Linton Quarry

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Introduction

Linton Quarry is the southernmost of a group of old quarry workings in the Silurian of the Gorsley area (Figure 4.11), which is situated between the May Hill and Woolhope Silurian inliers (Lawson, 1955; Squirrell and Tucker, 1960) in the southern Welsh Borderland. Murchison (1839), Phillips (1848) and Symonds (1872) were early commentators on the Silurian geology of the Gorsley area, but it was Lawson (1954) who first described in detail and put in modern terms the Silurian succession here, including that of Linton Quarry, which locally provides the best section.

In Linton Quarry the Gorsley Limestone is exposed below Ludlow and P■ídolí strata. Historically there has been debate (Lawson, 1954) as to whether this lithostratigraphical unit is the lateral equivalent of the (Much) Wenlock Limestone (Formation) of late Wenlock age or of the Aymestry Limestone (= Upper Bringewood Formation) of mid-Ludlow (high Gorstian) age. Murchison (1939), Symonds (1872) and, seemingly, Pocock (1950) all regarded the limestone to be a correlative of, or the same as, the Aymestry Limestone; Phillips (1848) considered both the Wenlock and the Aymestry limestones to be exposed in the Gorsley area; Lawson (1954), supported by Bassett (1974a), equated the limestone with the Much Wenlock Limestone; Hurst *et al.* (1978) thought that whilst it was not equivalent to the Aymestry Limestone, a correlation with the Much Wenlock Limestone was uncertain and that it could be anything from late Wenlock to mid-Ludlow in age.

Description

Wenlock age rocks form the lowest part of the exposure in Linton Quarry, where the Silurian strata (Figure 4.12), (Figure 5.46) dip at 5° to the southwest. The Gorsley Limestone here is hard, massive, light bluish-grey in colour, with irregular seams and pockets of silt, and is up to 3.6 m thick though its base is not exposed (Lawson, 1954). It contains a macrofauna mostly of brachiopods, for example species of *Leptaena, Strophonella, Atrypa, Meristina, Sphaerirhynchia, Brachyprion, Fardenia, Delthyris, Gypidula* and *Camarotoechia,* and corals including *Favosites* and solitary forms, plus a species of the gastropod *Platyceras,* together with indeterminate crinoid ossicles and bryozoans. The thelodont *Thelodus parvidens* has also been recorded from the Gorsley Limestone of Linton Quarry (Turner, 1973), and scolecodonts occur (R.J. Aldridge, pers. comm.).

Interpretation

Lawson (1954) based his correlation of the Gorsley Limestone with the Wenlock Limestone on lithological, stratigraphical and palaeontological grounds. He contended that the Gorsley Limestone was harder, purer and more crinoidal than typical Aymestry Limestone and especially more so than that of the nearest Aymestry outcrop just 5 km to the north in the Woolhope Inlier; moreover that the lithology of the Gorsley Limestone is essentially inseparable from that of the undoubted Much Wenlock Limestone of Ledbury Quarry (= Gurney's Quarry, this volume, Ludlow sites) 13 km to the NNE on the south-western flank of the Malvern Hills.

Stratigraphically, Lawson argued that in both the Woolhope and May Hill inliers — just a few kilometres to the north and south of the Gorsley area respectively, the Aymestry Limestone thins towards this area and is cut out.

Palaeontologically, Lawson maintained in particular that the fairly common' occurrence of *Meristina obtusa* at Gorsley, especially in a limestone facies, should be taken as an almost certain indication of a Wenlock age. This followed on from Alexander's (1936) contention that this brachiopod had not been found in the Aymestry Limestone, a view upheld by the work of Bassett (1974a) who regarded *M. obtusa* as a clear indicator of an age within the upper half of the Wenlock and who corroborated Lawson's age assessment of the Gorsley Limestone. Lawson further maintained that several fossils

that occur in the Aymestry Limestone, for example *Isorthis orbicularis, Michelinoceras bullatum* and *Pristiograptus tumescens,* are not found in the Gorsley Limestone. Whilst commenting that this was somewhat negative evidence, and that in addition many species typical of the Wenlock elsewhere were also absent from the Gorsley Limestone, Lawson noted that this latter absence applies equally to the Much Wenlock Limestone of Ledbury (= Gurney's) Quarry, where both the composition and preservation of the fauna closely resembles that of the limestone in Linton Quarry.

