



# BLACK MOUNTAIN FIELD MEETING JULY 8 2012



Fig 1. True grit and slickensides .

We left rainy Oxfordshire and headed for 'sunny Wales' to a location approximately 5 km north of Brynamman on the A4069, a high spot in the western area of the Black Mountain (Camarthen Fans). We were met with smiles from Prof Tony Ramsay who was to be our guide for the day. He began by leading us to an outcrop of rocks from which there was a splendid view of the valley to the north.

It was noted that the outcrop was in fact Grey Gritstones, with coarse quartz inclusions, that formed part of the Late Devonian. The outcrop ran W-E along the mountain side but with an offset of approximately 100 m further down from the viewing point. This was identified by Tony as the Cwmllynfell Fault and after some discussion we agreed that it was a dextral fault (Fig 1). The rocks also showed slickensides, further evidence of faulting. Tony then gave us an overview of the stratigraphy which ranges from early Devonian to the Carboniferous and includes two unconformities. We then headed to the

Trebig Arms for lunch.

In the afternoon we returned to a location a few hundred metres up the hill from the first site in order to study some enigmatic sand. This appeared very white and when examined under a lens it could be seen to consist solely of light quartz crystals (98% silica). The puzzle was the date and origin of the sand, speculation was invited, however Tony thought that it was most likely relatively recent weathering of the Twrch sandstone (Fig 2).

We then turned our attention to a small stream that disappeared into a sink hole quite near the road. A bowl like structure



Fig 2. Sand puzzle.



Figure 3 Tony walking on water!

some 2 m in diameter was seen at the point at which the water went under ground and it was clear that during high water flow that this bowl filled up leaving the varve-like structures in the upper sediments. Tony informed us that investigations into the subterranean water course using *Lycopodium* spores as a biomarker seemed to show that it was not a very significant structure.

We crossed the road and walked a few hundred metres to the location of some former lime burning kilns. We stopped and examined an exposure at the bottom of the carboniferous limestone at the horizon with the impervious shales and this formed the 'spring line' on the hillside. In the lowest deposition of the limestone abundant coral fossils (*Lithostrotion* sp.) could be seen but were absent above this layer. Water that permeates the area of the kilns and the associated slag heaps and then issues from the springs has a very high pH (12-13) due to the dissolved calcium carbonate. However, when exposed to the air on lower flat areas the evaporation allows precipitation of the carbonates as tufas in very interesting ripples and ooid-like forms. (figure 3)

A few hundred metres further east we reached a picturesque small gorge with stream tumbling down it, the Afon Clydach, and here Tony pointed out that an unconformity between the Later Old Red Sandstone and the Carboniferous was clearly to be seen, the missing strata could be observed in the corresponding levels on the eastern side of the mountain. In the upper level of the stream Alison found a piece of dolomite limestone which showed desiccation cracks, evidence of a sub-aerial environment at some stage.

To end the field trip Tony described the anthropogenic impact on the area, not only the lime kilns but also Bronze Age hilltop settlements and the major effects of the industrial revolution in the valleys to the south. We thanked him for such an enlightening trip and his lovely relaxed and friendly manner. A great day was had by all.

Filed by  
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