THE GEOLOGY OF SEDGLEY AND DUDLEY

Leader: Dr. I.D. Sutton — Sunday, 2nd October, 1966

The Sedgley and Dudley areas have become famed over the years for the wealth of fossil material collected from the Silurian rocks in this region. Records of fossil collections from Dudley go back to 1686, when Dr. Plot figured some specimens collected from these Silurian rocks.

Park Hill, Sedgley, and Wren's Nest and Castle Hills at Dudley are the three main areas where the Silurian rocks outcrop. Structurally the hills are in the form of periclines and are completely surrounded by deposits of Coal Measure age,which form tracts of low-lying land around the upstanding Silurian deposits.

Over 30 members of the East Midlands Geological Society attended this excursion, the fine weather adding to the enjoyment of those participating.

Having made our way into the Black Country, our first stop was just to the south of Wolverhampton at Park Hill, Sedgley (918957). Here the Aymestry Limestone is exposed in a small digging. The party were able to examine the nodular form of the limestone, a feature not uncommon in the Silurian limestones of the Welsh Borderlands. The limestone at this locality yields quite a large fauna and members had the opportunity to collect the following fossils:

Brachiopods - Dayia navicula, Atrypa reticularis, Leptaena rhomboidalis, Lingula sp. and Salopina sp.

Molluscs - 'Orthoceras'sp., Loxonema sp.

Corals - Favosites sp., Tryplasma sp.

Trilobites - Dalmanites sp.

Lunch was taken at Himley Wood and afterwards some time was spent in the Himley Wood Quarry of the Baggeridge Brick Company (903910). In this quarry the Etruria Marls of Upper Coal Measure age are exposed. A considerable variation in lithology was seen,with light coloured sandstones, blue, grey and reddish marls and clays,and occasional local developments of intraformational conglomerates. The marls and clays furnish the material for the well known blue bricks, while red bricks are also made from the same clays by firing them at a lower temperature and without subjecting the clay to a reducing atmosphere.

The sandstone horizons of the Etruria Marls, which are known by shaft sinkers as 'espleys', often yield a good number of fossil plants. Members were able to collect the plant remains from Himley Wood Quarry, but the state of preservation was poor and rendered identification difficult.

One interesting feature seen by the party was the presence of a mineral vein along a small fault line in the Etruria Marl. The most dominant mineral was a pink variety of barytes, accompanied by subordinate amounts of calcite, chalcopyrite,and a dark metallic mineral which has yet to be identified.

The third and final exposure the party visited was the famed outcrop of the Wenlock Limestone at Wren's Nest Hill, Dudley (937920). Wren's Nest Hill is formed by an elongated dome with an axis roughly NNW - SSE (see Sarjeant 1964, p. 65). The Wenlock Shales,which are poorly exposed,

form the core of the dome and are surrounded by the Wenlock Limestone, which has been divided into 3 main lithological divisions by Butler (1939):

Upper Limestone	34 feet
Nodular Beds	123 feet
Lower Limestone	42 feet

Both the Upper and Lower Limestones have been extensively quarried in the past, the outcrop today consisting almost entirely of the Nodular Beds. As the name implies, the Nodular Beds are lithologically argillaceous limestones with a distinct nodular form.

The Wenlock Limestone as a whole is extremely fossiliferous, the Upper and Lower Limestones being particularly so. In the years around the turn of the century, vast collections of fossils were obtained from this locality and one trilobite in particular, Calymene blumenbachi, was so abundant that it aptly received the name 'The Dudley Locust'. Besides the trilobites, crinoids were also very abundant, being in an excellent state of preservation. Representative collections of these fossils are now housed in many museums in the Midlands and in a large number of the major museums throughout the world.

Today collecting of specimens is not possible on such a large scale, but a very good fauna is still obtainable from the Nodular Beds, particularly brachiopods and corals.

The following list of fossils collected by members is by no means complete, but gives some idea of the varied nature of the fauna still obtainable.

Corals: Favosites gothlandicus, Palaeofavosites asper, Heliolites megastoma, H. interstinctus, Stelliporella parvistella, Propora tubulata, Halysites catenularius, H. sp., Cystihalysites westwoodensis, Coenites juniperinus, C. linearis, C. repens, Thecia swinderniana, Syringopora fasciculatis, S. bifurcata, Kodonophyllum truncatum, Ketophyllum subturbinatum, Acervularia ananas, Arachnophyllum murchisoni, Tryplasma loveni.

Trilobites: Mainly fragments of the following genera: Calymene, Cheirurus, Dalmanites and Phacops.

Brachiopods: Atrypa reticularis, Camarotoechia nucula, Dolerorthis rustica, Eospirifer radiatus, Gypidula dudleyensis, Howellella elegans, Leptaena rhomboidalis, Resserella elegantula, Rhynchotreta cuneata, Sphaerirhynchia wilsoni, Strophonella euglypha.

Gastropods: Bembexia lloydi and Poleumita discors.

Crinoids: Various fragments of crinoidal stems.

Stromatoporoids: Stromatopora typica and Clathrodictyon, sp.

Bryozoa: A great variety of stick-like bryozoans.

The Wenlock Limestone is mainly a well stratified limestone but, at various levels, the party were able to see the unstratified masses of hard limestone known locally as 'ballstones' or 'crog-balls'. These 'ballstones' are in fact small reef structures and consist of calcareous organisms, mainly a coral-stromatoporoid assemblage in position of growth and a lot of fragmentary organic debris, mainly crinoidal;

these are cemented together by a fine-grained blue cement. Many of the tabulate corals in the 'ballstones' tend to assume a branching form of growth; members were able to see this in one of the reef structures where a very large, branching colony of Stelliporella parvistella formed a large part of the reef. A more complete description of the reef structures is given by Crosfield and Johnston (1914).

By walking round the outcrop of the Nodular Beds, the party were able to see the gradual change of dip and the periclinal nature of the outcrop. Along the outcrop the thoroughness of the working of the Lower Limestone could also be seen; it had in fact been mined out from below the Nodular Beds, the latter beds themselves being held in place by strategically placed pillars.

From the highest point on Wren's Nest one can look out across country to Castle Hill and picture the type of topography which must have existed during Coal Measure times. Wren's Nest and Castle Hill would have stood up as islands above the mud flats, forests and estuaries during Lower Coal Measure times, while the Upper Coal Measures would have been banked up against the islands.

The weather remained perfect throughout the day and the members were able to make their way back to Nottingham dry, but in some cases overladen with specimens.

I.D.S.

REFERENCES

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