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# Burrington Farm Stream Section

[SO 4389 7278]

## Introduction

This Herefordshire site consists of small exposures along a southern bend of the stream called Nunfield Gutter, approximately 650 m east of the River Teme and north-west of the village of Burrington, in the western part of the northern limb of the Ludlow Anticline. Its geology was documented by Holland *et al.* (1963, locality 69) when they established the stratigraphy of the type Ludlow Series. They chose this locality as the standard section for the base of their Middle Elton Beds. Its current stratigraphical status, as the basal stratotype for the Middle Elton Formation (Elton Group, Gorstian Stage), was reviewed and formalized by Lawson and White (1989, locality 5; see (Figure 5.23)). Since Murchison's (1839) time, the Burrington area has long been known for its Silurian geology and fossils.

As originally designated this GCR site was named Burrington Farm stream and trackside section. As such it also included a nearby locality, on the north side of a track on the north-eastern margin of Onney Wood, which displayed the then standard section for the base of the Upper Elton Beds (Holland *et al.*, 1963, locality 76; [SO 4367 7283]). On the loss of that outcrop because of degradation, a specially excavated (1981) exposure near the Goggin Road section in the Ludlow Anticline was selected as the basal boundary stratotype for the Upper Elton Formation (see Lawson and White, 1989 and GCR site report for Goggin Road).

## Description

The rocks on site are the irregularly bedded, flaggy, calcareous siltstones with calcareous nodules at the top of the Lower Elton Formation, overlain by more thinly and better bedded siltstones of the Middle Elton Formation; beds dip 42° NNW (Holland *et al.*, 1963). The lithological and palaeontological transition between these formations occurs over about 1 m of strata and is seen at both western and eastern ends of the southern bank of a meander in Nunfield Gutter (Figure 5.24).

The Lower Elton contains a rich, characteristically fragmentary shelly fauna, including the brachiopods *Atrypa reticularis*, *Aegiria grayi*, *Dicoelosia biloba*, *Glassia* sp., *Howellella elegans* and *Leptaena depressa*, the bivalves *Nuculites* sp. and *Pterinea* sp. and the trilobite *Dalmanites myops*. Up to 33 cm above a thin brown clay band, which is traceable west to east across the exposures at the meander, the beds have a transitional fauna consisting of several brachiopod species together with abundant graptolite fragments and the orthoconic nautiloid *Michelinoceras*. The base of the Middle Elton Formation is drawn at a horizon 46 cm above the top of the clay band. About 60 cm above that boundary typical Middle Elton strata are developed and yield *Neodiversograptus nilssoni* and *Monograptus uncinatus orbatus*.

Other localities in the vicinity of Burrington, which collectively span upper Coalbrookdale Formation (Wenlock Series) to Upper Elton Formation strata, are detailed by Holland *et al.* (1963, fig. 10; see also Lawson and White, 1989, Siveter *et al.*, 1989, locality 3.7 and (Figure 5.23)). They include exposures in Nunfield Gutter that display body stratotypes of the Lower [SO 4366 7266] and [SO 4348 7262]: localities 4a, 4b of Lawson and White, 1989) and Middle ([SO 4352 7264] and [SO 4337 7263]: localities 8a, 8b of Lawson and White, 1989) Elton formations. Some 200 m to the north-west of Nunfield Gutter, in crags above the River Teme in Downton Gorge, there is a body stratotype section of the Upper Elton Formation (Lawson and White, 1989, locality 12).

The graptolite records of the Burrington area were important in helping to resolve the position of the Wenlock–Ludlow boundary with respect to graptolite biozonation (Holland *et al.*, 1969). They demonstrate that it is the base of the *N nilssoni* Biozone rather than that of the *M. ludensis* Biozone that correlates most closely with the Wenlock–Ludlow series boundary as defined nearby at the basal Ludlow Series stratotype at Pitch Coppice.

