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# Richmond Farm, Gedgrave, Suffolk

[TM 4122 4922]

## Highlights

The pit at Richmond Farm shows an excellent exposure in the Sudbourne Member of the Coralline Crag Formation which exhibits well-preserved large-scale cross-bedding. Although rather poor in fossils it is an excellent locality for study of the sedimentary structures associated with marine sandwaves.

## Introduction

The large quarry in the Coralline Crag at Richmond Farm was recorded by the Ordnance Survey in 1880 and was included by Reid (1890) in his synopsis of the Pliocene deposits of Great Britain. It was recorded by Harmer (1898) as 'locality 9' and was described by Boswell (1928) in the Geological Survey memoir of the area.

## Description

This pit shows a section of about 6 m of the Sudbourne Member of the Coralline Crag. The faces show large-scale cross-bedding (Figure 10.16) with a set thickness of around 1.5 m. The sediments have been selectively leached of all aragonitic material. The remaining sediment has a high content of terrigenous material (approximately 30%) which is mostly quartz. The calcitic bioclastic material is comminuted and very abraded indicating prolonged transportation. Identifiable fossils are uncommon but include occasional calcitic bivalves such as *Aequipecten* and bryozoan fragments. Small vertical and sinuous burrows can be seen in places. Well-developed joints are present in some of the quarry faces.

Carter (1957) proved a total thickness of more than 13 m of Coralline Crag at this location by augering into the floor of the pit. He noted a distinct contact with more silty sediments 11 feet 8 inches (3.55 m) below the floor of the pit. This contact was interpreted as the junction between 'zones 'e' and 'f' of Prestwich (1871a), which is equivalent to the contact between the silty sediments of the Ramsholt Member and the overlying less silty Sudbourne Member. An abundance of the foraminiferids *Alliatina excentrica* and *Alliatinella gedgravensis* was found in the uppermost part of the Ramsholt Member just below the contact, as was also seen at the section at Rockhall Wood, Sutton (Carter, 1957). This led Carter to the conclusion that this contact had stratigraphical significance.

## Interpretation and evaluation

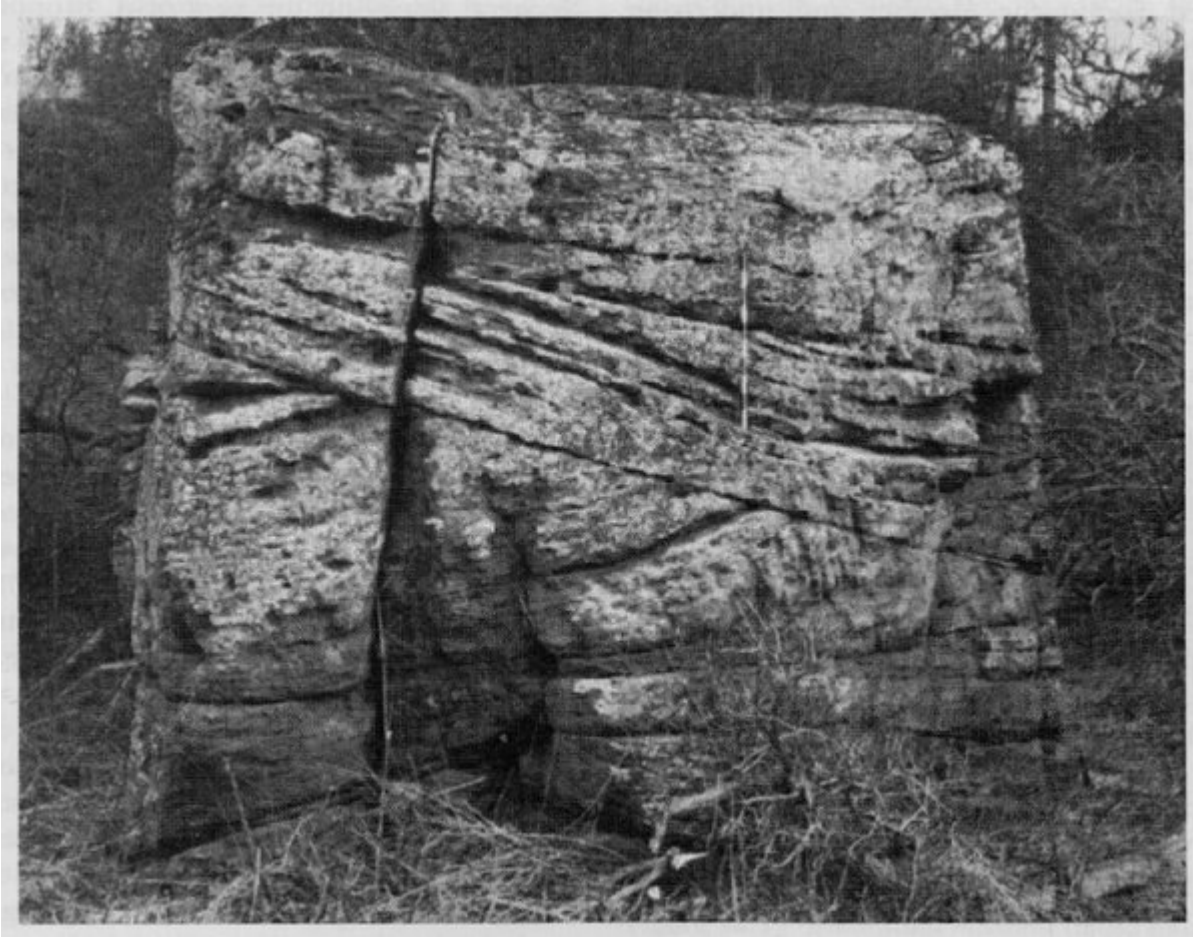
Richmond Farm lies about 2 km NE of the pits at Gedgrave Hall and at a similar elevation. These exposures of the Sudbourne Member together with other exposures at 'The Cliff', Broom Pit, Crag Farm, Valley Farm and Red House Farm allow the geometry of this facies to be reconstructed and allow comparison of lateral variations in grain size, sorting, and carbonate content which indicate sediment transport directions. The sediments at Richmond Farm are relatively fine and very abraded, indicating prolonged transport.

The foraminiferid *Alliatina excentrica* described by Carter (1957) from this locality had previously been recorded only from the late Pliocene Astian' stage of Italy.

## Conclusions

The site at Richmond Farm is the best exposure of the cross-bedded Sudbourne Member of the Coralline Crag in the Gedgrave area and shows finer, more abraded, carbonate sediment than in localities further north. It has yielded foraminifera that can be correlated with the late Pliocene of continental Europe.

## References



*(Figure 10.16) Cross-bedded calcarenites of the Sudbourne Member at Richmond Farm. Scale is 1 m long. (Photograph: P Balson.)*