

MEATH - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Painestown Quarry
Other names used for site	
IGH THEME:	IGH 8 (Lower Carboniferous)
TOWNLAND(S)	Painestown
NEAREST TOWN	Slane
SIX INCH MAP NUMBER	26
NATIONAL GRID REFERENCE	295350 270000 = N 9535 7000
1:50,000 O.S. SHEET NUMBER	43 1/2 inch Sheet No. 13

Outline Site Description

A disused quarry now heavily vegetated.

Geological System/Age and Primary Rock Type

Lower Carboniferous (Viséan) thin to medium bedded limestone and shale of the Loughshinny Formation.

Main Geological or Geomorphological Interest

This disused quarry has cut into thinly bedded limestone and shale, which displays a series of angular, zig-zag folds called chevron folds. These occur when pressure is exerted on thinly bedded sequences of alternating rocks, where one rock type (limestone) is competent and the other (shale) is incompetent. These features are also found in the same rock formation along the coast at Loughshinny.

Site Importance

This is a spectacular and easily accessible example of chevron folds, which could make an excellent teaching locality. It complements the example of coastal geology at Loughshinny. It should become a County Geological Site.

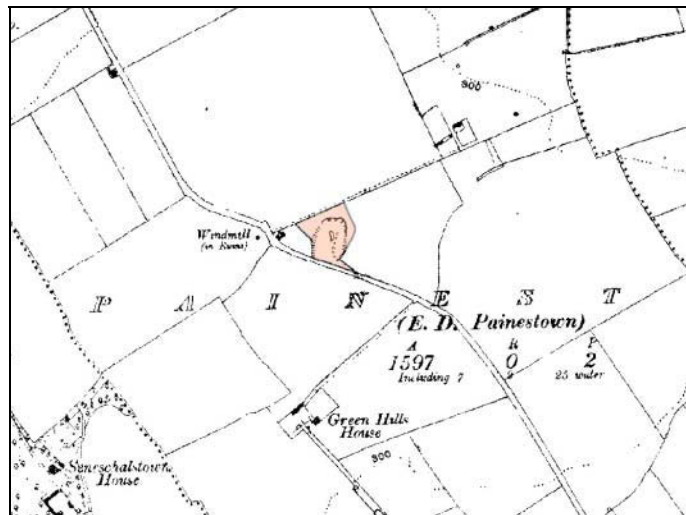
Management/promotion issues

This site is found just off a third class road and is on private agricultural land, which is occasionally used for grazing cattle. Access to the site is through a farm gate along the road. This is not suitable for general promotion without suitable arrangements being made with the landowner. Only one exposed face still remains within the old quarry as the rest of the site has been filled in. It is important to keep this last face exposed and if possible, relatively free of vegetation cover.



Left: Exposed quarry face displaying excellent examples of chevron folding.
Right: A closer look at the zig-zag shaped folds. The limbs of the folds usually form at a 45°- 60° angle, as seen here at Painestown.

Painestown Quarry



MEATH - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Rockwood Cliffs
Other names used for site	Boyne Walk
IGH THEME:	IGH 8 (Lower Carboniferous)
TOWNLAND(S)	Slane
NEAREST TOWN	Slane
SIX INCH MAP NUMBER	19
NATIONAL GRID REFERENCE	294750 273200 = N 9475 7320
1:50,000 O.S. SHEET NUMBER	43 1/2 inch Sheet No. 13

Outline Site Description

Cliff section along the River Boyne.

Geological System/Age and Primary Rock Type

Lower Carboniferous (Viséan, Courceyan) limestone of the Boyne Formation (commonly known as 'Calp') and Waulsortian Limestone.

Main Geological or Geomorphological Interest

A number of exposures of Lower Carboniferous limestone and occasional shale can be found along or near the banks of the River Boyne. Although a number of smaller outcrops can be seen on the north banks of the river the best example can be seen at Rockwood, a forested area opposite Slane Castle, on the south banks of the River Boyne. These rocks form cliffs that reach heights of up to 25 metres and are predominantly composed of thick bedded to massive brown-grey locally fossiliferous limestone and shale. The cliffs were most likely formed by the erosive power of glacial meltwater during the last Ice Age. Meltwater would have passed through the valley scouring out a deep gorge in the underlying bedrock creating the cliffs.

