Shepton Montague, Somerset

[ST 686 316]

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Introduction

The cutting at Shepton Montague, Somerset, on the disused railway north of Wincanton is famous for its exposure of the Fuller's Earth Rock Member and underlying Lower Fuller's Earth Member (Acuminata Beds) of the Fuller's Earth Formation (Parsons, 1879; Woodward, 1894; Arkell, 1933). Torrens (1966) described it as 'probably the most important Fuller's Earth Rock section still in existence'. The Milborne Beds and Ornithella Beds, into which the Fuller's Earth Rock Member is divided in areas farther south (see Laycock Railway Cutting GCR site report, this volume), are recognized here but, in addition, a further subdivision (Rugitela Beds) is present at the top of the member. The locality is considered to he near the southern limit of this last-named unit, which takes its name from a genus of brachiopod (Sylvester-Bradley and Hodson, 1957). As well as brachiopods, the cutting at Shepton Montague has yielded zonally diagnostic ammonite faunas and many other fossils.

Description

The exposure, although overgrown at the time of writing, extends for some 350 m. The following section, including bed numbers, is based on that measured by Torrens (1966), which itself included additional data from unpublished notes by W.J. Arkell and L. Richardson.

	Thickness (m)
Fuller's Earth Formation	
Fuller's Eartb Rock Member	
Rugitela Beds	
20: Marl and subsoil; bivalves including common *Catinula knorri mendipensis* Sylvester-Bradley MS, *Lopha* sp., *Modiolus anatinus* Wm Smith and *Pleuromya alduini* (Brongniart); belemnite fragments; and brachiopods (*Rhynchonelloidella* and *Wattonithyris*)	0.61
Ornithella Beds	
19: Limestone	0.15
18: Marl; bivalves (*Goniomya intersectans* (Wm Smith), *Pholadomya lirata* (J. Sowerby), *Pleuromya alduini, P. calceiformis* (Phillips)); brachiopods (*Rhynchonelloidella*)	0.61
17: Limestone	0.13
16: Marl with *Rhynchonelloidella* (including common juveniles)	0.30
15: Limestone, hard, impersistent	*c.* 0.30
14: Marl passing into limestone; nautiloid and brachiopods (*Ornithella bathonica* (Rollier) and *Rhynchonelloidella*)	0.41
13: Limestone, rubbly; *Ornithella bathonica* (particularly common in top 0.15 m) and *Wattonithyris;* ammonites (*Procerites*) near top; bivalves (*Catinula* sp., *Modiolus anatinus, Rollierella minima* (J. Sowerby)); corals (*Diastopora michelini* (de Blainville))	0.30

12: Limestone, marly; perisphinctid ammonites including *Procerites* cf. *quercinus* (Terquem and Jourdy) at base, '*Subgrossouvria*' and '*Siemiradzkia*', oppeliid ammonites; brachiopods including *Ornithella bathonica* and *Wattonithyris;* bivalves including *Catinula* sp., *Chlamys* (*Radulopecten*) sp., *Pleuromya alduini, Praeexogyra* cf. *acuminata* (J. Sowerby), *Rollierella* sp. and *Thracia depressa* (J. de C. Sowerby); echinoids (*Holectypus depressus* Leske); crustacean fragment	0.30
Milborne Beds	
11: Limestone, hard, prominent, shell-fragmental; ammonites (macroconch *Morrisiceras*)*;* brachiopods (*Wattonithyris*)*;* bivalves (*Catinula* and *Limatula cerealis* Arkell); marl parting with microconch *Morrisiceras* at base	0.18–0.23
10: Limestone, marly; parting at base	0.10–0.15
9: Limestone, marly; ammonites (including *Choffatia* and *Morrisiceras*); brachiopods	0.10–0.15
8: Limestone, prominent in north-west of cutting, elsewhere softer and more marly; ammonites (macroconch and microconch *Morrisiceras*)*;* brachiopods (*Wattonithyris*)	0.10–0.15
7: Limestone; ammonites (*Tulites modiolaris* (Wm Smith)); bivalves (*Modiolus anatinus*)*;* echinoids (*Acrosalenia*)	0.30–0.36
6: Limestone; corals (*Montlivaltia*)*;* ammonites (*Tulites modiolaris*)*;* bivalves (*Homomya gibbosa* (J. Sowerby) and *Modiolus anatinus*)	0.25–0.30
3: Parting with O. *haydonensis;* 4: Parting, sandy; *Tulites*, 5: Parting with *Ornithella baydonensis, Catinula and Wattonithyris*	0.30–0.36
2: Limestone; corals (*Montlivaltia*)*;* ammonites (*Tulites modiolaris*)	0.36
1: Limestone	seen
Clay, buff with occasional thin bands of argillaceous limestone	1.83
Lower Fuller's Earth Member	
Acuminata Beds	
Clay with abundant *Praeexogyra acuminata*	*1.83*

