
Brewin's Canal Cutting

Highlights

Brewin's Canal Cutting is the best exposure of the unconformable base of the Productive Coal Formation in the southern part of the South Staffordshire Coalfield, and helps demonstrate the onlap of the Upper Carboniferous of the Pennine Basin onto the Wales–Brabant Barrier.

Introduction

A cutting [SO 937 877] on the south side of the Dudley Canal, just east of High (or Brewin's) Bridge, Brierley Hill, West Midlands shows the lowest preserved Carboniferous strata in the southern part of the South Staffordshire Coalfield. The outcrop is described by Whitehead and Eastwood (1927), Hardie *in* Hardie *et al.* (1971) and Cutler (1981). Whitehead and Pocock (1947, pp. 18–20, pl. 3 fig. A) provide a drawing of the exposure and a detailed lithostratigraphical log. The site forms part of the Saltwells Local Nature Reserve, established by the Black Country Geological Society, in conjunction with the former NCC (West Midlands Region).

Description

Most of the strata exposed here are Upper Silurian shales and sandstones of the Temeside Shales and Red Downton formations. Overlying these beds with a low angle unconformity are 4 m of buff-yellow sandstone, the upper part of which becomes conglomeratic. They represent the basal part of the Productive Coal Formation in this part of the coalfield (Figure 7.5). Structural complications make it difficult to establish an exact lithostratigraphical position for these beds, but they probably lie not far below the New Mine Coal.

Interpretation

This site shows the unconformity between the Productive Coal Formation and the underlying strata in the southern part of this coalfield. The absence of Namurian and basal Westphalian strata is particularly significant. In the northern part of the coalfield, boreholes have proved thin Millstone Grit sequences underlying the Productive Coal Formation — reportedly 60 m thick near Lichfield and 23 m near Rugeley (Mitchell, 1954; Stevenson and Mitchell, 1955) although these sequences may have suffered from faulting (N.J. Riley, pers. comm.). Underlying the North Staffordshire Coalfield, only about 25 km further north, there is 1250 m of Millstone Grit. This clearly demonstrates the onlap relationship of the Upper Carboniferous of the Pennine Basin onto the Wales–Brabant Barrier. A similar relationship can also be seen a little to the east, in the Warwickshire Coalfield, but this is based exclusively on evidence from boreholes and underground workings (Fulton and Williams, 1988).

Whitehead and Eastwood (1927) mention a number of other exposures of this unconformity, perhaps most significantly the Hayes Road Cutting at Lye, which until recently was designated an SSSI. However, Brewin's Canal Cutting is by far the best exposed and easily accessed of these sites.

Conclusions

Brewin's Canal Cutting shows the relationship between the Productive Coal Formation in the southern part of the South Staffordshire Coalfield (310 million years old), and the underlying older rocks. This is important for understanding the evolution of this part of the Pennine Basin at this time.

[References](#)



(Figure 7.5) Base of the Coal Measures lying unconformably on Upper Silurian beds at Brewin's Canal Cutting. (Photo: C.J. Cleal.)