## Interpretation

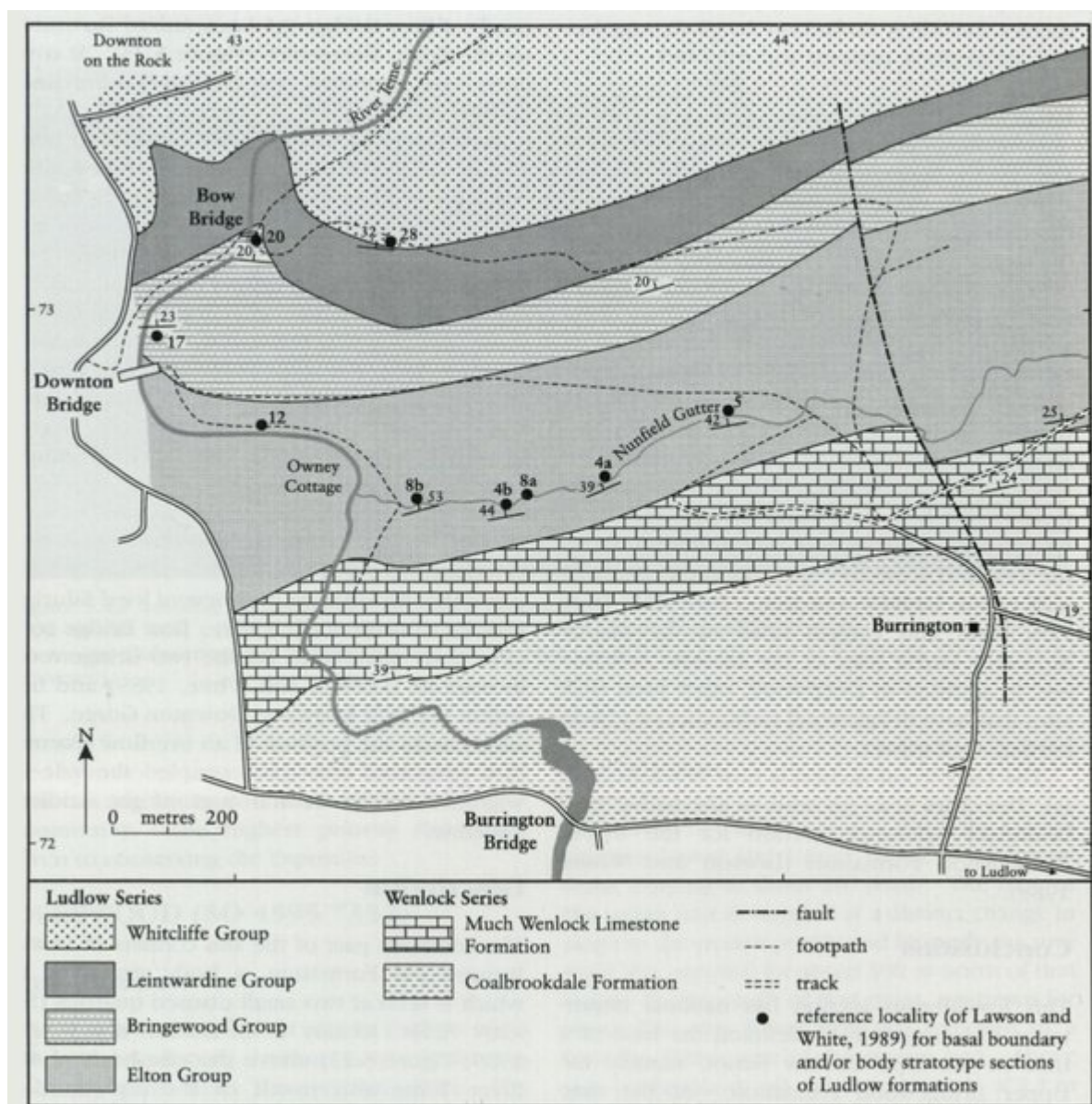
These sediments were deposited on the shelf area flanking the eastern side of the Welsh Basin (Siveter *et al.*, 1989, figs 8–10; Bassett *et al.*, 1992, fig. S4a). The overall lithological transition across the Lower–Middle Elton boundary, which is also mirrored in a faunal shift from mostly shelly benthos to graptolite dominated assemblages, may reflect a gradual increase in water depth.

Locally, in the type Ludlow area, GCR sites at Goggin Road and Elton Lane also have the Lower and Middle Elton formations and the basal Ludlow stratotype at Pitch Coppice displays the lower unit. Elsewhere in Shropshire both formations can be examined at the Upper Milliehope site.

