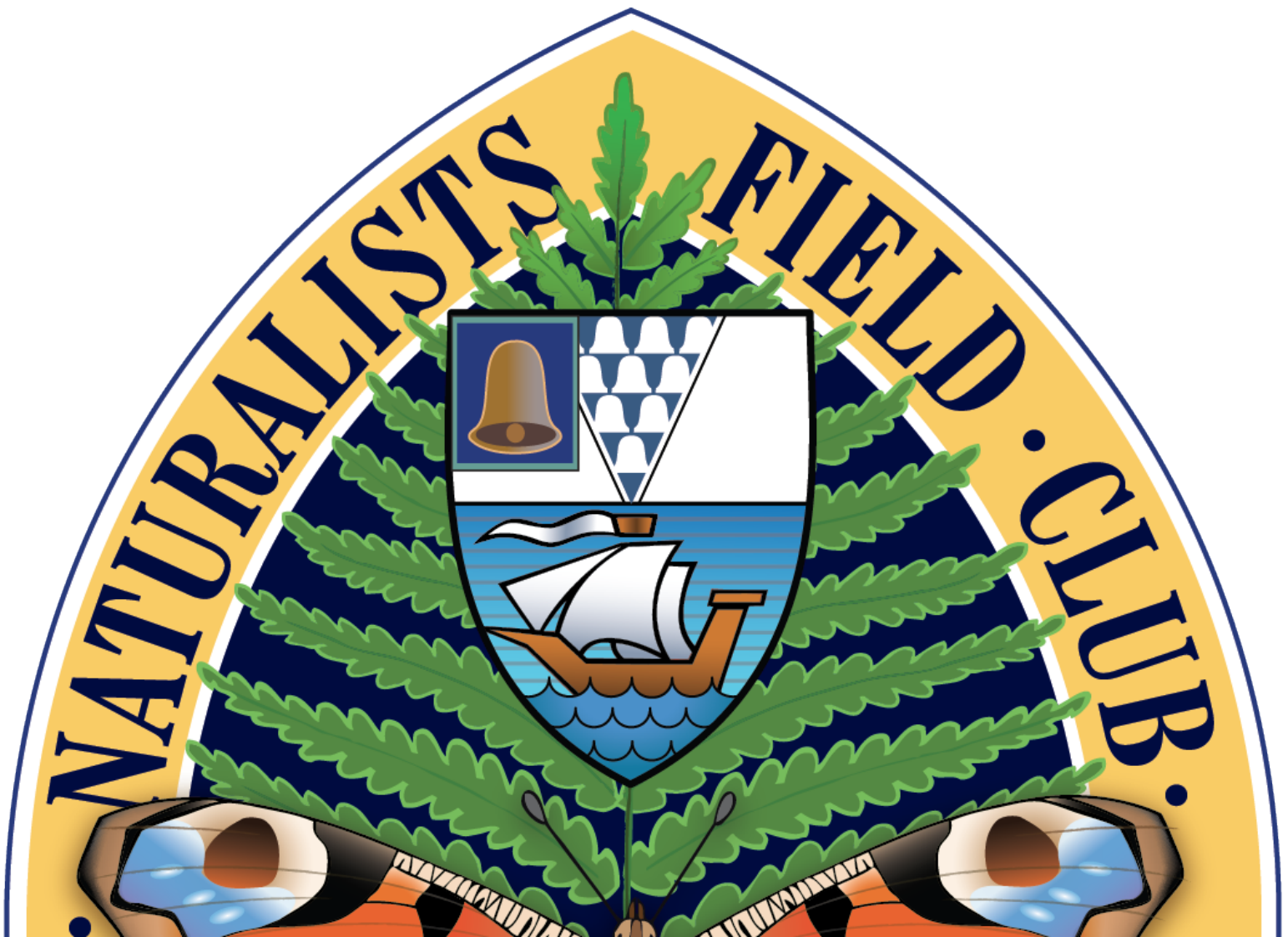




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Long Field Trip to County Offaly - Botany

Federation of Irish Field Clubs

10th June 2019

Botany

When thinking of the botanical hotspots of Ireland, one does not immediately think of *County Offaly*.

However raised bogs, eskers, the *Shannon Callows* and the *Slieve Bloom mountains* provide enough variety for every botanist or non-botanist to enjoy. **Charles Shier** and the *Dublin Naturalists' Field Club* had arranged a full programme covering every aspect of our Field Club.



Monday 10th June

While examining the strange *Mushroom Stones*, we spotted a bright yellow field (see left) – this turned out to be a mass of Rough Hawksbeard (*Crepis biennis*) a limestone lover – on closer examination the field was full of other grassland wild flowers including poppies and field scabious. The anti-Napoleonic defences at *Shannonbridge* were built on limestone. Pyramidal Orchids (*Anacamptis pyramidalis*) were coming into flower and Salad Burnet (*Sanguisorba minor*) was identified. Its leaves are supposed to smell of Cucumber and its scientific name means- "blood-stauncher". More lime-loving plants such as Yellow-wort (*Blackstonia perfoliata*) were seen at an esker quarry.



Shannon Callows

The *Shannon Callows* are an extensive area of winter-flooded grassland along the *River Shannon* with over 200 species of plants recorded; on a speedy walk there from the *Clonmacnoise Monastic Site* we were pleased to see the rare bright purple Marsh Pea (*Lathyrus palustris*).

Tuesday 11th June

Clara Bog (left) is a typical raised bog and the board walk enabled us to see some of the typical plants.



continued



Long Field Trip to County Offaly (contd)

Federation of Irish Field Clubs

10th June 2019



Lough Boora Discovery Park

Columbine (*Aquilegia vulgaris*) is a native in central Ireland, Lesser Butterfly Orchids (*Platanthera bifolia*) were photographed. The county flower of Offaly is Bog-rosemary (*Andromeda polifolia*).

Lough Boora Discovery Park is another area of former industrial peatland now maintained as an amenity area and for wildlife. On a walk around the lough we saw several species of Early Marsh Orchids (*Dactylorhiza incarnata*).

The 300 acre *Derrinboy Bog* with its piles of milled peat to be exported to Europe as horticultural peat was a demonstration of the effect of modern

peat-working, but *Bord na Mona* does now work to reclaim the land. One initiative was to introduce American cranberry production into bog holes – this has brought several north American plants into the area but not many cranberries!

Wednesday 12th June

Kinnitty Forest (left) in the foothills of the *Slieve Bloom Mountains* was a contrast to the bogs and eskers. Our leaders were **Fiona Devery**, the BSBI recorder for Co. Offaly, and **Richard Jack** of *Coilte*, who told us about the development of the forest as both a productive and as an amenity forest. As well as mature Oak and Beech, coniferous species include *Japanese Larch*, *Douglas Fir*, *Western Hemlock*, *Coastal Hemlock* and *Spruce*, but as they are felled they are replanted with Oak.

