
Aldeburgh Hall, Aldeburgh, Suffolk

[TM 4525 5665]

Highlights

The shallow pit at Aldeburgh Hall represents the best locality for collecting the rich bryozoan faunas of the carbonate-rich Aldeburgh Member of the Coralline Crag, including the large cyclostomes *Meandropora* and *Blumenbachium* which are so diagnostic of the Coralline Crag and the Pliocene. The pit is of great importance in the study of Coralline Crag facies and faunas.

Introduction

The quality of the exposure in this shallow pit has varied considerably over recent years as a result of periodic working of the Coralline Crag for material for the construction of farm tracks. Currently about 2 m of section is exposed in a face about 30 m long.

A pit has existed on this site since at least 1881. Harmer (1898) recorded a pit in the vicinity of Aldeburgh Hall pit but the position was omitted from his map (locality 30). Since this time no other mention of the locality appears to have been made in the literature until the 1980s (e.g. Balson, 1981a; Taylor *et al.*, 1981; Cadée, 1982).

Description

The Coralline Crag at this locality consists of weakly cemented calcarenites of the Aldeburgh Member. Rims of calcite cement crystals on carbonate fragments probably formed penecontemporaneously with aragonite dissolution (Balson, 1983). Aragonitic fossils are absent.

Poorly-defined planar beds are present dipping at 6–7° to the SSE (Figure 10.22). Silt drapes up to a centimetre or more in thickness are occasionally seen on the dipping beds and may be exposed on the floor of the pit. Subordinate, poorly defined cross-bedding may be seen in sets up to 20 cm thick dipping to the south-west (Figure 10.23). As at Crag Farm, white micritic calcite has been deposited along some bedding planes towards the top of the section. Abundant calcitic bryozoans are a feature of the Coralline Crag at this locality.

Globose colonies of the large cyclostome bryozoans (Figure 10.24) *Meandropora aurantium*, *M. tubipora* and *Blumenbachium globosum* (syn. *Alveolaria semiovata*) up to 10 cm in diameter, appear to be more common at this locality than anywhere else in the Coralline Crag. These bryozoans lived on the sea floor or occasionally on erect stems of hydroids (Balson and Taylor, 1982). The surfaces of the colonies show relatively little abrasion or colonization by epifauna. Although *M. aurantium* and *B. globosum* are both found in Pliocene deposits on the continent, these species, including *M. tubipora* (apparently restricted to the Coralline Crag), could be said to be characteristic species of the Coralline Crag of Britain. Unfortunately all are extinct and no comparable cyclostome bryozoans exist with which to make palaeoecological comparisons. Other types of bryozoan are also very numerous at Aldeburgh Hall. These include globular colonies of *Turbicellepora*, large eschariform colonies of '*Eschara*' *pertusa* and *Biflustra savartii*, and most notably, colonies of *Cellaria*. *Cellaria* has a colony consisting of a series of cylindrical calcitic internodes which branch dichotomously at flexible organic nodes. The preservation of colonies in which the original configuration of the internodes is preserved, as in occasional specimens at Aldeburgh Hall, is remarkable considering the coarse bioclastic nature of the enclosing sediment. Bryozoans are also a conspicuous member of the encrusting epifauna together with occasional serpulids and barnacles, which are found encrusting calcitic bivalve shells including *Aequipecten*, *Ostrea* and *Anomia*, and occasionally colonies of the large cyclostomes, particularly *B. globosum*. Aragonitic shells, like *Scaphella lamberti*, *Arctica islandica* and *Glycymeris glycymeris*, are preserved as internal or external moulds, the surfaces of which often show the undersides of the encrusting calcitic epifauna. The presence of an abundant, well-preserved, encrusting

epifauna is evidence of a relatively reduced rate of sedimentation and is characteristic of the Aldeburgh Member.

Valves of *Ostrea* often show clionid borings as further evidence of a relatively reduced sedimentation rate that allowed in-situ bioerosion.

