DAY EXCURSION TO SHROPSHIRE

Leader: I.D. Sutton 15th June 1986

The purpose of this excursion was to examine the sedimentary sequence and faunas of the Wenlock and Ludlow series in the classic areas close to Much Wenlock and Ludlow.

A party of thirty-seven members travelled by coach via Wolverhampton and Bridgnorth to Ludlow. The journey to Bridgnorth was largely across the low ground of the Permo-Triassic with very little exposure. However, at Bridgnorth, the party were able to see the excellent exposures of the dune-bedded Permian aeolian sandstone in the river cliffs of the Severn. The leader pointed out that there is only tentative evidence for the age of the sandstones, but they do underlie the transgressive base of the Sherwood Sandstone and have been tentatively correlated with the Penrith Sandstone. Since the latter is in places overlain by a thin conformable cover of Magnesian Limestone, a Lower Permian age is possible for the Bridgnorth sandstone.

From Bridgnorth, the party travelled to Ludlow, passing between Brown Clee Hill to the north and Titterstone Clee to the south, both largely formed of Old Red Sandstone, but with a capping of Carboniferous sediments and resistant dolerites.

From Ludlow, the party travelled southwestwards along the Wigmore Road for a distance of about 4 km to the Forestry Commission carpark and picnic site (SO473732). A short walk in bright sunshine took the group to a small quarry on the north side of the road (SO472730), where the leader pointed out that this was one of the localities on the Mortimer Forest Geological Trail which traverses the Wenlock and Ludlow succession along the Wigmore Road anticline. With the aid of the 1:25,000 Geological Survey Leintwardine and Ludlow special sheet, the northeast to southwest axis of an anticline with a northeasterly plunge was demonstrated (see Fig. 1). In this area round Ludlow, the Silurian sediments are of shelf facies, but not far to the west, there is a sudden transition to the deep water facies of the Welsh Basin. These basinal deposits are much thicker and include turbidites and slumped beds. To the west of the area being visited, a number of submarine channels of Ludlow (Leintwardine) age, in the transitional zone between shelf and basin, have been identified (Whitaker 1962).

At this first locality, 4.5 m of the highest horizons within the Much Wenlock Limestone Formation are exposed. A few brachiopods, crinoids and bryozoans were found, but generally, the limestone is nothing like as fossiliferous as the Much Wenlock Limestone Formation around Much Wenlock, perhaps because the Much Wenlock Limestones on the Wigmore Road section were deposited further out on the shelf in deeper water, in conditions not anywhere near so favourable for bottom dwelling organisms. Slickensiding is very apparent along a number of surfaces, indicating faulting along the axis of the anticline.

Led by the secretary, no doubt anxious for her lunch, the party progressed to a small quarry just on the opposite side of the road a few yards into a wood (SO472730). This is the type locality for the boundary between the Wenlock and Ludlow series (see Fig. 2). The lower 2 m or so of the section consists of massive nodular limestone with little bedding, from the scree debris of which the party collected specimens of *Favosites, Heliolites, Halysites, Atrypa, Leptaena* and numerous bryozoans and crinoid fragments. Above the limestone is a distinctive thin clay horizon which has been selectively weathered out, followed by about 2.5 m of similar massive, poorly-bedded, limestone before a very distinctive and fairly sudden change to brownish siltstones occurs. This change marks the boundary between the Wenlock and Ludlow series and is the type section (boundary stratotype) for this stratigraphical horizon.

Everyone then enjoyed a picnic lunch at the Forestry Commission Picnic Site before setting off along one of the Forestry tracks to exposures of the Middle Elton Beds in a low bank on the side of the track about 800 m from the road (SO480730). The exposures extended for 100 m or so, and the party diligently searched the loose debris for the wide range of fossils to be found, of which monograptids, dalmanitid trilobites, straight nautiloids and taxodont bivalves were the most plentiful.

Having returned to the coach, the party were then transported to Gorsty (SO478736) where exposures of the Upper Elton Beds were seen in another Forestry Commission trackway.

