

WEXFORD - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Booley Bay		
Other names used for site			
IGH THEME	IGH2 Precambrian to Devonian Palaeontology		
TOWNLAND(S)	Booley, Ballinphile		
NEAREST TOWN/VILLAGE	Fethard		
SIX INCH MAP NUMBER	49		
ITM CO-ORDINATES	674925E 605780N		
1:50,000 O.S. SHEET NUMBER	76	GSI Bedrock 1:100,000 Sheet No.	23

Outline Site Description

Coastal rock exposures and cliffs.

Geological System/Age and Primary Rock Type

The rocks are of Upper Cambrian age, classed as the Booley Bay Formation, and are thin bedded, repetitive alternations of siltstone and mudstone.

Main Geological or Geomorphological Interest

Booley Bay has rocks with two types of disc shaped fossils that are part of the Ediacaran or Vendian fauna. This association of extinct fossils is known from a number of places around the world and is from the end of the Precambrian period and the start of the Cambrian when the first multicellular organisms with hard shells appear in the fossil record. Independent dating using microfossils, at Booley Bay, suggested this is the youngest such fauna in the world (about 515 million years old from the youngest part of the Cambrian) and the style of preservation suggests these organisms in fact had hard outer walls. The preservation of these fossils is as casts. At Booley Bay, the fine preservation is sufficient to determine fine details of the organisms. It is apparent that these creatures had a rigid outer wall, contrary to earlier views that the Ediacaran biota comprised soft bodied forms, of probable coelenterate affinities. This outer wall and other characteristics throw doubts on the coelenterate nature, and the phyla they belong to is uncertain. However more recent research has argued they are unrelated to the Ediacaran fauna at all.

The site itself is critical in that these fossils must be examined in situ. Although a specimen of *Ediacara booleyi* and two slabs with *Nimbia occlusa* have been lodged in the Geological Survey of Ireland fossil collection, most specimens are impossible to remove without destruction and on no account should collection be attempted. Unfortunately extensive damage has already occurred, indicating whole bed scale removal probably by commercial fossil collectors. Hammering anywhere near the fossils is unnecessary, and all steps to preserve them for the future should be undertaken. Some collecting of fragmentary material on loose blocks along the coastal section has taken place and new localities for the fossils identified by Tony Nicholas formerly of UCC Geology Department. This material has been deposited in the GSI.

Site Importance – County Geological Site; recommended for Geological NHA

The Booley Bay Ediacaran fauna is new and unique in Irish geology, and is of international importance. It is also the subject of ongoing current research into the biological affinities, preservation and other aspects of the fossils, by different teams. Consequently the site is very important and has been recommended to NPWS for geological NHA status.

Management/promotion issues

Most material is irremovable without damage and SHOULD BE LEFT UNTOUCHED BY ALL PERSONS. Some damage was reported in 1999. Examination of the site indicated that half of one main bed with many of the figured specimens has been removed in a manner suggesting commercial fossil collectors. Ideally, a ban on all collecting should be in place, unless it is for rescue purposes, with permit from NPWS only given on advice from GSI.



A panorama view of the cliffs between Booley Bay and Dollar Bay.



Steeply dipping, thin bedded rocks are seen in cross section in the cliff exposures.



Steeply dipping, thin bedded rocks are seen in plan view in the foreshore exposures.



Panorama view of the cliffs in the north side of Dollar Bay.



Numerous sedimentary structures are seen as well as the rare fossils.

