Eaton Track

[SO 500 900]–[SO 504 902]

Introduction

This site, located in the hamlet of Eaton in Ape Dale, nestles close to the scarp face of Wenlock Edge (Figure 4.27). Situated in the sunken track adjacent to St Edith's Church, it comprises exposures high in the Coalbrookdale Formation (Figure 4.30). It achieved significance in terms of the stratigraphy of the Wenlock Series when Bassett *et al.* (1975; see also Bassett, 1989a) chose it to stand as the stratotype for the base of the Gleedon Chronozone, Homerian Stage, coincident with the base of the *nassa* Biozone. Thus it forms part of the network of such internationally important sites for the chronostratigraphy of the Wenlock in the type area.

Description

The track section runs to the east from St Edith's church for about 250 m and cuts obliquely across the NE–SW strike of the mid- to late Wenlock strata that young eastwards; fairly continuous exposure is available along both banks, the beds dipping to the south-east from 5–10°. Most of the section is in the upper part of the Apedale Member, Coalbrookdale Formation, which consists of blocky, olive-grey micritic mudstones. The youngest strata belong to the basal few metres of the Farley Member, uppermost Coalbrookdale Formation, which is characterized by an increase in carbonate content giving rise to calcareous nodules that sometimes coalesce and which alternate with thin mudstone horizons. The lithological change between the Apedale and Farley members is transitional over a few metres.

For some 180 m east of the church, strata of the *C. lundgreni* Biozone (Whitwell Chronozone, Homerian Stage) occupy the section, these rocks having yielded the following graptolites (Bassett *et al.,* 1975; (Figure 4.30)): *Monograptus flemingii, Pristiograptus dubius, Pristiograptus pseudodubius, Gothograptus nassa* and *?Pristiograptus jaegeri.* At 182 m east of the church [SO 5016 8999] *the lundgreni* Biozone is succeeded by the base of the *nassa* Biozone and thus the base of the Gleedon Chronozone. *G. nassa, P. jaegeri* and *Dendrograptus* sp. are the graptolites identified from the track section stratigraphically above (east of) this point. The *nassa* Biozone, as recognized by Bassett *et al.* (1975) in the whole of the type Wenlock area, has an assemblage of species that includes *G. nassa* (common), *P. dubius, P. pseudodubius* and *P. jaegeri;* in particular it lacks *M. flemingii* (found in the *lundgreni* Biozone) and shows the first appearance of *jaegeri. G. nassa* and *Dendrograptus* sp. are the stratigraphically youngest graptolites in the section, from the uppermost part of the Apedale Member.

Shelly fossils do occur in Eaton Track (particularly in the more lime-rich Farley Member), but they are less common. Greig *et al.* (1968) recorded, for example, *Glassia obovata, Resserella elegantula* and *Leptaena rhomboidalis* (brachiopods), *Loxonema* sp. (gastropod), *Ctenodonta* sp. (bivalve), *Michelinoceras subundulatum* (nautiloid), and *Dalmanites caudatus* (trilobite). In their monographic studies, Bassett (1972; brachiopods) recorded *Resserella canalis, Resserella sabrinae* and *Dicoelosia biloba* and Thomas (1978; trilobites) established *Harpidella* (*Harpidella*) *aitbolix* on the basis of specimens from this site. A rich microflora is also present, Downie (1959, 1963) in particular having noted over 50 species belonging to the following genera: *Micrhystridium, Polyedrixium, Pulvinosphaeridium, Estiastra, Baltisphaeridium, Veryhachium, Leiofusa, Cymatiosphaera, Pterospermopsis, Lophosphaeridium, Leiosphaeridia, Tasmanites* (acritarchs and prasinophyta algae) and *?Punctatisporites* and *Lophotriletes* (spores). At least 15 of the acritarch species found at this site have it as their type locality, for example *Micrhystridium eatonensis* Downie (1959) and *Florisphaeridium wenlockensis* Dorning (1981b). The sporomorphs from the Apedale and basal part of the Farley members of Eaton Track have been specifically documented by Burgess and Richardson (1991).

