FORAMINIFERA AND SEQUENCE STRATIGRAPHY OF THE SPEETON CLAY FORMATION (LOWER CRETACEOUS) IN N. E. ENGLAND

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The Speeton Clay Formation is exposed in the cliffs north of Flamborough Head in North East England. The formation ranges in age from the Ryazanian to the Albian but is often poorly exposed in the sea cliffs and on the foreshore. The foraminiferal assemblage is often dominated by long-ranging nodosariids, although, at some levels, the fauna is dominated by epistominids. Diversity of foraminifera varies throughout the succession, with the maximum diversity being recorded in the Late Hauterivian. Using information from the (i) diversity, (ii) distribution of epistominids, (iii) glauconite and (iv) pyrite it is possible to identify possible sequence boundaries in the Late Ryazanian (138 Ma), Early Valanginian (136 Ma), mid-Hauterivian (129 Ma) and Early Barremian. These four events are very close in age to the events (K20, K30, K40, K50) described by Sharland and co-workers in Arabia.

The distribution of the foraminifera will be discussed in the context of the sequence stratigraphy and the relationship between abundant epistominids and Maximum Flooding Surfaces, the stable isotope stratigraphy and changes in sea level. Other examples of similar distribution patterns from the Lower Cretaceous and mid-Upper Jurassic of Southern England will be discussed.

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