Evidence of the Acuminata Beds, which are not now well exposed, is provided by numerous specimens of *P. acuminata* amongst material excavated from rabbit burrows in the overgrown lower beds of the cutting at Shepton Montague. When recorded by Torrens (1966), the alternating marls and limestones of the Ornithella Beds were easily traced from one end of the cutting to the other but the underlying Milborne Beds were, at first sight, divisible only into an upper rubbly part and a lower more massive part with indistinct bedding planes, variable bed thicknesses, and small faults (Torrens, 1966). Exposure is presently less good and the section is generally degraded.

Interpretation

The term Acuminata Beds' originated with Richardson (1910) who used the term '*Ostrea acuminata*-Clays'for the beds, rich in the oyster *Praeexogyra acuminata,* just below the Fuller's Earth Rock Member in Somerset. Arkell (1934) wrote of a *c.* 1.5–2.1 m-thick bed with enormous numbers of *P. acuminata* extending from just north of Sherborne, Dorset, through Somerset, beyond the Mendips and along the side of the Cotswold scarp at least as far north as Wotton-under-Edge, a distance of at least 80 km. He reported that within this area, the oyster showed little morphological variation from Sowerby's (1816) type material from Bath, and he figured material from the Shepton Montague railway cutting as

examples (Figure 2.41). Torrens (1980b) applied the term Acuminata Beds' to the whole of this north Dorset–Gloucestershire area where they comprise up to 9 m of predominantly mudstone in which the *P. acuminata* are often concentrated in discrete oyster lumachelles. Penn *et al.* (1979) who investigated cored boreholes in north Somerset (Frome to Bath) preferred to abandon the term Acuminata Beds' and name a specific laterally persistent lumachelle within this package of strata as the Acuminata Bed' (shown in (Figure 2.4)). This occurs a few metres below the base of the Fuller's Earth Rock Member (or its equivalents) in an area from Frome, Somerset northwards into the Cotswolds as far as the Cirencester area. Use of the term Acuminata Bed' is somewhat unfortunate as a second laterally persistent *P. acuminata*-rich bed (shown in (Figure 3.4), Chapter 3) occurs within the Lower Fuller's Earth Member at a slightly lower stratigraphical level. This latter bed extends from just north of Bath as far as Burford, Gloucestershire (Wyatt, 1996a; Sumbler, 1999).

