

PLANKTONIC FORAMINIFERAL EXTINCTIONS AT THE APTIAN-ALBIAN AND K/Pg BOUNDARIES: SIMILARITIES AND RELATION TO TROPHIC RESOURCES

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ABSTRACT: The marine ecosystem, as all ecosystems, is characterized by the abiotic and biological balance in energy exchange between primary producers and subsequent secondary predators at different trophic levels. An extinction event is characterized by loss of diversity and abundance; in other words, the rate of extinctions is bigger than that of speciations. Globally, planktonic foraminiferal faunas suffered two major extinctions: (i) ~~At-at~~ the Aptian-Albian boundary, possibly related to a global anoxic event; (ii) ~~At-at~~ the Cretaceous/Paleogene boundary (K/Pg), associated to the impact of a meteor or volcanism, and associated global climate change. Although the causes of these extinctions were different, based on sections of the South Atlantic Ocean the current study shows, ~~based on sections of the South Atlantic Ocean~~, that the effects on-over the planktonic foraminiferal faunas were similar at DSDP Sites 364 (Aptian-Albian interval) and Site 356 (Cretaceous/Paleogene interval). Within the Aptian-Albian interval, the genera *Hedbergella*, *Paraticinella* and *Globigerinelloides* (with finely perforated walls; pore size between 1-2.5 µm) went extinct. The forms that survived this transition belong to the genus *Microhedbergella* (with microperforated walls; pore size <1 µm). In the K/Pg transition, almost all genera of planktonic foraminifera characteristic of the Cretaceous went extinct, except for *Muricohedbergella* (finely perforated), *Guembelitra*, *Zeauvigerina* and *Rectoguembelitra* (microperforated). Morphologically, Considering both extinctions, a reduction in the diameter of planktonic foraminiferal tests can be seen and, suggests a ing, the occurrence of a "liliput" effect. The similarity between both events can also be observed in the way that the marine niche of planktonic foraminifera was impacted. Since both time intervals show a drastic decline in forms that inhabit the deeper portion of the water column, elevation of oxygen minimum zones can be suggested as a driving mechanism. The progressive recovery of the ecosystem during the Albian (appearance of *Ticinella* and *Muricohedbergella*) and in the Danian (appearance of *Eoglobigerina*, *Subbotina*, *Parasubbotina* and *Chiloguembelina*; deeper pelagic dwellers and shallow pelagic dwellers) seems to be directly connected to the reestablishment of the trophic chain and the increasing gradient of marine productivity, subsequently leading to an evolutionary radiation. Overall, the evolution of planktic foraminiferal taxa after the extinction events is mainly controlled by the adaptation to new ecological niches.

KEY-WORDS: PLANKTONIC FORAMINIFERA; EXTINCTIONS, MARINE ECOSYSTEM, TROPHIC RESOURCES.

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