
Eyemore Railway Cutting

Highlights

Eyemore Railway Cutting (Figure 7.3) shows the only marine band known from the Wyre Forest Coalfield, and provides important evidence for the palaeogeography of this part of Britain during the Westphalian.

Introduction

A cutting [SO 767 792] on the Severn Valley Railway Line, about 1 km south of Arley station, Hereford and Worcester, provides the only known exposure of the Aegiranum Marine Band in the Wyre Forest Coalfield. Part of the exposure has been covered by brick facing, to prevent collapse of the cutting, but enough remains visible to establish the stratigraphical sequence. The site was first described by Whitehead and Pocock (1947) and further details were supplied by Poole (1966).

Description

Lithostratigraphy

A log of the sequence is given by Whitehead and Pocock (1947, pp. 54–5). The sequence now exposed consists of 3.2 m of sandstones overlain by about 2.4 m of shales and siltstones. The marine band, which is 30 cm thick, occurs about 1.5 m above the top of the sandstones. Whitehead and Pocock mention a further 10 m of sandstones and coloured mudstones at the top of the sequence, but these are no longer exposed.

The mudstones associated with the marine band are purple, red and brown, and are of the Etruria facies. This can be just about made out in the railway cutting, but was more clearly demonstrated by Poole (1966) in nearby boreholes. Whitehead and Pocock assigned all of the lower and middle Westphalian strata to the Kinlet Group. As pointed out by Besly (1983), however, this classification does not reflect the true nature of the sequence in the Wyre Forest. In the northern part of the coalfield, most of the sequence consists of red beds, of the type referred to elsewhere as the Etruria Formation. The only exception is a c. 20 m thick grey interval (Productive Coal Formation) associated with the Highley–Brooch, Half Yard, Four Foot and Two Foot seams (cf. Besly and Turner, 1983, fig. 2). In the south, such as at Eyemore, even this thin Productive Coal Formation disappears, and the entire lower and middle Westphalian belongs to the Etruria Formation.

Biostratigraphy

The marine band here has yielded the ammonoid *Donetzoceras cf. aegiranum* (Schmidt), together with brachiopods *Lingula* and *Levipustula*. The marine band was given the local name of the Eyemore Marine Band by Mitchell *in* Trueman (1954), but the fossils clearly indicate that it is the Aegiranum Marine Band in the standard classification of Ramsbottom *et al.* (1978) (Figure 7.4). From the same bed found in nearby boreholes (Eyemore Farm Nos 7 and 14 boreholes), Calver *in* Poole (1966) reported diverse assemblages of calcareous brachiopods, including *Crurithyris*, *Levipustula*, *Linoproductus*, *Productus*, *Rhipidomella*, *Rugosochonetes* and *Schuchertella* (see also Calver, 1968, p. 51).

Interpretation

This is the only well-developed marine band identified so far in the Wyre Forest Coalfield, and thus the only level in the sequence where a stage boundary can be unequivocally fixed (i.e. between the Duckmantian and Bolsovian stages). There are records of the Vanderbeckei Marine Band in boreholes at Kinlet and Alveley (Stubblefield *in* Whitehead and Pocock, 1947; Poole, 1970) but only very restricted fossil assemblages have been found. The poor or non-development of marine bands other than the Aegiranum in the Wyre Forest is probably a consequence of its marginal position in the

Pennine Basin. It confirms that the Aegiranum Marine Band represents the most widespread of the marine transgressions in the middle Westphalian, and why it was selected to define the boundary between the Duckmantian and Bolsovian stages.

The most characteristic feature of the Aegiranum Marine Band in the Wyre Forest is the diversity of the calcareous brachiopods. Calver (1968) has observed that similar assemblages are also typical of the Vanderbeckei and Houghton marine bands near the northern margins of the Wales–Brabant Barrier. This, he suggested, reflects the repetition of comparable conditions and facies in each of these transgressions.

Calver *in* Poole (1966) also noted that a similar, brachiopod-rich assemblage has been described from the Aegiranum Marine Band of South Wales (Ramsbottom, 1952). This provides possible support for the Herefordshire Straits hypothesis of Wills (1956), in which a narrow channel linked the South Wales and Pennine basins across the Wales–Brabant Barrier, thus allowing the migration of the brachiopod faunas. As pointed out by Bless and Winkler Prins (1972), however, the distribution of the 'microfaunas' (i.e. conodonts, foraminifera, ostracods) does not support this idea, nor is there any direct geological evidence for it (see discussion on Benson's Brook).

Conclusions

Eyemore Railway Cutting is the only place in the Wyre Forest Coalfield where marine rocks can be seen. These rocks are about 311 million years old, and were formed when the area was flooded by a raising of the sea level, possibly due to a partial melting of the polar ice cap.

[References](#)



(Figure 7.3) Eyemore Railway Cutting GCR site. Exposures are above the protective casing at the far end of the cutting as shown in the photograph. (Photo: C.J. Cleal.)



(Figure 7.4) The Aegiranum Marine Band (Duckmantian–Bolsovian boundary) exposed on the Severn Valley Railway Line at Eyemore. (Photo: C.J. Cleal.)