On a pleasant walk along the river we saw the signs of spring flowers such as *Bluebells* and *Primroses*.

Thursday 12th June

Birr Castle Demesne covers an area of 50ha including formal gardens, a pinetum, wildflower meadows, rivers and a lake. The *Parsons Family* have been collecting plants from all over the world for 150 years and there are now at least 2000 species.

continued



Birr Castle telescope



County Offaly - Geology

Federation of Irish Field Clubs

10th June 2019

The recently-planted *Giants' Grove* is to be the largest grove of Giant Redwoods (*Sequoiadendron giganteum*) outside California. The specimen planted in 1860 has a lifespan of 3500 years. The *Meridian* and *Carroll Oaks* are over 500 years old and the 10 m tall Box Hedges are over 300 years old. However the present 7th *Earl of Rosse* is still planting new species from seeds collected on his plant-hunting expeditions to Yunnan and Nepal.

Margaret Marshall

Geology



A distant Esker from the Shannon Callows

Most of Co Offaly Geology is of the Carboniferous Limestone 300 - 360 million years ago. The southern rim of the county boundary bordering Co Laois is of the older Devonian 360 - 415 million years. This is the area of the Slieve Blooms.

On our trip centred on Birr most of the solid geology is absent particularly as we were in the vicinity of the Shannon River.

Monday saw us in west Offaly near Cloghan where we had the chance to see some of the Mushroom stones - formed by lake water dissolving away the limestone below the level of the lip leaving strange shapes usually in the form of a mushroom.



Mushroom stone

Later after lunch in Shannonbridge we journeyed to Clonmacnoise area to the east where we were able to see at Esker or Fighting Hill (very relevant name) the Esker ridges. These sand and gravel deposits seen in the quarries were the result of the end stage of the Ice Ages about 10,000 years ago. The eskers were formed as a result of a river flowing beneath the ice leaving a narrow ridge of gravel and sand. In more recent times this long ridge was the perfect means of 'road' communication in Early Christian times particularly at Clonmacnoise close by. The name given was the Great Highway (Slighe Mhor) that went from Galway to Dublin.

During the other days on our trip we saw evidence of the Carboniferous Limestone in building stones in Birr, Banagher, Kinnitty and Clonfert.

Ian Forsythe



County Offaly - Zoology Federation of Irish Field Clubs

10th June 2019

Zoology

There were no outings to look at specific zoological sites but as always those of us particularly interested in the various aspects of zoology saw plenty to interest us and photograph.

On Monday 10th at Shannonbridge we walked along the river where there were a few butterflies and moths to be seen and two Orchid beetles (*Dascillus cervinus*) resting on Iris plants.

We moved on to Clonmacnoise where a beautiful Robin (*Erithacus rubecula*) perched on a statue's head welcoming us and a jackdaw (*Corvus monedula*) supervised our progress.

On Tuesday 11th at Clara bog we saw a wealth of wildlife, a Large Heath butterfly (*Coenonympha tullia*), Oak Eggar caterpillar (*Lasiocampa quercus*), Marsh Fritillary butterfly (*Euphydryas aurinia*), Birch Roller Weevils (*Deporaus betulae*) and a Burnet chrysalis probably a 5-or 6 spot *Zygaena* sp.

After lunch at Lough Boora again there was plenty to see. A beautiful female Common Darter (*Sympetrum striolatum*), Reed beetle (*Donacia vulgaris*), Parent Bug with eggs (*Elasmucha grisae*) and a Birch Sawfly larvae (*Cimbex femoratus*) - quite a varied collection all together.

On Wednesday 12th at **Kinnitty Forest** we continued to pick up interesting varieties. A micromoth *Psuedargyrotoza conwagana*, Red-necked footman (*Atolmis rubricollis*) and a nice specimen of the Dancing fly (*Emphis livida*) named for its mating behaviour. Thanks to Ryan Mitchell for the identification.