Site Importance

This is one of the best outcrop exposures along the Boyne Valley, which already lies within the existing Boyne Woods NHA. Natural well exposed outcrops such as these are rare, especially ones that are so easily accessible. It has good teaching potential. Its geological heritage value needs to be incorporated into the already existing pNHA synopsis. It should also be listed as a County Geological Site in Meath.

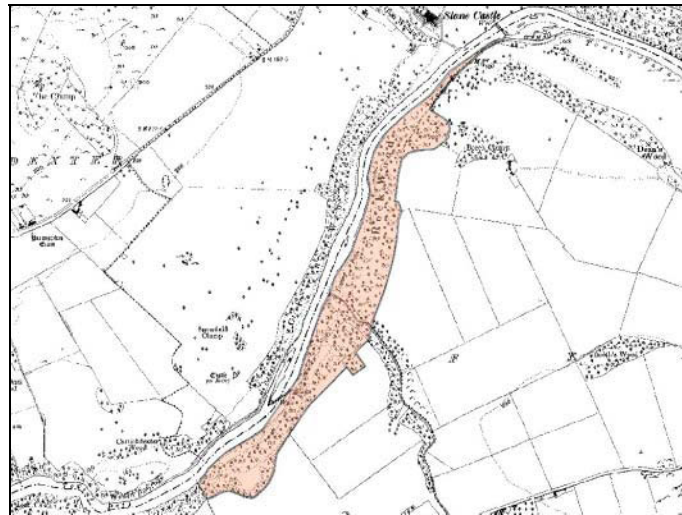
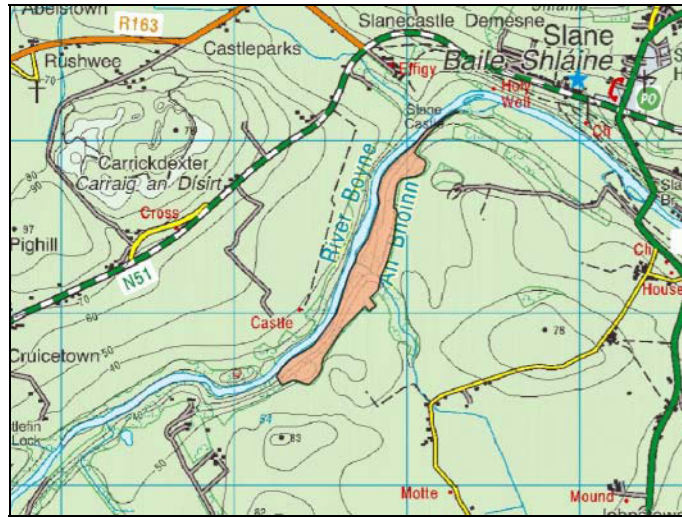
Management/promotion issues

Although access to the cliffs is on private land (part of Slane Castle) it is a recognised public right of way. All of the outcrops described in this report can be accessed via this riverbank walkway, although in places dense forestry and vegetation obscure some sections of the cliffs.



Left: Riverbank exposure of thick bedded dark limestone and shale (Calp) of the Boyne Formation found on the south side of the River Boyne. These rocks can be seen shallowly dipping to the southwest.
Right: Fossilised coral found within the Waulsortian Limestone, opposite Slane Castle.

Rockwood Cliffs



MEATH - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Carrickleck Quarry
Other names used for site	Roadstone – Silica Sand Ltd.
IGH THEME:	IGH 9 (Upper Carboniferous)
TOWNLAND(S)	Carrickleck
NEAREST TOWN	Nobber
SIX INCH MAP NUMBER	2, 3
NATIONAL GRID REFERENCE	282200 292300 = N 822 923
1:50,000 O.S. SHEET NUMBER	35 1/2 inch Sheet No. 13

Outline Site Description

A working quarry.