Farther north, neither of these two beds are specifically recognized although the upper one may correlate with concentrations of *P. acuminata,* which form a so-called Acuminata Marble' at the base of the Eyford Member of the Fuller's Earth Formation as seen at Hampen Railway Cutting (see GCR site report, this volume) (Sumbler, 1999). At present, the term Acuminata Beds' is still used in north Dorset and south Somerset (e.g. Bristow *et al.,* 1995, 1999) but not farther north in the Cotswold area (e.g. Sumbler *et al.,* 2000; see also (Figure 2.4); and Chapter 3). The unit appears to die out just south of Sherborne; Torrens (1966) reported its absence at Troll Quarry (see GCR site report, this volume). Another laterally persistent marker bed (the Echinata Bed), rich in the bivalve *Meleagrinella echinata* (Wm Smith), was identified by Penn *et al.* (1979) and Penn and Wyatt (1979) in the Frome-Bath area where it occurs about midway between the Acuminata Bed and the base of the Fuller's Earth Rock Member. It has been recognized extensively northwards into the Cotswolds (Wyatt, 1996a; Sumbler, 1999) and southwards, within the Acuminata Beds, to beyond Shepton Montague (Richardson, 1909c; Bristow *et al.,* 1999) (see (Figure 2.4); and (Figure 3.4), Chapter 3). However, records of the Acuminata Beds at the Shepton Montague railway cutting are too inadequate to enable the Echinata Bed to be identified there.

The Ornithella and Rugitela beds of the overlying Fuller's Earth Rock Member were named after their characteristic brachiopod genera by Sylvester-Bradley and Hodson (1957) when they described an exposure at Whatley near Frome about 16 km to the north of Shepton Montague. The term 