DONEGAL - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE Other names used for site IGH THEME TOWNLAND(S) NEAREST TOWN/VILLAGE SIX INCH MAP NUMBER ITM CO-ORDINATES 1:50,000 O.S. SHEET NUMBER: 11 GIS Code DL045 Srath Loingsigh Stralinchy IGH5 Precambrian Stralinchy Glenties 75 587322E, 895341N GSI BEDROCK 1:100,000 SHEET NOs: 3, 4

Outline Site Description

Mostly rough pasture, bog and moorland with access along farm track.

Geological System/Age and Primary Rock Type

The bedrock at Stralinchy straddles the boundary (c. 630 Ma) between the Islay and Easdale Subgroups of the Dalradian Argyll Group. The lowermost unit is the Slieve Tooey Quartzite Formation (Islay Subgroup) which consists of massively-bedded quartzite. It is overlain by the Cranford Limestone Formation (near the base of the Easdale Subgroup) which consists of a basal conglomerate (or diamictite) and overlying dolomitic limestone. Pelitic schists of the overlying Termon Formation complete the succession.

Main Geological Interest

The top of the Slieve Tooey Quartzite Formation at Stralinchy contains clasts of quartzite, with deformational fabrics, that were reworked within the upper part of the formation prior to deposition of the overlying strata. Similar clasts are found in the overlying Cranford Limestone Formation conglomerate (several metres to tens of metres thick), including quartzite, carbonate, schist, pelite and others in a carbonate or quartzitic matrix. This suggests that the Slieve Tooey Quartzite Formation and underlying sequences were metamorphosed and deformed prior to deposition of the overlying strata and that the boundary between them is an orogenic unconformity. The basal contact of the Cranford Limestone Formation is sharp and discordant to the underlying Slieve Tooey Quartzite Formation, consistent with the interpretation of this boundary as an unconformity.

The conglomerate at the base of the Cranford Limestone Formation has most recently been reinterpreted, partly as a result of carbon isotope studies, as a diamictite, a glacial sediment possibly deposited during the Marinoan glaciation around 635 Ma. Overlying the conglomerate is the Cranford Limestone proper, a several 100m-thick sequence of dolomitic limestone and thin-bedded limestone.

Site Importance: County Geological Site; recommended as Geological NHA

Stralinchy is a key locality in the interpretation of Dalradian geology in Donegal. The Dalradian has long been considered to represent a continuous stratigraphic sequence spanning c. 170 million years, but recent evidence has suggested that older parts of the Dalradian have a more complex structural history and may have undergone Neoproterozoic deformation or orogenesis. The site is unique in Ireland as elsewhere the relationship of the Slieve Tooey Quartzite Formation with the overlying Cranford Limestone Formation is obscured along the Swilly Slide. The site is of international importance as possible evidence for the Marinoan glaciation within the Dalradian Supergroup.

Management/promotion issues

This site is mainly of interest to the academic geologist. Access is easy along the farm lane and the landowner is co-operative regarding site visits. There is however, scope for promotion to the general public as a key site in the interpretation of Donegal's geology, through such media as publications and guides.



Possible diamictite at base of Cranford Limestone Formation (on right) overlying quartzite beds of the Slieve Tooey Formation (left).



Dolomite beds (Cranford Limestone Formation) stratigraphically overlying diamictite.





