

Milborne Wick Section, Somerset

[ST 662 205]

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Introduction

The Inferior Oolite Formation section generally known as 'Milborne Wick Lane', south-west of Milborne Wick in Somerset, was first reported by Buckman (1893a, section XVII) and has retained an important place in the study of Bajocian stratigraphy since that time. It is particularly famous for its abundant and well-preserved ammonite faunas of the Romani Subzone (Lower Bajocian Humphriesianum Zone). Fossil material from this section has found its way into numerous museums, abroad as well as in Britain (Parsons, 1976a). The stratigraphy at the site and in adjacent temporary excavations has been reviewed by Huxtable (1996).

Description

The following description, including bed numbers and ammonite names, is based on that recorded by Parsons (1976a) with additional data from Buckman (1893a), Richardson (1916a) and Page (unpublished English Nature records). The lithostratigraphical classification follows Bristow *et al.* (1995).

	Thickness (m)
Inferior Oolite Formation	
<i>Sherborne Building Stone Member</i>	
6: Limestone, sandy, hard, crystalline, pale-yellow; pebbles derived from Bed 5; <i>Ctenostreon</i> and eroded; limonite-coated fossils at base, resting on planed surface	seen to 0.90
<i>Miller's Hill Member</i>	
5: Limestone, marly, soft, white with numerous yellow limonite ooids and black dendritic manganiferous staining; very fossiliferous with many shells replaced by pink calcite; ammonites including <i>Chondroceras evolvenscens</i> (Waagen), <i>C. gervillii</i> (J. Sowerby), <i>Phaulostephanus</i> cf. <i>paululum</i> S.S. Buckman, <i>Stephanoceras</i> (S.) cf. <i>scalare</i> (Mascke emend. Weisert), <i>S. (Normannites) crassicostatum</i> (Westermann), <i>S. (N.) mitis</i> (Westermann), <i>S. (N.)</i> cf. <i>portitor</i> (Maubeuge), <i>S. (Germanites?) bicostatus</i> Westermann, <i>Teloceras blagdeniformis</i> (Roche), <i>Dorsetensia deltafalcata</i> (Quenstedt), <i>D. edouardiana</i> (d'Orbigny), <i>D. liostraca</i> S.S. Buckman, <i>D. regrediens</i> Haug, <i>Lissoceras</i> (L.) <i>oolithicum</i> : (d'Orbigny), <i>Oppelia</i> (O.) <i>subradiata</i> (J. Sowerby), <i>O. (O.)</i> aff. <i>skrodzkii</i> Brasil, <i>O. (Oecostraustes) genicularis</i> Waagen, <i>Poecilomorphus</i> (P.) <i>cycloides</i> (d'Orbigny), <i>P. (Micropeocilomorphus) vicetinus</i> (Parona) and <i>Stegoxyites</i> (S.) aft <i>parcicarinatus</i> S.S. Buckman; abundant bivalves including <i>Astarte spissa</i> S.S. Buckman, nukulaceans, <i>Oxytoma</i> , pectinids, <i>Pleuromya</i> , <i>Posidonomya</i> , <i>Unicardium</i> ; also cerithiid and pleurotomariid gastropods; belemnites; brachiopods (<i>Sphaeroidothyris</i>); occasional small 'button' corals	0.07–0.10

4: Limestone, hard; yellow-brown ooids set in pale blue-grey matrix; less fossiliferous than Bed 5; ammonites including *Stephanoceras* (*Normannites*) *formosum* (S.S. Buckman), *S. (N.) portitor*, *Dorsetensia liostraca* S.S. Buckman, *Oppelia* (*O.*) *subradiata* and *Stegoxyites* (*S.*) *parcicarinatus*; brachiopods (*Sphaeroidothyris*); bivalves (particularly in layer about middle of bed); non-sequence at base marked by conglomerate with material derived from Bed 3 0.20–0.25

