

WEEKEND EXCURSION TO LUDLOW

Leader: John Norton

5th-7th May, 1978

The meeting was attended by about 25 members, who were accommodated at the Cliff and Croft Hotels, Dinham. On Saturday, 6th May, we met at the County Museum's Natural Sciences Department in Old Street, Ludlow at 9.30 a.m. for a brief talk in the lecture room on the geology of the Ludlow Anticline area.

The Wenlockian and Ludlovian rocks of the Ludlow district were deposited in a shelf area of the sea, which towards the end of Ludlovian times became shallower owing to the uplift which continued into the Downtonian, when brackish, fresh-water and land deposits were laid down. The north-east to south-west strike of the Silurian rocks, so evident along Wenlock Edge, is disturbed in the vicinity of Ludlow by folding to the west of the town into an anticline which plunges underneath the Old Red Sandstone. It is now very much denuded and as its component rocks are alternating soft shales or siltstones and hard limestones, the landscape shows escarpments where limestone outcrops occur and valleys or step features in the shales.

One of the reasons for the introductory talk was to discuss the revised classification of Ludlovian rocks in their type area. The new revision made by Professor C.H. Holland, Dr. J.D. Lawson and Dr. V.G. Walmsley replaces the old classification of Sir Roderick Murchison, made during the first half of the last century when he divided the Ludlovian into Lower Ludlow, Aymestry Limestone and Upper Ludlow.

For a long time, geologists realised Murchison's old divisions were quite inadequate. The revised classification, based mainly upon fossil content, consists of the Eltonian, Bringewoodian, Leintwardinian and Whitcliffian stages; these, in turn are subdivided into beds. The name Aymestry Limestone disappears from the revised classification because it is diachronous and therefore, does not represent a bio-stratigraphical unit. It may still, however, be referred to lithologically as a limestone development which occurs about the middle of the Ludlovian in the area. The syncline which corresponds with the Ludlow Anticline covers the Craven Arms - Downton - Leintwardine district.

We commenced our excursion by taking the road through Bromfield and made our first stop at Downton Gorge, where we saw the River Teme flowing through a deep channel below the impressive, high, massively jointed limestone cliffs of the Upper Bringewood Beds. These Bringewood Beds correspond in general with Murchison's Aymestry Limestone, however, in some localities, he had also included calcareous Lower Leintwardine Beds. We crossed over the river to the south bank and climbed to a viewpoint on Bringewood Chase, collecting fossils on our way, which included specimens of tabulate and rugose corals, the brachiopods: *Kirkidium* (*Conchidium*) *knighii*, *Gypidula lata* and *Strophonella euglypha* also the trilobite *Dalmanites myops*.

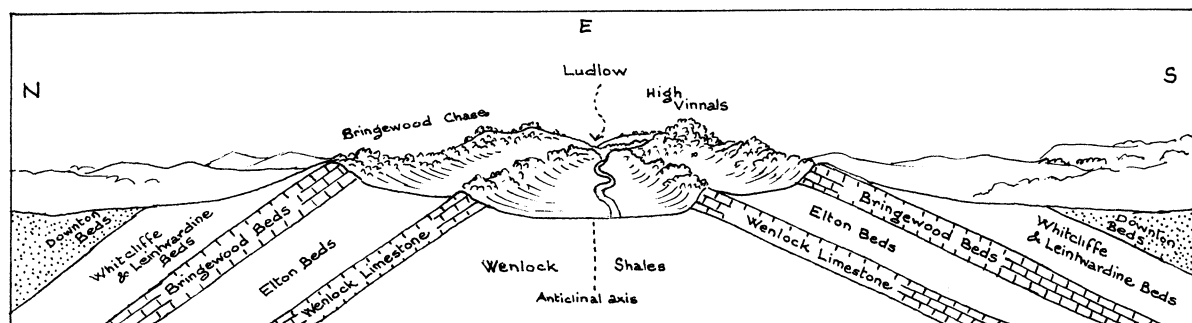
The glacial deposits of the Wigmore-Leintwardine area are particularly interesting and from the viewpoint, we obtained an excellent prospect over the Vale of Wigmore, in glacial times, occupied by a large lake, of which the shorelines can still be seen. It was pointed out that the original course of the River Teme may have been southwards through a gap at Aymestrey but when access to this became blocked, the river flooded those parts of the Vale of Wigmore, which were free of stagnant ice and spilled eastwards carving out the picturesque Downton Gorge.

Our next stop was Leintwardine, when the party climbed to the Church Hill Quarry. Unfortunately, this famous 'Starfish quarry' has long since, for the greater part, been filled in; although, occasional specimens of *Furcaster leptosoma* and *Lapworthura miltoni* still turn up when careful search is made. About a hundred years or so ago, the quarrymen did a good trade selling fossil starfishes to tourists. At the time these rocks were being deposited,

the area occupied a position somewhere near the edge of a continental shelf.

Dr. J.H. McD. Whitaker of Leicester did some splendid work on the Leintwardine district, showing how in higher Lower Leintwardine times, submarine canyon heads existed. The channels which lie parallel to each other contained a particularly interesting fauna, including echinoids, asteroids, phyllocarids, eurypterids, annelids and xiphosurids. Graptolites and small orthocones from these localities often show a definite orientation in their alignment.