'Ornithella Beds' has since been restricted to only the upper part of the unit originally described by Sylvester-Bradley and Hodson (1957); the lower part is referred to the Milborne Beds, a term first used by Buckman (1918, 1921) (see Troll Quarry GCR site report, this volume). This tripartite division of the Fuller's Earth Rock Member is widely recognized in Somerset but not farther south in the Sherborne area of Dorset.

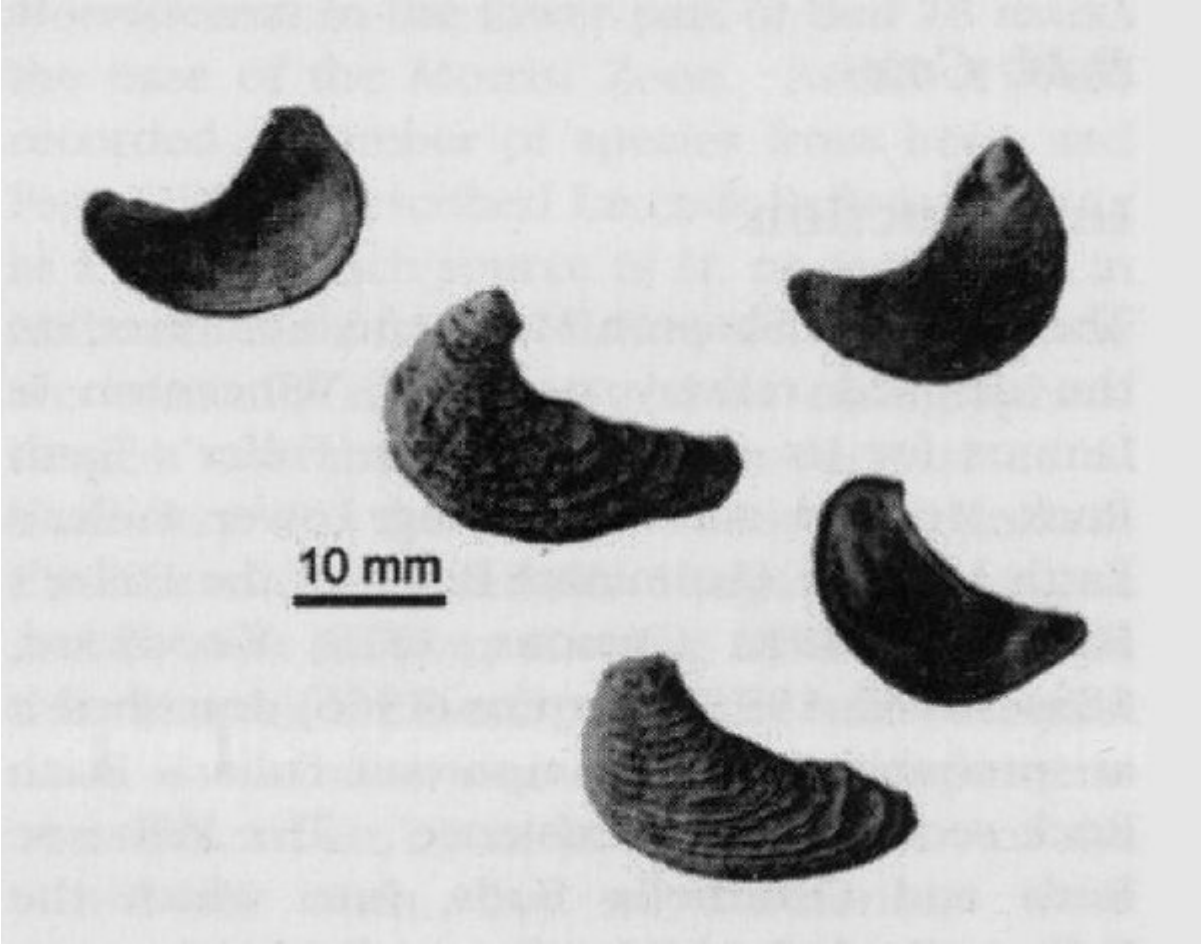
According to Torrens (1966), the topmost bed of the Milborne Beds is the prominent shelly limestone (Bed 11), which was the only bed that he could trace laterally with ease. The small brachiopod *Ornithella haydonensis* is very common in beds 3–5 and is ubiquitous in the top part of the Milborne Beds (see Laycock Railway Cutting GCR site report, this volume). The presence of corals (in beds 2 and 6) is also typical of the Milborne Beds (see Laycock Railway Cutting GCR site report, this volume). The ammonite fauna of the Milbome Beds comprises the tulitid genera *Tulites* and *Morrisiceras,* which are mutually exclusive in their stratigraphical ranges (see Bruton Railway Cutting GCR site report, this volume). The changeover of these genera, indicating the Subcontractus-Morrisi zonal boundary, occurs at the boundary between beds 7 and 8; indeed, Torrens (1966) admitted that this bed boundary had been drawn at the change in ammonite faunas (*Tulites* in Bed 7 and below, and *Morrisiceras* above) rather than at a lithological change. The fauna of beds 8–11 distinguishes them from the beds above and below. As well as macro-conch and microconch *Morrisiceras,* small specimens of the brachiopod *Wattonithyris* are also characteristic.