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Lack of time, however, prevented any serious examination of these strata. The party walked along the road to Mary Knoll House and then along a foot path to the pine topped hill of Mary Knoll (SO486736). This is an excellent viewpoint and despite the haze created by the heat of the day, the short walk was well worthwhile to view features both close at hand and in the misty distance (see Fig. 3). Looking towards the southwest, the hills of Radnor Forest with the distinct hill of the Whimble could just be seen. These are composed of basinal Ludlovian deposits. Further round to the west, the basinal Ludlovian hills of Clun Forest, are followed by the laccolith intrusion of Corndon Hill, the Precambrian of the Longmynd, and Caer Caradoc. Further round to the east of north, the ridge of Wenlock Edge and the largely Precambrian Wrekin were obscured by trees, but beyond the trees and almost due east, Brown Clee and Titterstone Clee, formed of Devonian strata, with cappings of Carboniferous could be well seen. To the southeast just about visible, was Worcester Beacon on the north end of the Malvern Ridge. Completing the full 360 degrees, the ground nearer to Mary Knoll showed the structure of the Wigmore Road anticline very well. In the immediate foreground to the southwest was a depression carved out in the fairly easily eroded Elton Beds flanked on either side by the distinctive hills of High Vinnals to the south and Bringewood Chase further round to the west indicating the outcrop of the Bringewood Beds. The wooded ridge beyond the Elton Beds is the outcrop of the Much Wenlock Limestone. Slightly further away to the west were the dip slopes of the Ludlow beds. On the descent from Mary Knoll, a short stop was made at a small quarry in the Bringewood Beds with poor specimens of the distinctive *Kirkidium knightii*. From Mary Knoll, the coach took the party back to Ludlow crossing the Bringewood, Leintwardine and Whitcliffe Beds in the process with the very distinctive man-made recess at the end of Wigmore Road marking the original presence of the Ludlow Bone Bed. This at one time was the type locality for the boundary between the Silurian and Devonian. The journey from Ludlow took us along Corvedale with Brown Clee to the south and the dip slopes of the Upper Ludlovian to the north. At Much Wenlock, we headed westwards along Wenlock Edge towards The Plough Inn. As we progressed along the Edge, to the southeast, the Much Wenlock Limestone Formation could be seen dipping away underneath the Elton Beds occupying low ground and then the distinctive ridge of the Upper Bringewood Beds.

From The Plough Inn carpark, a short walk across a meadow took the party to an excellent vantage point on the edge. The leader first of all pointed out the geological and landscape features to the northwest. Immediately in the foreground was the boulder clay covered vale of the Wenlock and Llandovery shales with the higher ground of the basal Llandovery Kenley Grit in the neighbourhood of Church Preen. Beyond this ridge, were the outcrops of the Caradocian near Chatwall, and further to the west and northwest, the Precambrian hills of Ragleth, Caer Caradoc and the Lawley. The bare outcrop of limestone on which the party was standing could be seen to be massive with no obvious bedding and represented one of the many small lenticular masses of reef-limestone described as "ballstones" by Crosfield and Johnson (1914). The reef structures consist of a framework of corals and stromatoporoids, often in growth position, and with a fine grained calcite mud matrix.

On returning to Much Wenlock, the party made their last stop of the day in the large working Shadwell Quarry on the outskirts of the village. The quarry faces showed clearly the bedded and reef limestones. Much of the time was spent collecting the wealth of fossil material from the weathered tip heaps. A wide range of fossils were found and included brachopods of which *Atrypa reticularis* was exceedingly abundant, along with *Meristina, Camarotoechia, Leptaena, Sphaerirhynchia* and *Strophonella*. Tabulate corals including *Favosites, Heliolites, Syringopora* and *Halysites* and also other faunas including trilobites (*Calymene* and *Encrinurus*), gastropods (*Poleumita*), straight nautiloids, crinoids and bryozoans were found.

With plastic bags filled, the odd large tabulate coral colony under the arm, the party made their way back to the coach and then via the gorge and bridge at Ironbridge to Telford and by using the M54 motorway, a fairly fast return to Nottingham was made.

References

Crosfield, M.C. and Johnson, M.S., 1914. A study of Ballstone and the associated beds in the Wenlock Limestone of Shropshire. *Proc. Geol. Assoc.* 25, 193–224.

Earp, J.R. and Hains, B.A., 1971. *The Welsh Borderland*, 3rd Edition. British Regional Geology Institute of Geological Sciences.

Lawson, J.D. *The Mortimer Forest Geological Trail.* Nature Conservancy Council Booklet.

Whitaker, J.H., McD., 1962. The Geology of the area around Leintwardine. *Q.J. Geol. Soc.* 118, 319–351.

