
Little Hill

[SO 603 387]–[SO 613 381]

Introduction

This site is located in the Silurian inlier of Woolhope in the central-southern part of the Welsh Borderland (Figure 4.10). The inlier takes the form of a pericline, Llandovery sediments occurring centrally and these being successively flanked by Wenlock, Ludlow and then Pridoli strata. Murchison (1839) first described the Woolhope Silurian, Phillips (1848) following him shortly afterwards with an account in his classic memoir on the Malvern Hills and adjoining areas. In the 20th century, combined stratigraphical, palaeontological and structural analysis of the inlier was provided by Gardiner (1927) and then Squirrell and Tucker (1960), Little Hill being cited in both studies.

The site exposes both bedded and reefal components of the uppermost Wenlock-age Much Wenlock Limestone Formation.

Description

Little Hill contains a line of quarries in the northeast part of the inlier; they run for about 1 km in a NW–SE direction, parallel with the local strike of the Much Wenlock Limestone which has an estimated thickness in the Woolhope district of 45–52 m. This formation comprises irregularly bedded, greyish-olive, impure limestones and purer, blue limestone bands that are interbedded with buff-olive calcareous muddy siltstones. Nodules are common in the basal and uppermost beds. At Little Hill these bedded units occur together with small biohermal structures. The latter are a few metres in height and diameter and comprise unstratified masses of pale yellowish-green porcellanous limestone with corals and stromatoporoids, some of these in growth position, and bryozoans.

The generic composition of the macrofauna from the limestone of the inlier as a whole (Squirrell and Tucker, 1960) includes at least 10 corals (for example *Heliolites*, *Favosites*, *Alveolites*, *Halysites*, *Arachnophyllum*, *Acervularia* and *Kodonophyllum*), two algae (*Rothpletzella*, *Solenopora*), three stromatoporoids (*Actinostroma*, *Clathrodictyon*, *Stromatopora*), five bryozoans (*Fenestella*, *Fistulipora*, *Hallopora*, *Ptilodictya*, *Leiodema*), two crinoids (*Crotalocrinus*, *Petalocrinus*), about 20 brachiopods (for example *Atrypa*, *Eospirifer*, *Leptaena*, *Meristina*, *Sphaerirhynchia*), a bivalve (*Pteronitella*), three gastropods (*Platyceras*, *Poleumita*, *Bellerophon*), a cephalopod (*Trochoceras*) and three trilobites (*Calymene*, *Iliaenus*, *Proetus*). Additionally, and more specifically with respect to provenance within the Woolhope district, beyrichiacean ostracods used in taxonomic studies (Siveter, 1980) and brachiopods of the shallow water *Sphaerirhynchia wilsoni* Community used in palaeoecological work (Hurst, 1975a, 1975b) have been recovered from Little Hill.

Interpretation

The Much Wenlock Limestone Formation, with its biohermal mounds being analogous with present day patch reefs, was formed in clear, warm, shallow seas within or about the subtropics (Scoffin, 1971). The bioherms of Little Hill do not reach the size of those in the same formation on Wenlock Edge, the latter averaging 12 m in width and 4.5 m in thickness. Nevertheless, the presence of the Much Wenlock Limestone in the Woolhope district indicates that the carbonate platform which covered much of the English Midlands in latest Wenlock time extended also to this part of the Welsh Borderland (Bassett, 1974a; Hurst *et al.*, 1978; Holland, 1992). In the late Wenlock low sea level was not confined to the Anglo-Welsh area; it has been recognized globally in rocks of this age (Johnson *et al.*, 1991), although the widespread carbonate deposition has also been attributed to climatic factors (Jeppsson *et al.*, 1995).

