CORK - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Ballybeg Quarry**
Other names used for site	Glenstone Quarries
IGH THEME	**IGH3 Carboniferous to Pliocene Palaeontology, IGH8 Lower Carboniferous**
TOWNLAND(S)	**Ballybeg West, Grange East**
NEAREST TOWN/VILLAGE	**Buttevant**
SIX INCH MAP NUMBER	**17, 24, 25**
ITM CO-ORDINATES	**553925E 607285N (centre of quarry)**
1:50,000 O.S. SHEET NUMBER	**73 GSI BEDROCK 1:100,000 SHEET NO. 21**
GIS CODE	**CK005**

Outline Site Description
This site comprises an extensive quarry cut into a long, prominent, steep-sided limestone ridge, which is flanked on two sides by glacial meltwater channels.

Geological System/Age and Primary Rock Type
The bedrock comprises Lower Carboniferous (359-323 Ma) fossil-rich, 'Waulsortian' limestones, deposited as reefs in open marine conditions. The ridge has been shaped and moulded during the Quaternary Period (Ice Age), both by glacier ice abrading the ridge top and flanks, and by meltwater eroding channels on either side of the feature.

Main Geological or Geomorphological Interest
Ballybeg Quarry has not been operational for some time (at time of writing, 2021), but historically produced stone for aggregates, chippings, lime dust, screenings, and drainage stone. In places the limestone exposed is quite chert-rich.

The Waulsortian limestone rocks are common in Ireland, representing a phase of submarine bank development during the early Carboniferous. These carbonate build-ups are rich in (now lithified) lime mud, contain a shelly, marine fossil fauna that generally lack any sign of a rigid supporting framework. As Waulsortian banks grew and developed they generated a complex topography on the sea floor. Thus, lateral facies variation is common as a result: the centre, or core, of individual mounds is typically represented by massive, or poorly-bedded, bank facies. This may pass laterally through flank facies (around the periphery of mounds) and into laterally equivalent off-bank facies, which is generally composed of interbedded argillaceous limestones, shales and cherts.

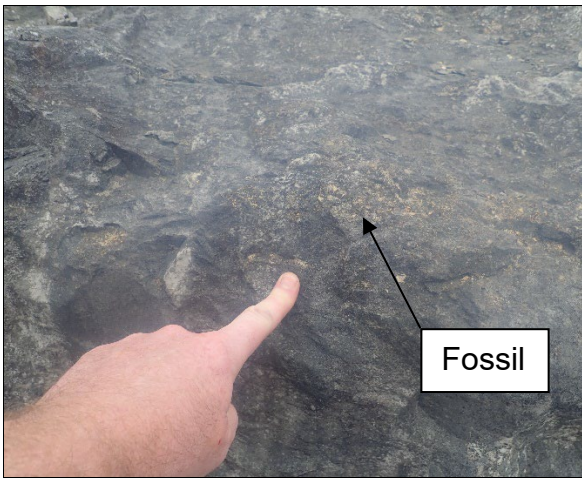
The limestone in Ballybeg Quarry include both reef and off-reef units, reflecting environments that existed at a number of localities on the ancient sea floor. This variation in depositional environment is also recorded by variations in the types of fossils found in different rock units across the quarry area. Beds of bryozoa, animals that actually lived on reefs, are common in the east of the quarry close to the N20 road, while stromatactis fossils, which lived off the reef, are present in the west.

Site Importance – County Geological Site
This County Geological Site is an important representative site exhibiting fresh and extensive exposures of Waulsortian limestone. The fact that both on- and off-reef facies units are exhibited heightens the interest in terms of palaeoenvironmental analysis of the limestones.

Management/promotion issues
The site is securely fenced off within its own compound, and the quarry is not particularly suitable for general promotion, especially as the base of the quarry is flooded with deep water, many of the rock faces are high, and in parts they are unstable. Ballybeg Quarry is likely to be of interest primarily to geologists only.

Folded beds of limestone at the northern extreme of the quarry.