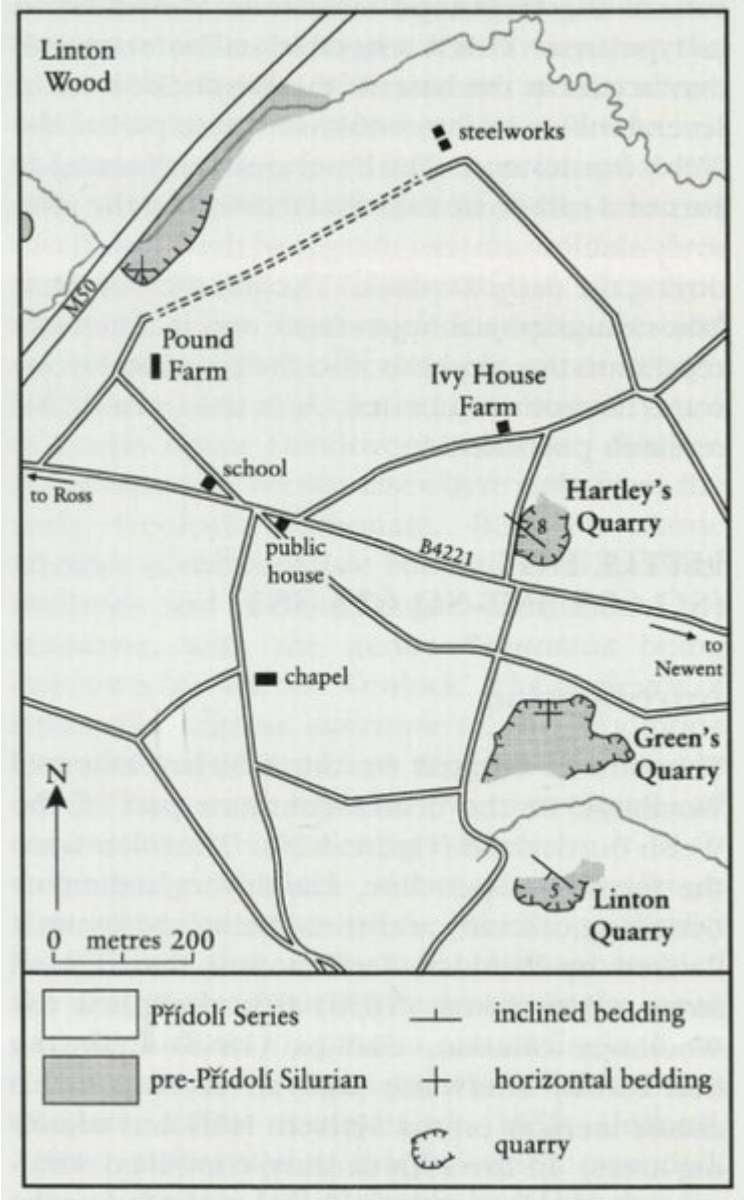
Hurst *et* al. (1978), in contrast to Lawson (1954) and to Bassett (1974a), declared the presence of *M. obtusa* to have no bearing on the age of the Gorsley Limestone, this species having been recorded (by R. Watkins, pers. comm.) from the middle Ludlow Bringewood beds in the Abberley Hills (Woodbury Quarry; this volume, Chapter 5). The current consensus (e.g. Cocks *et al.,* 1992), however, follows the conclusion of Lawson. The true Ludlow age strata of Linton Quarry are described in Chapter 5 of this volume.

Linton Quarry is most closely networked to Little Hill and Hobbs Quarry in the Woolhope and May Hill inliers, respectively, and it also links to Cilwrgi Quarry in the Usk Inlier. All these southern Welsh Borderland sites expose the Much Wenlock Limestone Formation or a local correlative of it.

