

GALWAY - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Knockanbaun Ridge
Other names used for site	Dereen
IGH THEME	IGH5 Precambrian, IGH6 Mineralogy
TOWNLAND(S)	Deereen, Knockanbaun, Poundcarton, Lee, Gowlaunlee, Bunasviskaun
NEAREST TOWN/VILLAGE	Leenaun
SIX INCH MAP NUMBER	12, 25
ITM CO-ORDINATES	490460E 756160N (Knockanbaun ridge)
1:50,000 O.S. SHEET NUMBER	37, 38 GSI BEDROCK 1:100,000 SHEET NO. 10, 11

Outline Site Description

A prominent hill between the Maamturk Mountains and R336 road, at the northwest end of the Maam Valley.

Geological System/Age and Primary Rock Type

Bedrock across the hill is predominantly Ballynakill Schist Formation bedrock, and part of the Connemara Dalradian (Argyll Group) suite of rocks. These rocks were deposited on the deep ocean floor as mixtures of mud, sand and gravels (turbidites) around 700 million years ago (Neoproterozoic), and later metamorphosed around 456 million years ago during Ordovician times, forming psammites and semi-pelitic wackes, and pebble-rich semi-pelites, collectively called schist.

Main Geological or Geomorphological Interest

Cross-cutting through the schists on Knockanbaun are veins of mineral assemblages that were emplaced into the bedrock towards the end of the main metamorphic events associated with the Connemara Dalradian. The mineral assemblages and textures at Knockanbaun provide an insight into the metamorphic conditions and events, which are linked to magmatism in the southern part of the Connemara region. A few veins at Knockanbaun exhibit a typical greenschist facies mineral assemblage with quartz, coarse muscovite, sericitized albite and fine aggregates of chlorite, all of which indicates that the final stages of local magmatism and metamorphism continued into the final D4* (deformation 4) folding event, when most of Connemara had otherwise begun to cool at that time. Rb-Sr radiometric dating of muscovite minerals in one coarse vein provided an age of 456 ±6 Ma - evidence for continued prograde metamorphism (burial and heating) during D4 deformation times. The muscovite dates acquired at Knockanbaun suggest that the D4 folding events predated the development of a major thrust fault in Connemara called the Mannin Thrust.

(* Four metamorphic deformation events have been identified in the Connemara Dalradian; the first and earliest is termed D1, and the fourth and last is termed D4.)

Site Importance – County Geological Site

This is an important county geological site in terms of understanding the geochronology of magmatism and metamorphism in the Connemara region. Dating of the minerals at Knockanbaun support the hypothesis that the overall duration of magmatism in southern Connemara lasted from 490 to c. 460 million years ago.

Management/promotion issues

Situated between R336 Maam-Leenaun road and Letterbreckaun (Maamturks), the hill can be accessed from the Glenlosh Valley. At one time, a path from the small road led across a footbridge spanning the Failmore River. Much of the footbridge was washed away in the past decade, and a dry-footed river crossing is no longer possible. For these reasons the site is not suitable for public promotion.



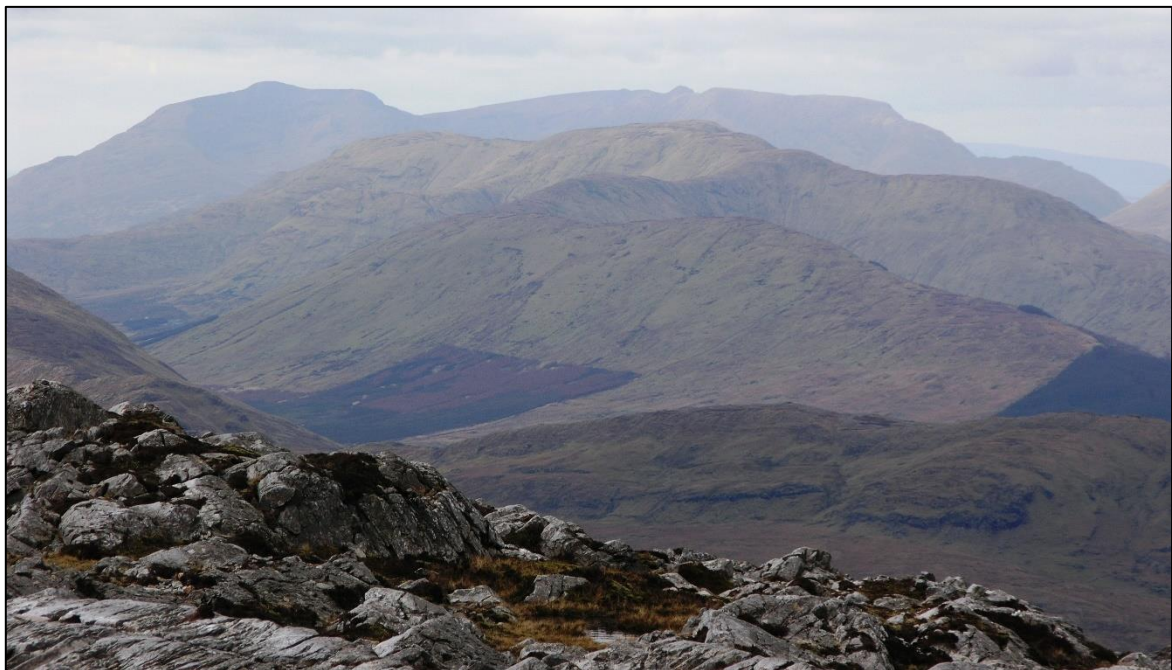
View of Knockanbaun Hill looking northeast from the Glenlosh Valley road.



Pebbly semi-pelites and coarse psammites outcrop on west side of hill at Dereen.



Quartz vein and quartz pebble beds outcropping on the Knockanbaun ridge.



Knockanbaun ridge viewed from Corcogemore (Maamturks) looking north. Mweelrea Mountain in background.

