
Portishead Pier

Highlights

Portishead Pier shows the only good exposure of Upper Carboniferous strata in the Severn Coalfield, and provides useful sedimentological data to help understand the environment of their deposition.

Introduction

Coastal exposures below Royal Hotel, Portishead, Avon [ST 475 776] show a sequence of mainly sandstones, belonging to the Severn Coalfield (Figure 5.7). The Upper Carboniferous deposits are faulted against Lower Carboniferous limestones (Black Rock Group), and are overlain by Triassic red beds. The geology of the site is described by Stead and Williams (1973).

Description

About 30 m of Pennant Formation are exposed here. The sequence consists mainly of coarse-grained, litharenitic sandstones. A variety of sedimentary structures can be observed, including trough cross-stratification and erosional surfaces with clay-ironstone lags, which point strongly to this being an alluvial sequence. Palaeocurrents suggest a south-east provenance for the sediments.

The only argillaceous bed is a 30 cm thick mudstone near the base of the sequence. The sandstone immediately above has prominent deformational structures, which are thought to be the result of slumping caused by penecontemporaneous earth-movements.

Interpretation

This is the only good exposure of strata in the Severn Coalfield, which represents a southern extension of the Forest of Dean Coalfield. It is an isolated outcrop with no biostratigraphical control, and so its relationship to the rest of the coalfield is speculative. However, the sedimentological evidence would seem to indicate that it belongs to the stratigraphically lower part, known as the Pennant Formation. It may thus be broadly correlated with the lower part of the Forest of Dean Coalfield, such as exposed at Meezy Hurst.

On lithological grounds, Stead and Williams (1973) correlated the Portishead deposits with the Mangotsfield or upper Downend formations of the Bristol Coalfield. However, this is contrary to the biostratigraphical evidence found in other parts of the Severn Coalfield, which indicate that they are probably coeval with the Farrington or Radstock formations (Cleat, 1986a).

Conclusions

Portishead Pier shows the only good exposure of rocks of the Upper Carboniferous Severn Coalfield, about 306 million years old. It has allowed details of how the rocks were formed to be established, and how they relate to the neighbouring Forest of Dean and Bristol coalfields.

[References](#)



(Figure 5.7) Upper Carboniferous sandstones of the Severn Coalfield, exposed near Portishead Pier. (Photo: C.J. Cleal.)