
Scutterdine Quarry

[SO 577 368]

Introduction

Scutterdine Quarry lies within the Woolhope district, which is situated some 10 km west of the southern part of the Malvern Hills, between Ledbury, Hereford and Ross-on-Wye. This district comprises a link in the chain of Silurian inliers that run from the West Midlands in the north to the Cardiff and Mendips areas in the south. The Woolhope Inlier is periclinal in form, the main axis trending NW–SE and the western limb being the steeper (Figure 4.10). Llandovery strata are present in the core, these being successively enveloped by Wenlock, Ludlow and Permian age sediments. Numerous dip faults offset all the Silurian rocks throughout the pericline.

The quarry is located in the north-west part of the inlier and exposes the Woolhope Limestone, a name first coined by Murchison (1839) for this essentially calcareous unit which here forms the base of the Wenlock Series. Murchison's lithostratigraphical term was endorsed, slightly later, by Phillips (1848) and used subsequently by all students of the Woolhope Silurian, for example Richardson (1907), Gardiner (1927), Pocock (1930) and Squirrell and Tucker (1960), the last of these providing the now standard account of the inlier. Most lately, Bassett (1977) has given the unit formation status.

The Woolhope Limestone Formation was deposited over a wider area of the central-southern part of the Welsh Borderland than just the Woolhope district. As such, this site is regionally representative for this early Wenlock time in terms of lithofacies, fossils and thus palaeoenvironment.

Description

In the inlier as a whole, the Woolhope Limestone Formation is 36 m thick and consists of nodular argillaceous limestones and fine-grained, rubbly siltstones. The limestones vary in colour from olive-grey to greenish-grey and the siltstones are commonly light olive-grey. The base of the formation generally shows a sharp lithological change from the siltstones, fine sandstones and impure and crinoidal limestone bands of the uppermost Llandovery Haugh Wood Beds below, the latter containing the well-known *Petalocrinus* Limestone horizon. The top of the formation, in contrast, shows a more gradual transition into the overlying Coalbrookdale Formation. Within the Woolhope area, the Woolhope Limestone contains four bentonites.

The quarry at Scutterdine was formerly the most important one in the district for extracting the Woolhope Limestone. A vertical face in the centre of the outcrop shows now some 6–8 m of the limestone, though its present extent is reduced both vertically and laterally by vegetation and lain from that during the heyday of quarrying operations (see photographs in Richardson, 1907). The face runs roughly parallel to strike and the strata dip south-west at about 10°.

About 1 m of the massive, blue, 1.5 m thick limestone, which was the main bed quarried in the area, was recorded by Gardiner in 1927 as being exposed at the base of the quarry; above this he described 7.3 m of brown impure limestones with shale partings, followed by 3.6 m of shales and thin limestone bands. About the same time Pocock (1930) also noted that the main blue limestone occurred at the base of the old quarries at Scutterdine, and that overlying it there was a 0.6 m thick ('creamy, yellow, soapy clay') bentonite, which was divided by a 10 cm band of ferruginous, cuboidally jointed limestone. Squirrell and Tucker (1960) remarked on the utility of this particular bentonite in local correlation, having traced it around the central topographical dome of the inlier.

The macrofauna of the Woolhope Limestone consists mainly of brachiopods, with corals and trilobites also occurring (Squirrell and Tucker, 1960). Hurst (1975a) assigned the brachiopods from the Woolhope Limestone of the inlier to his *Eoplectodonta duvalii* Community. From Scutterdine Quarry in particular, Gardiner (1927) listed 10 brachiopod species, a coral and an orthoconic nautiloid. Figured specimens from this quarry, some of them types, include those of the

brachiopod *Leptaena oligistis* Bassett (1974b), the trilobites *Bumastus barriensis* Murchison, 1839 (Lane and Thomas, 1978) and *Warburgella* (*Warburgella*) *scutterdinensis* Owens (1973), and the alga *Girvanella pusilla* Johnson (1966).

Interpretation

Because graptolite evidence is lacking from the Woolhope Limestone Formation there has previously been uncertainty as to its precise age (Bassett, 1974a). All authors, however, now regard it as basal Wenlock. Some Llandovery elements such as *Costistricklandia lirata lirata* and *Eocoelia sulcata* continue through into the limestone from the upper Llandovery, but the base of the formation lies some metres above typically latest Llandovery associations of *Costistricklandia* and *Palaeocyclus porpita*. Also, overall, the lithology and shelly fauna of the limestone equate well with that of the lower Wenlock Buildwas Formation of the type Wenlock area; *Eoplectodonta duvalii* and *Anastrophia deflexa*, for example, occur in both formations, these species being at best very rare in British upper Llandovery horizons. Further, *B. barriensis* is known elsewhere only from the early Wenlock, carbonate, Barr Limestone Member (Coalbrookdale Formation) of the West Midlands and the Woolhope Limestone of the Malverns, with the genus *Bumastus* being unknown outside the Wenlock. The presence of *Resserella sabrine sabrinae* in the Woolhope Limestone of the type area suggested to Hurst *et al.* (1978) an age between the *centrifugus* and *riccartonensis* biozones for this unit.