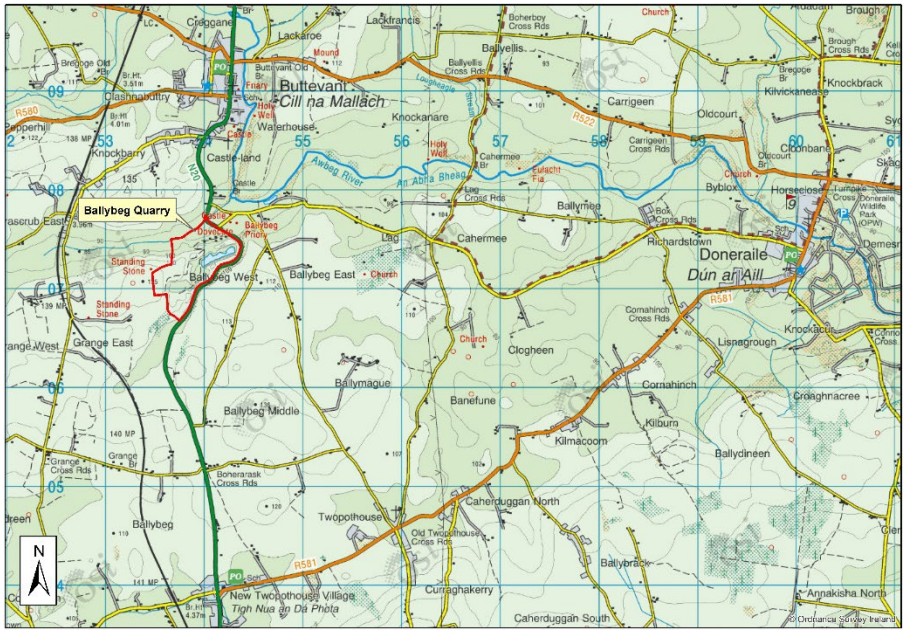
A panorama of Ballybeg Quarry, viewed from the west.

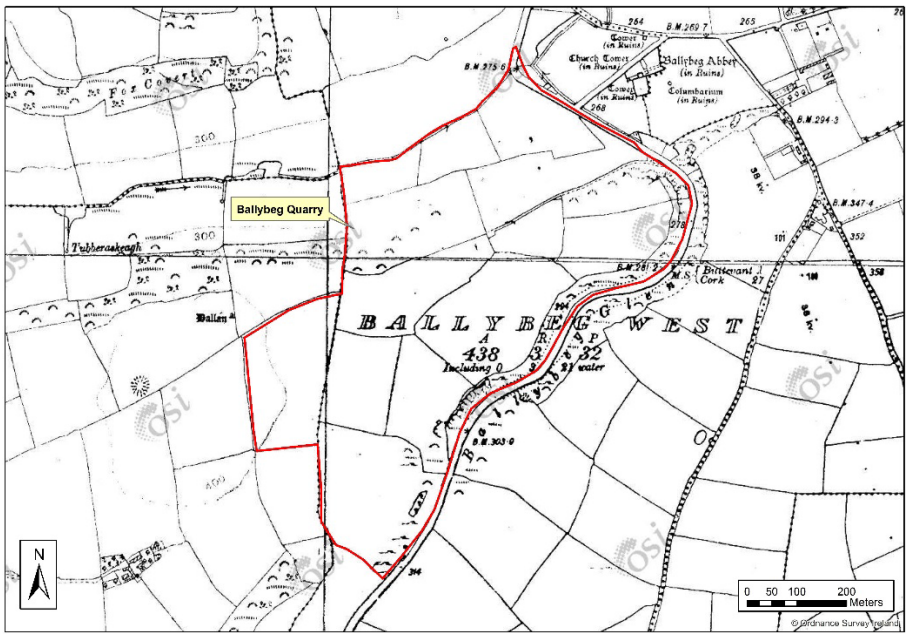


Fossils of stromatatactis at the western side of the quarry.