Geological System/Age and Primary Rock Type

Upper Carboniferous (Namurian) disaggregated sandstone of the Carrickleck Sandstone Member.

Main Geological or Geomorphological Interest

Formally owned by Irish Glass Bottle this small working quarry now owned by Roadstone has excavated though a narrow strip of sandstone forming a long, narrow valley. The walls of this quarry reach up to 30m in some places. This exposed sandstone is locally disaggregated, meaning that its individual grains are no longer cemented together strongly. This produces an unusual situation where the sandstone, which appears to be solid rock as it still holds its structure (bedding, joints, etc), can be easily crushed by hand to produce a fine dusty sand. Due to this natural breakdown, it is possible to extract and sell this fine grained sand without having to crush or break the rock.

Site Importance

This quarry has an important historic significance as it is possible that rock quarried from this site was used in the production of the High Crosses at Kells. This is also a very interesting example of disaggregated sandstone and is probably the only one of its kind within Meath and is recommended for County Geological Site status.

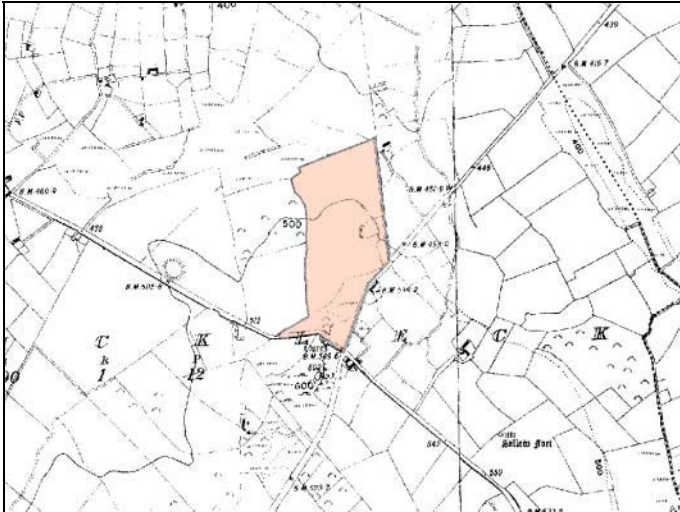
Management/promotion issues

Due to the unusual characteristics of the sandstone this would make a good teaching locality. This site is adjacent to a quiet third class road and access is via a locked gate. Although small and relatively quiet this quarry is a potentially hazardous environment and would not be suitable for general promotion without appropriate access arrangements being made with Roadstone.



Left: Quarry operations have carved out this narrow valley exposing the rocks of the Carrickleck Sandstone Member.
Right: Disaggregated sandstone – bedding and other sedimentary structures are still visible but this weakened rock breaks down into a fine grained sand, even when squeezed between the hands.

Carricleck Quarry



MEATH - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Dunshaughlin
Other names used for site	
IGH THEME:	IGH 12 (Mesozoic and Cenozoic)
TOWNLAND(S)	
NEAREST TOWN	Dunshaughlin
SIX INCH MAP NUMBER	
NATIONAL GRID REFERENCE	297591 253243 = N 975 532
1:50,000 O.S. SHEET NUMBER	43 1/2 inch Sheet No. 13

Outline Site Description

The site is unexposed at the surface.

Geological System/Age and Primary Rock Type

A basin shaped body of silica derived from decalcified limestone, undated but possibly formed from Tertiary weathering.

Main Geological or Geomorphological Interest

This site is of interest in the Mesozoic and Cenozoic history of Ireland, since it is a very large depression over 1km² in area composed of silica. Detected primarily by geophysical techniques, the limited investigation shows that the deposit contains white silica, red-brown clays and some black lignite. Reynolds (1974) used geophysics to define the depression. He suggested that it was formed by in situ solution of the limestone by sulphuric acid released from breakdown of pyrite in the rock.

