Oystermouth Old Quarry, Gower, West Glamorgan

[SS 615 883]

Introduction

The Oystermouth Old Quarry GCR site, also known as 'Clements Quarry', lies 6 km southwest of Swansea, on the seaward side of Oystermouth Castle [SS 615 883]. The floor of the quarry is now a car park. Despite having become rather overgrown, the site offers the best exposure of the late Brigantian Oystermouth Beds; the topmost unit of the Carboniferous Limestone on the Gower Peninsula. The sedimentary facies recorded in this unit are transitional between the pure shelf limestones of the Dinantian succession beneath and the marine shales of the Namurian sequence above. Descriptions of the site feature in Dixon and Vaughan (1911) and Thorne (1978).

Description

The site shows a succession of dark-coloured limestones and shales (Figure 9.31) dipping approximately 25° eastwards, this more-or-less representing the plunge on the Colts Hill Anticline (Owen, 1971). This unit was originally known as the 'Upper Limestone Shales' (e.g. Strahan, 1907a), and has also been called the 'Black Lias' because of the resemblance of the bedding style to that of the Jurassic Blue Lias. It was attributed to the topmost division of the Carboniferous Limestone, the 'B_2-D_3' interval by Dixon and Vaughan (1911). In its re-survey of the Swansea district, the [British] Geological Survey (Institute of Geological Sciences, 1973) used the name 'Oystermouth Beds' to replace the term 'Upper Limestone Shales' in this area.

About 25 m of succession can now be seen, close to the top of the unit according to Dixon and Vaughan (1911). The limestones are argillaceous, sometimes crinoidal and often cherty, and are rather thicker than the interbedded calcareous shales. They were described as dark packstones by Ramsay (1989, 1991). Some levels are notably rich in sponge spicules, and finely crystalline dolomite is also locally present (Thorne, 1978).

The richest faunas have been collected from the shales (Owen, 1971) and include many brachiopods, notably *Martinia multicostata, Spirifer oystermouthensis, Schellwienella* cf. *crenistria and Eomarginifera longispina.* Solitary rugose corals are also present, including *Piplophyllites oystermouthensis* and *Amplexizaphrentis enniskilleni*, plus the trilobite Paladin '*Griffithides*' *cf. barkei.* The section was also searched for conodonts, but found to be almost completely barren (Rhodes et al., 1969).

Interpretation

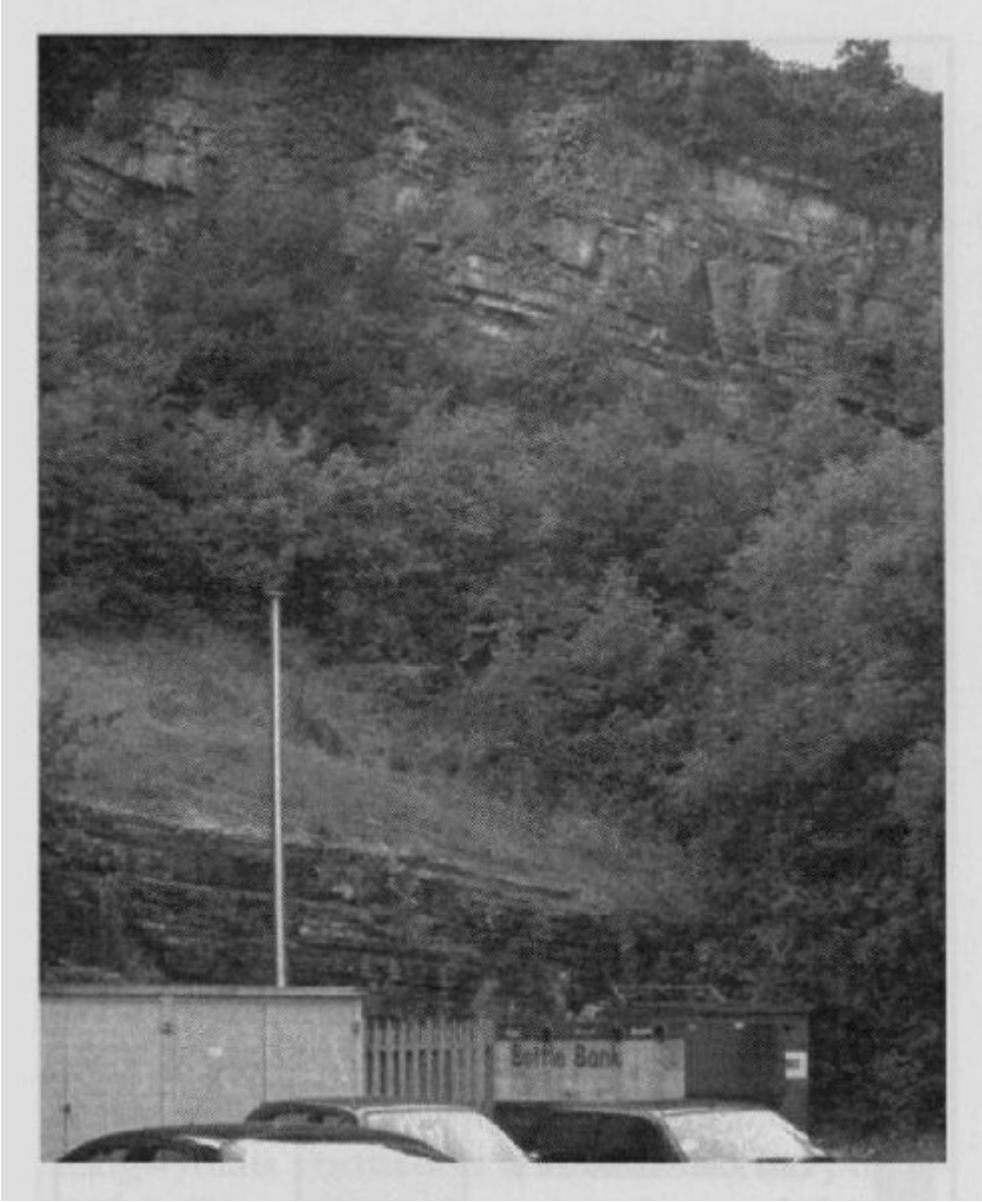
The dark packstones and interbedded shales of latest Brigantian age are regarded as offshore deposits by Ramsay (1991). They suggest an overall deepening of the environment towards the end of Dinantian times and also record the increasing input of terrigenous clastic material which, by the beginning of the Namurian Epoch, had terminated carbonate deposition in South Wales. George (1958) notes that this is a widespread late Dinantian facies; it can be recognized in Pembrokeshire (Bosherston) and the Mendips and extends as far as Belgium. On the north crop the facies extends as far east as the Vale of Neath where it is still known as the 'Upper Limestone Shales' (e.g. Barclay *et al.,* 1988). It is not known throughout the area covered in this chapter, partly because of post-Dinantian erosion and partly because the facies is replaced by sandstones in the Bristol district.

Conclusions

This site shows the best exposure of the uppermost unit of the Carboniferous Limestone in South Wales, the Oystermouth Beds. These beds represent offshore deposits with a higher concentration of fine-grained land-derived sediments than earlier formed parts of the Lower Carboniferous succession. The site is also important for its

well-preserved late Dinantian brachiopod–coral–trilobite fauna and occasional ammonoids which confirm its late Brigantian age.

References



(Figure 9.31) General view of the Brigantian Oystermouth Beds at Oystermouth Old Quarry, near Swansea. (Photo: P.J. Cossey.)