

Site Name: Llanfawr Upper Quarry Grid Reference: SO 0655 6178

RIGS Category: Educational & Scientific

Earth Science Category: Ordovician (Caradoc) Stratigraphy and Igneous

Geology 1:50,000: BGS 178 and 179 Llanilar and Rhayader

RIGS Statement of Interest:

The quarry preserves an extraordinary fossil fauna (Botting et al., 2004) of great international importance, and is one of four significant soft-bodied faunas in the Ordovician worldwide. Included in the biota are sponges (Botting, 2004), hydrozoans, echinoderms, nautiloids with encrusting organisms, rare arthropods, worms and problematic creatures, but only graptolites (Elles, 1939; Hughes, 1989) are easily visible at the outcrop. The fossils are preserved in iron pyrite, hosted in black mudstones of basal Caradoc (basal Upper Ordovician) age, immediately adjacent to a quarried-out dolerite laccolith, an igneous body that is also exposed in the sides of the quarry. The thin zone of contact metamorphism of the mudstone caused by the dolerite is completely exposed and can be easily studied, and the fine grain size of the sediment has retarded weathering by water percolation, so that pristine sections through the sedimentology can theoretically be obtained. The site has been used for generations by collectors and field trips, due to its exquisitely-preserved graptolites, and abuts the main Llanfawr Quarries SSSI (Owens, 1999), where abundant trilobite remains have been collected. Overall, this RIGS is one of the most important palaeontological sites in Wales.

Surveyed by: J. P. Botting