
Oak Dingle, Tugford, Shropshire

[SO 566 871]

Potential ORS GCR site

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Introduction

Oak Dingle near Tugford, Shropshire is already an established GCR site for its fossil fishes (Dineley, 19991). A brief summary is presented here. The stream section (Figure 5.9) exposes a near-strike section in strata in the lower part of the St Maughans Formation (Ditton Group of Dineley, 1999f). Its main conservation interest is in the rich fossil fish fauna recovered from intraformational conglomerates. Another important feature not discussed by Dineley is the occurrence of modiolopsid bivalves. White (1935) first reported fish from this locality, since when it has been described by Ball and Dineley (1961), Allen (1964a), Greig *et al.* (1968) and Collinson (1978). Turner (1973) collected a thelodont fauna, and other microvertebrate remains from the site are listed by Vergoossen (2000). Greig *et al.* (1968) described modiolopsid bivalves from the site, first reported by Kyles (1953).

Description

(Figure 5.10) shows a graphic log of the strata compiled by Allen (1964a). Greig *et al.* (1968) provided details of the section. The strata lie in the lower part of the St Maughans Formation, close above a group of calcretes in about 35 m of strata named the 'Psammosteus Limestones' by Ball and Dineley (1961) and Greig *et al.* (1968). In this area, there appears to be no single laterally persistent, thick limestone to mark the junction between the underlying Raglan Mudstone Formation and overlying St Maughans Formation. However, a thick (4.3 m) calcrete, the lowest of three, is present to the west of Oak Dingle and can be traced to a 1.3 m calcrete in the stream [SO 563 870] between Oak Dingle and Tugford. Above, it is separated by 0.6 m of mudstone from 0.6 m of mudstone- and calcrete-rich intraformational conglomerate, which is unusual in also containing round quartz pebbles. Greig *et al.* (1968) placed the junction (between their Ledbury Group and Ditton Series) at the base of this bed, which accords with the base of the St Maughans Formation in current lithostratigraphical classification.

The section mainly comprises sandstones showing evidence of multiple channel incision and filling in their basal part (Figure 5.10). Fish fragments, including *Pteraspis rostrata*, occur in a grey intraformational conglomerate [SO 5656 8709] and in the base of a 2.1 m-thick sandstone upstream [SO 5661 8730]; at the latter, *Modiolopsis complanata* and *Modiolopsis* sp. occur in a grey siltstone about 0.6 m below the sandstone (Eyles, 1953). Dineley (19990) summarizes the fish fauna as comprising the pteraspids *Pteraspis rostrata* var. *trimpleyensis* (this is the best site known for this species), *Wiegeltaspis* n. sp. (the earliest record in Britain); the cephalaspids *Cephalaspis* n. spp. and *Stensiopelta* sp.; and indeterminate acanthodian spines. A *Turinia pagei* thelodont fauna is also recorded (Turner, 1973).