As elsewhere (see Goathill and Laycock Railway Cutting GCR site reports, this volume), the characteristic fauna of the Ornithella Beds is the large brachiopod *Ornithella bathonica,* which occurs in beds 12–14. Bed 12, the basal bed of the Ornithella Beds, is also notable for large specimens of *Procerites;* this ammonite also occurs in the top part of Bed 13. Specimens reported by Arkell (1958b), including one figured as *P.* cf. *wattonensis* Arkell, came from one of these beds. These perisphinctid faunas are considered to be indicative of the basal Bremeri Zone (see Bruton Railway Cutting GCR site report, this volume, for a discussion of zonation). The boundary between the Ornithella and Rugitela beds at this locality was drawn by Torrens (1966) below the first appearance of the oyster *Catinula knorri mendipensis,* a specimen of which was figured from here by Arkell (1934, pl. 2, fig. 5) as *C. inatisconensis* (Lissajous).

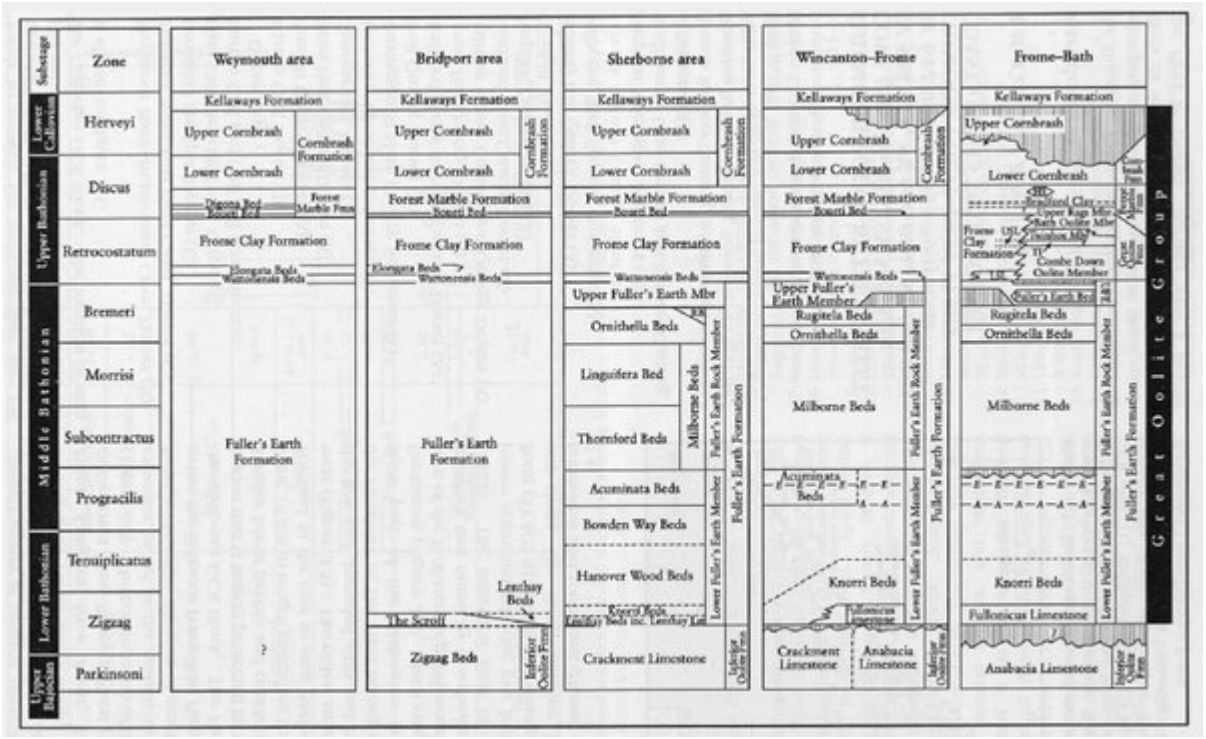
Conclusions

The disused railway cutting at Shepton Montague exposes an almost complete section through the Fuller's Earth Rock Member of the Fuller's Earth Formation in an area where the member is internationally renowned as one of the best developments of Middle Bathonian rocks in Europe. Underlain by the Acuminata Beds of the Lower Fuller's Earth Member, the Fuller's Earth Rock Member here is divided into the Milborne Beds, Ornithella Beds and Rugitela Beds. It is the southernmost well-documented exposure of the last-named unit whose type area is farther north near Frome. The member has yielded a rich fauna including zonally diagnostic ammonites, and specimens from here are well represented in published literature. Together with the other Fuller's Earth Rock Member sites in this area (see Troll Quarry, Goathill, Laycock Railway Cutting and Bruton Railway Cutting GCR site reports, this volume), the section has enabled the lithological and palaeontological characterization of these beds to be well understood. The site is thus an important one for understanding the classification and correlation of the Bathonian rocks of Wessex, and of the Bathonian Stage further afield.

