

Trip to Black Mountain Mynydd Du, Saturday 4th July 2015.

By Isabel Buckingham

On 4th July 2015 the Society had a field trip to Black Mountain (Mynydd Du) led by Dr Geraint Owen of Swansea University. While we had departed with blue sky and sunshine, it had clouded over when Geraint was picked up in Brynamman. By the first stop at Craig Derlwyn precipitation had started. This never became enthusiastic by Welsh standards, and peering to the south, we could make out coal workings and the escarpment of the Pennant Sandstone. All day we were in the Fforrest Fawr Geopark, part of the Brecon Beacons National Park and working down



Figure 2: Group at the small roadside quarry

through the strata with an excellent clear sequence of the Marros Group (Millstone Grit equivalent) to the Carboniferous Limestone.

The first site was a small roadside quarry, an exposure of the so called "Farewell Rock" the

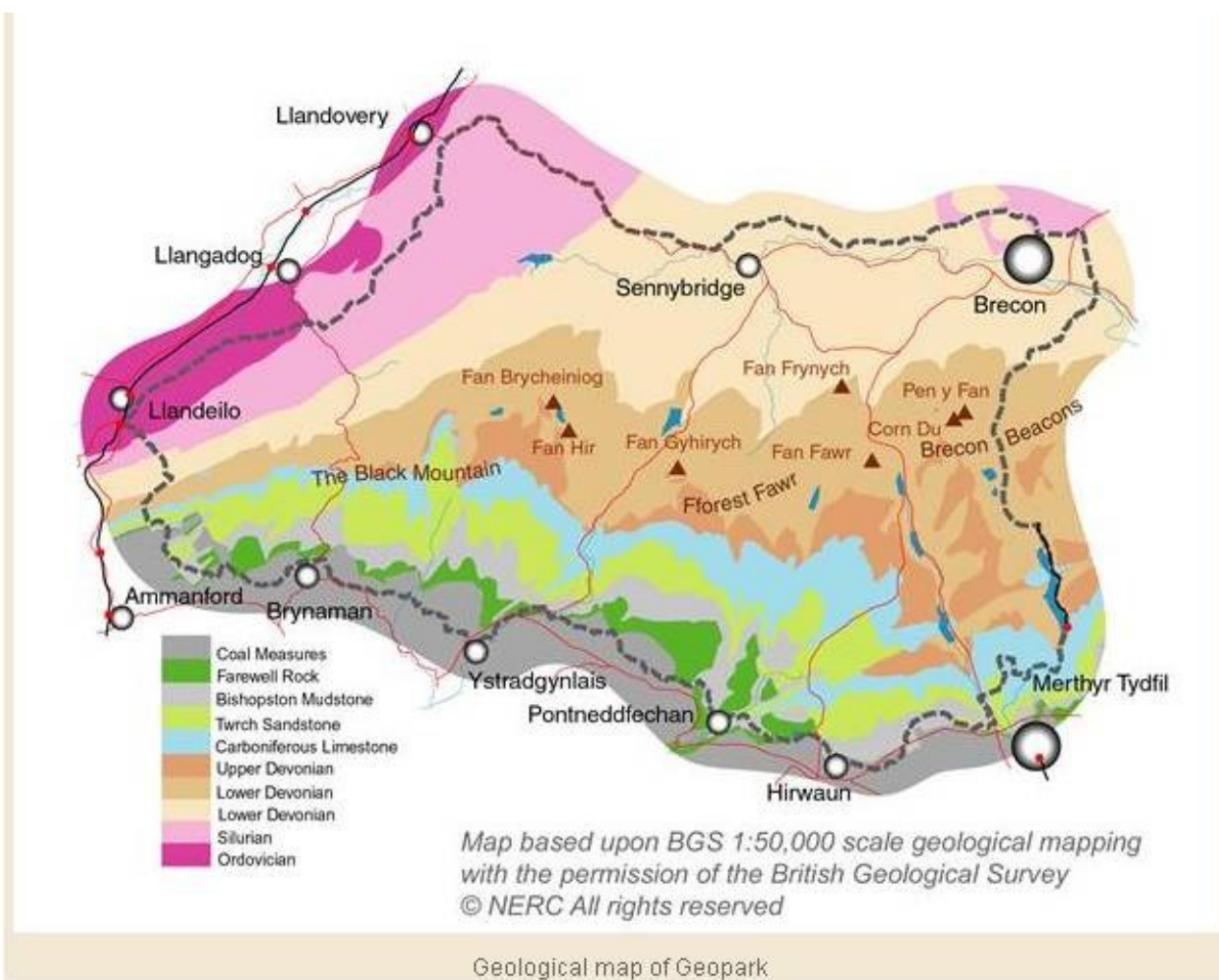


Figure 1: Map showing the roads and geology



Figure 3: infill deposit

sandstone base of the Westphalian Coal Measures, as when the miners met that they knew there was no more coal. The itinerary we were shown is used by Swansea University as an introduction to geology. There was a strong structural element to the scenery with the harder bands forming ridges on the hillsides. Land management is light grazing by ponies. Signs not to feed them were for their protection from traffic, but they eyed the visitors with a hopeful curiosity that was unfulfilled.

Just round the corner a clear channel infill feature was convincing evidence of the fluvial nature of the deposit (Figure 2).

Having proceeded a small way but still at Craig Derlwyn we arrived at a small quarry in the shale of the Bishopston Mudstone Formation part of the Marros Group. The shale was from a marine band, dark coloured with ironstone nodules, and fossils of goniatites and bivalves. Many found pieces of the goniatite *Gastrioceras subcrenatum* which marks the base of the Westphalian Coal Measures. All were at a loss to think of why anyone had quarried this flaking mudstone on such an exposed site. The frost weathering did expose some fossil fragments for the more adept searchers.

Just round the corner 20-30 cm of soil had developed, not from the weathering of the mudstone but from till. Fossil ice wedges were shown and very clearly visible as the infill was a different colour (Figure 3). These must have developed at a time after the ice had gone in the last glacial maximum. Elsewhere in the Geopark are well developed frost shattered boulder fields and patterned ground developed by frost heaving when permafrost is present.

The next site at Pen Rhiw-wen initially puzzled many as there was a white quartzitic sandstone. This is the Twrch Sandstone Formation which was worked here for refractory bricks due to the high silica content. The fluvial origins were carefully pointed out with pebbly quartz conglomerate in clear cut channels and also plant fossils. This hard stone was shattered into large angular boulders. As plant growth struggled on the hard rock the dip and gentle folding were clearly visible in the shallow quarry (Figure 4).