Site Importance

The site is a large scale enclosed limestone depression, now infilled with silica deposits, of similar magnitude to the Carran Depression in Clare, and although it is not actually exposed, it certainly merits recognition as a County Geological Site.

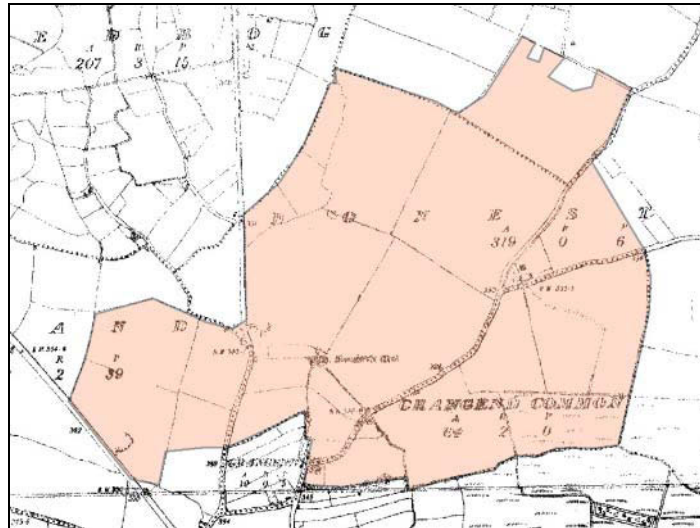
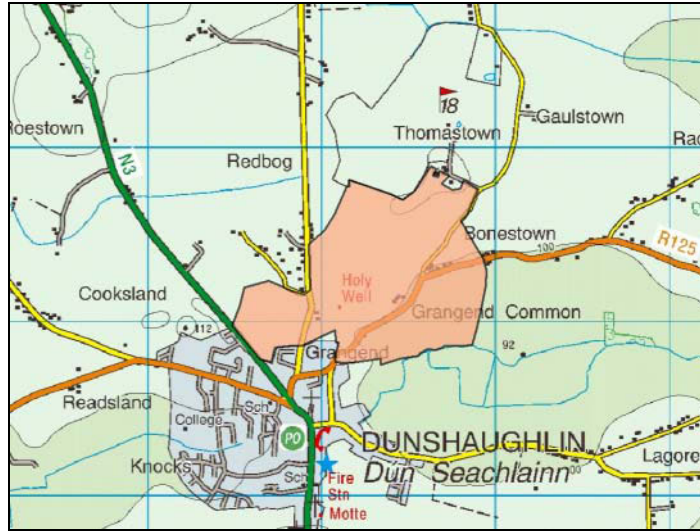
Management/promotion issues

This site is only known through geophysical surveys and from a limited drilling programme. There are no management issues. However, any planned developments that include ground investigations or excavations may provide a much more complete understanding of the deposit and GSI should be notified of any such works at the earliest stage. Such works may include a proposed railway line extension.



Above: Approximate limits of the infilled depression at Dunshaughlin.

Dunshaughlin



MEATH - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Boyne River, Trim		
Other names used for site			
IGH THEME:	IGH14 (Fluvial/Lacustrine Geomorphology)		
TOWNLAND(S)	Numerous		
NEAREST TOWN	Trim		
SIX INCH MAP NUMBER	31, 36, 37		
NATIONAL GRID REFERENCE	284350 258560 = N 8435 5856		
1:50,000 O.S. SHEET NUMBER	42	1/2 inch Sheet No.	13

Outline Site Description

A section of the Boyne River.

Geological System/Age and Primary Rock Type

River with anastomosing (distributary) channels.