Dorothy Lyle and Pamela Thomlinson



Robin, Clonmacnoise



Parent Bug, Lough Boora



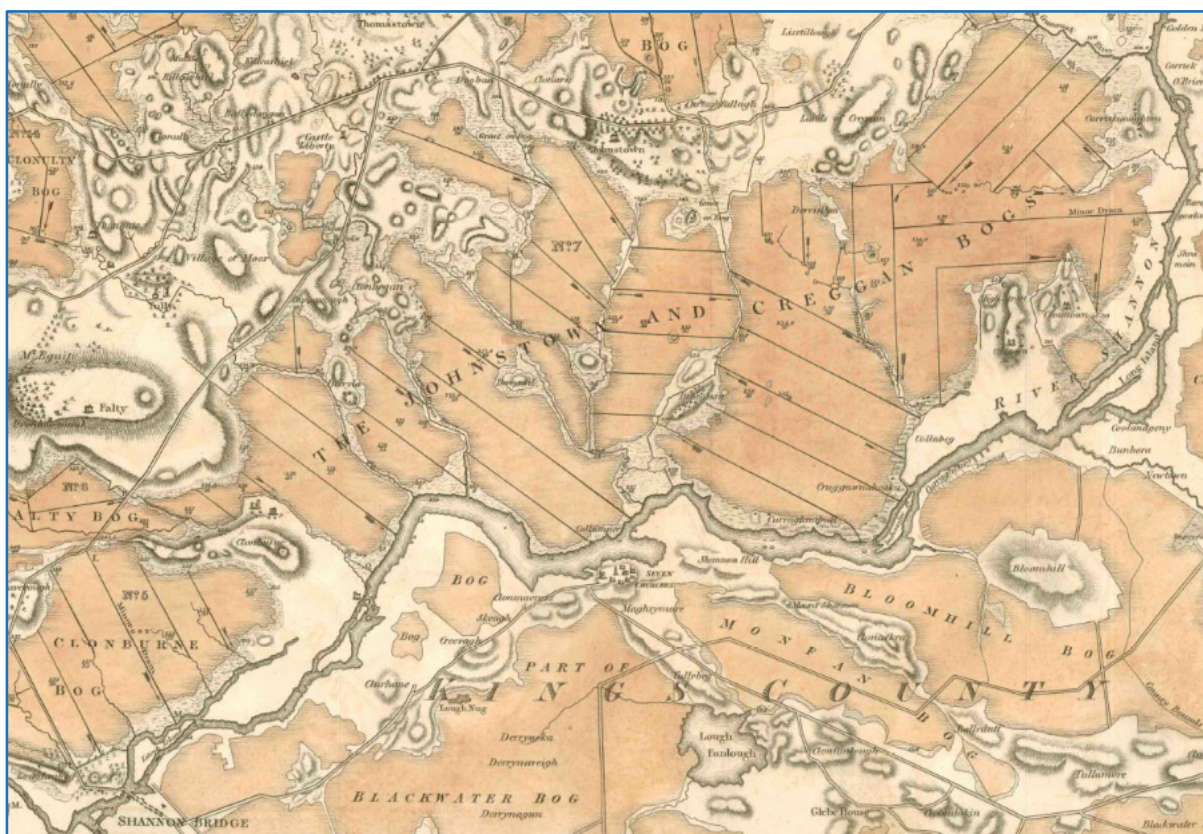
Reed Beetle, Lough Boora



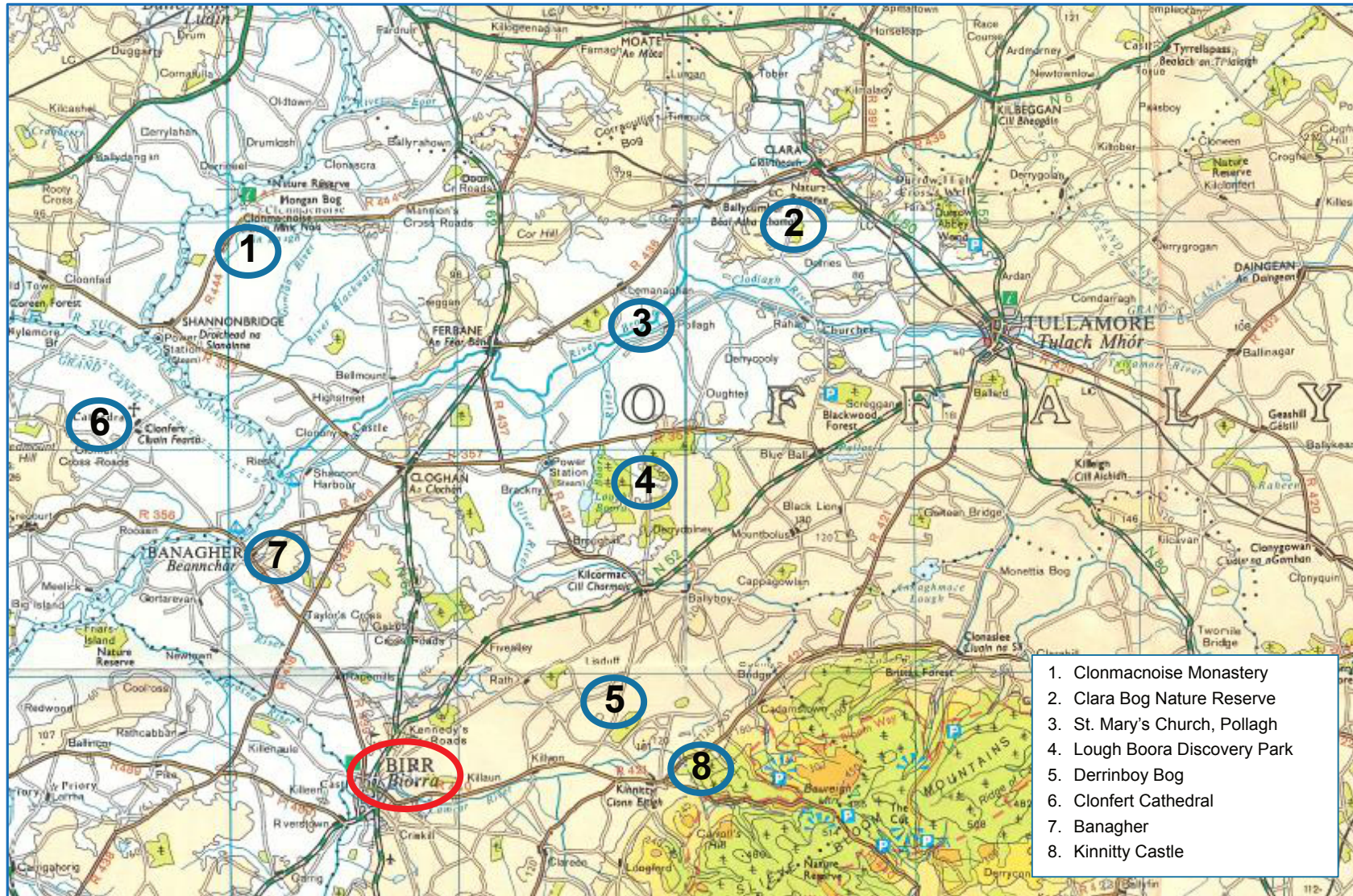
Common Darter

FIFC Field trip to County Offaly Field Trip Programme

9th – 13th June 2019



Location Map for the Sites Visited



Co. Offaly Outing Programme

Sunday 9th June – evening	
16.00 +	Arrival and welcome to the FIFC Outing to Co. Offaly
18.30	Dinner at The County Arms Hotel, Birr
20.00	Talk by Dr. John Feehan on “The Geology and Landscape of County Offaly”
Monday 10th June Leader: John Feehan	
09.30	Buses depart from County Arms Hotel
a.m.	The structure and geology of eskers in West Offaly <ul style="list-style-type: none"> - Esker habitats and flora - Mushroom stones
13.00	Lunch at Lukers Bar, Shannonbridge
p.m.	Callows along the River Shannon Seven Churches – the Clonmacnoise monastic site
19.00	Dinner at The County Arms Hotel
20.30	Walking tour of Birr – Led by Brian Kennedy, Birr Historical Society
Tuesday 11th June	
09.30	Buses depart from The County Arms Hotel
10.00	Arrival at Clara Bog Visitor Centre <ul style="list-style-type: none"> - Clara Bog Reserve restoration & management – leader: Colm Malone, NPWS
12.15	St. Mary’s Church, Pollagh
13.00	Lunch at Lough Boora Visitor Centre
p.m.	Lough Boora Discovery Park – Leader: Mark McCorry, Bord na Mona <ul style="list-style-type: none"> - Grey partridge project at Boora (NPWS)
16.30	BnM Housing Scheme at Kilcormac, designed by Frank Gibney
17.00	Milled peat production at Derrinboy Bog
19.00	Dinner at The County Arms Hotel
20.30	Talk by Stephen Heery on “Birds in the Shannon Valley Region”
Wed 12th June	
9.00	Buses depart from The County Arms Hotel
9.45	St. Brendan’s Cathedral, Clonfert – leader Christy Cunniffe, Archaeologist
11.00	Banagher fortifications and Martello Tower – leader: James Scully, Offaly Historical Society
13.30	Lunch at Kinnitty Castle Bistro
p.m.	Kinnitty Forest: management and amenity – Leaders: Richard Jack & Fiona Devery <ul style="list-style-type: none"> - Forest walk around the Kinnitty Castle loop - Kinnitty High Cross & Kinnitty Pyramid
19.00	Dinner at The County Arms Hotel
20.30	Conversazione and short talk on “Mary Ward” by Amanda Pedlow, Offaly Heritage Officer
Thur 13th June – morning	
9.45	Visit to Birr Castle demesne – gardens, lake and science centre <ul style="list-style-type: none"> - The Great Telescope and I-LOFAR radio telescope - Guided tours of the castle interior (at 10.00 & 11.30 a.m.)
~13.00	Lunch at Birr Castle Courtyard Café
p.m.	Departure for home

Front Cover: Map showing bogs along the River Shannon and site of the Seven Churches - from Plate XI of Fourth Report of the Bog Commissioners, 1814.

