# Conegar Hill, Dorset

[ST 439 028]

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## Introduction

The GCR site known as 'Conegar Hill' comprises both sides of a deep cutting on the B3164 road immediately north of Broadwindsor, Dorset. The northward ascent out of Broadwindsor, along which the cutting extends, is known as 'Hollis Hill', which, a little farther north, runs into Conegar Hill itself; the latter is formed of Cretaceous Upper Greensand capped by cherry gravels (Wilson *et al.,* 1958). The site extends for about 200 m and exposes, when clear of vegetation, Inferior Oolite Formation resting on Bridport Sand Formation. Compared with the succession at Horn Park Quarry (see GCR site report, this volume), which lies *c.* 2.5 km to the south-east, Conegar Hill shows that a consider able part of the Inferior Oolite Formation, including all of the Lower Bajocian succession, is missing. However, the boundary with the underlying Bridport Sand Formation has been well exposed, and the latter formation has yielded ammonites indicative of the basal Aalenian Opalinum Zone, which has not been proved at Horn Park Quarry.

## Description

The cutting was cited by Woodward (1894) and Wilson *et al.* (1958) but the only published description of the section remains that of Richardson (1928–1930) on which the following is based. The graphic section in Richardson (1930) was repeated from Richardson (1919). The lithostratigraphical classification has been updated, where appropriate, following Parsons (1980a).

| | Thickness (m) |
|---|---|
| **Inferior Oolite Formation** | |
| *Burton Limestone* | |
| Limestone, yellowish; belemnites; brachiopods (*Sphaeroidothyris*)*;* perisphinctid ammonites; basal erosion surface | seen to 0.9 |
| *Murchisonae Bed* | |
| Limestone, hard, yellowish as above but iron-stained; planed upper surface; terebratulid brachiopods quite common in upper part; ammonites including *Ludwigia;* bivalves including pectinids,'rnyids' and trigoniids; irregular base | 0.3 |
| *Ancolioceras Bed* | |
| Limestone, similar to bed above; corals (*Montlivaltia*) at top; bivalves including astartids, *Ctenostreon, Gryphaea* and 'myids'; ammonites | 0.3 |
| Limestone, paler than above; bivalves including pectinids; ammonites; irregular base | 0.3 |
| *Scissum Bed* | |
| Sandstone, hard, calcareous, rubbly with interstitial sand; bivalves including arcids, 'myids', mytilids, pectinids and *Plagiostoma inoceramoides* (Whidborne); irregular base | 0.4 |
| Sandstone in irregular layers with partings of sand; belemnites; gastropods; nautiloids; serpulids; bivalves including 'myids', pectinids, *Gryphaea* and trigoniids | *c.* 1.0 |
| Sandstone, very soft in top 0.1 m, harder in middle part; passing down into | 0.6 |

| | |
|---|---|
| Sandstone, hard; terebratulid brachiopods | 0.3 |
| **Bridport Sand Formation** | |
| *Rusty Bed:* Marl, brown and sandy at top, dull-grey and marly at base; ammonites including *Leioceras;* belemnites; terebratulid brachiopods | 0.15 |
| Sandstone, very fossiliferous; abundant ammonites; bivalves including arcids and pectinids; rhynchonellid brachiopods; serpulids | 0.45 |
| Sandstone, passing down into | 0.4 |
| Sand, yellow; occasional lenses of calcareous sandstone; rhynchonellid brachiopod near top | *c.* 4.6 |
| Sandstone | 0.2 |
| Sand, soft, yellow | 1.5 |
| Sand, yellow, and lenses of calcareous sandstone in about eight layers; serpulids | *c.* 6.7 |
| Sand, soft, yellow | *c.* 2.1 |
| Sandstone | 0.3 |
| Sand | seen to 0.3 |

## Interpretation

Unlike Horn Park Quarry and many of the other Inferior Oolite Formation sections in this chapter, Conegar Hill has not been the subject of recent reassessment and new collecting, and the published ammonite records remain as given by Richardson (1928–1930). However, comparison with the succession at Horn Park Quarry and that on the coast at Burton Bradstock (see Burton Cliff and Cliff Hill Road Section GCR site report, this volume) together with others in Parsons (1980a) enables the zonal succession to be deduced (Figure 2.20).

There is no reason to suppose that the ammonite genera (*Canavarella, Lioceras* (=*Leioceras*) and *Pleydellia*) recorded by Richardson (1928–1930) from the Rusty Bed, at the top of the Bridport Sand Formation, and the underlying very fossiliferous sandstone indicate anything other than the Aalenian Opalinum Zone as at other localities in south Dorset (Parsons, 1980a; Callomon and Cope, 1995). Indeed, the Rusty Bed — a name used by Buckman (1910a) for a distinctive thin band of sandy marl — is now generally taken as both the top bed of the Opalinum Zone and of the Bridport Sand Formation in the whole of the area from Burton Bradstock to Broadwindsor (e.g. Torrens, 1969b; Hesselbo and Jenkyns, 1995). However, at Burton Bradstock, Callomon and Cope (1995) took the formation boundary a little lower and Buckman (1910a) and Arkell (1933) took it somewhat higher, at the top of the Scissum Bed (see Burton Cliff and Cliff Hill Road Section GCR site report, this volume). The lowest 15 m or so of Bridport Sand Formation at Conegar Hill, from which no ammonite has been reported, probably belong to the Lower Jurassic Upper Toarcian Substage; the Toarcian–Aalenian stage boundary is thus present here.

