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# Peashill Quarry, Dorset

[SY 495 916]

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## Introduction

The Peashill Quarry GCR site is a small disused quarry now occupied by two residential properties at the corner of Shipton Road and Burbitt Lane in the village of Shipton Gorge, Dorset (Wilson *et al.*, 1958). In the older literature, the locality is referred to as the quarry near or opposite the New Inn, Shipton Gorge (e.g. Watford, 1889; Woodward, 1894). Since the 1880s, the locality has been famous for the fauna of small fossils, notably bryozoa, and sponges that the Upper Bajocian part of the Inferior Oolite Formation has yielded. Indeed, the residential property that has the main exposure of the former quarry as the northern boundary of its garden is called 'Polyzoa', the name previously given to bryozoa. In addition to the palaeontological interest, the quarry section also originally showed a major non-sequence, with youngest Bajocian strata (Parkinsoni Zone) resting directly on oldest Aalenian strata (Opalinum Zone).

## Description

The following description of the section, including the bed notation, is based on that of Richardson (1928–1930). A slightly modified version of the latter was given by Macfadyen (1970). The lower part of this section has not been visible for some years. The lithostratigraphical classification has been updated, where appropriate, following Parsons (1980a).

	Thickness (m)
Soil, brown	0.35
<b>Inferior Oolite Formation</b>	
<i>Burton Limestone</i>	
A: Limestone, bluish-grey, rubbly; ammonites including <i>Oecotraustes</i> ; nautiloids; belemnites; rhynchonellid and terebratulid brachiopods; echinoids; bivalves including 'rnyids', pectinids and <i>Protocardia</i>	0.5
B: Marl, grey and brown, rich in sponges and microfauna (including bryozoans, foraminifera, ostracods, micro-brachiopods and crustaceans); ammonites ( <i>Oecotraustes</i> ); bivalves; terebratulid brachiopods; gastropods	0.1
C: Limestone, greyish-white, rubbly; echinoids including cidarids and <i>Clypeus</i>	0.15
D: Marl, as B above; ammonites ( <i>Oecotraustes</i> )	0.35
Limestone, white with 'yellow ochreous matter'; fossils including ammonites ( <i>Parkinsonia</i> ); bivalves including astartids, <i>Ctenostreon</i> , pectinids and <i>Trigonia</i> ; rhynchonellid and terebratulid brachiopods	1.2
<b>Bridport Sand Formation</b>	
Limestone, rubbly, 'impure', very hard, full of ammonites; belemnites; rhynchonellid brachiopods	seen

## Interpretation

In Richardson's (1928–1930) original description of the section, he assigned beds A-D to the 'Microzoa Beds', and the underlying limestone to the 'Massive Beds'. He had introduced these terms earlier in his 1928 paper for the two-fold subdivision of the upper part of the Inferior Oolite Formation between Burton Bradstock and Beaminster. Within the Microzoa Beds, he separated beds B–D at Peashill Quarry as the 'Sponge Beds', a term -that he also used at Burton Bradstock (see Burton Cliff and Cliff Hill Road Section GCR site report, this volume). However, Parsons (1975b) considered that these three stratal terms, as well as Richardson's (1928–1930) 'Top Limestones', either referred to facies of limited geographical and stratigraphical range or had been used in a wider sense, thereby including several distinct lithostratigraphical units. He therefore proposed that Richardson's terminology should be replaced by a single lithostratigraphical term the Burton Limestone.

The microscopic bryozoan fauna (Figure 2.17), for which the locality is perhaps most famous, was first reported by Walford (1889, 1894) who believed that he had recovered about 50 different forms representing 12 or more genera from the marl beds of the Burton Limestone (beds B and D above). Apart from at Peashill Quarry and Burton Bradstock (see Burton Cliff and Cliff Hill Road Section GCR site report, this volume), these marls are invariably absent (Parsons, 1975b). The bryozoan fauna from Peashill Quarry was revised by Walter (1967) based on a study of the Walford collection held at the University Museum Oxford. He rejected Walford's (1894) new genus *Pergensia*, but confirmed the latter author's assessment of the diversity of the fauna, recognizing 13, mainly monospecific, genera (*Acanthopora*, *Apsendesia*, *Collapora*, *Entalophora*, *Idmonea*, *Mesenteripora*, *Mecynoecia*, *Multisparsa*, *Neuropora*, *Plagioecia* (two species), *Proboscina*, *Stomatopora* (three species) and *Theonoo*). He concluded that, in life, the bryozoa had been attached to seaweed or hard objects such as shells, rather than to the sea bottom itself, which would have been too soft. Like Walford, he also thought that the high proportion of slender forms suggested minimal current activity.

