
Hobbs Quarry, Somerset

[ST 622 446]

Introduction

The Hobbs Quarry GCR site (also known as 'Hobbs Brothers Quarry') is a small disused quarry, which lies on the north side of the Shepton Mallet–Downside road (B3136) on the south-western edge of the village of Downside (Figure 3.9). At this site, the basal Downside Stone marginal facies of the Hettangian Stage lies on a striking angular unconformity above steeply dipping Carboniferous Limestone. The site graphically illustrates the effects of erosion on the flanks of the 'Mendip Islands' during early Jurassic times and the progressive burial of these islands by marginal marine facies. The site has seldom been cited in the literature and no detailed account has been published. A brief description was given in Donovan (1958a) with even more cursory mentions in Richardson (1911) and Green and Welch (1965).

Description

Hobbs Quarry is located just to the north of a small inlier of (Dinantian) Black Rock Limestone that lies within an extensive outcrop of Lower Jurassic marginal facies. The Black Rock Limestone is exposed throughout the quarry to a height of about 3 m and dips at 65° to the south (160°). The northern face formerly exposed about 5 m of Lower Jurassic marginal facies, but the top 3–4 m at the time of writing was heavily overgrown (Figure 3.12). The Black Rock Limestone is well bedded on a decimetre-to metre-scale with a few thin (centimetre-scale) shale partings. Irregular to sheet-like chert bands 5–20 cm thick are common within the richly bioclastic limestones. A N–S-orientated face at the western end of the quarry, immediately adjacent to the studied section, exposes a minor fault with a downthrow of about 1.5 m to the east.

The unconformity surface on which the marginal Lias rests was reported by Donovan (1958a) as irregular, with a relief of several decimetres, though this was not evident in 1999. The overlying Downside Stone marginal facies is a coarse, bioclastic, cream-coloured limestone, crudely bedded on a decimetre- to half-metre-scale. It is very porous and packed with shell debris towards the base, where elongate angular lathes of reworked Carboniferous chert also occur. These chert lathes are distinct from the irregular, pale grey-brown chert bands which also occur near the base of the Jurassic marginal facies here. The Downside Stone here is very fossiliferous, in places packed with thick-shelled, coarse-ribbed bivalves including *Cercomya desbayesi*, *Ctenostreon tuberculatus*, *Atreta intusstriata*, *Liostrea cf. laevis*, *Plagiostoma valoniensis* and *Terquemia arietis* (Donovan, 1958a; Green and Welch, 1965). Donovan (1958a) noted that gastropods and belemnites were also abundant at the site, but this was not confirmed in 1999. No ammonites have yet been recorded from the site.

Interpretation

The irregular nature of the unconformity surface on the Black Rock Limestone was attributed by Donovan (1958a) to differential erosion of the steeply dipping strata beneath, much as is found in modern sublittoral settings. However, observations in 1999 could not confirm this and there were indications that the apparent irregularity of the unconformity was due to the effects of recent weathering and the relationship of the studied section to the minor fault immediately to the west. Nonetheless, such small-scale relief is evident in parts of the Pant y Slade to Witches Point GCR site in south Wales, where horizontal to steeply dipping Carboniferous Limestone also is overlain by Lower Jurassic marginal facies, and hence its development here would not be unexpected. Significant marine erosion must have preceded the deposition of the overlying Downside Stone marginal facies, which represent the first sediments to have entered the area after the transition from an erosional to a depositional regime. It is evident from the angular nature of the reworked chert lathes that the eroded Carboniferous material experienced relatively little transportation.

