
Gullet Pass Pit

[SO 7598 3798]

Introduction

At Gullet Pass Pit a clear exposure of fossiliferous shoreface sandstones allows approximate correlation of the basal Cambrian transgression in the Malvern area with that in the Wrekin area, where the dating is better constrained.

Groom (1899, 1902) described the general succession of Cambrian rocks in the Malvern Hills, distinguishing the Malvern Quartzite from the previously described Hollybush Sandstone of Phillips (1848).

White-leaved Oak Shale	Merioneth (St David's not recognized)
Hollybush Sandstone	
Malvern Quartzite	Comley

This sequence was adopted by Rushton (1974) and Worssam *et al.* (1989), who each summarize more recent work on the district.

The Malvern Quartzite occurs in faulted inliers, although at one place the base has been seen resting, probably unconformably, on the Malvernian Complex (R. Jones *et al.*, 1969). Because outcrops are small and generally faulted, the total thickness of the formation is unknown but may attain as much as 100 m in all (Groom, 1902, p. 93).

The lithology varies from pale-grey, even-grained quartzose sandstone to brown, sandy conglomerate. The petrology was described by Sweeting (1927). Cross-bedding is recorded, but trace fossils are not. Groom (1902, p. 91) described strata transitional to the overlying dark-green Hollybush Sandstone. The fauna recorded is of low diversity: *Paterina phillipsii* (Holl), *Obolella? groomi* Matley and rare hyolithids, including '*Hyolithes*' (*sensu lato*) *primaevus* Groom. These indicate an early Cambrian age (Comley Series).

Description

Gullet Pass Pit is a small quarry 100 m southwest of the Gullet Quarry [SO 7598 3798]. It exposes a small part of the outcrop of Malvern Quartzite, which locally may represent as much as 60 m of beds (Worssam *et al.*, 1989). The quarry exposes about 5 m of hard, brittle, even-grained quartzose sandstone, cemented by silica, forming beds around 10 cm thick; these are interbedded with conglomeratic layers containing rounded pebbles of quartz and rocks derived from the Malvernian Complex. The strata dip north at 32°. Certain sandstone layers contain numerous fragments of the brachiopods *Paterina phillipsii* and *Obolella? groomi*, together with the problematical *Sunnaginia* cf. *parva* Brasier. Humphreys (195-, undated) also recorded *Micromitra labradorica* (Billings), *Kutorgina? anglica* Cobbold and Pocock, *Obolella crassa* (Hall) and *Hyolithes primaevus*.

Interpretation

The Malvern Quartzite is interpreted as an early Cambrian shoreface sand that formed beside a landmass from which Malvernian rocks were being eroded. Although the formation rests unconformably on the Malvernian, the contact at the present locality is considered to be faulted (Worssam *et al.*, 1989). Shells of a low-diversity shallow-water fauna, reworked and broken by currents, are preserved in some beds.

The principal brachiopods recorded, *P phillipsii* and *O? groomi*, are known also from the lowest beds of the lower Comley Sandstone (Cobbold, 1921), for example at the Ercall Quarry (see site report, above) in the Wrekin area (Hamblin and Coppack, 1995, p. 9), and these suggest correlation with the Tommotian Stage of Siberia and part of the Comley Series

(non-trilobite Zone of Cowie *et al.*, 1972). *Sunnaginia parva* Brasier (1986) was described from the Home Farm Member at Nuneaton (see site report for Woodlands Quarry, below), which is correlated with the Tommotian Stage. One of the fossils recorded by Humphreys (195-, undated), *Paterina labradorica*, occurs at Comley, Shropshire, at a higher horizon, namely at the base of the Comley Limestones (Cobbold, 1921), although as his other fossils are more suggestive of the older, low Comley Sandstone, horizon, Humphreys did not attempt to effect a correlation of the Malvern Quartzite with either level in the lower Comley Sandstone.

Conclusions

This quarry shows beds of shallow-water or beach sands that represent the transgression of the Lower Cambrian sea onto the Precambrian of the Malvern Hills. The sands contain brachiopods known from beds of the same age in Shropshire.

[References](#)