

GALWAY - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Gowla
Other names used for site	<i>Gabhla</i>
IGH THEME	IGH11 Igneous intrusions
TOWNLAND(S)	Gabhla
NEAREST TOWN/VILLAGE	Sraith Salach (Recess)
SIX INCH MAP NUMBER	64
ITM CO-ORDINATES	481490E 739420N
1:50,000 O.S. SHEET No. 44	GSI BEDROCK 1:100,000 SHEET NO. 10

Outline Site Description

Small outcrops in rear garden of private house and some large outcrops on moorland used for rough grazing.

Geological System/Age and Primary Rock Type

Dalradian gneiss and metagabbro of the 475 – 462 Ma Connemara Metagabbro and Orthogneiss Complex, with unusual orbicular lithology.

Main Geological or Geomorphological Interest

The Connemara Metagabbro and Orthogneiss Complex comprises felsic orthogneisses with metagabbro or metadolerite lenses. The mafic magmas were emplaced slightly earlier and in general appear to have solidified before intrusion of the felsic magma. The latter was emplaced under conditions of strong compressional stress that led to fragmentation of the mafic rocks so that the felsic rocks now contain large fragments of metagabbro and dolerite. At Gowla, as is the case for most of the metagabbro and orthogneiss complex, the felsic rocks are quartz diorite gneisses.

Gowla is also the location of an unusual example of mixing between felsic and mafic magmas. In this case, the mixing is believed to have occurred before solidification of the rock, forming an “emulsion” in which hornblendite orbs are set in a quartz-plagioclase matrix.

The original outcrop was described as being 300 m north of Geabhla Beag bridge but was not located during field work for this audit. No suitable site map exists that can relate the described outcrop to current or historical ordnance survey maps. The specified area contains abundant examples of metagabbro and metadolerite fragments in quartz diorite gneiss. A separate outcrop of orbicular rock was located behind a private house west of Geabhla Beag bridge, albeit the observed outcrop yielded less striking textures than the original outcrop (see photos).

Site Importance – County Geological Site

The orbicular rock at Gowla is an unusual variant of the felsic-mafic mixed rocks that characterize the Connemara Metagabbro and Orthogneiss Complex. There is uncertainty as to location of the originally described site, which was not located during this audit. A smaller outcrop to the rear of a private house provides a basis for including the site as a County Geological Site. The area of the original site, 300 m north of Geabhla Beag bridge, has abundant excellent examples of felsic-mafic rock mixtures.

Management/promotion issues

The site is not within any designated heritage or conservation area. It is in a private garden area some distance from the house. There appears to be no threat to the site and no requirement for specific management. Promotion is not required as the site is likely to be of interest mainly to research scientists.



View westwards of site at rear of house, outcrop in centre of photo.



Outcrop of weathered orbicular rock at rear of house; finger pointing at small ultramafic orbicules in quartz-rich matrix.



Metadolerite fragment in quartz diorite gneiss, c. 300 m north of Gabhla Beag bridge.



Boulder of orbicular rock from Gowla (courtesy P. Mohr).