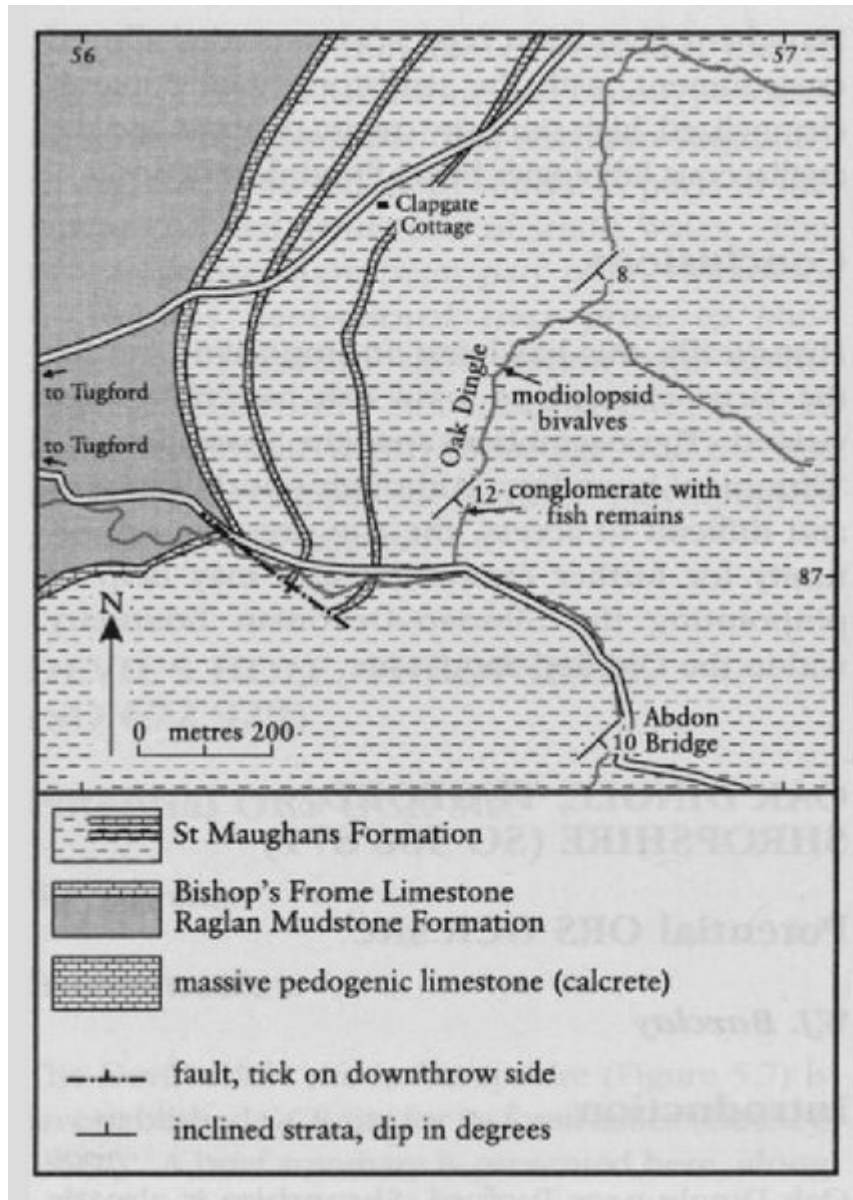
Interpretation

(Figure 5.10) shows the sedimentological interpretation of the rocks at the site by Allen (1964a). The sandstones are interpreted as the deposits of a meandering, high-sinuosity river. Most of the sandstones are in-channel deposits, including some laterally accreted point-bars. The intraformational conglomerates were channel-bottom lag deposits. The finer-grained alluvial-floodplain muds and silts were largely destroyed by the meandering river system, but are preserved at the base and top of the section. Invertebrate burrows and calcrete nodules in the topmost bed point to levee, floodplain and backswamp environments. The presence of modiolopsid bivalves indicates sporadic marine influence, which had largely ceased by this time in the Anglo-Welsh Basin, but is known elsewhere at the same stratigraphical level (Barclay *et al.*, 1994).

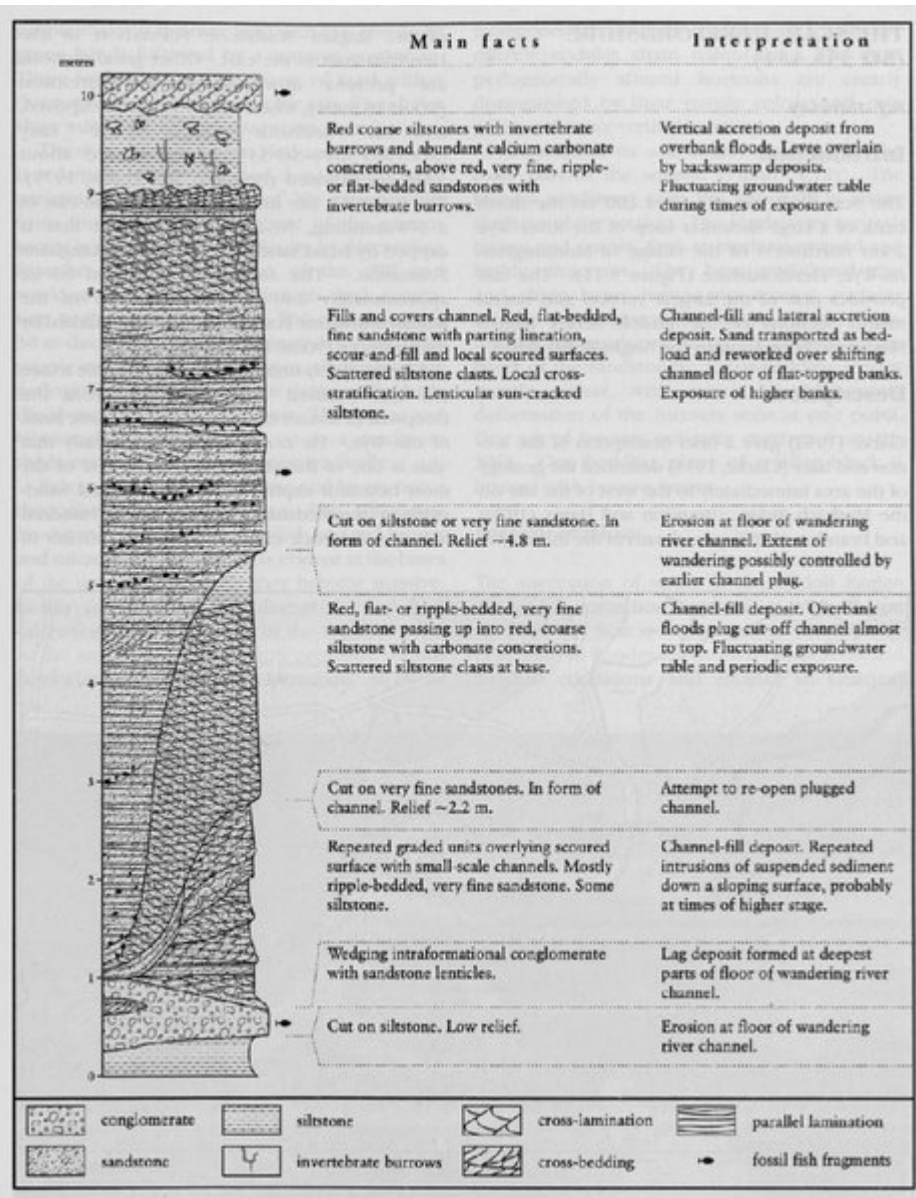
Conclusions

The Oak Dingle site allows three-dimensional examination of the sandbodies of an early Devonian fluvial, meandering river complex and its overbank environments. The fish fragments recovered from the site comprise an important early Devonian assemblage and include new species and the earliest examples of some taxa. The site is also one of only a handful in the Anglo-Welsh Basin to have yielded modiolopsid bivalves from a level above the Psammosteus Limestone, providing rare evidence of marine influence in early Devonian times.

References



(Figure 5.9) Geological map of Oak Dingle, Tugford. After British Geological Survey 1:10 560 manuscript map Shropshire 65NW (1960)



(Figure 5.10) Vertical section of the strata in Oak Dingle, Tugford, showing the sedimentary facies and their interpretation by Allen (1964a). After Dineley (1991, fig. 4.11).