Devil's Hole, Shropshire

[SO 672 929]

Potential ORS GCR site

W.J. Barclay

Introduction

The Devil's Hole site in Shropshire (Figure 5.7) is an established GCR site for its fossil fishes (Dineley, 1999f). A brief summary is presented here, along with a geological map of the site. The opportunity is also taken to correct the vertical section (Figure 5.8) given in Dineley's account (fig. 4.8).

The site provides a stream section across the 'Downtonian'–'Dittonian' boundary, with fish remains recovered from above and below the Bishop's Frome (Psammosteus) Limestone. Excavations by the GCR Unit of the Nature Conservancy Council between 1980 and 1982 enabled a detailed sedimentological and palaeontological analysis by M.A. Rowlands and P. Tarrant (Tarrant, 1991). The section is now poorly exposed and difficult to access.

The section was originally collected by the [British] Geological Survey (Whitehead and Pocock, 1947) and later by Ball and Dineley (1961). Reference to the geology of the site was made by Ball and Dineley (1961), Allen and Tarlo (1963), Banks (1980), Richardson *et al.* (1981), Allen (1985), Blieck (1985), Halstead (1985) and Jenkins (1998). The fish faunas were also referred to by Wills (1948, 1950), White (1950), Denison (1956), Robertson (1957), Turner (1973), Blieck (1981, 1984, 1985), Tarrant (1981) and Vergoossen (2000).

Description

A mature 2.5 m-thick calcrete cropping out in a lichen-coated waterfall [SO 6710 9284] is correlated with the Bishop's Frome (Psammosteus) Limestone and marks the top of the Raglan Mudstone Formation (Jenkins, 1998). The succession below the limestone comprises mainly red mudstones/siltstones with sporadic thin sandstones and several thin calcretes. The St Maughans Formation (Ditton Group of Dineley, 19990 lies above the Bishop's Frome Limestone and comprises a succession of fining-upward cyclic sandstone–siltstone–mudstone units. The basal coarse members of the cycles include intraformational conglomerate lenses, in which most of the disarticulated fish remains are found. The commonest fish below the limestone is *Traquaraspis* (*Phialaspis*) *symondsi.* Above the limestone, pteraspids dominate, including several species of *Protopteraspis.*

