Site Name: Ogôf-fach Road Section Grid Reference: SH 73810039

RIGS Category: Educational & Scientific
Earth Science Category: Structural Geology
Geology 1:50,000: BGS Sheet 163, Aberystwyth

RIGS Statement of Interest:

The cutting adjacent to the A 487(T) Aberystwyth-Machynlleth road is of regional importance because it provides a spectacular, easily accessible example of a Caledonian fold pair. Such structures have proved to be of great significance in the interpretation and understanding of the tectonic evolution of the Welsh Basin during the late Silurian - early Devonian Acadian phase of the Caledonian Orogeny.

The folds are developed within a sequence of interbedded, turbiditic sandstones and mudstones belonging to the Lower Silurian Devil's Bridge Formation (Llandovery Series, Telychian Stage). Well-exposed ripple marks on bedding planes reveal that these sedimentary rocks were derived from the east or north-east, and it has been suggested that the formation of the turbidites reflects an increase in sediment supply rates induced by faulting along the eastern margin of the Welsh Basin. The sedimentary rocks have been deformed into a complex array of mesoscale folds that are cut by a NE-striking cleavage dipping SE at about 56º. The western anticlinal fold is dominated by shallow dipping limbs, whilst the eastern anticlinal fold has a vertical east limb. The latter is cut by two faults, the older of which clearly pre-dated the main fold forming deformation since it is itself deformed. A second younger, steep fault also occurs on the vertical east limb and is closely associated with an array of quartz-filled tension gashes.

Investigations at this locality suggest that the folds were tightened as much as the rocks would allow until they failed with the development of a steep fault and tension gash array. Such deformation is thought to represent one stage in a continuum of deformation, the ultimate product of which may be the development of large-scale thrusting of the type seen 750 m farther to the south-west at the road cutting near Gelli-Goch.

Surveyed by: Dr Bob Mathews