The overlying basal bed of the Inferior Oolite Formation is the Scissum Bed, which, as elsewhere, is assigned to the Scissum Zone although no ammonite has been recorded. The overlying limestones were classified as the Ancolioceras Bed by Richardson (1928–1930) as at Horn Park Quarry (see GCR site report, this volume). The ammonite genus *Geyerina,* which he recorded from this interval at Conegar Hill, was subsumed as a junior synonym of *Canavarella* by Donovan *et al.* (1981) but both these taxa were subsequently taken as, respectively, macroconch and microconch subgenera of the graphoceratid genus *Cylicoceras.* Their presence is compatible with the ammonite assemblage of biohorizon Aa-4 (basal Murchisonae Zone) in the Ancolioceras Bed at Horn Park Quarry (Chandler, 1996). The overlying bed is referred to as the 'Murchisonae Bed', following Richardson (1928–1930), and correlated with the Craterospongia Bed of Horn Park Quarry and elsewhere (Parsons, 1980a). Richardson's (1928–1930) record of species of *Ludwigia* is compatible with the ammonite assemblage of biohorizon Aa-7 reported in the latter bed at Horn Park Quarry

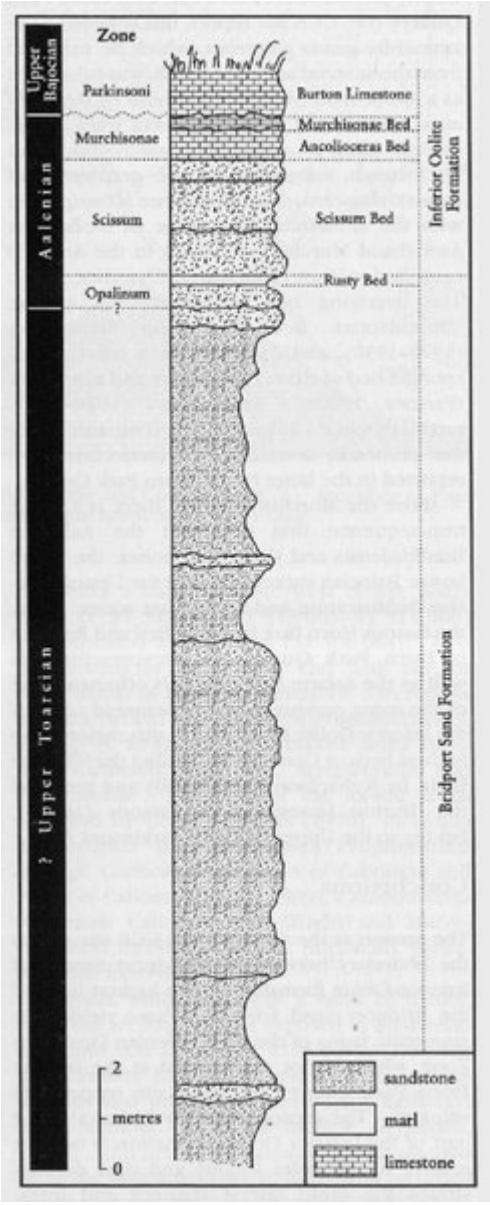
Above the Murchisonae Bed, there is a major non-sequence that cuts out the Aalenian Bradfordensis and Concavum zones, the entire Lower Bajocian succession, and the Upper Bajocian Subfurcatum and Garantiana zones. Thus the

famous Horn Park Ironshot Bed and Red Bed of Horn Park Quarry are unrepresented, as well as the Astarte Bed, which is otherwise one of the more persistent and widespread units of the Inferior Oolite Formation in this region. The highest beds at Conegar Hill, called the 'Massive Beds' by Richardson (1928–1930) and renamed the 'Burton Limestone' by Parsons (1975b), belong to the Upper Bajocian Parkinsoni Zone.

## Conclusions

The section at the Conegar Hill GCR site shows the boundary between the Bridport Sand and Inferior Oolite formations. The highest beds of the Bridport Sand Formation have yielded an ammonite fauna of the basal Aalenian Opalinum Zone, which is not represented at the famous Horn Park Quarry (see GCR site report, this volume). The section also shows that a major part of the Inferior Oolite Formation is missing relative to the latter locality and thus demonstrates the rapid lateral changes and intra-formational breaks in deposition that occur within the local Aalenian–Bajocian succession. The site thus contributes to an understanding of the complexities of Aalenian–Bajocian sedimentation and depositional history in Wessex.

**References**




*(Figure 2.20) Graphic section of the succession at the Conegar Hill GCR site. (After Richardson, 1928–30, fig. 7.) For lithologies, see text.)*