



## South Wales RIGS Group Site Record RIGS Description

**SECTION A**

General	South Wales
<b>Site Name:</b> Pales (House Quarry near Llandegley)	<b>File Number:</b> Site_DH_23
<b>RIGS Number:</b> 693	<b>Surveyed by:</b> Rhian Kendall and Adrian Humpage
<b>Grid Reference:</b> SO 1372 6407	<b>Date of Visit:</b> 15 <sup>th</sup> September 2011
<b>RIGS Category:</b> Scientific, educational	<b>Date Registered:</b>  <b>Owner:</b> Unknown <b>Planning Authority:</b> Powys County Council
<b>Earth Science Category:</b> Stratigraphic, palaeontological	
<b>Site Nature:</b> Disused Quarry	<b>Documentation prepared by:</b> Rhian Kendall
<b>Unitary Authority:</b> Powys County Council	<b>Documentation last revised:</b> 6 <sup>th</sup> March 2012
<b>OS 1:50,000 Sheet:</b> 148	<b>Photographic Record:</b> Attached
<b>OS 1:25,000 Explorer Sheet:</b> 200	
<b>BGS 1:50,000 Sheet:</b> E180 (not available)	
<p><b>RIGS Statement of Interest:</b></p> <p>The Meeting House Quarry near Llandegley is an excellent locality in which to study the sediments and fossil groups of the basin margin environment of the Early Ludlow of the Welsh Basin. The different rock types visible here illustrate alternations in background sedimentation and depositional events (turbidity flows) originating on the shelf.</p> <p>The locality is also important for its fossils and shows a pelagic (free floating) assemblage of organisms. Ostracods discovered here are of particular interest they are believed to be some of the earliest examples to have adapted to a pelagic habitat. This site was highlighted as a Potential GCR Site by the Geological Conservation Review – Silurian Stratigraphy.</p>	

**Geological setting/context:**

The Meeting House Quarry is a small disused quarry near Llandegley exposes a thick sequence through the "Llanbadarn Formation" mudstones, just below its junction with the overlying Bailey Hill Formation. The term Llanbadarn Formation used in this area but it is thought that it is a local development of the Nant Glyn Flags Group. It is an important site because exposures of this formation are relatively rare and it is an example of the offshelf, basin marginal facies and faunas of the Ludlow of the Welsh Basin. It is within the Pontesford Lineament which is part of the Welsh Borderland Fault System.

The rocks in the quarry, dip gently to the north east and the sequence is made up of silty mudstones (1-20mm thick) which are weakly graded, alternating with finely laminated carbonaceous siltstones (1-20mm thick). The mudstones are weakly bedded or may have parallel laminated or cross laminated siltstones at the bases of the units.

The carbonaceous mudstones are made up of alternating quartz rich and carbon rich laminae. This is thought to have originated from periodic influxes or silt and planktonic fallout. It is thought that the waters here were anoxic and this favoured the preservation of organic material. The lack of bioturbation also supports this.

The sequence is interpreted as interbedded units deposited by storm induced turbidity flows and laminated siltstones of hemipelagic origin.

The laminated siltstones contain fossils. Graptolites, orthoconic nautiloids and bivalves are common and easily found. The quarry has also produced ostracodes, planktic crinoids, phyllocarid crustaceans and small brachiopods. Graptolite faunas indicate that the formation is in the *scanicus* biozone.

The dominance of pelagic fauna in the sequence has led to the theory that the ostracods that occur here were also pelagic. This represents a fundamental ecological change in their lifestyles during this point of the Silurian.

**References:**

ALDRIDGE, R J, SIVETER, D J, SIVETER, D J , LAN, P D, PALMER, D, & WOODCOCK, N H. 2000. British Silurian Stratigraphy. Geological Conservation Review Series.







DIMBERLINE, A J, WOODCOCK, N H. 1987. The southeast margin of the Wenlock turbidite system, Mid-Wales. Geological Journal Vol 22.

SIVETER, D J, OWENS, R M, THOMAS, A T. 1989. Silurian Field Excursions. A Geotraverse Across Wales and the Welsh Borderland.

TYLER, J E, WOODCOCK, N H. 1987. The Bailey Hill Formation: Ludlow Series turbidites in the Welsh Borderland reinterpreted as distal storm deposits. Geological Journal Vol 22.

WOODCOCK, N H, BASSETT, M G (Eds). 1993. Geological Excursions in Powys. Central Wales.

## SECTION B

<b>PRACTICAL CONSIDERATIONS:</b> Please score Accessibility and Safety Red Amber or Green			
<b>Accessibility:</b>			X 
Comment: Parking is available in the quarry			
<b>Safety:</b>			X 
Comment: Hard hats are required as there are high faces			
<b>Conservation status:</b> There are no known conservation designations of this RIGS			

<b>OWNERSHIP/PLANNING CONTROL:</b> <b>Owner/tenant:</b> Unknown  <b>Planning Authority:</b> Powys County Council <b>Planning status/constraints/opportunities:</b> There are no known planning constraints or opportunities
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<b>CONDITION, USE &amp; MANAGEMENT:</b> <b>Present use:</b> <b>Site condition:</b> Excellent. <b>Potential threats:</b> None. <b>Site Management:</b> None. The quarry does not appear to be degenerating so current style of management should be maintained.
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<b>SITE DEVELOPMENT:</b> <b>Potential use (general):</b> This quarry is scientifically important for the understanding of the Ludlow in this part of Wales and also the evolution of the ostracodes which appear to have undergone a major shift in mode of life at this time. <b>Potential use (educational):</b> This quarry is very accessible and relatively safe environment for teaching and would be an excellent set for students and researchers.
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<b>Other comments:</b>
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## Photographic Record



General view of the quarry from the west



Cross bedded siltstones



Laminated hemipelagites and silty mudstones.