



South Wales RIGS Group Site Record

RIGS Description

SECTION A

General	South Wales
Site Name: Aberedw Rocks	File Number: RAW_JRD_16
RIGS Number: 709	Surveyed by: R A Waters and J R Davies
Grid Reference: SO 0800 4660	Date of Visit: 11 th October 2010
RIGS Category: Scientific, educational	Date Registered:
Earth Science Category: Stratigraphical, sedimentological,	Owner:
Site Nature: Natural crags and quarry	Planning Authority: Powys County Council
Unitary Authority: Powys County Council	Documentation prepared by: R A Waters
OS 1:50,000 Sheet: 147	Documentation last revised: 28 th March 2012
OS 1:25,000 Explorer Sheet: 188	Photographic Record: Attached
BGS 1:50,000 Sheet: E196	
<p>RIGS Statement of Interest:</p> <p>Aberedw Rocks is part of a network of sites demonstrating the evolution of the south-east margin of the Lower Palaeozoic Welsh Basin during the mid to late Silurian. It has been proposed as a RIGS as it provides an accessible, semi-continuous section in the uppermost part of the Cwm Graig ddu Formation and most of the late Ludlow, Aberedw Formation.</p> <p>The section is the type locality for the Aberedw Formation and is well known from the geological literature for its stratigraphy and fossils and provides an important data point when describing the geological history, sedimentology and palaeontology of the Late Silurian in mid Wales. It shows a range of muddy sandstones and sandstones with numerous sedimentary structures, including fossil burrows, that provide information on the depositional environment of the formation.</p> <p>It provides an excellent section for those interested in scientific research into the stratigraphy, palaeontology and sedimentology of the late Silurian, It also provides a good section for students to study burrowed sandstones.</p>	

Geological setting/context:

Aberedw Rocks is a series of natural crags on the eastern side of the Wye valley, south of Builth Wells. It provides a very accessible, semi-continuous, 120 m-thick section through the uppermost part of the Cwm Graig ddu Formation and most of the overlying, late Ludlow, Aberedw Formation. The section is the type locality for the Aberedw Formation. The dip is roughly horizontal throughout. The section was first described by Straw (1937), who erected a stratigraphy based on a mixture of lithology and fauna. More recently, the section has been described in a field guide by Cherns (1993). Since then, the area has been remapped by the British Geological Survey (2005) and a revised lithostratigraphy published (Schofield et al. 2004).

The base of the section is seen in cliffs on the south side [SO 0774 4663] of a NW/SE orientated head-filled gully, 200m south of Pontsioni. Here, the very gradational transition from the Cwm Graig ddu up into the Aberedw Formation (Orthonota Mudstones of Straw 1937) is seen. The Cwm Graig ddu Formation comprises platy, thinly flaggy, muddy, calcareous, very fine-grained sandstones that exhibit lenticular bedding. The sandstones are intensely burrowed, so the lenticular bedding is not primary and probably the result of pressure solution. Also present are scattered thin sandstones up to 3 cm thick with parallel and cross-lamination that occur every 0.3 - 0.5 m. Straw (1937) reports poorly preserved '*Monograptus leintwardinensis*' and the ostracod '*Beyrichia lauensis*' from here suggesting the *leintwardinensis* Biozone but this fauna was not replicated during the BGS (2005) survey. However, Cherns (1993) reports brachiopods and trilobites characteristic of the Upper Leintwardine Formation of the Ludlow Anticline, providing further evidence of a *leintwardinensis* Biozone age. As the gully is ascended, crags on the northern side show the lenticular bedding becoming thicker and rubbly levels appearing, which is typical of the Aberedw Formation. Thin sandstones exhibiting tractional structures are still present in packets. Thin disturbed beds caused by slumping are locally seen as at [SO 0786 4662] on the north side of the gully, where a 2 m thick unit exhibits bedding plane discontinuities and chaotic bedding. Between the eastern end of the gully [SO 0794 4659] and another crag-lined gully [SO 0816 4671], 220 m to the ENE, there is a gap in the section. In the latter NNW/SSE orientated gully, the Aberedw Formation comprises thinly to medium flaggy, lenticular bedded, intensely bioturbated, fine-grained muddy sandstones with scattered master bedding planes. The brachiopod *Dayia navicula* is locally abundant.

In a line of crags [SO 0824 4652], just south of the end of the gully, the formation contains three sheet sandstones up to 30 cm thick. Each sandstone has a sharp base and a burrowed top and internally exhibits HCS and unidirectional cross-lamination. This suggests that the overlying Cae'r mynach Formation, which is characterised by abundant sheet sandstones, lies not far above these crags, that represent the highest strata in the section.

The Aberedw Formation represents offshore shelf deposition. The thin sandstones in the lower part and the sheet sandstones in the upper part are storm generated in origin. However, the fact that most of the succession is intensely bioturbated suggest that the formation was deposited only just within storm wave base but became shallower towards the top. The formation represents part of the late Ludlow progradation that resulted in the occlusion of the Welsh Basin and the deposition of

the Old Red Sandstone.

References:







British Geological Survey. 2005. *Builth Wells. England and Wales Sheet 196, Solid geology, 1: 50 000*. British Geological Survey: Nottingham

Cherns, L. 1993. The Silurian of the Wye Valley, south of Builth. 301-310 in *Geological Excursions in Powys*. WOODCOCK, N H and BASSETT, M G. (editors) (Cardiff: University of Wales Press, National Museum of Wales)

SCHOFIELD, D I, DAVIES, J R, WATERS, R A, WILBY, P R, WILLIAMS, M and WILSON, D. 2004. Geology of the Builth Wells District – a brief explanation of the geological map. *Sheet Explanation of the British Geological Survey. 1:50 000 Sheet 196 Builth Wells*

STRAW, S.H.1937. The higher Ludlovian rocks of the Builth district. *Quarterly Journal of the Geological Society, London*. Vol. 93, 406-56

SECTION B

PRACTICAL CONSIDERATIONS: Please score Accessibility and Safety Red Amber or Green			
Accessibility:			X 
Comment: Site is on open access land that can be accessed via public footpath or by crossing private land (with permission) at Pontsioni.			
Safety:			X 
Comment: Care needed crossing bracken covered steep slopes. Vertical faces of crags and quarry need to be examined for stability.			
Conservation status: Not known			

OWNERSHIP/PLANNING CONTROL: Owner/tenant: Unknown Planning Authority: Powys County Council Planning status/constraints/opportunities: Not known

CONDITION, USE & MANAGEMENT: Present use: Open public access moorland, used for sheep grazing and one disused quarry. Site condition: Trees and bushes obscure some faces on lower slopes, higher slopes covered by bracken in Summer which makes access locally difficult. Potential threats: Increasing vegetation obscuring faces. Site Management: suggest that selected parts of the site are periodically cleared of vegetation
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SITE DEVELOPMENT: Potential use (general): Potential use (educational): It is a key section for those interested in scientific research into the stratigraphy, palaeontology and sedimentology of the late Silurian. It also provides a good section for students to study burrowed shelf sandstones.
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Other comments:

Photographic Record



Slump unit in Aberedw Formation



General view of lower gully near base of section.



General view of upper gully in Aberedw Formation



Platy, lenticular bedded, muddy bioturbated sandstone of the Aberedw Formation with a thick sheet sandstone with HCS. Crag near top of section.