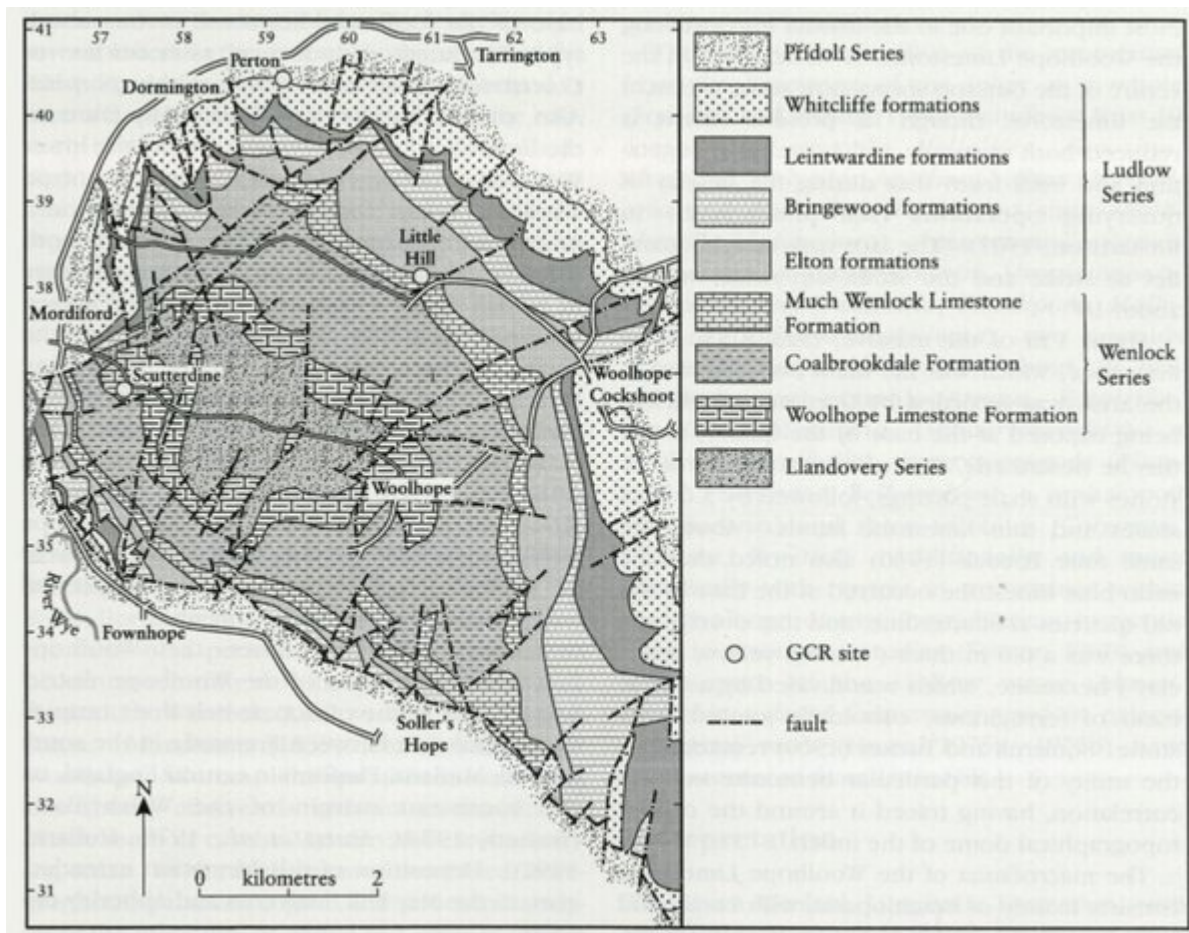
In early Wenlock times the Woolhope Limestone Formation of the Woolhope district formed part of the carbonate belt that occupied the central area between Pretannia in the south and the Midland Platform in central England, on the south-east margin of the Welsh Basin (Bassett, 1974a; Hurst *et al.*, 1978; Holland, 1992). Deposition of this formation extended, also, to the May Hill, Malverns and Abberley districts.

Another site that displays evidence of this carbonate belt during the early Wenlock is Hay Head in the West Midlands, where the penecontemporaneous Barr Limestone occurs. Dolyhir Quarries in the Radnor area also expose lower Wenlock carbonates, but here they are dominantly algal in nature, formed on topographic highs farther offshore, and may or may not have been in depositional continuity with the coeval Woolhope carbonates (Hurst *et al.*, 1978; Holland, 1992). The Buildwas River and Hughley Brook sites, in the type Wenlock area, also show lime-rich deposition during this time, in the form of the Buildwas Formation. The lower Wenlock clastic sediments of the Brinkmarsh Quarry site in the Tortworth Inlier to the south reflect its closer position, compared with Woolhope, to the shoreline of Pretannia.

Conclusions

Scutterdine Quarry has probably the best exposure of the Woolhope Limestone Formation in its type area. This is a notable sedimentary unit that occurs at the base of the Wenlock Series in several inliers in the central-southern part of the Welsh Borderland. The limestone was formed as part of a carbonate belt that existed on the relatively shallow eastern margin of the Welsh Basin during the early Wenlock. The site therefore has lithostratigraphical importance and is regionally representative, and it is also the type locality for some macroinvertebrates. It is used mainly for research purposes.

[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).