Birr (Biorra)

A warm welcome to all of our Federation of Irish Field Club participants to the designated Irish heritage town of Birr. The town grew up around the confluence of the Camcor and the Little Brosna rivers which flow into the River Shannon. Birr has a rich monastic heritage, owing to the monastery founded here by St. Brendan in the first half of the 6th Century. This was a centre of learning and craftsmanship and in the early 9th Century it produced an illuminated gospel, attributed to MacRegol, which is now in the Bodleian Library in Oxford.

The Anglo-Normans built a castle at Birr in 1208, and it remained under their command until the early 14th century, when the Gaelic Irish O'Carroll dynasty began to re-establish control in Ely O'Carroll, a petty kingdom (túath) that included parts of S. Offaly and N.E. Tipperary. The O'Carrolls built a castle at Birr, known as the Black Castle, and the town became a major O'Carroll stronghold until the early 17th Century. In 1619, during the plantation of Ely O'Carroll, Sir Laurence Parsons was granted Birr Castle along with 1,227 acres of land.



Emmet Square, Birr

www.rte.ie

Sir Laurence was a capable developer of his new estates, and the town grew and flourished under his direction. He rebuilt the gatehouse of the O'Carroll Castle and added two flanking towers and this forms the core of the castle that we still see today. Birr was renamed Parsonstown in 1620, and continued under this name until the end of the 19th Century. Birr Castle has been the seat of the Parsons family, later also known as the Earls of Rosse, for fourteen generations.



John's Mall, Birr

www.heritagetowns.com

Birr is renowned for its Georgian architecture. Following a turbulent 17th Century, when the castle was besieged in 1643 and again in 1690, the town settled into a period of stability and enlargement. The earliest Georgian buildings are around Emmet Square, developed in 1747 with a central column that originally carried a statue of the Duke of Cumberland. This was removed in 1915. Later developments include Oxmanstown Mall, laid out around 1816 as a promenade from the gates of the castle to the Church of Ireland, Wilmer Road in c. 1817 and John's Mall in 1833. Many of the houses exhibit the exquisite fanlight windows that are characteristic of the Georgian period.

Today, Birr is the principal market town for the south Offaly region and also for north east Tipperary. The annual Birr Vintage Week and Arts Festival takes place each year in August; and the Birr Theatre and Arts Centre, located on Oxmanstown Mall, has seating capacity for 220. Dooly's Hotel, which is located in Emmet Square, is one of the oldest coaching inns in Ireland, dating from 1747. The town remains extremely well preserved, with a handsome assemblage of Georgian architecture; and Birr Castle offers a historic science centre, formal and informal gardens, the great telescope and the more recent I-LOFAR radio telescope – but more about that later in the programme.

Monday 10th June

The West Offaly Landscape

The western part of County Offaly is bounded by the Slieve Bloom Mountains to the south and by the R. Shannon in the west. The area north of Birr consists of a mosaic of eskers, peatlands, callows, small woodlands and agricultural grasslands. The area is underlain by limestone formed during the Lower Carboniferous period, some 340 million years ago, with some inliers of Old Red Sandstone. A limestone quarry at Clorhane produces a greyish stone, which has been much used in the local towns and villages.



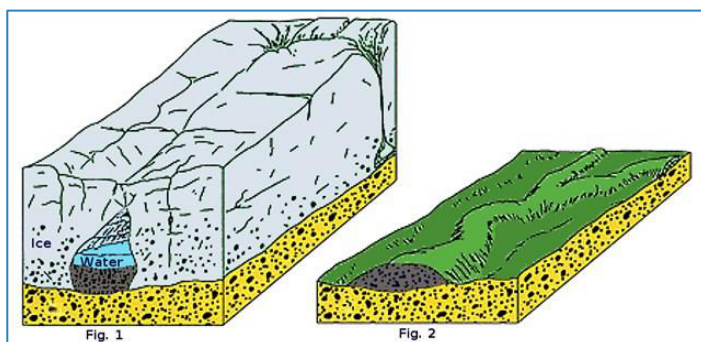
Mongan Bog & R. Shannon

<http://raisedbogs.ie>

Following the most recent glacial epoch, which lasted from 110,000 to around 12,000 years ago, the area was left covered by glacial till with ribbon-like eskers and shallow lakes. In the cold post-glacial period, the landscape was initially colonised by a tundra-like vegetation composed of dwarf shrubs, sedges, grasses, mosses, and lichens. As the climate improved, and tree species moved northwards from their southern refuges, the region would have become dominated by mixed woodlands of pine, ash, elm, oak and hazel, with willow and alder in the damper locations. The largely open landscape that we can see today is the result of two processes: the development of Raised Bogs in the lake basins and the impact of woodland clearance by man over the past 5,000 years.

The Eskers

During the last Ice Age two of the main ice centres in Ireland, the northern dome and the central dome, converged along a line across north Offaly and southwest Westmeath. Towards the end of the Ice Age, as temperatures began to rise, this convergence zone began to weaken and the meltwater was channelled through large tunnels at the base of the glacier. When the flow through these channels lessened, it dropped any rocky debris that it was carrying and this debris formed a continuous deposit along the base of the channel. When the ice melted these ice tunnel deposits were left as long winding ridges in the landscape.



Channel Esker formation

<https://kidskunst.info>

The eskers formed from these subglacial stream deposits generally consist of rather coarse, poorly-sorted, water-washed gravels with cobbles and sometimes also with boulders. In the Irish landscape, they are typically up to 100 metres wide and 20 metres high. But not all of the eskers that we find across the Irish Midlands contain materials that are quite so coarse.

Some of them contain layers of sand, silt and finer gravels. These materials were laid down in much slower waters. After the two ice domes separated and began to retreat, it is believed that the area between the retreating glacier fronts was occupied by a large lake of meltwater. The sediment being carried into this lake by the meltwater streams was sorted into layers and laid down as a series of fans and deltas under the water. These glaciofluvial deposits are also known as kame moraine.

The eskers were important in earlier times, as they formed a spine of higher land across the Midlands that enabled travellers to avoid the many bogs, fens, marshes and swamps. The Esker Riada (**Eiscir Riada**) is a sequence of large eskers that traverses the country from Dublin to Galway. One of the main ancient highways across Ireland, the **Slighe Mhór** or Great Highway, ran along its crest and reached the Shannon at Clonmacnoise, where it was possible to cross the river.

The County Offaly eskers were first mapped by the Geological Survey in the early 1860s. They have contributed greatly to the local economy by providing stone for building, cobbles for paving and sand that was often used for the early reclamation of the bogs. They have also provided the materials for making lime in local kilns, which could be used to improve the land and also to whitewash the houses. Today, the esker quarries allow us to take a peep at the constituent layers of glacial and fluvial materials; and any old or abandoned quarries are quickly colonised by a wide variety of plants that first occupied these esker sites following the clearance of the woodlands.