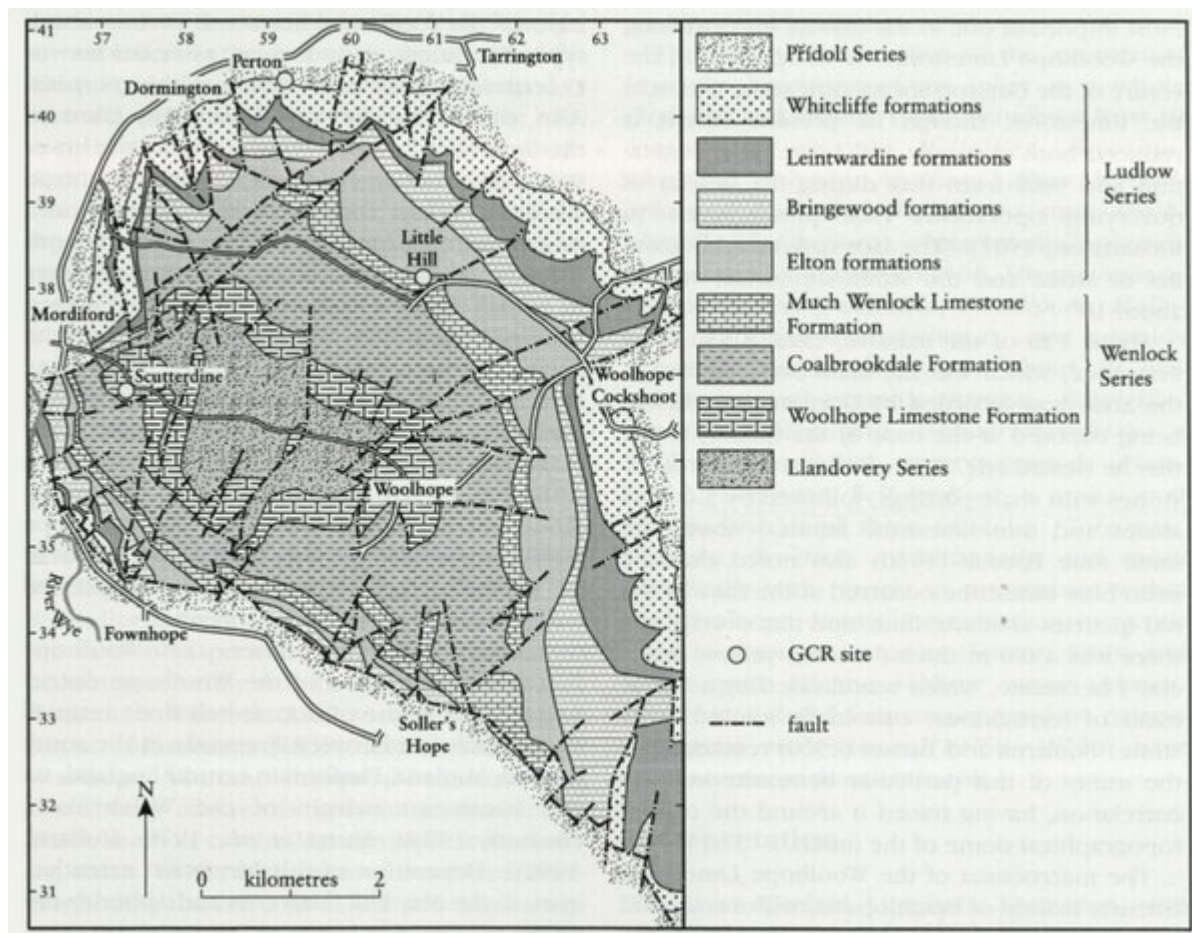
Little Hill is thus most closely networked to other sites that provide evidence of the Midlands–Welsh Borderland carbonate platform, such as Hobbs Quarry in the May Hill Inlier, Linton Quarry in the Woolhope area, the Wren's Nest

and Daw End Cutting in the West Midlands, and Easthope–Harley Hill on Wenlock Edge.

Conclusions

Little Hill stands as the representative section in the Woolhope Inlier of the Much Wenlock Limestone Formation. It is thus a complementary site to those in the Much Wenlock area exposing the type development of this formation. This limestone is significant for palaeoenvironmental and palaeogeographical interpretation of the late Wenlock. Its presence shows that at this time the Woolhope area was a part of the carbonate shelf centred on central England, and its biofacies, comprising in part small bioherms, indicates that it was formed in warm climates at low latitudes.

References



(Figure 4.10) Location of Scutterdine Quarry and Little Hill quarries, and geology of the Woolhope Inlier, southern Welsh Borderland (after Squirrell and Tucker, 1960; and Earp and Haim, 1971).