

Keeled planktic foraminifera in the Lower to Middle Cenomanian of the Boreal Cretaceous, North German Basin

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Recent investigation of three new drill cores from the Cenomanian center of the North German Basin (core Anderten I, BORNEMANN et al., 2017) and two industrial cores Wunstorf 2011/2 and 2011/8) revealed a potentially complete composite Late Albian to Late Cenomanian succession. High-resolution bulk-rock $d^{13}C_{carb}$ data from these cores clearly document the positive excursions around the Albian-Cenomanian boundary and the Mid Cenomanian Event (MCE) 1 and 2.

Here we focus on the 130-m-thick interval between the Albian-Cenomanian boundary and MCE 1. While planktic foraminifera are present in all of the samples investigated, keeled forms (rotaliporids and praeglobotruncanids) almost only occur in distinct intervals. These intervals correlate well with sea-level highstand or maximum flooding zones (WILMSEN et al., 2003). The first level with abundant keeled forms correlates with the highstand of depositional sequence Ce II. Above MCE 1, during the sea-level highstand of sequence Ce IV, planktic foraminifera become dominant (P/B break, see CARTER & HART, 1977; and keeled planktic foraminifera are present throughout (WEISS, 1982). The observed sea-level control results in species ranges clearly differing from Tethyan standard planktic foraminiferal biozonation. E.g., the species *Thalmaninella globotruncanoides*, marker of the Albian-Cenomanian boundary, has its first appearance (FA) in the middle of the Lower Cenomanian; *Rotalipora montsalvensis*, a species with its Tethyan first occurrence in the Lower Cenomanian has its FA in the late Middle Cenomanian above MCE 1. Our results deliver new aspects to the discussion about the timing and depth of connections between Boreal and Tethyan basins. Furthermore, they put the chronostratigraphic interpretation of older Boreal planktic foraminiferal zonations into perspective.

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