
Marshwood

[SO 444 891]

Introduction

Marshwood is the historical type section for the Marshbrookian Substage of the Cheneyan Stage and is nationally important in containing the basal stratotype for the Actonian Substage of the overlying Streffordian Stage. The faunal change at the base of the Actonian is one of the most striking in the type upper Caradoc and permits correlation with Scandinavia and potentially with sequences deposited around Gondwana. Marshwood is also the type locality for several trilobite and brachiopod species.

Bancroft (1929b) introduced the term 'Marshbrookian' for a stage of the Caradoc and subsequently (1945) designated his Upper Longville Flags in the lane through Marshwood as the type section. The Marshbrookian is now considered a substage of the Cheneyan Stage (Fortey *et al.*, 1995). Bancroft (1929b) divided the Marshbrookian into three brachiopod zones, in ascending order the zones of *Wattsella watsi*, *W. unguis* and *Kjaerulfina polycyma*. The last of these was subsequently renamed the *Onniella reuschi* Zone (Bancroft, 1933). Hurst (1979b) redefined Bancroft's Upper Longville Flags as the Crosspipes Member of the Cheney Longville Formation. He designated its basal stratotype and that of the Marshbrookian at Cheney Longville, south of the Onny River, but illustrated a reference section for the lower part of the member in the river section at the northern end of Marshwood [SO 442 891] (Hurst, 1979b, fig. 6B), and considered the exposures in Marshwood to be the best section of the Marshbrookian. Hurst also recognized Bancroft's three zonal faunas as successive faunal associations (Hurst, 1979a, b) within the Crosspipes Member, and he redefined the base of the Actonian (now the Actonian Substage of the Streffordian Stage, following Fortey *et al.* (1995)) at the incoming of the third of them. The section in Marshwood was designated the basal stratotype for the revised base of the Actonian (Hurst, 1979b, p. 211, fig. 14). The Marshwood section has also been described in varying detail by Bancroft (1945, p. 195), Dean (1958, p. 209) and Greig *et al.* (1968, p. 133).

Description

At the time of writing (1996) the Marshwood section is extensively overgrown, but Greig *et al.* (1968) estimated a succession of a little over 30 m was present in the quarry and track to the south. The measured section provided by Hurst (1979b, fig. 14) forms the basis of (Figure 10.17) and shows the typical fine sandstones, siltstones and bioturbated shales of the Crosspipes Member of the Cheney Longville Formation. Some of the beds are shelly and otherwise calcareous, weathering to form rottenstones. The base of the Actonian lies to the immediate south of the quarry and is marked by a major change in the shelly fauna within this member. Dean (1958) noted that the transition from the 'Cheney Longville Flags' to the mottled siltstones of the overlying Acton Scott Formation (now within the Actonian Substage) could be seen in the track to the south, but this is now completely overgrown.

Interpretation

Hurst (1979a, table 1) interpreted the Cross-pipes Member as comprising distal storm sands together with silts that settled out from suspension (cf. Brenchley and Newall, 1982). It represents a deepening from the Woolstonian Glynboro Member of the Cheney Longville Formation. The Marshwood section is richly fossiliferous. Faunal lists were given, by Greig *et al.* (1968, appendix 1) and incorporated by Hurst (1979a, b) in the quantitative and semiquantitative lists of the faunal associations present in the member. Trilobites (Dean, 1960, 1961b, 1963a, b), brachiopods (Hurst, 1979b) and chitinozoans (Jenkins, 1967) have been described from the site, which is the type locality for several species, including the zonally important Marshbrookian trilobite *Broeggerolithus transiens*.