Many of the larger fossils found at this locality are well-preserved indicating that much of the fauna lived at or close to this site. *G. glycymeris* sometimes occurs as moulds of articulated specimens. The sand that formed the substrate for these organisms, however, consists of extremely abraded and comminuted skeletal debris indicating transportation from elsewhere. Many of the molluscan shells were encrusted by bryozoans or barnacles or were bored by marine organisms including *Cliona*. This evidence suggests relatively slow rates of deposition. Conversely, the large bryozoan colonies of *Meandopora* and *Blumenbachium* are generally not encrusted or bored, suggesting rapid burial.

Recently, a thin layer up to 1 cm thick was found composed almost entirely of small (10–12 mm), unribbed pectinids (?juvenile *Palliolium gerardt*) compacted together. This layer contains virtually no other sediment grains and probably existed as a thin lens of limited extent.

Interpretation and evaluation

The pit at Aldeburgh Hall provides the best opportunity to examine the fauna of the Aldeburgh Member in its type area. The abundance and quality of preservation at this locality allows reconstruction of palaeoecology and palaeoenvironments. These show interesting apparent contradictions between energy and sediment supply indicated by the presence of migrating bedforms and less vigorous conditions and reduced sediment supply indicated by the in-situ benthic and epibenthic faunas. The explanation of this apparent contradiction may be that the low-relief bedform, which deposited the low-angle dipping beds, was only periodically mobile, possibly related to storm events. These periodic movements rapidly buried the indigenous fauna with sand, allowing preservation of relatively delicate bryozoan colonies like the articulated *Cellaria*. The lack of epifauna or borings on the surfaces of the large bryozoan colonies may also be due to rapid burial. During intervening periods conditions were more tranquil with occasional small bedforms migrating across the low-angle bedform in the regional sand transport direction, i.e. to the south-west. Low-energy conditions also allowed the accumulation of the thin layer of juvenile pectinid valves possibly as a result of a mass mortality event. The superimposition of smaller, perhaps more active bedforms on a larger, lower relief one is a particular feature of this site. Round Hill, only a kilometre to the north-west, shows similar small-scale cross-bedding, and Crag Pit Nursery exhibits low-angle bedding.

