

CORK - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Gortnabinna		
Other names used for site			
IGH THEME	IGH10 Devonian, IGH2 Precambrian to Devonian		
	Palaeontology		
TOWNLAND(S)	Gortnabinna		
NEAREST TOWN/VILLAGE	Béal Átha an Ghaorthaidh (<i>Ballingeary</i>)		
SIX INCH MAP NUMBER	69		
ITM CO-ORDINATES	516220E 571280N		
1:50,000 O.S. SHEET NUMBER	79	GS1 BEDROCK 1:100,000 SHEET NO.	21
GIS CODE	CK052		

Outline Site Description

Roadside section of Old Red Sandstone outcrops, containing burrow-like trace fossils.

Geological System/Age and Primary Rock Type

Bedrock comprises fluviatile purple siltstone and sandstone of the Birdhill Formation and is part of the Old Red Sandstone succession of the Munster Basin. The type-section for the Birdhill Formation is in the Shalany Valley, situated 14 km west of Gortnabinna, along-strike (WSW-ENE), and is of Middle Devonian age (393 to 385 million years ago).

Main Geological or Geomorphological Interest

Beaconites-like burrows have been identified in the fluviatile sediments. The burrows were some of the first trace fossils (ichnofossils) to be described in Old Red Sandstone rock of the Munster Basin and were discovered in what was then fresh outcrop exposed following road-widening works in the mid-1980s. Although deformed, the morphological features are described as being well preserved and exhibiting many differences to *Beaconites barratti*, despite their comparable size. The burrows (present in both cross-section and burrow-top section) have been interpreted as having been produced by lungfish, although the identification remains provisional as no skeletal parts have been found preserved. Four facies have been described in the 45 m roadside section: (1) sheet-flood deposits, (2) ephemeral stream channels, (3) marginal sheet-flood deposits and (4) low-energy settling of fine overbank silts. The sedimentary sequence is interpreted as a forming from sheet-flooding events in a distal part of a terminal fan. Polygonal mud-cracks have been identified on upper surfaces of some units, as well as root impressions within the sandstone units. The site is situated in the core of a major upright, westward-plunging regional anticline. The burrows occur in Facies 1 and 4.

Site Importance – County Geological Site; recommended for Geological NHA

This is an important County Geological Site owing to the presence of burrow-like features, polygonal-cracks (indicating periodic drying out and aerial exposure of sediments), and rhizocretes (indicating root systems). Together with the four distinct lithological units (facies) they combine to provide an insight into the palaeoenvironment that prevailed here during Middle Devonian times.

Management/promotion issues

The Gortnabinna site is situated about 5 km north of Béal Átha an Ghaorthaidh beside a series of bends in the road, overlooked by steep rock outcrop. The features of interest are not easily recognisable and are situated near the road edge. Hence, the site is not deemed suitable for public promotion, but is a valuable site for research on the palaeoenvironment of the Munster Basin and structural development of this part of southwest Ireland.



Birdhill Formation on the northside of L3402 road, view eastwards. Burrows A and B shown below.



Cross-section burrow (A) visible in outcrop by roadside.



Cross-section burrow (B) visible in outcrop by roadside.



Gortnabinna L3402 roadside outcrop viewed looking west from memorial plinth.