The rain stopped and a couple of miles further on we stopped at the picnic site at the spectacular location at the crest of the escarpment. The sun came out and we could see north to the red earth of the Devonian Old Red Sandstone with Cardigan



Figure 4: Ice wedges



Figure 5: basal grit

Bay in the distance. The picnic site is at Herbert's Quarry. The Cwmllynfell Fault with a 100m downthrow to the west, runs through at this point and the throw results in different geology and vegetation each side of the road, the bright green grass on the Carboniferous limestone to the east contrasting with the moor grasses developed on the Twrch Sandstones to the west.

Here the Twrch is completely different as there has been deep weathering, presumably in the Tertiary, and the rock has mostly disaggregated. The ice cover here at height must have been thin as this is in situ and the loose material would have been easily eroded. The same feature made it much easier to work and it is in the walls of these diggings that exposures can be found. This shows a steep dip which is linked to the fault. However some of the holes are dolines near the limestone junction and along the fault where water could easily penetrate. These are well developed and the small streams clearly drain into the depressions.

The picnic site is at the quarry working in the Oxwich Limestone which fed an array of limekilns some of which have been restored as part of the CALCH project by the Dyfed Archaeological Trust and the Brecon Beacons National Park, an investigation into the history and archaeology of the lime industry in Carmarthenshire. Full details are at www.calch.org.uk. Unusually all this development of lime kilns and the transport away of the slaked lime was by road transport.

There are no canals or railways in the mountains here. Development of the lime kilns over time is explained by the interpretation boards around the trail which makes access easy.

While we saw this in glorious sunshine, this is an area of high rainfall. The lime kilns near the road showed a most unusual tufa formation. This deserves an article in its own right. [Ed's note: this can be found on Page 33.]

It was a long enjoyable and informative day, clearly explained, with a route that showed the different depositional conditions, landscape results and industrial archaeology.

Our good fortune was brought home the following day when electrical storms over Pen y Fan caused fatalities and injury.

I am grateful to Bob Mustow and Mellissa Freeman for the photographs.

Bibliography

British Regional Geology Wales BGS
The Land of the Beacons Way: Scenery and geology across the Brecon Beacons National Park Dilys Harlow