Travelling on to Wigmore, a stop was made at the Compasses Hotel, where we ate sandwiches, and obtained liquid refreshment. From the hotel car park, we had a splendid view of the Ludlow Anticline, where we were standing on low ground of comparatively flat Wenlock Shales. Two horse-shoe shaped escarpments opened in front of us, the nearer being of Wenlock Limestone with a step feature in the softer Elton Beds between it and the further escarpment on the skyline of Bringewoodian and Lower Leintwardine Beds (text-fig.1).



Text-fig. 1. Sketch section across the Ludlow Anticline

We followed the road towards Ludlow almost along the anticlinal axis and paid a visit to some roadside quarries in Wenlock Limestone. These rocks were deposited away from the reef area, and fossils are not common. Possibly, the water may have contained too much suspended sediment for corals and other reef-building organisms to have thrived, or perhaps, water may have been deeper than was favourable for their growth. In one of these quarries, we saw an interesting fault with a slickensides feature and in another higher up, observed the junction to the Lower Elton Beds marking the beginning of the Ludlow Series.

A short detour through the forest then took us to a fossiliferous exposure in Middle Elton Beds, the soft blue-grey soapy shales containing many trilobites mostly *Dalmanites myops*, although, a few fragmentary odontopleurids were also found. There is a fairly abundant graptolite fauna here, including *Neodiversograptus nilssoni*. Other fossils included orthoconic cephalopods, bivalves and gastropods. We then returned to the road and examined Upper Elton Beds at Gorsty, where flaggy siltstones yielded many specimens of *Monograptus tumescens*. As we had already examined the Bringewood Beds, at Downton Gorge, the party decided to pass roadside quarries in these beds and to proceed up the succession to a roadside quarry in calcareous siltstones of the Lower Leintwardine Beds, where we saw a shelf fossil assemblage consisting chiefly of the brachiopods *Isorthis orbicularis*, *Sphaerirhynchia wilsoni* and *Dayia navicula*. Other fossils here included bryozoans, gastropods, bivalve molluscs and small eurypterid fragments. We did not find the tabulate corals *Favosites* and *Heliolites* from these beds, whereas they are plentiful from the Bringewoodian, no doubt, due to some environmental control. The Upper Leintwardine Beds on the trail are less calcareous and distinctly more flaggy than the lower division, and contain an interesting fauna with trilobites and the large ostracod *Neobeyrichia lauensis*.

The Lower Whitcliffe Beds were examined at roadside exposure and on Whitcliffe itself, where members of our group noted the bedding to be thicker and more irregular than in the Leintwardine Beds, and calcareous nodules and honeycombing were absent, but sphaeroidal jointing occurs. It was also commented on that there is a marked change in fauna and many fossils common in the Leintwardine Beds were missing, such as brachiopods of the genera: *Atrypa*, *Shaleria* and *Leptaena*, but *Protochonetes*, *Camarotoechia* and *Salopina* had become very common. There is an increase in the numbers of bivalve molluscs such as *Fuchsella amygdalina* and cephalopods are quite plentiful. Examination of the character of the Whitcliffe Beds indicated a shallowing of the sea. Fossils are numerous often occurring in layers or lenses, probably due to current washing.

In Ludford Lane, the position of the Ludlow Bone-Bed is clearly defined by a recess where collectors have for many years, obtained specimens. We tried to be careful not to add too much to this erosion process, but did obtain a few small pieces with the aid of a long chisel. In these samples, we were able to examine the skin studs and cutwater spines of small fishes. The Bone-Bed was probably deposited in very shallow water, and consists of organic debris deposited along a strand line winnowed by a retreating sea. We were now back at Ludlow, where the members kindly entertained the leader and his son at the Cliff Hotel, providing an excellent and very welcome dinner.

On Sunday morning, we journeyed through the ancient market town of Much Wenlock to Farley Quarry, where we were able to compare the Wenlock Limestone with that seen the day before on the Ludlow Anticline. In contrast, to that at Ludlow, the rocks at Farley are extremely fossiliferous and it was possible for us to examine corals and other reef-building organisms *in situ*. Excellent corals and stromatoporoids were collected, also some splendid specimens of gastropods of the genus *Poleumita*. Our next stop was to the Acton Arms, Morville, where we enjoyed a picnic lunch. Here we met the Tarrant brothers, Peter and Mark, who have for many years, collected important 'fish' specimens from the Old Red Sandstone of South Shropshire and they accompanied us to Monkhopton where some fish fragments were collected in a stream where cornstones of the Ditton Series, lower group, are exposed. Specimens included fragments of *Traquairaspis symondsii* and acanthodian scales and spines.

After a rather lengthy journey over the 'Old Red,' we saw the Carboniferous Limestone at Oretton but owing to lack of time, did not stop to examine it. Eventually, the party arrived at Titterstone Cleehill roadstone quarries, where an impressive dolerite sill intrudes into rocks of the Coal measures. A discussion took place about the possible source of the dolerite, which is the famous 'Dhustone,' from which, in the past, many of the sets for city roads were made. Fashioning these was an extremely skilled job, the Old Cleehill set makers starting work at a very early age to become expert. It was at one time, suggested that there may have been a volcanic plug in the middle of Cleehill, but this is now disproved. Brown Clee has similar igneous sills, which, no doubt, were derived from the same source as those on Titterstone.

The leader would like to thank members of the party for being so kind in providing lifts for his young son Mark and himself and for their wonderful enthusiasm and co-operation in every way.

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