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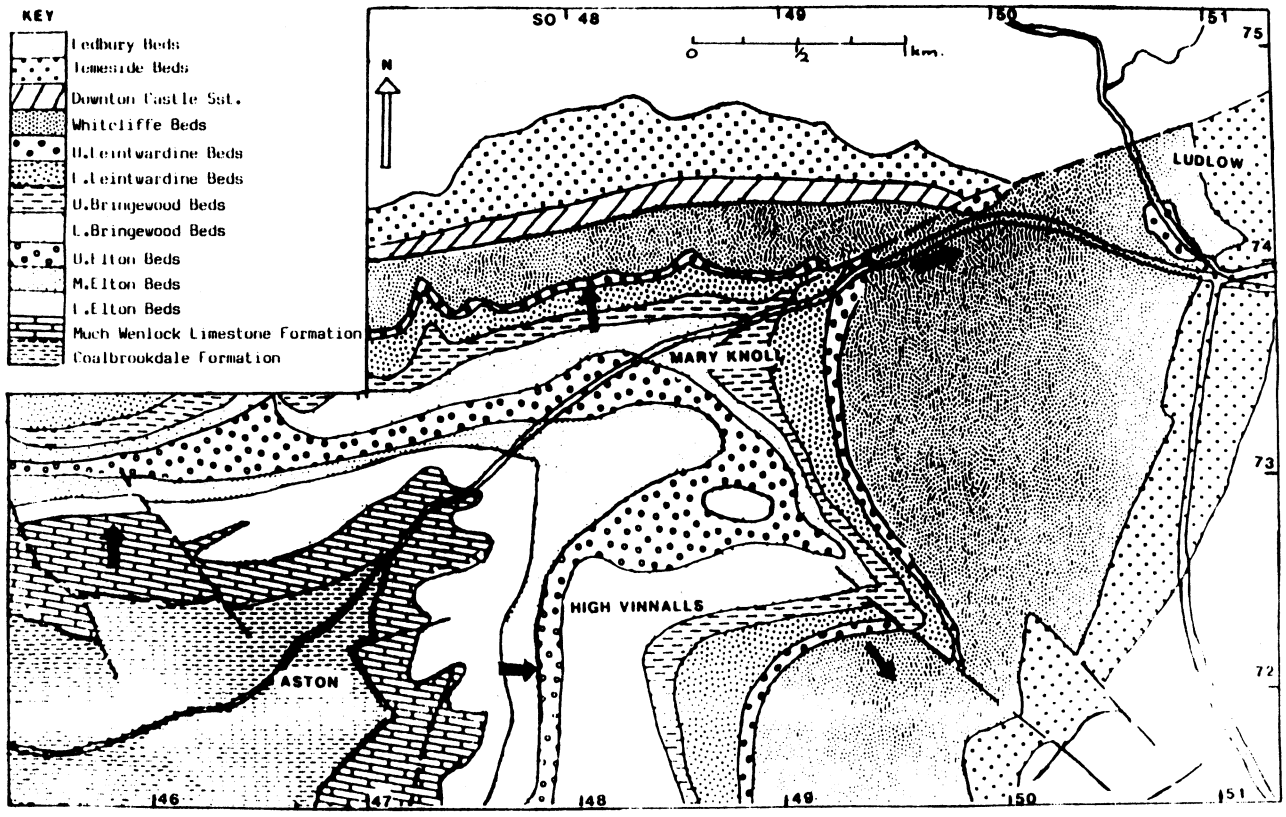

Fig. 1. Geological sketch map of the Wigmore Road anticline S.W. of Ludlow.