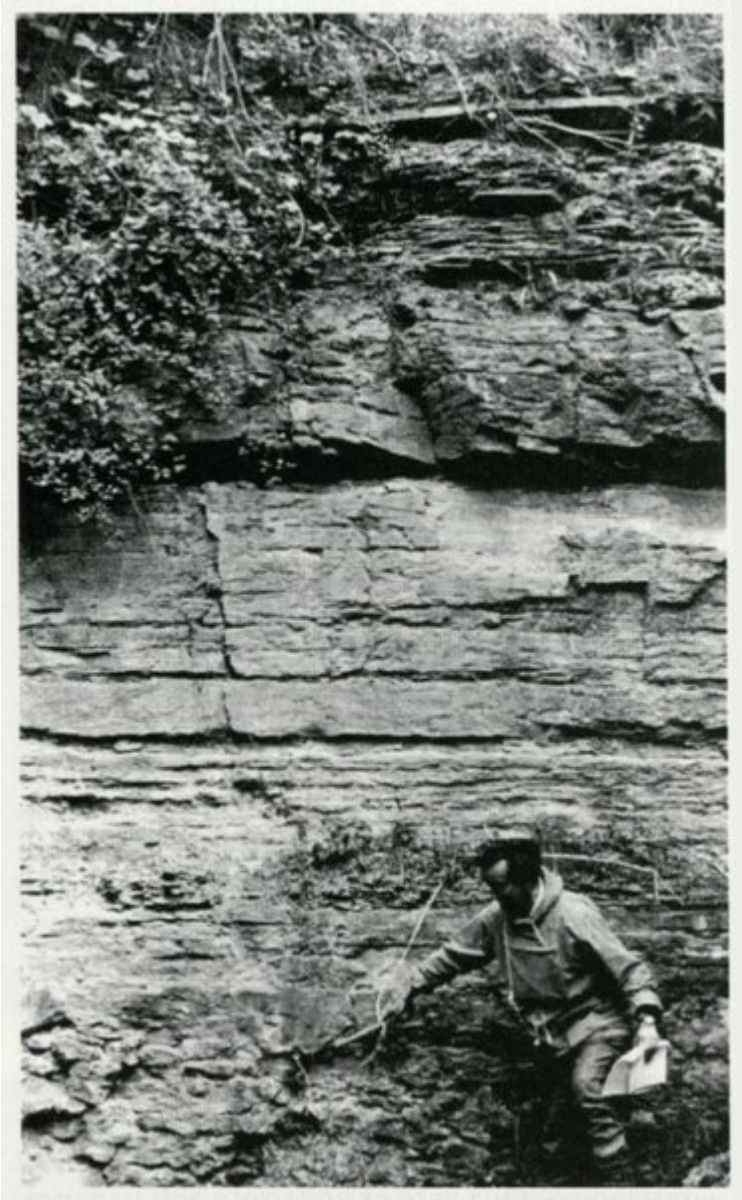
Conclusions

The basal sedimentary unit of the Silurian of the Gorsley area, the Gorsley Limestone, is best exposed in Linton Quarry. This limestone has been variously regarded since the time of Murchison in the mid-19th century as either Wenlock or Ludlow in age. Most authors of the present day consider it to be a correlative of the Much Wenlock Limestone Formation.

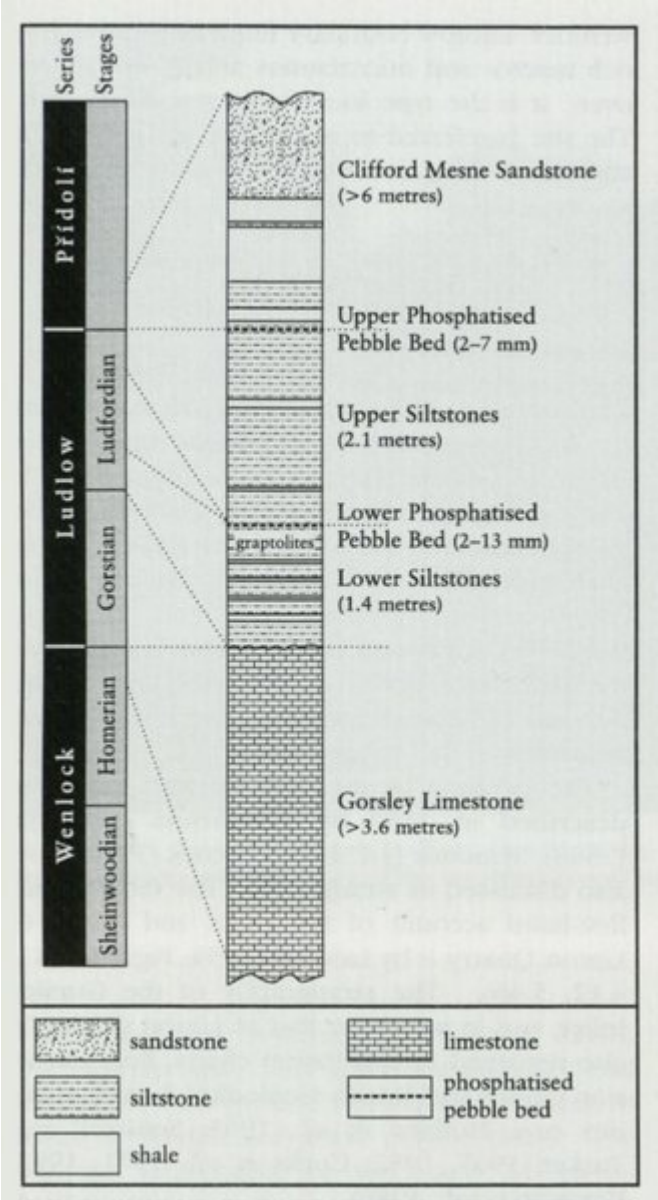
References



(Figure 4.11) Location of Linton Quarry and geology of the Gorsley area, southern Welsh Borderland (after Lawson, 1954).



(Figure 4.12) Linton Quarry, Gorsley area, southern Wales Borderland. Dr Jim Lawson indicating the Wenlock–Ludlow series boundary: the Gorsley Limestone of Wenlock age lies below the hammer head and the Lower Siltstones of Ludlow age above it. The middle part of the quarry face comprises a much condensed Ludlow sequence, with the P■ídolí age Clifford Mesne Sandstone forming the top. (Photo: Derek J. Siveter.)



(Figure 5.46) Succession and correlation of the Silurian strata at Linton Quarry, Gorsley Inlier, Herefordshire (after Lawson, 1954; see also Cocks et al., 1971, 1992).