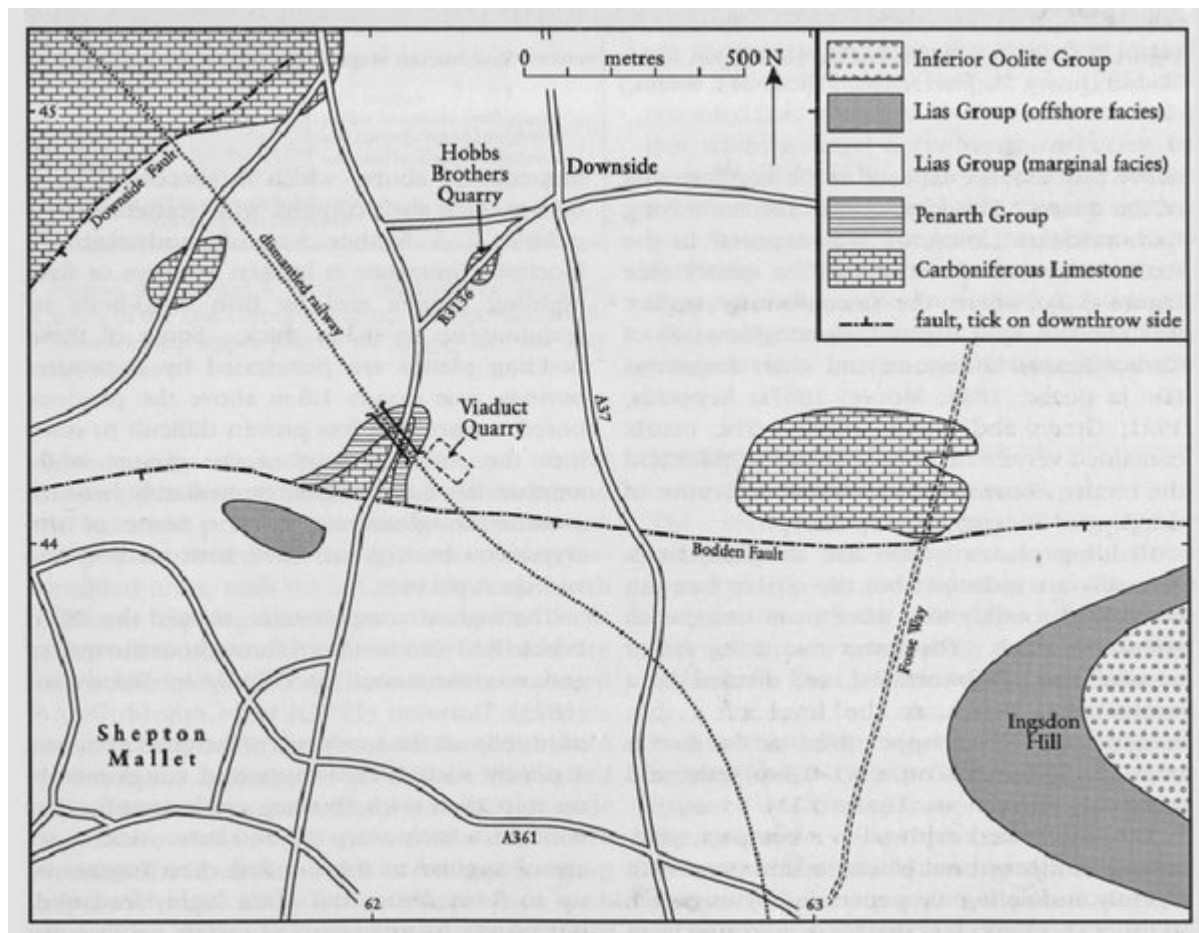
Some details of the facies at this site differ significantly from that at the nearby Viaduct Quarry GCR site. The irregular chert bands near the base of the marginal facies here have not been recorded at Viaduct Quarry, while the angularity of the derived Carboniferous chert fragments here contrasts with the generally more rounded Carboniferous pebbles which occur in the Viaduct Quarry succession. In addition, intact fossil material at this site appears to be more common and more evenly distributed than at Viaduct Quarry where it tends to be concentrated at particular horizons.

The age of the Downside Stone at Hobbs Quarry is uncertain. As with the south Wales marginal facies, ammonites are rare in the marginal facies around the Mendip Hills and none have been found at this site. Significantly, the Penarth Group conglomerate seen at the base of the Downside Stone near Viaduct Quarry is absent here. Similarly, it was not seen at Bowlsh Quarry, 1 km to the south-west, although Penarth Group material was present in fissures in the Carboniferous Limestone at that locality (Richardson, 1911). These observations suggest that the base of the marginal facies in the Mendip Hills is diachronous and may commence above the base of the Hettangian Stage at Hobbs Quarry. Green and Welch (1965) concluded that the age of the Downside Stone ranges from the Planorbis Zone to the Bucklandi Zone in the immediate area of Downside and Shepton Mallet, although to the north it apparently may extend as high as the Jamesoni Zone. None of the bivalve taxa present at Hobbs Quarry are biostratigraphically diagnostic but together they suggest a Hettangian age for the deposit.