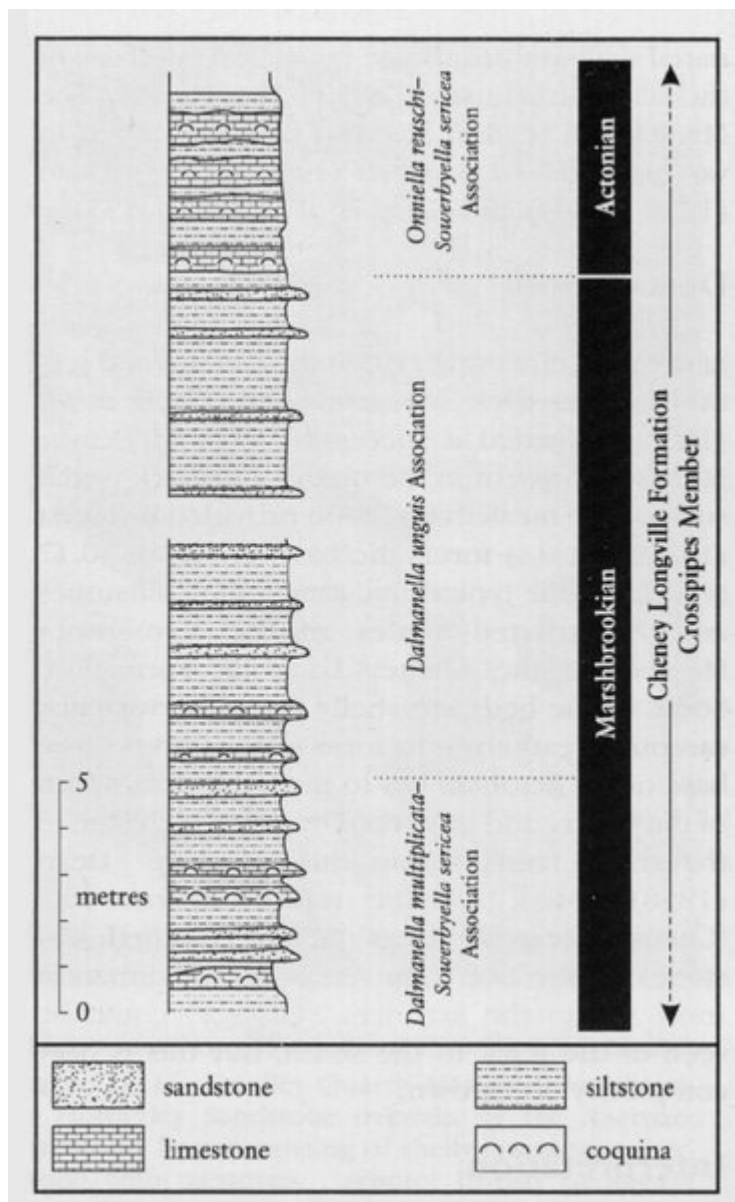
Hurst (1979a; see also Lockley, 1983) termed the three faunal assemblages present in the Crosspipes Member, in ascending order, the *Dalmanella multiplicata*–*Sowerbyella sericea* Association, the *D. unguis* Association and the

Onniella reuschi–*Sowerbyella sericea* Association. The base of the Actonian was defined at the base of the last of these, at a level that Hurst (1979b, p. 211) considered to be one of the most prominent faunal turnovers in the type upper Caradoc, possibly representing a wider than local ecological event. He gave a quantitative breakdown of the highest Marshbrookian and lowest Actonian faunas in the Marshwood section, showing the sudden introduction and dominance of the brachiopod *Onniella reuschi*. The Streffordian Stage, of which the Actonian is the lower substage, can be recognized in Scandinavia on the basis of its trilobite faunas (Fortey *et al.*, 1995, p. 23), and the appearance of the trilobite *Onnia* in the upper part of the stage holds the promise of close correlation with Gondwanan successions.

Conclusions

Marshwood is a nationally significant site, being the type section for the Marshbrookian Substage of the Cheneyan Stage of the type Caradoc Series and for the base of the succeeding Actonian Substage of the Streffordian Stage. It is thus important for correlation of the Caradoc, both within the Anglo-Welsh area and internationally. The site is the type locality for species of trilobite and brachiopod, and the shelly faunas have played a significant role in assessing the changes in Ordovician benthic communities in this part of the Welsh Basin.

References



(Figure 10.17) Sedimentary log through the Crosspipes Member of the Cheney Longville Formation in Marshwood, based on Hurst (1979b, fig. 14), showing the base of the Actonian Substage and the three faunal associations recognized by Hurst (1979a; see also Lockley, 1983).