3: Marl, soft, white, speckled with green glauconite grains; ammonites including *Kumatostephanus* (*K.*) cf. *perjucundus* S.S. Buckman, *K. (Gerzenites?) rugosus* Westermann, *?Labyrinthoceras* sp. nov., *Skirroceras bayleanum* (Oppel), *S. skolex* (S.S. Buckman), *Emileia* (*E.*) *polyschides* (Waagen), *E. (Otoites) contractus* (S.S. Buckman non J. Sowerby) and *Papilliceras arenatus* (Quenstedt emend. S.S. Buckman); pleurotomariid gastropods 0.10–0.15

2b: Limestone, blue-green, richly glauconitic, forming relatively soft, irregularly preserved top to Bed 2a; ammonites including *Kumatostephanus* (*Gerzenites?*) cf. *rugosus*, *Mollistephanus* (*M.*) sp., *Emileia* (*E.*) sp., *E. (Otoites)* sp., *Witchellia* (*W.*) *laeviuscula* (J. Sowerby) and *W. (Pelekodites)* aff. *macra* (S.S. Buckman); *Astarte spissa*, nautiloids and lignite fragments 0–0.10

Cotton Denham Member

2a: Limestone, blue, hard in two or three layers; less glauconitic than Bed 2b; ammonites including *Emileia* (*E.*) cf. *brocchii* (J. Sowerby) and *Shirbuirnia* (*Stiphromotophites*) cf. *nodatipinguis* S.S. Buckman. 0.45–0.60

1: Limestone, hard, sandy, sparsely glauconitic, interbedded with soft, sandy marl; ammonites including *Witchellia* (*W.*) aff. *W. (Pelekodites)* (S.S. Buckman); bivalves including 'myids'

Both Buckman (1893a) and Richardson (1916a) recorded a further two metres of beds at the base of the section. Between them, these authors also noted belemnites, nautiloids, lignite and *Astarte spissa* in Bed 2, but it is not clear if the records relate to Bed 2a or 2b of the above section.

Interpretation

According to Parsons (1976a), there has been some confusion concerning the Milborne Wick section in past literature because Richardson (1916a) considered that Buckman (1893a) had been overzealous in splitting up beds 3–5 of the above section; Richardson believed that they were all of the same age and lithology. However, Parsons (1976a) concluded that there was no doubt that Buckman was correct because, of these three beds, only Bed 3 contained glauconite grains and also its ammonite fauna proved it to be significantly older than the overlying beds. Incidentally, both Buckman (1893a) and Richardson (1916a) numbered the beds from the top down such that, for example, Bed 1 in the above section is their Bed 6 and Bed 2 (a and b) is their Bed 5.

The succession belongs almost entirely to the Lower Bajocian Substage. The three youngest zones of that substage are well substantiated on the basis of the ammonite faunas, specimens of which were figured by Buckman (1909–1930). Beds 1, 2a and 2b are assigned to the *Laeviuscula* Zone and Subzone, Bed 3 to the *Sauzei* Zone, and beds 4 and 5 to the *Humphriesianum* Zone, *Romani* Subzone (Parsons, 1976a; (Figure 2.39)). The *Romani* Subzone, with a type area and horizon in south-east France and index ammonite *Witchellia romani* (Oppel) (*Dorsetensia* (*D.*) *romani* in Rioult *et al.*, 1997), was confirmed in the British zonal sequence by Parsons (1976a, 1980a). Callomon and Chandler (1990)

subsequently substituted the more commonly occurring *Poecilomorphus cycloides* (d'Orbigny) as the index taxon for this interval (following Sturani's (1971) usage) but later, Callomon and Cope (1995) reverted to the earlier nomenclature. The base of Bed 6 marks a non-sequence, which probably spans the younger subzones of the Humphriesianum Zone as well as the Upper Bajocian Subfurcatum Zone (Bristow *et al.*, 1995), and Bed 6 itself may belong to the Garantiana Zone.