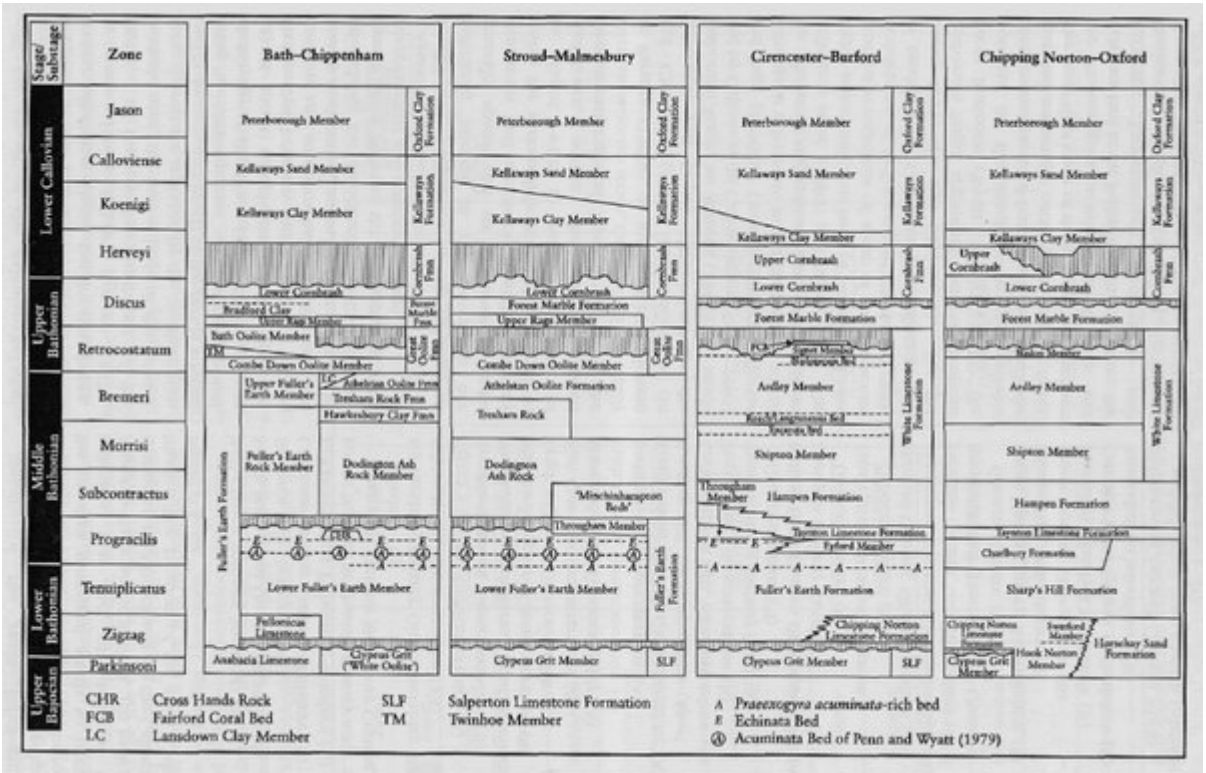
References



(Figure 2.41) Specimens of Praeexogyra acuminata (J. Sowerby) from Shepton Montague railway cutting as figured by Arkell (1934, pl. 2, figs 30–4).)



(Figure 2.4) Lithostratigraphical classification of the Great Oolite Group in the Wessex region. Vertical ruled lines indicate non-sequence. (Based on data in Penn and Wyatt, 1979; Torrens, 1980b; Page, 1989, 1996a; Bristow et al., 1995, 1999; and Wyatt, 1998.) (-E-E-E-E- = Echinata Bed; -A-A-A-A- = Acuminata Bed of Penn and Wyatt (1979); HS = Hinton Sand Member; LSL = Lower Smithi Limestone; RB = Rugitela Beds; TI = Twinhoe Ironshot; UFE = Upper Fuller's Earth Member; USL = Upper Smithi Limestone.))



(Figure 3.4) Lithostratigraphical classification of the Great Oolite Group and overlying beds in the Cotswold area. Columns are deliberately separated one from the other because the nomenclature as used in different areas is in need of rationalization. Vertical ruling indicates non-sequence. (Based on data in Cave, 1977; Horton et al., 1987; Page, 1989, 1996a; Sumbler et al., 2000; Wyatt in Sumbler, 1996; and herein.))