LATE MESOZOIC BIOGEOGRAPHY AND SURFACE CIRCULATION OF THE INDIAN OCEAN

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Biogeographic zonality and surface water circulation in the Indian Ocean were reconstructed for four Late Mesozoic time intervals, based on micropaleontological and paleoceanographic data. The oldest marine basin existed on the Exmouth - Argo area in the Late Jurassic. The Proto- Circumantarctic Current and related Australian biogeographic province developed during the Neocomian. The current transported high-latitude and western oceanic plankton species into the Exmouth-Argo area, connected with the southern part of the Eastern Tethys at the end of Neocomian via the anticyclonal gyre. During the Mid-Cretaceous, there existed three biogeographic provinces with the sea- surface temperature gradient between terminal ones about 10 C. Closure of circumantarctic current in the Late Cretaceous led to stronger latitudinal differences in microfossil assemblages, and five biogeographic provinces can be distinguished. Therefore, biogeographic zonality and mainly anticyclonal surface circulation with upwellings along eastern and western margins of the Indian Ocean developed during the Mesozoic being controlled by progressive opening of the basin and by global climatic oscillations.