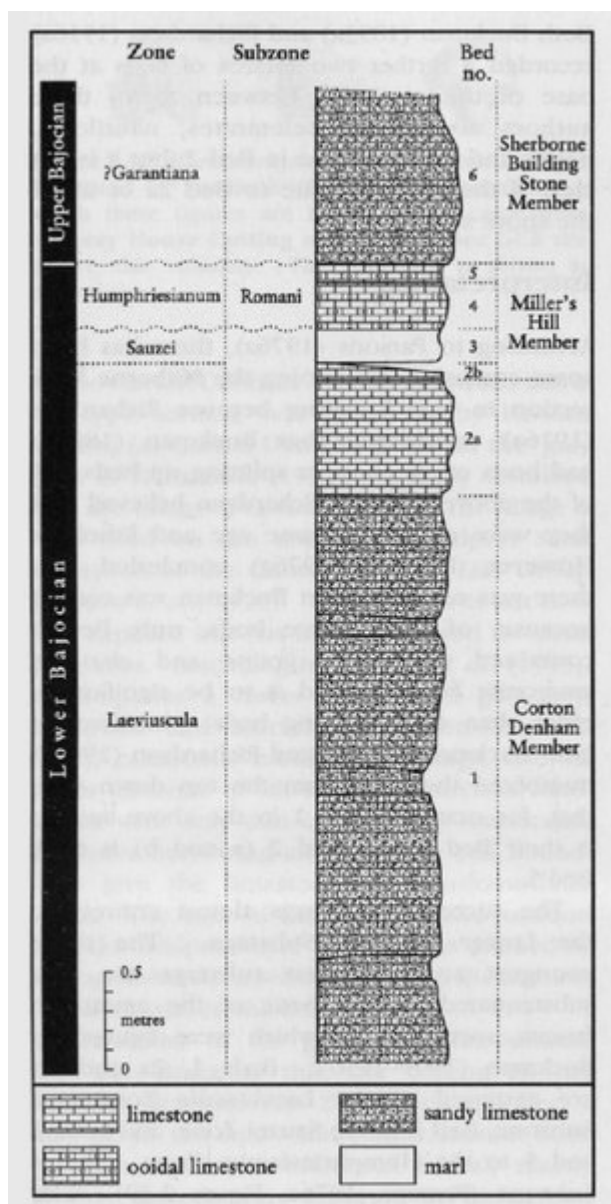
The Milborne Wick Section is sited on the gradient known as 'Miller's Hill', which rises from the western side of the village of Milborne Wick. Barton *et al.* (1993) and Bristow *et al.* (1995) recognized a distinctive member within the Inferior Oolite Formation in this area, and named it the 'Miller's Hill Beds' ('Miller's Hill Member' herein). Characterized by glauconitic sands, limestones and calcarenites with clasts of phosphatic limestone and abundant ammonite fragments, the base of this member is defined by an erosion surface. It is underlain by the Corton Denham Member (based on Parsons' (1980a) Cotton Denham Beds for Richardson's (1932) 'grey-beds'), and overlain by the Sherborne Building Stone Member (based on the Sherborne Building Stone of Buckman, 1893a). Bed 5 was called the '*Astarte spissa* Bed' by Richardson (1916a) but should not be confused with the 'Spissa Bed' of Parsons (1980a), which occurs at a lower stratigraphical level, equivalent to Bed 2b at the GCR site.

The locality of the Milborne Wick Section is the north-easternmost of a cluster of GCR sites near Sherborne (see also Bradford Abbas Railway Cutting, Louse Hill Quarry, Halfway House Cutting and Quarry, Sandford Lane Quarry, Frogden Quarry and Holway Hill Quarry GCR site reports, this volume) where the Inferior Oolite Formation is rather thicker than elsewhere in Dorset and Somerset (see (Figure 2.29)). According to Bristow *et al.* (1995), this local thickening is related to deposition in a half-graben with a depocentre located approximately 10 km south of the Mere Fault (see (Figure 2.29)). The fault-controlled basin was starved of sediment during deposition of the Miller's Hill Member, and Bristow *et al.* (1995) considered that the inferred slow rate of deposition and the member's widespread iron mineralization, now contained as glauconite, reflected an important tectonic event.