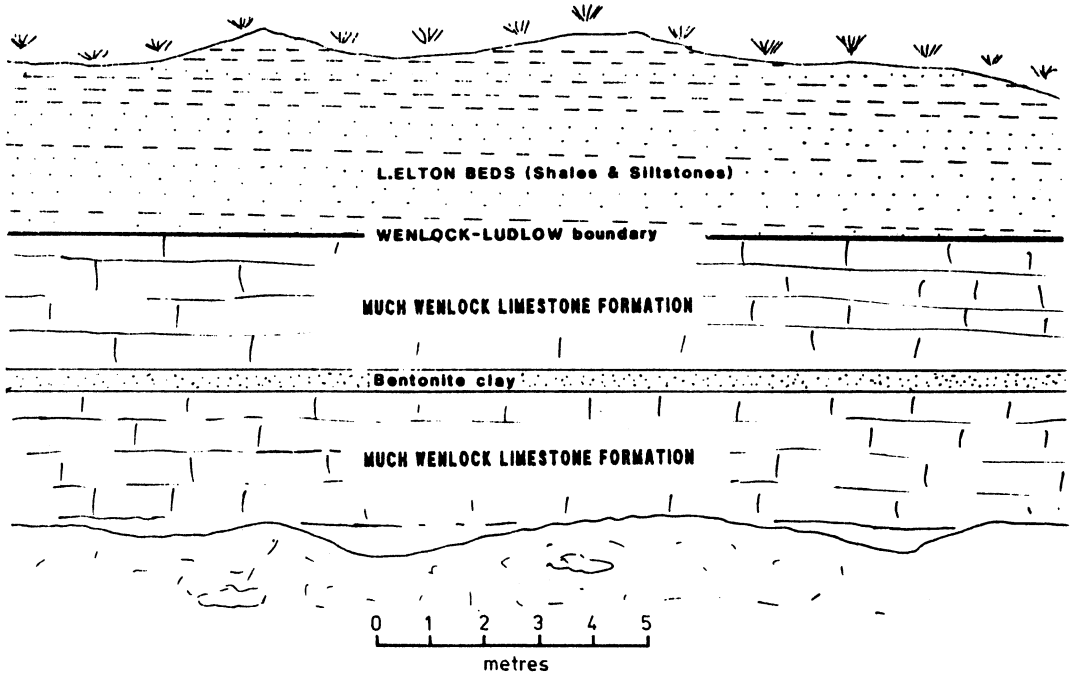

Fig. 2. Sketch section of the quarry face at S0472730, the type locality of the Wenlock-Ludlow Boundary

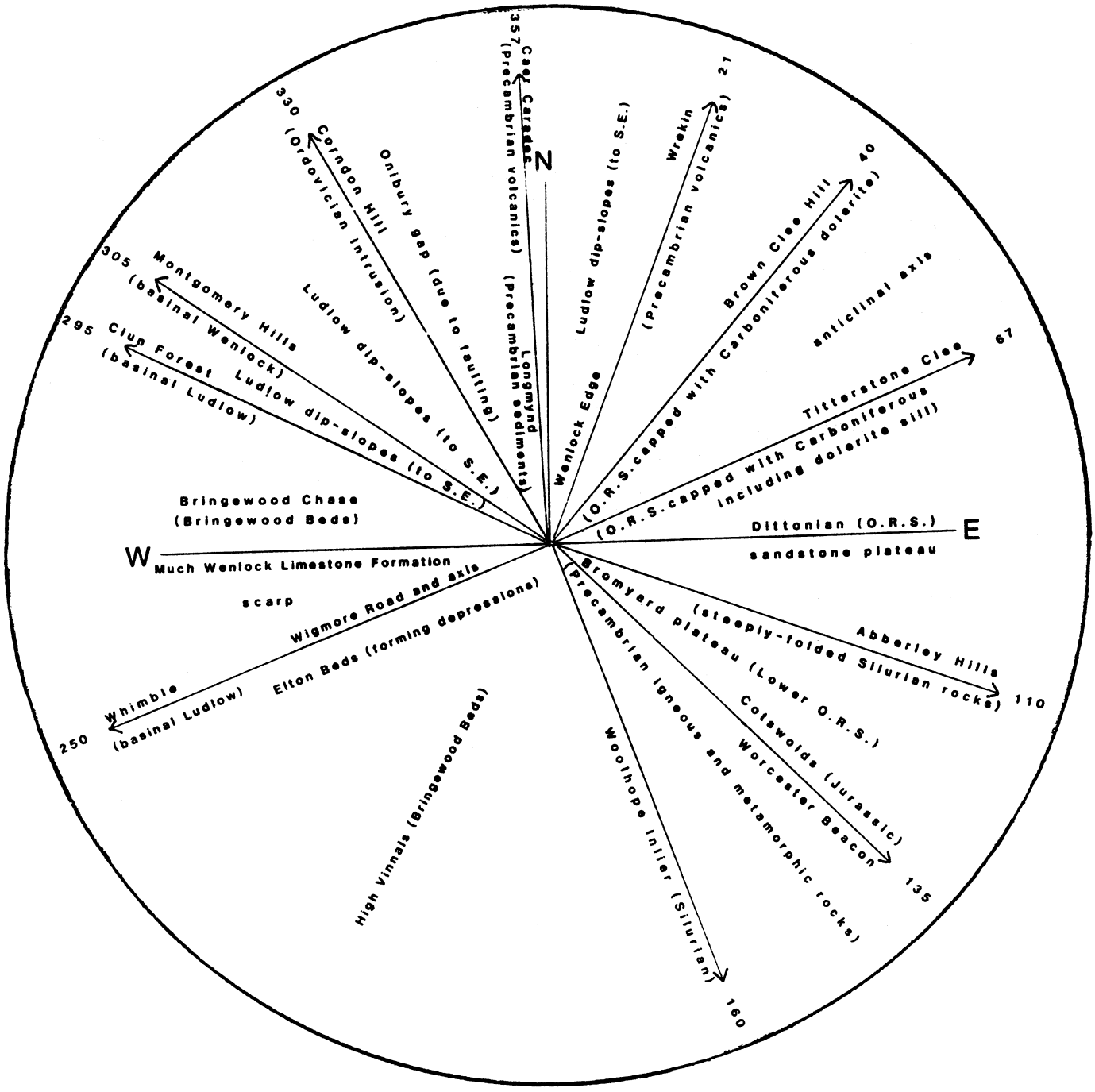

Fig. 3. The Panorama from Mary Knoll at S0486736