Interpretation

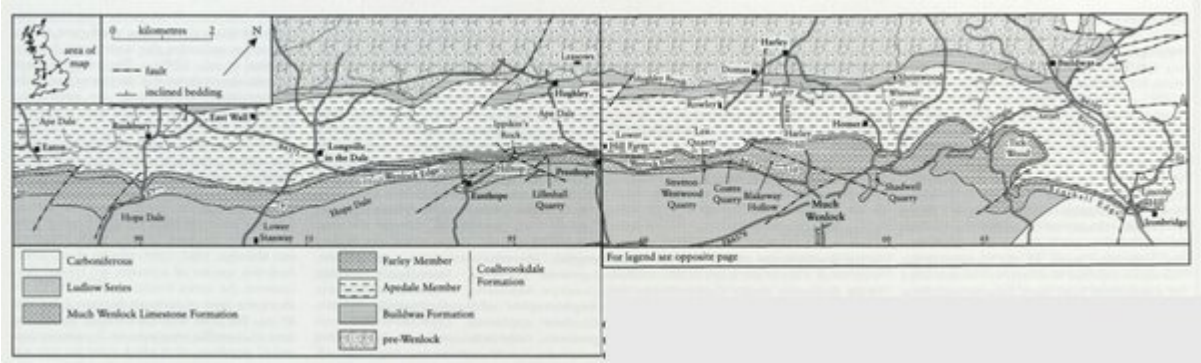
The sediments of the Apedale Member were deposited in an open marine, outermost shelf environment as the Sheinwoodian–Homerian easterly transgression, which continued from Llandovery times, further submerged the land area that had previously occupied central England (Bassett 1974a, 1989a; Holland, 1992). The environment was one of low energy, below wave base, and was mud-dominated with a dominantly planktonic fauna and flora and a relatively sparse benthos. The Farley Member indicates the beginning of the shallowing and higher energy conditions that culminates with the reef formation of the Much Wenlock Limestone. This change may also reflect climatic warming (Jeppsson *et al.,* 1995).

Stratigraphically, the Eaton Track site lies up-sequence from the Whitwell Coppice site, which exposes middle Coalbrookdale Formation strata of late Sheinwoodian–early Homerian age, and it lies immediately down-sequence from the Longville in the Dale, Easthope-Harley Hill and Farley sites, though these last three link with it by exposing the Farley Member of mid–late Homerian age.

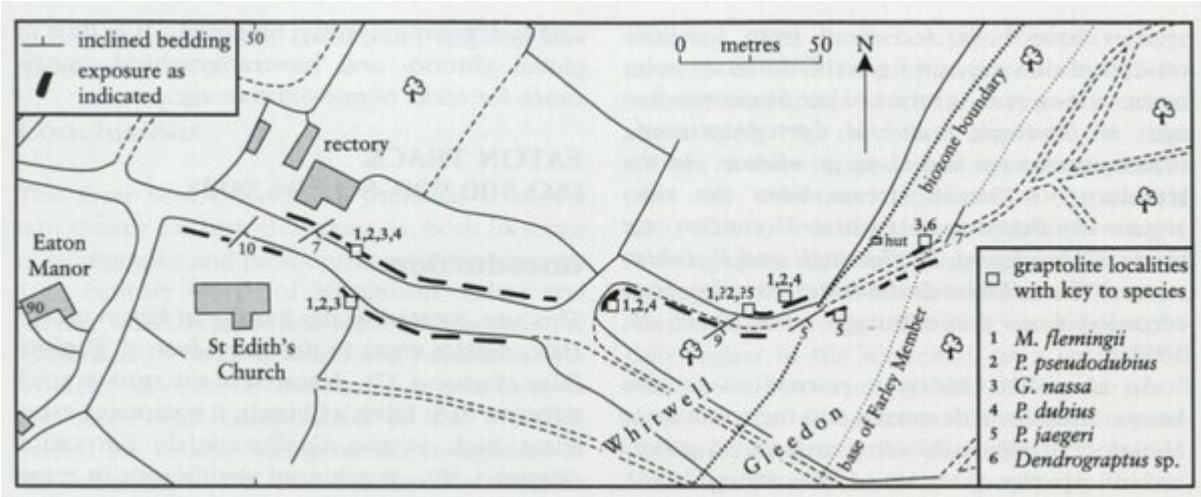
Conclusions

Eaton Track is of international importance for the chronostratigraphy of the Wenlock Series in the type area. It is the designated stratotype for the base of the Gleedon Chronozone, Homerian Stage, defined in the section at the base of the *nassa* Biozone. It also provides a more or less complete sequence through much of the upper part of the Coalbrookdale Formation in its type area and shows the transitional lithological change within this formation from the carbonate muds of the Apedale Member to the more calcareous, nodular Farley Member. Very quiet, followed by slightly higher energy conditions chart the deposition of the Apedale and Farley members, respectively. The site is noteworthy for its planktonic fauna and microflora, with the graptolites from here enabling construction of a biostratigraphy for the type Wenlock Series, and many acritarch species being based on specimens from its trackside exposures.

References



(Figure 4.27) Geology of the Wenlock Edge–Benthall Edge area between Eaton and Ironbridge, Shropshire (after Bassett et al., 1975).



(Figure 4.30) Eaton Track, Wenlock Edge, Shropshire. Location of the standard section for the base of the Gleedon Chronozone, Homerian Stage, together with the graptolites recorded either side the boundary (after Bassett, 1989a).