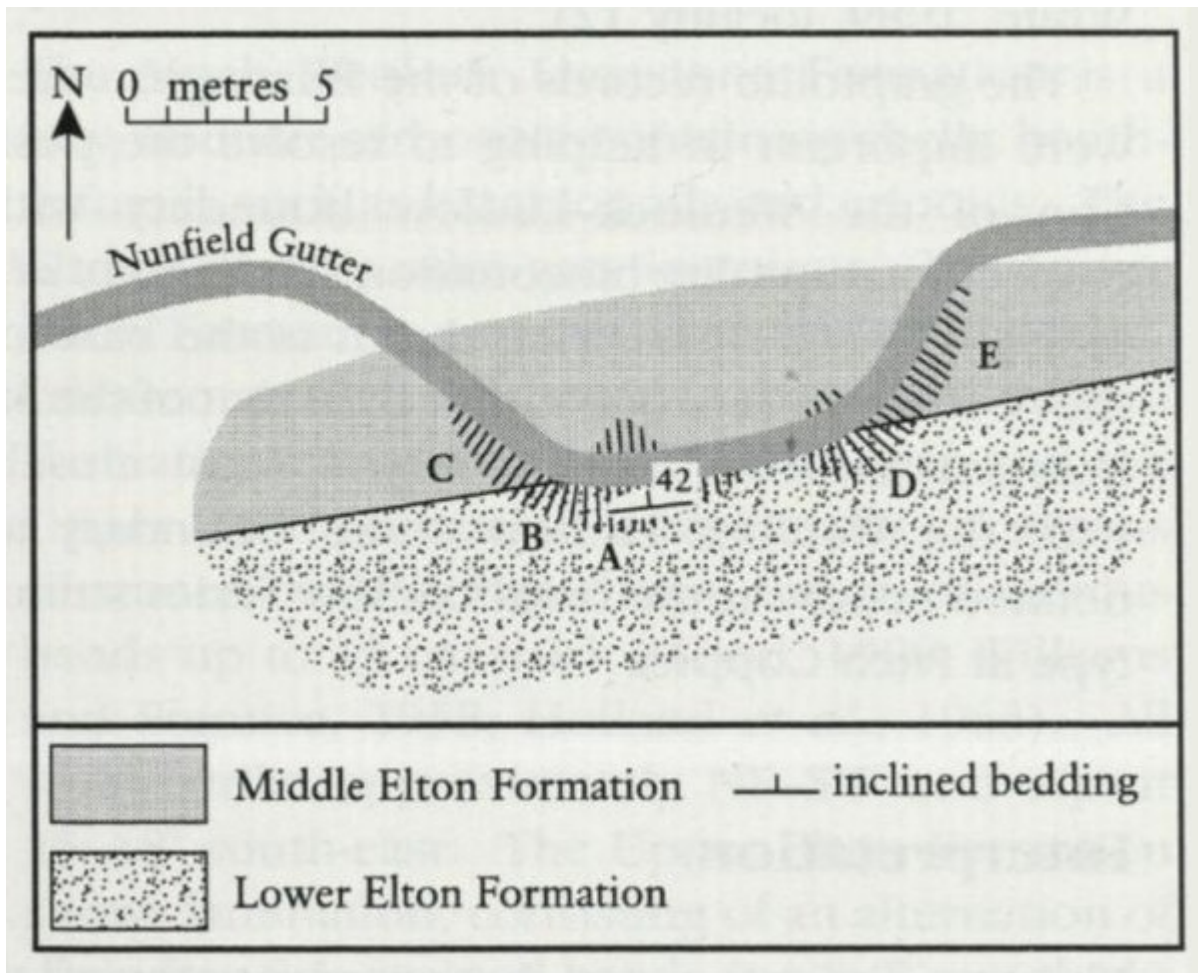
## Conclusions

Characteristic lithologies and faunas for two of the three formations of the Elton Group may be examined at this locality. As a basal stratotype section for the Middle Elton Formation of the type Ludlow Series it is of national importance in stratigraphy and should be conserved.

## References



(Figure 5.23) The geology between GCR sites at Bow Bridge and Burrington, in the western part of the northern limb of the Ludlow Anticline (after Holland *et al.*, 1963 and Lawson and White, 1989).



(Figure 5.24) The location of the basal stratotype section of the Middle Elton Formation, at Nunfield Gutter, near Burrington, in the Ludlow Anticline (from Holland et al, 1963). The letters refer to parts of the section as described by Holland et al. (1963).