Esker Habitats

The eskers that stretch across the Irish Midlands were originally covered by woodland, most likely dominated by ash and hazel, with scattered trees of oak and elm. When farming commenced in Ireland, around 3,500 B.C., the lighter soils on the eskers were easier to clear and work than the heavier and wetter soils of the lowlands.

Following clearance, the eskers were turned into open grasslands, which had a rich and diverse community of plants. They were colonised primarily by species that like lime-rich but nutrient poor conditions. The grasses included quaking grass, false oat, crested hair-grass, heath grass, yellow oat and downy oat; herbaceous species were characterised by lady's bedstraw, ox-eye daisy, wild thyme, kidney vetch, yellow centaury, carline thistle, bee orchid, pyramidal orchid and salad burnet, with the occasional autumn lady's-tresses and green-winged orchid.



Species-rich esker grassland

J. Feehan

Maps drawn for the Down Survey (1655-1659) show small patches of forest still remaining on the eskers and extensive areas of shrubby woods or woody pasture. The area of woodland decreased over the following centuries, under pressure from a growing population; and the open landscape was progressively enclosed into permanent fields. Most of the esker woods that we see today are secondary woods that have recolonised following earlier clearances.



Esker recolonising with scrub

J. Feehan

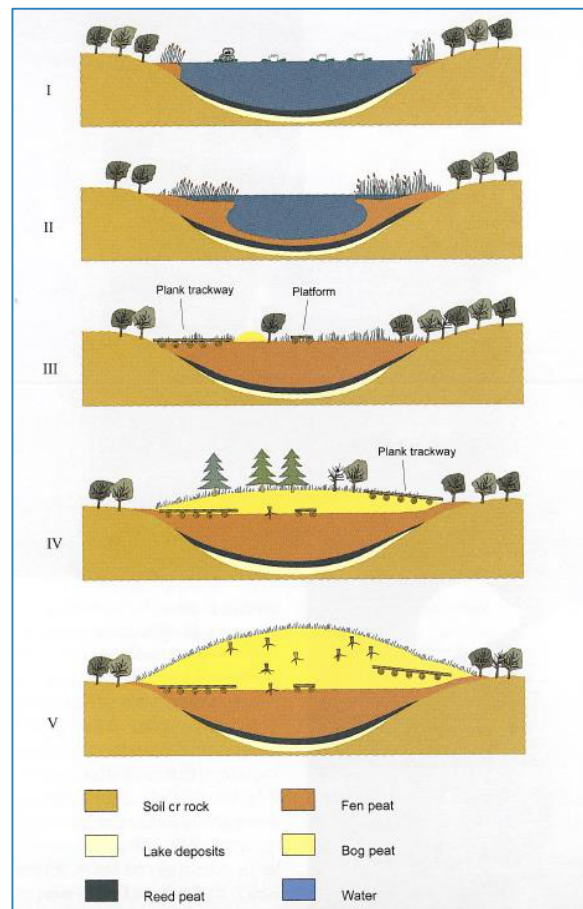
Changes in farming practices, especially in recent decades, have resulted in changes to the esker habitats. Many of the grassland areas have been 'improved' by reseeding or by the use of fertilisers; and the formerly widespread species-rich grassland communities are now largely confined to roadside verges and to steep slopes. Any areas that are neglected, or not subject to the same grazing intensity as in former times, will quickly recolonise with blackthorn or furze. These will ultimately go on to form woodlands with ash, hazel and oak.

The Peatlands

At the end of the last Ice Age the west Offaly landscape had numerous shallow calcareous lakes. After the settlement of lacustrine silts and clays, a layer of 'shell marl' was deposited in some of the lake basins, formed from the limy remains of stoneworts (**Chara spp.**) and freshwater snails. Reedswamp colonised the lake margins and gradually, over time, the lakes began to infill with reed peat; and then later on with fen peat when the reeds were succeeded by fen species and by fen carr.

As the surface layer became less influenced by the mineral rich groundwater it was colonised by **Sphagnum** mosses and other acid-loving plants. Owing principally to Sphagnum's water retention capabilities, the peatland continued to grow upwards and spread outwards onto the adjoining forested land. Many of the peatlands still have ancient stumps and trunks of pine, oak and yew at their base.

Our forefathers have been present in the area for much of the last 6-8,000 years and have built access trackways across the peatlands in places where the higher eskers weren't available. These trackways remain preserved in the peat today.



Raised Bog formation

E. O'Carroll

Many attempts were made to drain the vast stretches of Raised Bog in the Midlands, primarily for agricultural purposes, over the centuries. Following the clearance of the woods and forests, the local population turned to the bogs for their source of fuel. This resulted in many of the bogs being partially drained and cut along their edges; but large-scale utilisation for energy had to wait until the advent of mechanisation in the mid-20th century.

The Callows



Shannon callows

<http://discovertheshannon.com>

The callows represent an extensive area of winter-flooded grassland along the River Shannon and its tributaries. They are of international importance, with large sections protected as SACs or SPAs, as they provide shelter and food for large flocks of migratory wildfowl. The grasslands were established between the 16th to the 19th centuries, when the previous carr woodland was cleared and drained. They are grazed and mown during the summer months and the annual flooding brings a supply of silt that provides a natural fertility. The Shannon Drainage Scheme of the 1840s helped to extend the grazing season.

The callow grasslands are extremely species rich, with over 200 species of plants recorded. These may be grouped into a variety of communities, from fully aquatic to dry grassland, along a spectrum from the river channel up to the higher ground. Farmers in the protected zones operate a management system that maintains the biodiversity. This includes refraining from cutting the hay meadows before mid-July, when the offspring of ground-nesting birds are mature; and ensuring that the pastures are not overgrazed, to prevent the seeding and spread of dock and ragwort species.

Clonmacnoise Monastic Site



Clonmacnoise site

www.visitoffaly.ie

The Clonmacnoise monastic site, also known as the Seven Churches, is situated at the intersection of two important ancient routes: the great east-west highway on the Esker Riada and the River Shannon. The monastery was founded by St. Ciarán in 548-9 AD; and the initial early wooden structures were replaced by more durable stone buildings from the 9th Century onwards. Today, the Clonmacnoise site is home to a cathedral, seven churches, three high crosses, two round towers and a large collection of Early Christian graveslabs.

The great monastery at Clonmacnoise dominated the west Offaly landscape for more than a millenium, until it was abandoned in the mid-16th Century. It had become a major centre for religion, learning, craftsmanship and trade by the 9th Century and it attracted scholars from all over Europe. It produced many manuscripts, including the Annals of Tigernach and the Book of the Dun Cow – the oldest surviving manuscript written in Irish. Artists and craftsmen located at Clonmacnoise created many enduring treasures, including the Clonmacnoise Crozier, now in the National Museum of Ireland, and the Cross of the Scriptures, which is on display in the visitor centre at the site.

