

WICKLOW - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Luggala		
Other names used for site			
IGH THEME	IGH4 Cambrian – Silurian, IGH6 Mineralogy		
TOWNLAND(S)	Ballinastoe		
NEAREST TOWN/VILLAGE	Roundwood		
SIX INCH MAP NUMBER	12		
NATIONAL GRID REFERENCE	716996E 707363N		
1:50,000 O.S. SHEET NUMBER	56	GSI 1:100,000 Bedrock Sheet No.	16

Outline Site Description

The site consists of several large outcrops flanking the public road above Lough Tay.

Geological System/Age and Primary Rock Type

The bedrock consists of schists and quartzites of the Lower Palaeozoic (Ordovician) Maulin Formation, about 300 m from their contact with the Leinster Granite.

Main Geological or Geomorphological Interest

The site is listed because of the occurrence of *coticule*, an unusual lithology that has received considerable attention both for its complex structure and its mineralogical composition. Coticules were originally described in the 19th century from Belgium where they have been mined and quarried for use as sharpening stones. The name is a derivative of the latin word for whetstone. The principal characteristic of coticule is the presence of abundant equidimensional crystals of garnet, typically a manganese (Mn)-rich type called spessartine. Garnet is a hard mineral that can act as an abrasive. Garnets within coticules are typically fine-grained, generally much less than 1 mm in diameter.

In Wicklow, the coticule comprises thin quartzite or psammite beds with abundant spessartine. The coticule layers display complex folding suggesting slumping or deformation prior to final lithification. The enrichment of coticules in Mn has been linked to their possible formation within a seafloor hydrothermal system, and it has been speculated that they may be evidence for possible metal enrichment in Lower Palaeozoic rocks in southeast Ireland. Other origins, including diagenesis, have also been suggested.

Site Importance – County Geological Site

Coticule is an unusual rock, easily overlooked in the field, particularly since the garnets are so fine-grained. The occurrences at Luggala are relatively abundant and accessible.

Management/promotion issues

The outcrops of coticule-bearing schist are mainly along the eastern side of the narrow, often heavily trafficked road. The site is within the Wicklow Mountains National Park and is not under any threat. Coticule is likely to be of interest mainly to geologists and further promotion is not recommended.



Complexly folded coticule layers within schist.



Close-up of folded coticule layer. The pink colour is typical, reflecting the red colour of the spessartine garnet.



