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Foraminifera from a suite of samples from Hampstead Marshall, Berkshire

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Foraminifera from a suite of samples from Hampstead Marshall, Berkshire

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Summary

Foraminifera from the Newhaven/Seaford boundary interval in the neighbourhood of Hampstead Marshall are listed and biostratigraphical conclusions drawn.

1 Introduction

Three samples (MPA51016-51018; PMH3622-3624) were examined for foraminifera in order to place the succession in a stratigraphical framework. Foraminiferal zones referred to herein are after Wilkinson (2000)

2 Foraminiferal biostratigraphy

2.1 MPA51016 (PMH3622)

National Grid Reference SU 42046 65802

Selected species:

Bolivinooides culverensis (very rare)

Gavelinella cristata

Gavelinella stelligera

Reussella szajnochae praecursor

Rugoglobigerina pilula

Stensioeina exsculpta exsculpta

Stensioeina granulata perfecta

Conclusions. The presence of *G. cristata* and together with *Rugoglobigerina pilula*, *Stensioeina exsculpta exsculpta* places the fauna no older than foraminiferal zone BGS18iv (*uintacrinus* macrofossil Zone). However a single specimen of *B. culverensis* was also found indicating BGS19. The concurrent range of *B. culverensis* and *Stensioeina exsculpta exsculpta* is in the very basal part of that foraminiferal zone and the very basal *pilula* Zone can be inferred. The assemblage is typical of that found in the lower (but not basal) Newhaven Chalk.

2.2 MPA51017 (PMH3623)

National Grid Reference SU 40757 66073

Selected species:

Gavelinella cristata

Gavelinella stelligera

Stensioeina granulata perfecta

Stensioeina exsculpta exsculpta

Stensioeina exsculpta gracilis

Neoflabellina rugosa

Conclusions: The presence of *S. g. perfecta* indicates an age no older than 'mid' *socialis* zonal age, its inception being at the base of zone BGS18ii. However, rare *Stensioeina exsculpta gracilis* means that the age is younger than the 'mid' BGS 18iii. Also a single fragment of *Neoflabellina rugosa* was found-- this species is extremely rare in the lower part of its range and

its exact point of inception is not entirely certain, but it does not seem to occur below the base of the *pilula* Zone. *Stensioeina exsculpta exsculpta* becomes extinct in the very basal part of the *pilula* Zone (basal BGS19). Unfortunately, species of *Bolivinoides* were not present.

It is difficult to draw conclusions for this sample, but on the basis of *S. exsculpta exsculpta* and the single fragment of *N. rugosa*, the best fit is basal *pilula* Zone (basal BGS19). Disregarding the fragment of *N. rugosa*, the age is *testudinarius* to basal *pilula* (upper BGS18iii to basal BGS19). The basal Newhaven Chalk is implied.

2.3 MPA51018 (PMH3624)

National Grid Reference SU 44425 67704

?*Stensioeina polonica* (very rare)

Epistomina concinna

Gavelinella cristata (rare)

Gavelinella stelligera

Reussella szajnochae praecursor

Stensioeina exsculpta exsculpta

Whiteinella baltica

Conclusions: The presence of *Reussella szajnochae praecursor*, *Gavelinella stelligera* and rare *Gavelinella cristata* proves a stratigraphical position above Barrois Sponge Bed and below Peake's Sponge bed and lateral equivalents. The inception of the first named species occurs at the base of foraminiferal Zone BGS17iii and the inceptions of the last two species occur at the base of foraminiferal Zone BGS18i. The fact that *G. cristata* is rare suggests that the fauna comes from below Peake's Sponge Bed, because above it, the species becomes common and abundant. A single, poorly preserve specimen tentatively assigned to *Gavelinella polonica* is significant, because if correctly identified it proves a position stratigraphically no higher than Peake's Sponge Bed (and lateral equivalents) at which horizon it becomes extinct. The foraminiferal association is characteristic of a latest *coranguinum* zonal age often seen at the top of the Seaford Chalk.

3 References

WILKINSON, I P 2000. A preliminary foraminiferal biozonation of the Chalk Group (In preparation for the Holostrat Project: Upper Cretaceous). BGS Internal Report IR/00/13, 21pp.