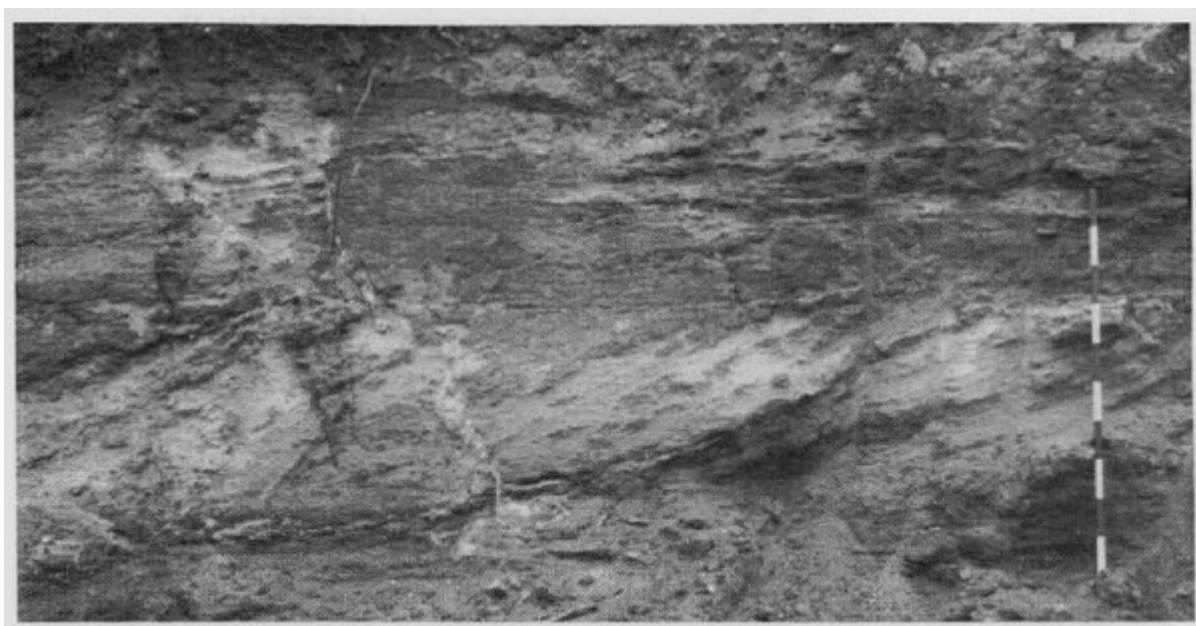
Conclusions

This site is an important one, for two main features. Firstly, the fauna at Aldeburgh Hall is both diverse and well-preserved and the remarkable abundance of fist-sized bryozoan colonies, unique to the Neogene, make this one of the most important palaeontological sites in the Coralline Crag. Secondly, the sedimentary structures indicate that periods of slow deposition may have been interspersed with periods of rapid burial.

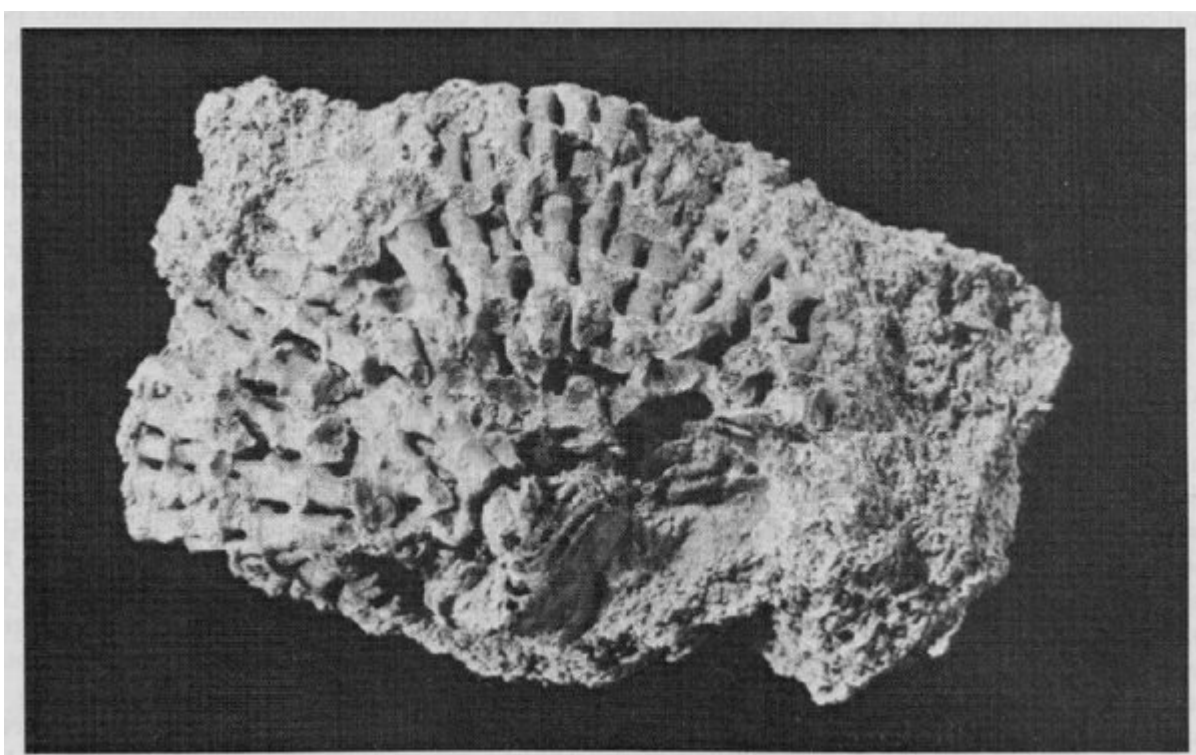
[References](#)



(Figure 10.22) Gently dipping beds of the Aldeburgh Member at Aldeburgh Hall. Scale is 1 m long. (Photograph: P Balson.)



(Figure 10.23) Cross-bedding within a gently dipping unit at Aldeburgh Hall. Scale is 1 m long. (Photograph: P Balson.)



(Figure 10.24) *Meandropora tubipora*. Specimen is 60 mm across. (Photograph: P Balson.)