Lowside Brickworks

Highlights

Lowside Brickworks is the best exposure yielding non-marine bivalves of the *Carbonicola cristagalli* Subzone of the *Anthraconaia modiolaris* Zone in the Pennine Basin (Figure 10.22).

Introduction

This abandoned brickworks [SD 942 042] at Glodwick, on the east side of Oldham exposes upper Langsettian strata that yield abundant non-marine bivalves. Some details of the geology are given by Tonks *et al.* (1931), while an up-to-date field description is provided by Broadhurst *in* Eagar and Broadhurst (1991).

Description

Lithostratigraphy

The exposed sequence is about 20 m thick. The lowest 6 m consists of alternating sandstones and siltstones, thought to represent successive crevasse-splay or possibly overbank deposits filling a lacustrine basin. The highest sandstone in this sequence contains presumed lycopsid rootlets, and is thought to mark a period of emergence when a coal is often found in this area. This coal is locally known as the Oldham Great Seam, but is probably a lateral equivalent of the Trencherbone Coal elsewhere in the Lancashire Coalfield.

Overlying the Oldham Great Seam are about 10 m of lacustrine mudstone, with bands of sideritic clay-ironstone. These in turn are overlain by a fluvial sandstone. The sandstone here is only about 1 m thick, but Broadhurst *in* Eagar and Broadhurst (1991) reports that it becomes much thicker to the south-east. This, together with the presence of very well developed ripple cross-laminations, suggest that it may be a crevasse channel deposit.

Above this sandstone is a thin interval representing emergent conditions. The sandstone is overlain by a seat earth, which is badly weathered but sometimes shows evidence of rootlets. This is succeeded by the Blenfire Coal, which here occurs as three discrete leaves, overlain by mudstone.

The topmost part of the succession consists of another sandstone, known as the Blenfire Rock, which occurs over large parts of the Lancashire Coalfield. The base of the sandstone is clearly erosive, cutting down into the roof of the Blenfire Coal, and in other parts of the coalfield cutting down into the coal itself. The Blenfire Rock shows well-developed trough cross-bedding and abundant mudstone clasts, which together with its strongly erosive base, indicate that it is a fluvial channel deposit.

Biostratigraphy

The only stratigraphically useful fossils reported from here are non-marine bivalves from between the Oldham Great and Blenfire coals, and include *Carbonicola cristagalli* Wright and *C. oslancis* Wright. These are diagnostic of the *C. cristagalli* Subzone (lower *A. modiolaris* Zone), indicating a position in the upper Langsettian. The shells are mostly preserved compressed flat, except in the ironstones where uncrushed specimens can be found. This suggests that the ironstone developed soon after deposition of the mudstone, before significant compaction occurred.

Interpretation

This is the best exposure in Britain of beds yielding bivalves of the *C. cristagalli* Subzone. The subzone is known from other coalfields in Britain (e.g. see Ramsbottom *et al.,* 1978, pl. 2) and is known from natural exposures in South Wales, such as on the Amroth Coast and Cwm Gwrelych (see Chapter 4). However, these deposits are most easily investigated

at Lowside Brickworks, where the bivalves can be seen in their original lacustrine setting.

There are few well documented assemblages of this subzone from outside of Britain. The only notable exception is one from Limburg in The Netherlands, documented by van der Heide (1943).

The site is also of interest for showing a typical example of the upper Langsettian part of the Coal Measures in the Pennine Basin, including an equivalent of the Trencherbone Coal which occurs widely over the western part of the basin. It clearly demonstrates many of the typical lithologies of the Coal Measures found in this basin, including examples representing lacustrine, fluvial and emergent conditions. In particular, it shows the two main types of Coal Measures sandstone: the fluvial channel deposit with its trough cross-bedding and the crevasse channel deposit with ripple cross-bedding.

Conclusions

Lowside Brickworks shows a well exposed sequence of Coal Measures rocks of late Langsettian age (about 313 million years old). Its shows a range of rock types, representing deposits formed in lakes, river channels and swamps, the latter including coal deposits. It is the best site in Britain for yielding shells of the freshwater bivalves *Carbonicola cristagalli* and *C. oslancis,* which typically inhabited the lakes of this age, and whose remains are diagnostic of this particular level in the Coal Measures.

References

(Figure 10.22) Lowside Brickworks GCR site. (Photo: C.J. Cleal.)