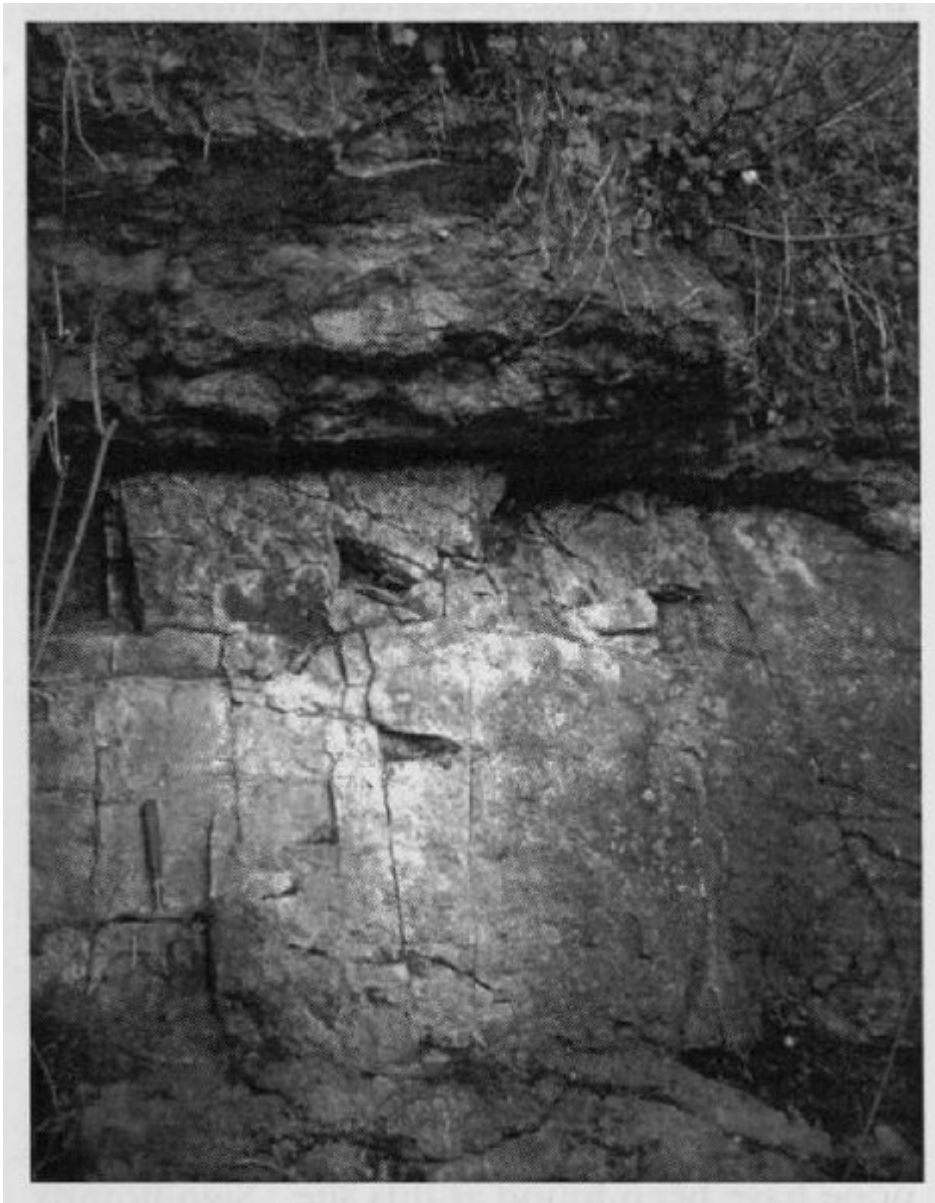
Conclusions

The succession at the Hobb Quarry GCR site exposes the best-remaining section through the unconformity between steeply dipping Carboniferous Limestone and the near-horizontal marginal facies of the Lower Jurassic Series. It complements the thicker and lithologically more diverse section through the marginal facies found at the nearby Viaduct Quarry GCR site, where the contact with the underlying Carboniferous Limestone is not exposed. Together these two sites provide invaluable information on the nature of the Lower Jurassic marginal facies of the Mendip High, which can be further enhanced by comparison with the much more extensively exposed marginal Lias in the Pant y Slade to Witches Point GCR site of south Wales.

References



(Figure 3.9) Sketch map of the geology in the area around Viaduct Quarry and Hobbs Quarry.



(Figure 3.12) Near-horizontal marginal facies of the Lias Group resting unconformably on Carboniferous Limestone dipping steeply southwards (towards the camera) at Hobbs Quarry, Shepton Mallet. The hammer, for scale, is in the lower left of the picture. (Photo: M.J. Simms.)