
Trehir Quarry

Highlights

Trehir Quarry was one of the best exposures of the Pennant Formation in the eastern part of the South Wales Coalfield.

Introduction

This old building-stone quarry [ST 154 897] lies on the eastern side of the Rhymney Valley, about 3 km north of Caerphilly. It was briefly mentioned by Squirrell and Downing (1969), but the only detailed account is in an unpublished thesis by Jones (1989a).

Description

When originally studied by Jones (1989a), this site showed a thick development of South Wales Pennant Formation. According to Squirrell and Downing (1969), these beds lie above the Daren-ddu Coal and thus belong to the middle Westphalian D Hughes Member. Of particular interest was the presence of stacked dunes of planar and trough cross-bedding, and numerous examples of channel lag deposits with erosive surfaces. At least some of this interest has been subsequently lost, due to infilling of the site, but some of the upper part of the face was still visible at the time of writing (summer, 1994).

Interpretation

This was the best site for showing some of the characteristic features of the sedimentology of the upper part of the South Wales Pennant Formation. The features suggest that these sandstones were deposited as bars by lower sinuosity rivers than were the sandstones in the lower part of the formation (most typically developed in the Rhondda Member, e.g. Earlswood Road Cutting). Jones (1989b) has argued that this change in pattern of bar accretion probably reflects one or more effects of tectonic movement in the hinterland, including increased sand production, faster river discharge, and increased depositional slope. It is thus evidence of the increasing seismic instability of northern Europe towards the end of the Westphalian and in the very early Stephanian, which culminated in the major Variscan basin inversion (probably in the late Cantabrian). This resulted in the cessation of sedimentation and coal formation in the main north European coalfields.

Conclusions

Trehir Quarry was one of the best exposures of the upper part of the South Wales Pennant Formation, which is about 307 million years old. It shows that these rocks were formed in rivers that were not as meandering as those that formed the lower part of this formation, which is important for understanding the geological evolution of this part of Britain towards the end of the Westphalian Epoch.

[References](#)