Main Geological or Geomorphological Interest

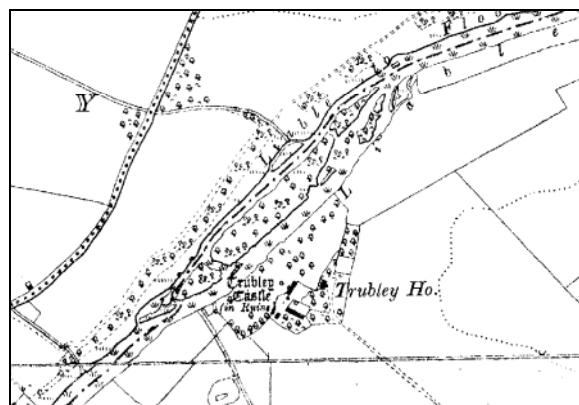
Along a 5.5km stretch of the Boyne River, just east of Trim are a number of sub-parallel distributaries known as anastomosing channels. These channels separate from the main river and may flow parallel to it for several kilometres before rejoining it. In the case of this site the anastomosing channels only run for a couple of hundred meters at any one time. These channels tend to form in areas of low relief with shallow gradients and generally have thick clay and silt banks.

Site Importance

This is one of the few examples of an anastomosing channel system in Meath and is therefore recommended as a County Geological Site. Anastomosing channels are not common nationally.

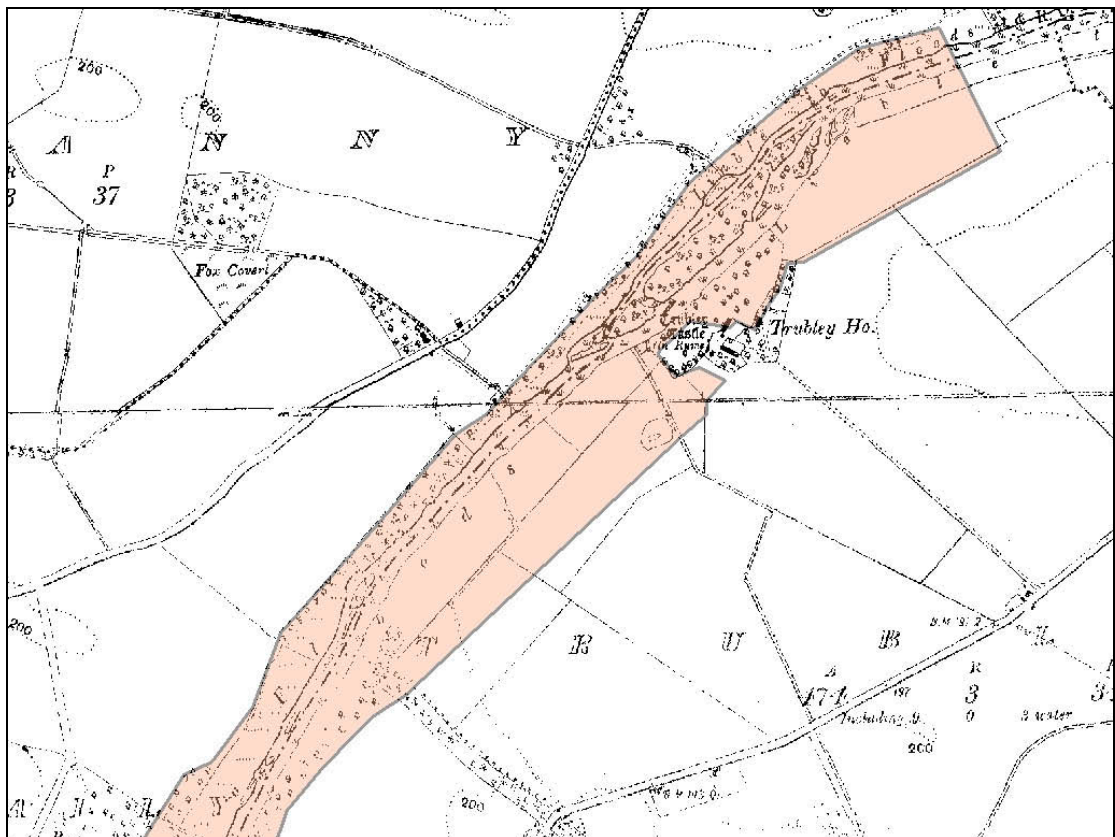
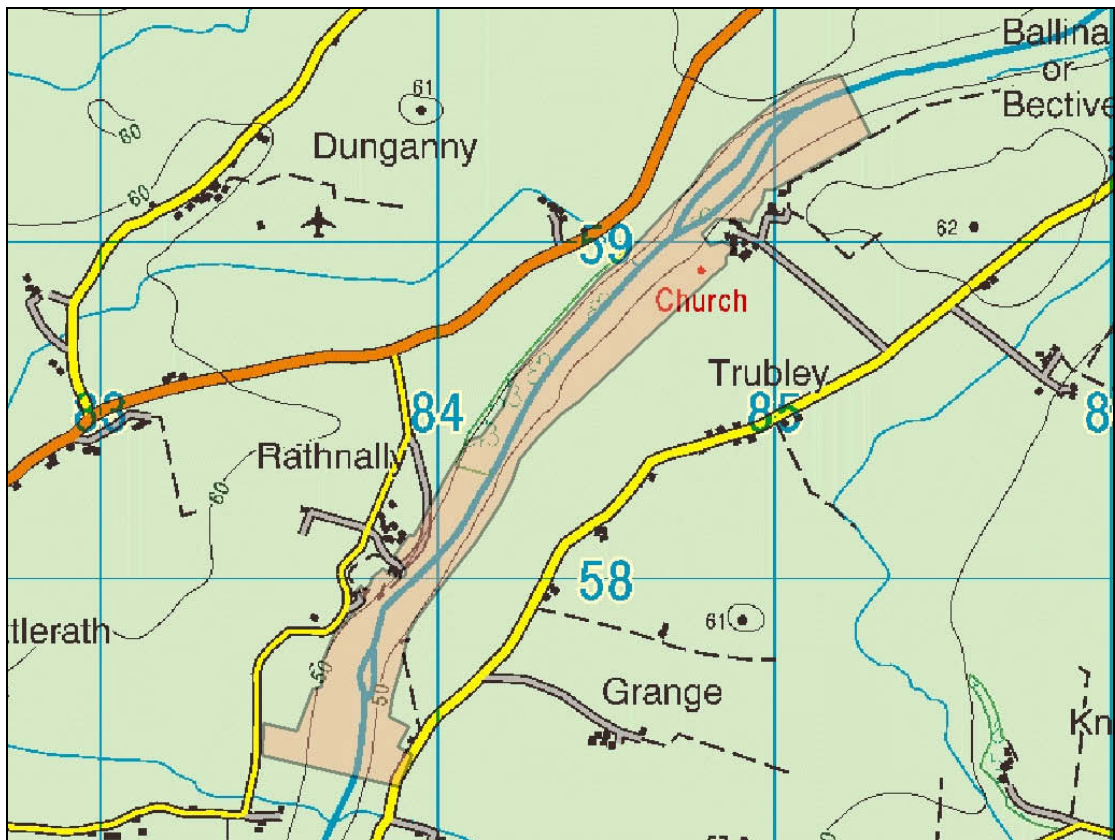
Management/promotion issues

