

CHARNWOOD MEETING MARCH 20 2011

Nine members took part in this trip, which was organised by Paul Sargent, who hired and drove the minibus. Our local guide was John Carney, an expert on the geology of the area. He distributed a splendid booklet (available on the web), describing and illustrating what we were to see. The area is an unusual one where knolls of enormously old rock protrude from Triassic and Tertiary overlay.

The first location was a remarkable one, Mount St Bernard Abbey, a Cistercian monastery built c. 1850, with early Cambrian roof slates and walls into which are set a variety of even older rocks (pre-Cambrian, i.e. before c. 543 Ma), in particular blocks known as the Peldar Dacite Breccia, where a dark matrix houses phenocrysts sometimes as long as 1 cm; this rock is found e.g. in the Bardon Hill quarry which we saw later. On one side of the road leading to Calvary (which we did not climb: a notice warned of its dangers) is a contorted crag of rocks of the St Bernard Tuff Member .

We went on a short way by van to a National Nature Reserve, Charnwood Lodge, the type area for the Charnwood Lodge Volcanic Formation. The prize exhibit is a group of 'Bomb Rocks', a tangled mass that is now interpreted not as consisting of volcanic bombs, but as a volcanic breccia containing 'blocks' of many different shapes and sizes. These and the much more regular rocks of Grimley Andesite which we saw a little further on

share the same petrology, and are thought to be the result of debris flows from a volcano; the eruption at Montserrat in the late 1990s is seen as an analogue. The walk then took us along the axis of the Charnwood anticline through steadily younger volcanic rocks, culminating in white-weathering volcanoclastic sandstones of the Bradgate Formation.

John's explanations gave us a vivid picture of the conditions infinitely long ago, below the sea at a subduction zone at a time when England and Wales were around 300 south.

In the afternoon, after an excellent lunch at the Forest Rock Inn (where else?), we parked on the outskirts of Coalville, and walked up Bardon Hill. Before we came to the woods, we passed a row of large blocks, taken from the quarry, mostly of Bardon Breccia. John poured water over some of them to show up the structures on this dry but not very warm day. At the top of the hill, where there are natural outcrops of the breccia, we could look out over the great hole (Bardon Hill Quarry), one of the largest in England. The most striking feature is the vast unconformity between the dark pre-Cambrian rocks and the red Triassic beds of the Mercia Mudstone Group, which coat the plain for miles around. The group's triumphant ascent of the hill (278 m.) is recorded in the accompanying photograph.

Michael Winterbottom