While the core of the monastery was comprised of churches, ecclesiastical dwellings and workshops, the site was surrounded by the houses of a large secular community of metal workers, craftsmen and farmers who supported the clergy and their students. It is estimated that between 1,500 and 2,000 people lived and worked here when Clonmacnoise was at its peak during the 11th Century. The monastery was considered wealthy, being supported by tributes from lands located in nine counties, and it was attacked and raided many times by the Irish, by the Vikings and also by the Normans.

Clonmacnoise was the burial site for the High Kings of Tara from the 9th to the 11th Century. Then, from the 12th Century onwards, Clonmacnoise began to decline, partly due to an influx of new competing religious orders from the Continent; and partly due to the growth of Athlone as a trading town located just north along the Shannon. The change from a monastic framework to a diocesan one in the 12th Century also diminished the site's standing, as it was designated the seat of a small and impoverished diocese. Finally, in 1552 the site was attacked, looted and left in ruins as part of the dissolution of the monasteries under Henry VIII.



High Cross

<http://discovertheshannon.com>

Tuesday 11th June

Clara Bog & Visitor Centre

The visitor centre is co-located with Clara Library on the Ballycumber Road in Clara Town, some 1.5 km north of the bog. It includes an interactive interpretive area covering the development of peatlands, their history, archaeology and biodiversity and information on Clara Bog itself.

Clara Bog is probably the largest remaining example of a true Midland Raised Bog. It covers 836 ha, of which 443 ha are high bog and 393 ha have been cut away. A roadway through the centre of the bog, constructed at the beginning of the 19th Century, caused it to subside by several metres and divides the bog into two peat domes. The bog was acquired by Bord na Móna in the early 1980s and initial drainage was carried out on the eastern dome. However, the bog was listed as being of international importance and development was suspended.



Clara Bog

www.clarabognaturereserve.ie

The bog was sold to the NPWS in 1986 and the initial drainage was reversed by the installation of around 6,000 peat dams between 1993 and 1996. Clara is a typical raised bog, with hummocks, lawns and pool complexes, but it also has a number of unique features: including soak systems, which are areas of open water that are more nutrient-rich and support a fen-like vegetation; and an area of native bog woodland dominated by Downy Birch (*Betula pubescens*).



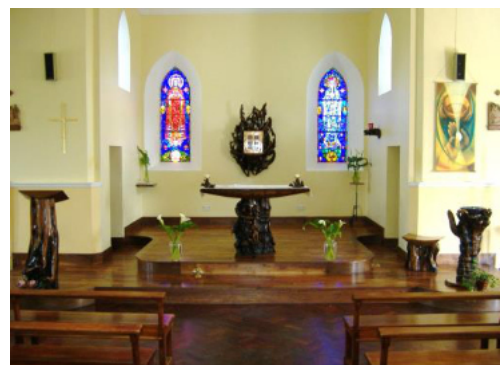
Clara Boardwalk

<https://wli.wwt.org.uk>

The private cutting of sod turf around the edges finally ceased in 2012. The bog is now a protected site, having been designated as a National Nature Reserve, a Special Area of Conservation, a Natura 2000 site, a Ramsar Wetland site and a Natural Heritage Area. It has been the focus of intensive research, on both the bog hydrology and its ecology, and the management programme includes measures to try and prevent further water loss. A 1 km looped boardwalk with interpretive panels has been installed, to provide access to the Raised Bog habitat while also protecting the delicate surface flora.

St. Mary's Church, Pollagh

St. Mary's Church is located beside the Grand Canal in the village of Pollagh. The church was built between 1907 and 1910, under the direction of Canon Matthew Columb, based on a design that he had seen in France. Known locally as the "Trousler Church" it was originally chevron or V-shaped, with the sanctuary at the apex. This design allowed segregation of the sexes, so that the women, seated in one aisle, were not visible to the men in the other, but both could see the altar. The space between the aisles was enclosed when the church was enlarged in the 1950s.



Pollagh Church

<https://en.wikipedia.org>

The interior of St. Mary's Church is dominated by a pair of stained glass windows which flank the altar. They were procured from the studio of Harry Clarke, who was renowned for his innovative approach to the medium and his spectacular use of colour, and were installed in 1936. A second unusual feature in the church is the decorative sanctuary furnishings. These have been carved from 4,800-year old bog yew, that was preserved beneath the Midland raised bogs. The furnishings were crafted by the sculptor Michal Casey, from Barley Harbour in Co. Longford, along with students from the local Celtic Roots Studios at Ballinahown.

Lough Boora Discovery Park

Lough Boora Discovery Park has been developed over the past 30 years on 3,000 ha of former industrial peatlands that have been cut away. Some of the cutaway areas have been developed for forestry or reclaimed to agricultural grasslands. However, much of the area has been allowed to recolonise naturally into a mosaic of wetland and dryland plant communities. It now provides an extensive amenity area where people can enjoy getting closer to nature and can cycle or walk around a series of looped tracks and trails.



Bird Hide at L. Boora www.loughboora.com

The Lough Boora Park is owned and maintained by Bord na Móna. Parts of the park initially acted as an 'outdoor laboratory' for the rehabilitation of industrially cutaway peatlands. As areas colonised and matured, and species diversity increased, they helped to create an area of rich ecological interest. The park has five angling lakes, that are stocked with coarse and game fish, including Loch an Dochais, a small lake close to the visitor centre that has facilities for people with disabilities.

The park also includes the former site of Lough Boora, a 50 ha lake surrounded by peatland that was drained during the 1950s. Archaeological excavations carried out under the direction of Dr. Michael Ryan in the 1970s revealed the presence of Mesolithic hunter-gatherer encampments along the shore of what would have been a much larger post-glacial lake. Artifacts discovered were dated to 6,500 – 6,800 BC, making this the earliest known site for the presence of man in the Irish Midlands.



Sculpture in the Park www.loughboora.com

In 2000, an International Sculpture Symposium was held in the park, that resulted in the creation of seven permanent structures. Over the years many more pieces have been created by a series of 'artists in residence'. These artists, inspired by the rich industrial heritage and natural legacy, have created a series of innovative land and environmental sculptures. Some have been made from wood, some from metal and some from stone. They can be enjoyed by following the 'Sculpture Park Trail', a 3.3 km looped walk that starts from the visitor centre.

Lough Boora Park is an important refuge for wildlife, including some of Ireland's more endangered species. Over 130 species of birds have been recorded here and about half of these breed on site. The lakes, wetlands and grasslands in the park play host to large numbers of Whooper Swans, Golden Plover and Lapwing during the winter months; and the park also contains the last remaining breeding population of Grey Partridge in Ireland.

