

CALCAREOUS NANNOPLANKTON RECOVERY FROM THE CRETACEOUS / TERTIARY MASS-EXTINCTION EVENT IN BJALA SECTION, EAST BULGARIA

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Calcareous nannofossils from the Cretaceous/Tertiary (K/T) boundary interval in the complete section at Bjala, Black Sea coast (East Bulgaria) were studied in order to document their response to the K/T boundary event(s) and to show the pattern of their survival and recovery. The interval studied represents over 80m thick sedimentary sequence, biostratigraphically subdivided to the CC26 *Micula prinsii* (Uppermost Maastrichtian), NP 1 *Biantholithus sparsus*, NP 2 *Cruciplacolithus tenuis* and NP 3 *Chiasmolithus danicus* (Lower Danian) nannofossil Zones. The K/T boundary is marked by a clay bed (2 to 6 cm thickness) with an iridium anomaly.

Diversity and abundance of nannofossil assemblages in the last 1m of the Uppermost Maastrichtian (CC 26 *M. prinsii* Zone) are relatively high, comprising over 40 species.

A drastic reduction in nannofossil abundance and diversity and mass-extinction of the Cretaceous taxa occurred at the boundary clay bed. It is practically devoid of nannofossils and only fragments of poorly preserved *Thoracosphaera*, *Braarudosphaera* and *Cyclagelosphaera* occur rarely.

Immediately above the clay bed, in the survival interval, an explosive increase in abundance of disaster species *Thoracosphaera operculata*, *T. saxea* and *Braarudosphaera bigelowi* is evidenced. The disaster's blooms are quantitatively evaluated: Thoracosphaerids reach over 80% and *Braarudosphaera bigelowi* - up to 20% from the total specimens. In the Lowermost Danian (NP 1 *B. sparsus* Zone) many of Cretaceous species practically occur. We still do not know whether these are reworked or if they survived the K/T boundary event(s).

In the recovery interval, related to the time of NP 2 (early phase) and NP 3 (late phase) nannofossil Zones, nannofossil assemblages have completely changed. Here a major radiation of newly evolved clades (*Cruciplacolithus*- lineage, *Futyania-Prinsius*, *Coccolithus-Ericsonia*, *Cruciplacolithus-Chiasmolithus*) is registered.

In conclusion, these changes in calcareous nannofossil assemblages across the K/T boundary interval are interpreted as reflecting the short-time global Cretaceous/Tertiary boundary event(s), affected the marine nanoplankton communities.