

**CYNGOR CEFN GWLAD CYMRU
COUNTRYSIDE COUNCIL FOR WALES**

SITE OF SPECIAL SCIENTIFIC INTEREST CITATION

POWYS

GWERN Y BRAIN DINGLE

Date of Notification: 1963, 1983

National Grid Reference: SJ 218127

O.S. Maps: 1:50,000 Sheet number: 126
1:25,000 Sheet number: SJ 21

Site Area: 1.1 ha

Description:

This is the best tectonically undisturbed section through the highly fossiliferous Nod Glas shales of Onnian age, here showing clear relations with the over and underlying sediments. These are the only Nod Glas sediments to contain an extensive shelly benthic fauna. One of very few mixed graptolitic and shelly assemblages in the Caradoc of Wales and the Welsh Borders, enabling close correlation between the two normally divorced zonal schemes and therefore a key site in biostratigraphic studies of the Upper Ordovician.

In layman's terms, the interest of this site may be expressed more simply, and such a statement is provided below. This should not be taken as definitive and further information as to details of the interest can be obtained from the Countryside Council for Wales.

During the Caradoc portion of geological time, some 425 million years ago, virtually all of Wales lay beneath the sea. Much of the area which is now mid and north Wales lay beneath deep water, in a sea known as the Welsh Basin, in which thick deposits of muddy sediment accumulated. To the south-east lay an area of rather shallower water, in which carbonate-rich sediments, which later consolidated to form limestones, were laid down. The animals which lived in these contrasting marine environments were quite distinct, as can be seen from the fossils which occur in the black shales and limestones laid down in these two areas. Although both the black shales and the limestones were laid down at about the same time, in different parts of the ocean basin, geologists have experienced difficulties in relating the different rock sequences, since the differing environments supported different assemblages of animals. However, the rocks seen at Gwern y Brain contain a mixture of fossils, some of which are also found in the Welsh Basin and in the shallower shelf area. This has enabled geologists to improve substantially their understanding of the relationships of the rocks laid down in various parts of Wales during late Ordovician times.

*This document is **NOT** a definitive legal version and has been formatted, updated and partially edited for use on the CCW Web site. This document should not be used in any legal proceedings, public enquiry or any other hearing or appeal. If you require a full legal copy of the document please contact CCW in writing.*