The Grey Partridge Project at Boora

The Grey Partridge (*Perdix perdix*) was once a ubiquitous game bird throughout the Irish countryside. However, the decline in cereal production, coupled with the use of herbicides and pesticides which impact on the availability of insects to feed the young, led to a dramatic decline in Grey Partridge numbers. By the end of the 20th Century, there was only one wild breeding population left, at Lough Boora in Co. Offaly.

The Grey Partridge Conservation Project was set up at Boora to reverse the decline in this Red Listed game bird species. The principal agencies involved included the NPWS, the Royal College of Surgeons and the Grey Partridge Conservation Trust. 150 ha of land were leased in the Lough Boora Parklands and are managed to provide: (i) nesting cover, such as Cocksfoot and other tussock forming grasses; (ii) an insect-rich habitat for the young chicks; and (iii) seed bearing crops that are left unharvested to provide over-wintering food and cover.



Grey Partridge at Boora www.loughboora.com

Grey Partridge numbers at Boora have increased from a low of 22 in the autumn of 2001 to over 1,000 birds in 2014. Some of the birds have dispersed from the original study area into the adjacent farmland, and management agreements are in place with the local farmers. The population at Lough Boora has also been used to re-establish wild bird populations in other counties, including the provision of 29 birds to Northern Ireland in December 2014. These were translocated to the farm of David Sandford at Lecale in County Down.

St. Cormac's Park, Kilcormac

In the early days of the mechanised peat industry during the post-war years, men travelled from all over Ireland to work on the drainage and development of the large expanses of bog. Initially, most of the work would have been carried out during the summer months and these peat workers were housed in hostels or 'turf camps'. Then, as the industry matured, and Bord na Móna needed to retain a core of permanent workers, the company built houses for its employees. In total, Bord na Móna built 572 houses in 8 schemes across the country. The company was determined that the housing schemes should be models for rural living, and in June 1949 Frank Gibney was appointed consultant architect and town planner for the project.

All of the schemes designed by Frank Gibney have distinctive and dramatic layouts, with spacious village greens and attractive lawns. St. Cormac's Park in Kilcormac was built for the employees who worked on the Boora Group of bogs. It consists of 104 terraced houses and is located just south of the village, at an acute junction of four roads. The layout consists of a series of giant arcs, pierced by a central axis and two subsidiary axes. The curved form of the development is very different from the linear form of the village, but like all of Gibney's designs it creates a strong sense of its own internal identity.



St. Cormac's Park Layout F. MacCabe



Houses in St. Cormac's Park

F. MacCabe

The St. Cormac's Park housing scheme was built by Healy of Drogheda. The architectural style is of a modest and familiar semi-vernacular 'Arts and Crafts' character, with plastered walls and pitched roofs. The houses were originally rented to the Bord na Móna workers and then later they were sold to the tenants from the 1970s onwards. The front gardens were not transferred to the new owners, but were gifted to the local authority in order to maintain the integrity of the design. Later on, they were transferred to local trustees.

Derrinboy Bog

Derrinboy Bog is located about 5 km south east of Kilcormac. It is a typical lake basin infill peatland that then continued to grow upwards and outwards to become a Raised Bog. It was drained and developed by Bord na Móna in the late 1990s for the production of horticultural peat. The bog is bisected by the road from Kilcormac to Kinnitty. Since Derrinboy is isolated from the main Boora Group of bogs, it was not economic to connect it into the narrow gauge rail network. All of the peat produced at Derrinboy is transported out by road.



Aerial view of Derrinboy Bog

www.google.com

The bog occupies an area of 309 ha and it has been developed for milled peat production by using shallow drains at 15-metre centres. These drains create a series of parallel peat harvesting fields. The milled peat production cycle consists of five operations: milling, harrowing, ridging, harvesting and stockpiling. The milling operation involves breaking up the horizontal surface layer of peat, 12mm to 18mm deep, into a crumb or powder form. This is then harrowed and turned over several times to assist with atmospheric drying.



Milled peat harvesting

Bord na Móna

Once the milled peat has dried down to between 40% and 45% moisture content, it is collected into small ridges and then loaded into trailers for transfer to the stockpiles. In Derrinboy these stockpiles are located along the central road, to facilitate unloading. This system of central stockpiles is known as the 'Haku' method of milled peat production. The milled peat harvested at Derrinboy is a high quality horticultural peat that is exported to European markets, where it is used to produce growing media for the horticulture industry.

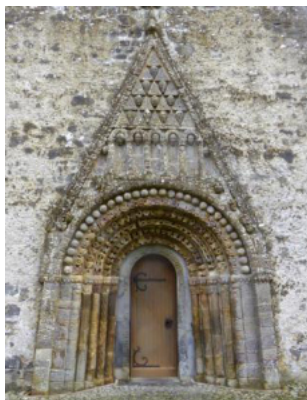
Wednesday 12th June

St. Brendan's Cathedral, Clonfert

An abbey or a monastery was initially founded in the small townland of Clonfert by St. Brendan the Navigator in the mid-6th Century. He died in 577, and is reputed to be buried at the site. It was raided and burned many times by the Vikings, but always rebuilt. The only remaining evidence of the original religious centre is the cathedral, the earliest parts of which date back to the 12th Century. The cathedral is renowned for its Hiberno-Romanesque western doorway. This has six orders of decorated brown sandstone, and a later inner order of blue limestone that was added in the 15th century.



St. Brendan's Cathedral www.tripadvisor.ie



The Doorway

Above the door is a tall pediment consisting of triangles alternating with human heads, and below this an arcade enclosing further heads. The doorway is attributed to Peter O'Moore, who was Bishop of Clonfert from 1161 to 1171. The Late Romanesque windows at the eastern end of the chancel date from the early 13th Century. The chancel arch was inserted in the 15th Century and it is decorated with angels, a rosette and a mermaid carrying a mirror. The supporting arches of the tower at the west end of the cathedral are also decorated with heads, dating from the 15th Century; and the sacristy dates from the same period. This Church of Ireland cathedral at Clonfert was previously in the Diocese of Clonfert; but it now forms one of three cathedrals in the United Dioceses of Limerick and Killaloe.

Banagher

Banagher is located on the eastern bank of the River Shannon. It has long held a very strategic position, as it was one of the few crossing points on the river between the provinces of Leinster and Connacht. It therefore became the focal point for the development of a series of fortifications, built to control and defend the river crossing. These included Fort Falkland, built on the east bank in the 1620s; Cromwell's Castle on the west bank, which dates from the 1650s; the Barracks, built in 1750

on the east bank on the site of the fort; the Salt Battery, constructed on the eastern side around 1812; and the Martello Tower, which is oval in plan, built on the west bank during the Napoleonic Wars. The River Shannon was originally crossed by ford, and the first bridge over the river is thought to have been built as early as 1049. A stone bridge was erected across the river in 1685, and this was replaced by the present seven-arch bridge that was built by the Commissioners for the Improvement of Navigation of the Shannon in 1841-43.