Although these channels can be accessed in some areas, the feature is not readily recognisable from the ground. The use of aerial photography and the old six inch maps are probably the best way to distinguish these features.

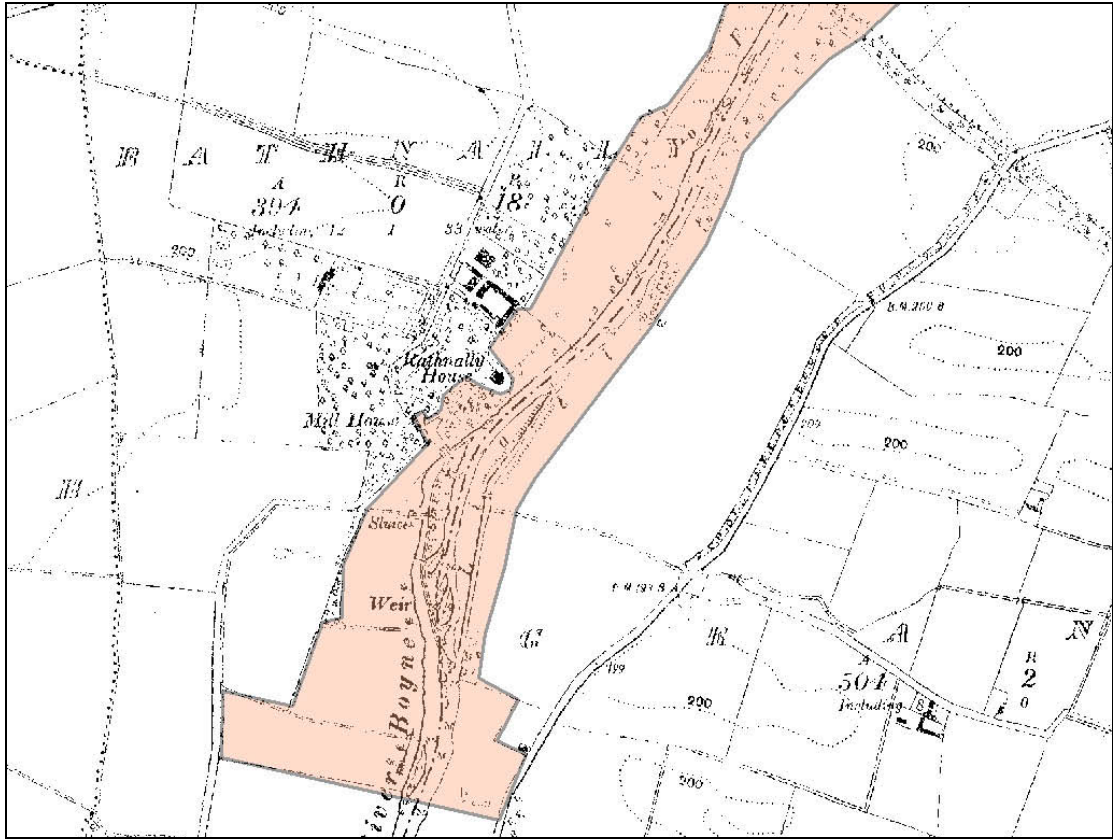


Above: Six inch base map and aerial photograph of a representative section of the River Boyne, displaying anastomosing channels.

Boyne River, Trim



Boyne River, Trim



MEATH - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	St. Gorman's Spring
Other names used for site	St. Gorman's Well, Hotwell House
IGH THEME:	IGH 16 (Hydrogeology)
TOWNLAND(S)	Ballynakill
NEAREST TOWN	Summerhill
SIX INCH MAP NUMBER	48
NATIONAL GRID REFERENCE	274080 244200 = N 7408 4420
1:50,000 O.S. SHEET NUMBER	49 1/2 inch Sheet No. 13

Outline Site Description

Warm spring.

Geological System/Age and Primary Rock Type

Lower Carboniferous (Waulsortian) limestone.

Main Geological or Geomorphological Interest

This warm spring found northwest of Enfield reportedly covers an area of approximately 40m² during periods of high discharge. Temperatures vary between 12° and 25° depending on climate conditions and seasonal variations. The spring occasionally overflows into an adjacent swamped area from where it is channelled into a local ditch drainage network. The substratum is primarily composed of large limestone fragments and gravel. St. Gorman's Spring is described as being seasonal, completely drying up towards the end of the summer.

Site Importance

This spring is a very important example of the warm spring province of the Kildare-Meath border area in northwest Leinster. As it is one of the highest temperature warm springs, well studied and the least disturbed in the Leinster province, and probably in the whole of Ireland, it is to be proposed as an NHA. It should also be listed as a County Geological Site in Meath.

Management/promotion issues

The spring lies within the grounds of the aptly named Hotwell House. As this site is on private land it is not suitable for general promotion without first contacting the owner.



Left: A view of St. Gorman's Spring, taken in February.

Right: Steam rising from St. Gorman's Spring. This is generated by the geothermal processes that heat the water to as much as 25°. Photo taken in February.

Photos by Percy Foster

St. Gorman's Spring