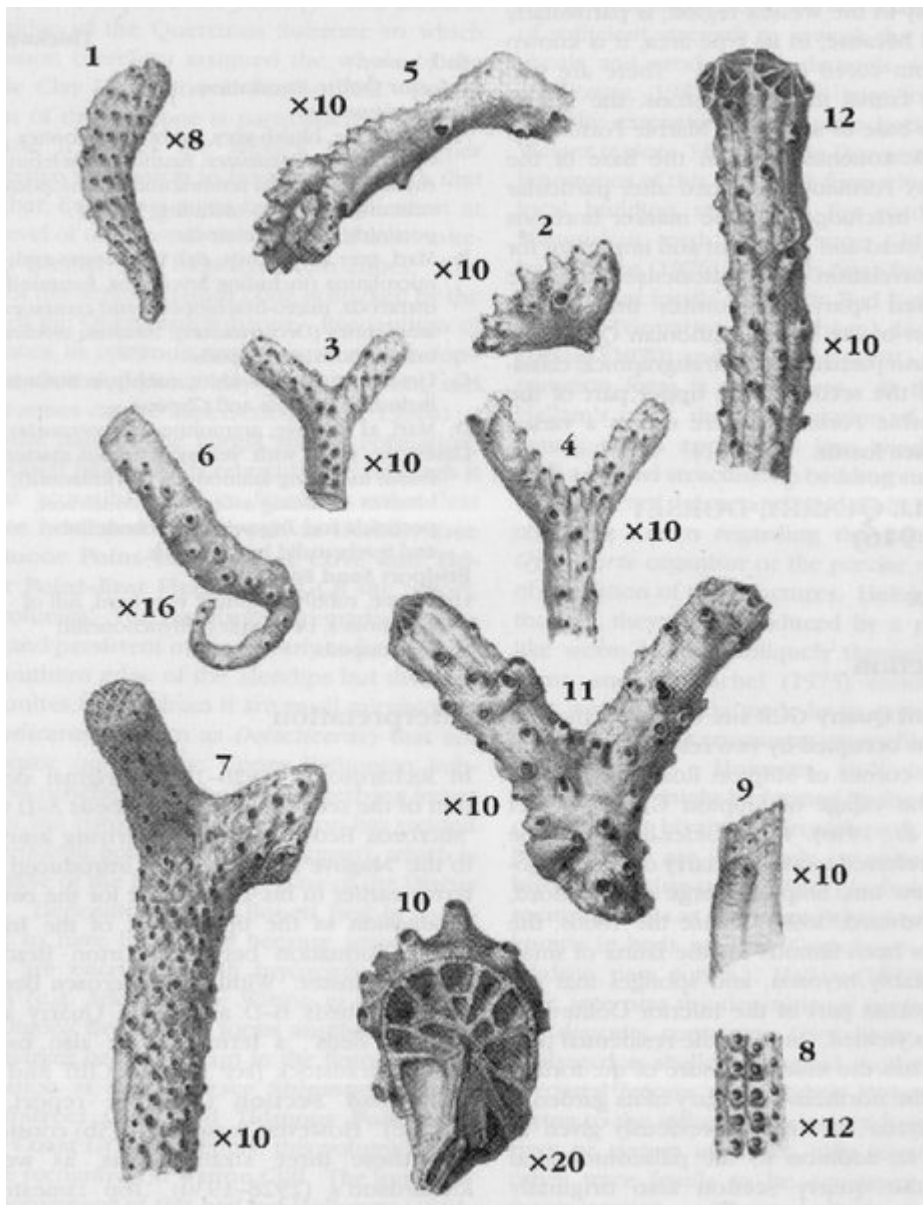
The sponge fauna from Peashill Quarry, which Walford (1889) had also noted, features in Hinde's (1893) monograph of British fossil sponges, and Richardson and Thacker's (1920) review of sponge occurrences in the Inferior Oolite Formation. A revised summary of the recorded sponges, including both calcareous and siliceous forms, is given in Macfadyen (1970). Other microscopic fossils from the marl beds include foraminifera, ostracods, micro-brachiopods, fish teeth and crustacean claws. An extensive list of taxa is given in Richardson (1928–1930).

Amongst the larger fossils in the Burton Limestone, the ammonites *Oecotraustes costiger* S.S. Buckman and *Parkinsonia* sp., recorded by Richardson (1928–1930), indicate the Upper Bajocian Parkinsoni Zone. These contrast with the ammonite fauna recorded from the lowest bed ('*Alocolytoceras tцениatum* (Pompeckj)' and '?*Canavarella* sp. '), which indicates the much older Opalinum Zone of the basal Aalenian Stage. There is thus a major non-sequence here that cuts out the Aalenian Scissum, Murchisonae, Bradfordensis and Concavum zones, the entire Lower Bajocian Substage, and the Upper Bajocian Subfurcatum and Garantiana zones. Richardson (1928–1930) considered that the presence of *Alocolytoceras tцениatum* suggested that the Rusty Bed, which, in this area, is generally taken as both the top bed of the Bridport Sand Formation and of the Opalinum Zone (see Burton Cliff and Cliff Hill Road Section and Conegar Hill GCR site reports, this volume) was once present here. He surmised that while the ammonite became affixed to the surface of the limestone, the soft material of the Rusty Bed was washed away. Richardson (1928–1930) noted that the level surface of this lowest bed in the quarry was visible in the road opposite and that, in the lane below, there were underlying massive sandstones and then yellow sands with lenses of calcareous sandstone typical of the Bridport Sand Formation (see also Conegar Hill GCR *site* report, this volume).

## Conclusions

Peashill Quarry is the only Aalenian–Bajocian GCR site in Wessex whose palaeontological interest does not pertain primarily to ammonites. The Inferior Oolite Formation here has yielded a rich fauna of sponges and microscopic bryozoans, as well as other microfossils, and it is the type locality for a number of sponge and bryozoan taxa. The original quarry section also showed that a major part of the Aalenian and Bajocian stages, more than at any other GCR site in Wessex, is missing, with youngest Bajocian strata resting on oldest Aalenian strata. The site thus provides an excellent example of the intra-formational breaks in deposition that affect the Inferior Oolite Formation in this region. Combined with its palaeontological credentials, this makes the site one of local, regional, national and international importance.

## References



(Figure 2.17) Bryozoa from Peashill Quarry as illustrated by Watford (1889, pl. XIX). According to Walter (1967), figures 1–9 are *Idmonea triquetra* Lamouroux, figure 10 is *Stomatopora spatiosa* (Watford) and figures 11–12 are *Mecynoecia bajociana* (d'Orbigny). Magnifications, ranging from x8 to x20, are shown beside each figure.)