

**Site Name: Penygarnedd Quarry**

**Grid Reference: SJ 109238**

**RIGS Category:** Scientific

**Earth Science Category:** Ordovician (Caradoc) Stratigraphy

**Geology 1:50,000:** BGS Sheet 137, Oswestry

**RIGS Statement of Interest:**

This part of the Ordovician stratigraphic column, especially the Nod Glas Formation, is very poorly exposed in eastern Wales. It is represented at the Gwern-y-Brain SSSI [SJ 218127 area] but much of the rock at that site has become degraded and hidden by brush-wood. An alternative, back-up site is required. This Penygarnedd\* RIGS has some potential for this purpose, but is itself in very poor condition and needs major conservation efforts (see Additional comments box, below).

This stratigraphic section at this RIGS and the SSSI are of particular academic interest for several reasons: its top coincides with the boundary between the Caradoc and Ashgill epochs; the older rocks contain volcanic ash, suggesting a distant link with the vigorous volcanic activity in Snowdonia at that time; the Pen-y-garnedd Shales, of Caradoc age, and the local representatives of the Nod Glas Formation which is distributed widely in Wales, may have been deposited on a shallow platform instead of in deeper water as in more westerly parts of the Welsh Basin; several of the rock units, notably the Pen-y-garnedd Shales, contain abundant nodules of phosphorite (calcium phosphate) that was economically important in the late 19th and early 20th centuries; and there are breaks at the base of the Pen-y-garnedd Shales and base of the Ashgill, denoting changes in sea-level in this region.

\* Spelling on recent OS maps. `Pen-y-garnedd' in Wedd et al. (1929)

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