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Microfossils from two samples of London Clay from the Harlow District (50K sheet 240)

Whatever Programme

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Microfossils from two samples of London Clay from the Harlow District (50K sheet 240)

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Summary

Two samples of London Clay Formation were examined for their microfaunal content with a view to determine their biostratigraphical position. That from Roxwell (TL 657000 880000) contained foraminifera consistent with zones B, C and basal D. The sample from Hollingson Quarry (TL 453000 126000) was decalcified, but contained common diatoms preserved as pyrite indicative of Zone A to mid B.

1 Introduction

Two samples of London Clay Formation from the Harlow district were examined for microfossils in order to provide a biostratigraphical determination. This report completes the work carried out for this project detailed in Internal Reports IR/04/93 and IR/04/165.

2 Microfossil lists

2.1 ROXWELL (spoil heap)

MPA53862 TL 657000 880000

FORAMINIFERA
Marginulinopsis wetherelli (=Marginulina enbornensis)
Nodosaria latejugata
Cibicides westi
Lenticulina
Anomalinoides sp cf nobilis
Dentalina sp
OSTRACODA:
Cytherella londinensis
OTHER
Fish teeth

2.2 HOLLINGSON QUARRY

MPA53863 TL 453000 126000

DIATOMS
Coscinodiscus sp 1 of Bettenstaedt et al
Coscinodiscus sp 2 of Bettenstaedt et al
RADIOLARIA
?Spherical radiolarian ('calcisphere')
??Radiolarian (cruciform)
OTHER
Lignite

3 Conclusions

At Roxwell, nodosariids form the bulk of the foraminiferal fauna, suggesting Division B and lower division C where King (1981) recognises the Nodosaria-Rich Assemblage ('NRA'). *Marginulinopsis wetherelli (=Marginulina enbornensis)*, *Nodosaria latejugata* and *Cibicides westi are* are characteristic of London Clay divisions B, C, and basal D in the London Basin. The absence of *Osangularia* (which becomes common in Division C in the London Basin) was not observed. The ostracod species, *Cytherella londinensis*, ranges through the London Clay and is therefore not stratigraphically useful. Fish teeth were observed in the sample, but it is not certain whether these are associated with the "fish beds" of Division B (e.g. at Bognor Regis) or

Division D (e.g. Isle of Sheppey). The assemblage can be assigned to the upper part of the London Clay and probably divisions B although the lower part of division C cannot be ruled out entirely.

Diatoms are particularly abundant at Hollingston Quarry. They are confined to frequent specimens of *Coscinodiscus* sp 1 of Bettenstaedt et al. and common specimens of *Coscinodiscus* sp 2 of Bettenstaedt et al. Preservation is generally poor due to the effects of pyritisation. These two species are particularly characteristic of London Clay Division A, although they range up into the base of Division B. Plant remains were also common in the sample, preserved as chips of lignite. 'Woody pockets' have been recorded in Division A2 at South Ockenden (George & Vincent, 1977), but plant remains in the form of seeds and fruit, have been located in A1 at Walton-on-Naze and division D at Sheppey. It is concluded that this assemblage indicates London Clay Division A, although the lower part of Division B cannot be ruled out entirely.

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