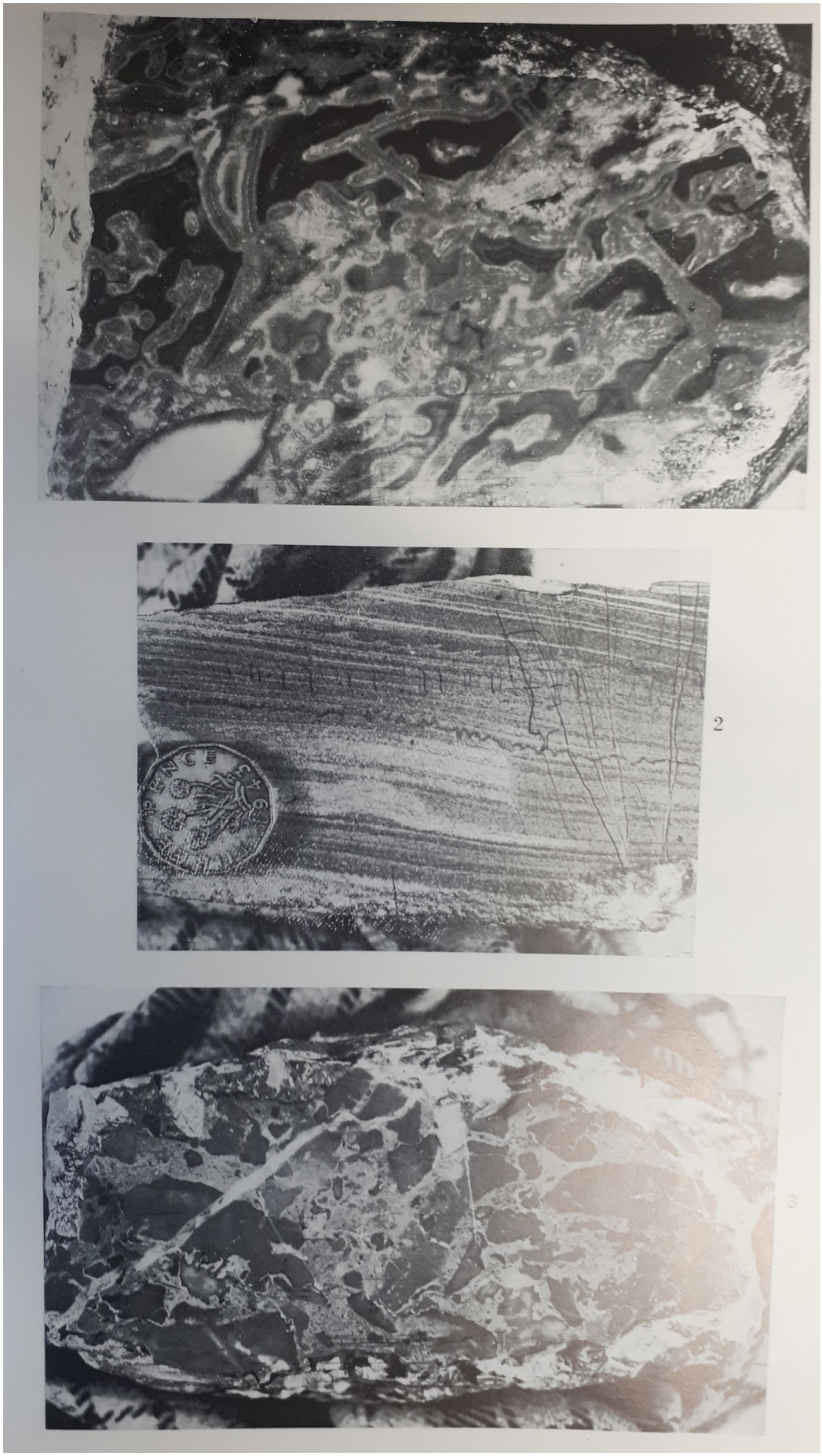
Nodule of chert blasted from the western end of the quarry.

Hennessy et al., 2023. Geological Survey Ireland.





Hennessy et al., 2023. Geological Survey Ireland.



Some of the detailed images of fossils in the limestone at Ballybeg from Mike Philcox's 1971 paper.