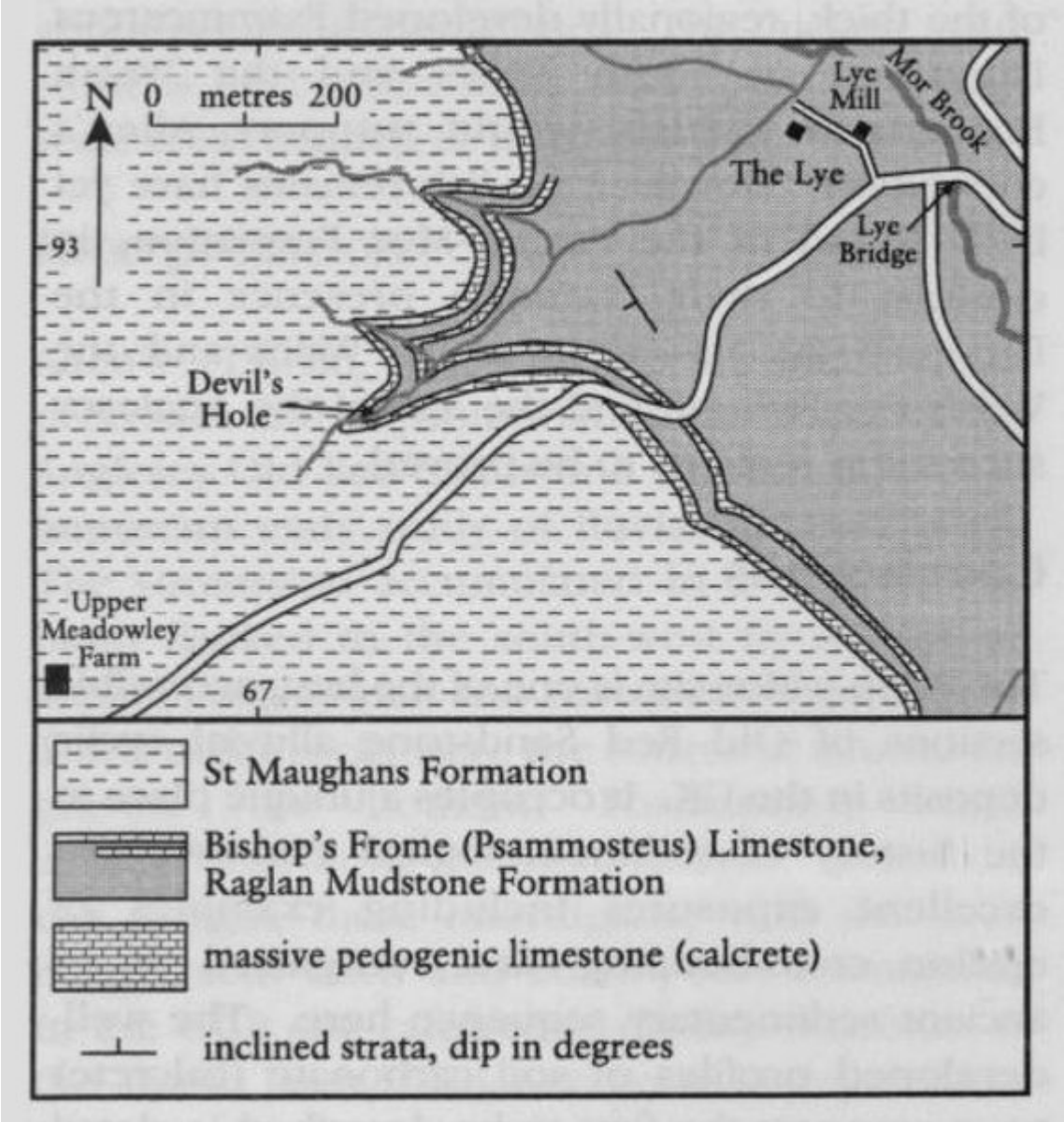
Interpretation

The Raglan Mudstone Formation is interpreted as the deposits of a coastal alluvial-floodplain subject to frequent desiccation and soil carbonate formation and crossed by minor distributary channels. The Bishop's Frome Limestone represents a prolonged period of basin-wide non-deposition and soil carbonate formation. The St Maughans Formation represents a medial alluvial environment, with the sandstones being mainly channelized, high-sinuosity stream deposits and the argillaceous lithologies being floodplain deposits.

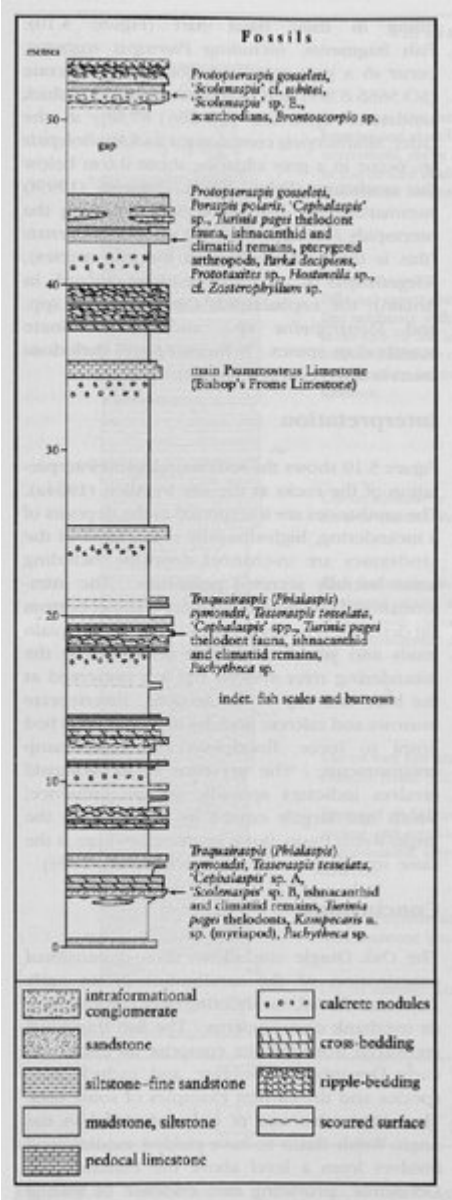
Conclusions

Historically, this has been an important site for the large amount of fossil fish material it has yielded. The assemblages span the Downtonian'–'Dittonian' boundary. Although poorly exposed and difficult to access, the site presents opportunity for further excavation and may help in pinpointing the Silurian–Devonian boundary within the Old Red Sandstone.

References



(Figure 5.7) Geological map of Devil's Hole GCR site. Based on British Geological Survey 1:10 560 manuscript map Shropshire 58NW (1960) and 1:10 000 manuscript map SO 69SE (2002).



(Figure 5.8) Vertical section of the strata at Devil's Hole. Based on Dineley (1999f, fig. 4.8), after M.A. Rowlands (MS).