

Biostratigraphy of the Barremian-Aptian (Early Cretaceous) of eastern Greenland

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In eastern Greenland, marine Barremian-Aptian deposits are known from the Watkins Fjord Formation on Kangerlussuaq. Going northwards scattered outcrops of the Steensby Bjerg Formation or equivalent units in the 'Mid Cretaceous sandy shale sequence' occur principally on Traill Ø, Geographical Society Ø, Hold with Hope, Wollaston Forland, eastern Kuhn Ø, Hochstetter Forland, Store Koldewey and some of the smaller islands. Detailed knowledge of the biostratigraphy of this interval in eastern Greenland is variable. A good dinoflagellate cyst stratigraphy has been established for the mudrocks through the work of NØHR-HANSEN (1993). He recognised five biozones in the Early Cretaceous, of which three are of relevance to this study: *Batioladinium longicaudatum* (Early-Late Barremian, with 3 subzones); *Pseudoceratium nudum* (earliest Aptian) and *Circulodinium brevispinosum* (Early Aptian to Early Albian, with 4 subzones). However, detailed association of the dinoflagellates with other important macrofossil groups is often lacking. CASP studies (KORAINI, 1997) demonstrated the soundness of Nohr-Hansen's scheme and the potential of relating the microfloras to macrofossils. A number of often large heteromorph ammonites have been discovered which include *Audouliceras* and *Procheloniceras* that are related to the principal *Sanmartinoceras* fauna of the region appearing to be of Late Barremian age. Lytoceratid ammonites are also common ranging up to levels with deshayesitids. Certainly the coming of the deshayesitid faunas heralds the Early Aptian (KELLY & WHITHAM, 1999) and *Tropaeum subarcticum* Casey may indicate the Late Aptian. Allocation of the first-described ammonite faunas including *Sanmartinoceras* to the Late Aptian by BØGVAD & ROSENKRANTZ (1934) and FREBOLD (1935) is challenged herein; these are probably of Late Barremian age. Significant belemnite faunas of oxyteuthids as well as the inoceramid bivalve *Neocomiceramus* span the Barremian-Aptian boundary. The successive biotas are brought together to give a more integrated biostratigraphy for eastern Greenland and comparisons will be drawn with equivalent successions of northwest Europe, the Russian Platform and the Barents Shelf including Spitsbergen.

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