Hascot Hill Pit, Battisford, Suffolk

[TM 061 538]

Highlights

This pit formerly exposed several metres of flint pebble conglomerate interpreted as a marginal or beach facies of the Red Crag. The section therefore may be used as evidence of the local position of the Red Crag shoreline and of sea level, and is therefore of great importance to the reconstruction of Red Crag palaeogeography. The Red Crag lies directly on the Chalk at this location.

Introduction

This site is a small overgrown pit in the side of a valley which cuts through Anglian Lowestoft Till to expose the underlying Crag deposits. The pit exhibits no permanent exposure at the present time. The pit was recorded by the Ordnance Survey in 1884 but the geological interest appears to have gone undescribed until relatively recently (Cambridge, 1949). In 1971 the pit became a geological reserve of the Suffolk Trust for Nature Conservation. A second pit just to the south of the road was worked during the 1970s and showed excellent exposures of both the pebble bed and almost 2 m of overlying sands. The sands are unfossiliferous and their age is unknown but they were believed to be of shallow marine origin (Dixon, 1978) and may be more or less contemporaneous with the pebble bed. This second pit was infilled and landscaped during the 1980s. Hascot Hill pit lies to the west of a Chalk ridge which separates the so-called Stradbroke Trough from the outcrop of 'classic' Red Crag to the east.

Description

In 1967 the pit showed an exposure of approximately 2 m of flint pebble conglomerate overlain by sand and chalky till. This chalky till is the Anglian Lowestoft Till which covers much of the interfluves of the area (Markham, 1967). Excavation at that time revealed a further 1.5 m of gravel below the floor of the pit, with abundant shell debris in the lowest metre of the excavation. Subsequent temporary excavations proved a total thickness of approximately 4.5 m of Red Crag pebble bed overlying Chalk approximately 2.5 m below the floor of the pit (Markham, 1976).

The pebbles are dominantly of flint, well rounded and between 10 and 100 mm diameter. Small well-rounded pebbles of phosphatic mudstone also occur. The matrix between the pebbles consists of heavily iron-stained, poorly sorted medium sand. The uppermost part of the section appears to have been decalcified and contains only moulds of molluscan shells (Spencer, 1967). Other fossils include fragments of phosphatized cetacean bone and shark teeth, including one specimen of *Carcharocles megalodon* (Spencer, 1966). Derived Mesozoic fossils occur and include belemnites, crinoid ossicles, echinoid spines, rhynchonellid brachiopods and fragments of *Inoceramus.* The calcareous fauna of the lower part of the section has been described by Markham (1971, 1975) and Dixon (1978) and includes many of the typical Red Crag mollusc species including *Neptunea contraria.* Many of the shells are badly abraded and the fauna is clearly transported. The presence of articulated specimens of sublittoral species such as *Mytilus edulis* and *Macoma obliqua* (Dixon, 1978) is evidence that reworking from older deposits is unlikely and that the length of transport for some shells was small.

The overlying sands contain ripple cross-lamination indicating flood and ebb tidal transport to the north-north-east and south-south-west, with the north-north-east direction apparently dominant (Dixon, 1978).

Interpretation and evaluation

Other pits in the area expose pebble beds which occasionally yield molluscs of presumed Red Crag age (Dixon, 1978) but none show such a thick development of the pebble bed or have yielded such an extensive fauna. The presence of a

fauna of probable Red Crag age in the interstitial sediments between the pebbles of the conglomeratic deposit at Battisford is not in itself conclusive proof that the deposit is contemporaneous with Red Crag sediments further east. Most of the mollusc shells are very abraded and clearly reworked (Dixon, 1978) as would be expected in such a high-energy deposit. The presence of articulated *Mytilus* shells indicates that at least some of the mollusc fauna might be contemporaneous with the deposit, but *Mytilus* is not a diagnostic fossil of stratigraphical value. It therefore remains to be proven whether the pebble bed is unequivocally of Red Crag age.

Similar pebble deposits containing well-rounded flint, phosphatic pebbles, shark teeth and phosphatized bone are found elsewhere in Suffolk and north Essex. *Cerastoderma angustatum,* a fossil known only from the Red Crag, is recorded from a deposit at Hadleigh (Dixon, 1978). The pebble deposits are interpreted as beach or very shallow-water littoral deposits and therefore, if they were proven to be contemporaneous with each other and with the 'classic' Red Crag deposits, would provide important evidence of the limit and palaeogeography of the Red Crag sea.

Conclusions

In the past the pit at Hascot Hill exposed a conglomeratic flint pebble bed which yielded marine fossils indicating that the deposit may be contemporaneous with the Red Crag deposits further east. The pebble deposit has been interpreted as a beach or very shallow-water littoral deposit and as such yields important evidence of the nature and position of the coastline during Red Crag times.

References