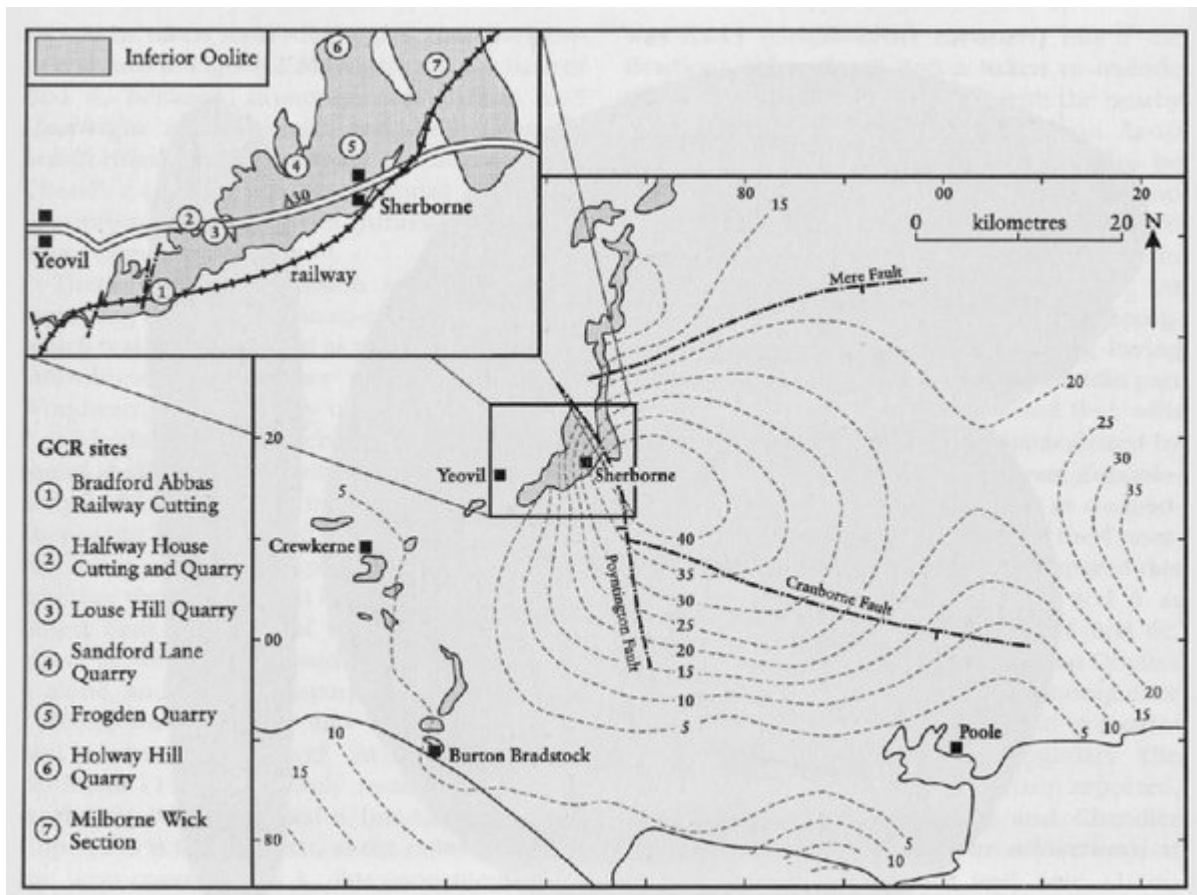
Conclusions

The Milborne Wick Section has yielded a prolific and well-preserved ammonite fauna characteristic of the Romani Subzone of the Lower Bajocian Humphriesianum Zone. With other sites in the Sherborne area, it constitutes one of the most important localities in Britain for this stratigraphical interval. Known in the geological literature for over 100 years and represented in the collections of many museums both in Britain and abroad, it remains a key site for Bajocian stratigraphy as well as providing an insight into the palaeogeography and depositional history of the Wessex Basin.

[References](#)



(Figure 2.39) Graphic section of the Inferior Oolite Formation at the Milborne Wick Section. For lithologies, see text.)



(Figure 2.29) Sketch map showing isopachytes (in metres) for the Inferior Oolite Formation in the Wessex Basin and the GCR sites in the Sherborne area. (After Parsons, 1976a, fig. 1; and Barton et al., 1993, fig. 5.)