Cromwell's Castle <http://discovertheshannon.com>



Railway Station

<http://irishrailways.blogspot.com>

The town of Banagher was incorporated by charter of Charles I in September 1628. In the 17th Century it was the centre of a flourishing wool trade. The opening of the Grand Canal at the end of the 18th Century meant that Banagher became an outlet for grain grown in the surrounding area. In 1834 the town boasted a distillery, a brewery, two tanyards, a malthouse and a number of corn mills. A branch rail line from Clara was opened in 1884, but passenger services were withdrawn in 1947, and the line finally closed in 1963.

Banagher has two bow-fronted Georgian buildings that date from the mid-to-late 18th Century. One is Crank House, restored in the early 1990s; the other was a hotel and home to Anthony Trollope during his stay in the town in the 1840s. Charlotte's Way (Hill House) was built in 1753, near the southern end of town. It was once the home of Charlotte Brontë's husband, Mr. Nicholls, who returned to live in the town after her death. Today, the main local industry is Banagher Precast Concrete and the marina and river tourism also play important roles.



Charlotte's Way

www.buildingsofireland.ie

Kinnitty Castle



Kinnitty Castle

<https://visitkinnitty.com>

Kinnitty Castle is a gothic revival castle located in the foothills of the Slieve Bloom Mountains. An early castle on the site was destroyed in 1209, and was rebuilt by the Normans in 1213. During the Norman period, an Augustinian Abbey was established near the castle, from which an Abbey wall still remains today. In 1630 William O'Carroll built a new castle on the site. This was confiscated by the English forces in 1641, as part of the plantation of 'Kings County'. In 1664 the Crown granted the estate to Colonel Thomas Winter.

The castle and estate were sold by Colonel Winter's descendants to the Bernard family in 1764. It was extended at the beginning of the 19th Century, when it acquired many of its neo-gothic charms. The castle was burned by Republican forces in 1922, but rebuilt by the Bernard family in 1928. It was sold in 1946 to Lord Decies, who in turn sold it on to the State in 1951. It was used as a forestry training school for a number of years, and passed back into private ownership in 1994. Today, Kinnitty Castle operates as a 37-bedroom luxury hotel with a unique Dungeon Bar.



Entrance Stairway

www.expedia.ie

Kinnitty Forest

Kinnitty Forest covers the foothills of the Slieve Bloom Mountains just to the south of Kinnitty Castle. It has been owned by the State since the 1920s and is now managed by Coillte as both a productive and an amenity forest. It contains a number of looped walks, including the Glinsk Castle Loop (blue) and the Kinnitty Castle Loop (green) which we will follow. This loop is about 4.2 km long, with gentle slopes and some fine views out over the mid-Offaly landscape. Kinnitty Forest contains a wide mix of species of varying age class. Coniferous species include: Japanese Larch, Norway Spruce, Douglas Fir, Western Hemlock, Coastal Redwood, Hybrid Larch and Sitka Spruce. There are some area with mature Oak and Beech and many of the stands that have been felled over the last two decades have been replanted with Oak. Since there is a large herd of fallow deer in the area, some of this younger planting is inside a high, deer-proof fence to prevent browsing.



Kinnitty Castle Loop

Kinnitty High Cross & Pyramid



www.megalithicireland.com

The high cross stands in the grounds of Kinnitty castle. It is 2.4 metres in height, with a damaged head. The cross is made from sandstone, which is not of local origin. It is believed that it may have been part of a nearby monastic site, founded in the 6th Century by St. Finnian, and the cross was brought to the castle by the Bernard family to add to the antiquity of their demesne. The north face bears seven bosses at the centre of the head standing above two affronted birds; and the north shaft has a figurative panel showing Eve handing the apple to Adam. There is a crucifixion scene on the south face; and the south shaft has a panel showing David playing a lyre. An inscription at the bottom of the shaft on the north side reads: 'A prayer for Colman, who made the cross for the King of Ireland'. On the south side, the inscription states: 'A prayer for Máelsechnaill, son of Maelruanaid'. Máelsechnaill was the King of Ireland between 846 and 862 CE.

Kinnitty Pyramid is a burial tomb, located on a hill in the village, just to the south of the Church of Ireland graveyard. It was built by Lt. Col. Richard Wesley Bernard, who completed a tour of duty in Egypt in the early 19th Century. Since he was trained in engineering and architecture, it is believed that what he saw in Egypt inspired his design for a family mausoleum. Construction started in 1830 and was completed by 1834. The pyramid stands 30 feet high, with access doors made of steel, from which steps lead down into the burial chamber.



Pyramid at Kinnitty

<https://mapio.net>

The Pyramid forms the resting place for six members of the Bernard family. The first Bernard to be entombed was young Margaret, who was laid to rest in 1842 at the age of 24, after being bitten by a rabid dog. The final member was Ellen Georgina in 1907. The tomb is now permanently sealed.

Thursday 13th June

Birr Castle

An Anglo Norman castle on a motte was built originally near the confluence of the Little Brosna and Camcor Rivers. The castle was later occupied by the O'Carrolls until the 1580s, when it was sold to the Ormond Butlers. In 1620, the now ruined castle was granted to Sir Laurence Parsons by James I. Rather than occupy the Black Tower house of the O'Carrolls, Parsons decided to incorporate the original Norman gate tower and he built flanking towers on either side. These form the core of the modern castle which survived two sieges, in 1643 and again in 1690.



Birr Castle

<https://birrcastle.com>



The Dining Room

At the beginning of the 19th Century the castle, which had always faced the town, was given a new gothic façade, and it now faces the park. The octagonal Gothic Saloon was added in 1820s and, after a fire in 1836, the centre part was rebuilt and a third storey added along with the great dining room. In the mid-1840s the old Norman motte was flattened and the moat redesigned to form the present star-shape. The final addition was in the 1860s, when a square tower was added to the east side. It is still the home of the Parsons family.

The present head of the family, Brendan Parsons, is the 7th Earl of Rosse. The family papers, extending back to the early 17th Century, are one of the most important collections in private ownership. The Great Telescope, also known as the 'Leviathan of Parsonstown' was built by the 3rd Earl of Rosse in the 1840s. This reflecting telescope was the largest in the world for over 70 years. The Science Centre records how the telescope was built in the castle workshops; along with the wonders of early photography, engineering and astronomy.



The Leviathan of Parsonstown



Birr Castle Gardens

The Castle Demesne occupies an area of 50 ha. It includes formal gardens, terraces, a pinetum, waterfalls, the rivers and a lake. It also hosts the Irish Low Frequency Array (I-LOFAR), part of a European-wide network of radio telescopes. The gardens contain an abundance of rare plants collected by the family over the past 150 years. They include the world's tallest box hedges, over 40 'Champion Trees' and more than 2,000 species of plants. After you have spent many hours enjoying these botanical delights it will be time to relax in the Courtyard Café.

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Clonmacnoise and the River Shannon

www.pinterest.ie

Compiled and edited by: **Charles Shier, DNFC**

