

# BENTHIC FORAMINIFERAL PALEOECOLOGY AND DEPOSITIONAL PATTERNS DURING THE ALBIAN AT DSDP SITE 327 (FALKLAND PLATEAU)

*Lopes, F.M.<sup>1</sup>, Koutsoukos, E.A.M.<sup>2</sup>, Kochhann, K.G.D.<sup>3</sup>, Savian, J.F.<sup>4</sup>, Fauth, G.<sup>1</sup>*

<sup>1</sup>Itt Fossil – UNISINOS; <sup>2</sup>Institut für Geowissenschaften, Universität Heildeberg; <sup>3</sup>Institut für Geowissenschaften, Christian-Albrechts-Universität zu Kiel; <sup>4</sup>Universidade Federal do Rio Grande do Sul

The present paleoenvironmental study uses a spectrum of analytical methods, such as benthic foraminiferal assemblages, total organic carbon (TOC) and calcium carbonate (CaCO<sub>3</sub>) contents and magnetic susceptibility (MS), to assess changes in primary productivity, bottom-water oxygenation and depositional patterns within the Albian interval, recovered at Deep Sea Drilling Project (DSDP) Site 327 Hole A, Falkland Plateau. DSDP Site 327 was drilled at a water depth of 2400 m, in the western sector of the Falkland Plateau, on the Maurice Ewing Bank. Twenty-six samples, composed predominantly of nannofossil oozes, were analyzed from cores 15 to 21 (175,69 to 339,05 meters below seafloor – msbf) at Hole 327A. Taking into account the composition of the rocks characterizing this interval, sample preparation was performed with H<sub>2</sub>O<sub>2</sub> at 30% concentration. Residues were then washed and wet-sieved in 125µm and 38µm grain-size fractions. Whenever possible, 200 specimens were picked and identified from 125µm grain-size fraction. Residues retained in the 38µm sieves were not quantified in the present study, although the samples were checked for rare and relevant benthic foraminiferal species. Thirty-three benthic foraminiferal species were identified in the studied section and, based on the abundances of morphogroups (epifaunal and shallow infaunal), two distinct associations were identified. In order to test the reliability of the identified benthic foraminiferal associations, a Q-mode cluster analysis was run by paired groups, using the Bray-Curtis similarity index on the software package PAST – Paleontological Statistics, using the relative abundances of the benthic foraminiferal morphogroups identified herein. Stratigraphic intervals dominated by the epifaunal morphogroup can be interpreted as indicative of bottom-waters with low-oxygen content. However, these decreases in oxygenation were not vigorous enough to establish a dominance of deep-infaunal morphotypes, as supported by the low TOC values. Intervals dominated by the shallow infaunal morphogroup were interpreted as subjected to moderate to high nutrient flux to the ocean floor. These intervals are associated with high magnetic susceptibility (MS) values and low calcium carbonate (CaCO<sub>3</sub>) content, suggesting that dissolution processes, rather than increased primary productivity, controlled CaCO<sub>3</sub> accumulation in the studied section. Furthermore, faunal analysis points to deposition in an outer neritic to upper bathyal paleoenvironment.

**KEY WORDS:** Benthic foraminifera, Albian, DSDP Hole 327A.