

CARLOW - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Aclare		
Other names used for site			
TOWNLAND(S)	Aclare		
NEAREST TOWN	Myshall		
SIX INCH MAP NUMBER	17		
NATIONAL GRID REFERENCE	284700 160000, = S 847 600		
1:50,000 O.S. SHEET NUMBER	61,68	1/2 inch Sheet No.	19

Outline Site Description

A number of fields with surface boulders at their margins, overlying the proven deposit below ground.

Geological System/Age and Primary Rock Type

The pegmatites are associated with the intrusion of the Leinster Granite approximately 400 million years ago.

Main Geological or Geomorphological Interest

Extensive drilling at Aclare House has revealed the presence of the largest lithium-bearing pegmatite deposit in the Leinster region. Pegmatites are very coarse-grained igneous rocks of granitic composition. They usually occur in association with intrusive igneous rocks, most commonly felsic intrusions (e.g. granite). Most economically important pegmatites, although in close proximity to intrusions, actually occur in the surrounding [metamorphic aureole](#). Aclare, for example, lies approximately 1km from the granite contact. The main lithium-bearing mineral present is spodumene, a white mineral up to 0.3m in length at this locality. Other accessory minerals include Bertrandite, Cassiterite, Columbite-Tantalite, uranium-bearing Microlite, lithian Muscovite and Phosphosiderite. There is still some controversy as to the formation of the Li-pegmatites in this area. The pegmatite at Aclare is one of a series of Li-bearing pegmatites flanking the Leinster Granite between Borris and Shillelagh. Despite numerous boulders there are no natural outcrops of these spodumene pegmatites. Drilling has proved an invaluable source of information. The lithium deposits only occur in the Lower Ordovician [metasediments](#) and [metavolcanics](#) of the Ribband Group and within the East Carlow Deformation Zone. Whilst the development of the lithium deposits is associated with the intrusion of the Leinster Granite it is not clear to what extent. Some researchers believe that the lithium-enriched pegmatites formed from later stage lithium-enriched magma associated with the emplacement of the granite. Others attribute the enrichment to the melting of surrounding lithium-rich sediments. Movement of the East Carlow Deformation Zone also played an important part in their formation. Whatever the origin it seems as though the geology of the Carlow area was just right to accommodate the lithium pegmatites.

Other significant bedrock spodumene pegmatites occurrences in Carlow are known from Orchard, Coolasnaghta and Seskinnamadra.

Site Importance

The site is of National importance and is likely to be proposed for NHA designation under the IGH6 Mineralogy theme, and the IGH15 Economic Geology theme of the GSI's IGH Programme.

Management/promotion issues

Although the deposit has been extensively explored, and is of uneconomic extent for mining purposes, it still provides a geological topic of debate, concerning the origin and emplacement of the pegmatites. Although there are numerous boulders around the field margins showing pegmatites, there is little to show a non specialist. This and the fact that the site is on private farmland indicates it is not suitable for significant promotion.



A view over the site, the two main fields in the middle distance.



A typical collection of boulders at the edge of the fields.



A close up of a pegmatite boulder showing the very large crystals of feldspar.



A spodumene sample (the purple mineral), actually from one of the other main localities in the district.

ACLARE



