
Cwm Twrch

Highlights

Cwm Twrch is the best exposure of the Vanderbecke Marine Band in the South Wales Coalfield.

Introduction

The banks of the River Twrch, 2 km north of Upper Cwm Twrch, on the border between Dyfed and Powys, Wales [SN 755 125]–[SN 758 130], expose part of the Productive Coal Formation, and include marine mudstones known locally as the Amman Marine Band. There is no published account of this site, but it is dealt with in an unpublished thesis by Matthews (1955).

Description

Lithostratigraphy

The strata exposed in the bed of the Twrch here are mainly mudstones and siltstones, representing non-marine, fluvial conditions. Within this essentially non-marine succession, however, there is about 0.20 m of dark blue marine shales — the Amman (or Vanderbecke) Marine Band.

Biostratigraphy

There has been no systematic treatment of the fossils found in the Vanderbecke Marine Band here. However, it is claimed to yield a diverse assemblage, including the index ammonoid *Anthracoceratites vanderbecke* (Ludwig), as well as bivalves, gastropods and brachiopods.

Interpretation

The Vanderbecke Marine Band is generally poorly developed in South Wales. It can be up to 3 m thick, such as at Wern Ddu on the east crop, and in the Ammanford area (Archer, 1968). However, it rarely yields more than bivalves and gastropods. Elsewhere in southern Britain (i.e. south of the Wales–Brabant Barrier) there are no known exposures of this band. Even in the Pennine Basin, where the band is normally much thicker, the band rarely yields a diverse fossil assemblage, at least in a surface outcrop (e.g. Duckmanton Railway Cutting — see Chapter 2). The exposure of the band at Cwm Twrch may be much thinner, but at least has the merit of yielding the index ammonoid.

The significance of Cwm Twrch lies in the context of the Cwm Gwrelych–Nant Llyn Fach succession. The latter is the best exposed sequence of lower and middle Westphalian strata in northern Europe, and has only one significant gap, at about the Vanderbecke Marine Band. Cwm Twrch is the only site in South Wales that can reasonably convincingly fill this gap.

Conclusions

The River Twrch has the best exposure of rocks belonging to the Vanderbecke Marine Band in South Wales, just under 310 million years old. It marks the boundary between two geological ages known as the Langsettian and Duckmantian, and is thus important for putting the succession in the South Wales Coalfield into a wider national and international setting.

[References](#)