

ABSTRACT VOLUME

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VERTEBRATE FAUNA AND ENVIRONMENTAL INTERPRETATION OF THE ITAPECURU AND ALCÂNTARA FORMATIONS (EARLY-LATE CRETACEOUS OF THE PARNAÍBA AND SÃO LUÍS BASINS)

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The Itapecuru and Alcântara formations have yielded important records of the Aptian, Albian and Cenomanian continental faunas of northeastern South America. Formerly considered to be a unique sedimentary unit, these two successions were recently individualized based on facies analysis and environmental settings, although there is general agreement that they are closely related. The coastal deposits of the Alcântara Formation (Cenomanian) represent a marginal marine succession deposited above the continental fluvial deposits of the Itapecuru Formation (Aptian/Albian). The Itapecuru Formation is composed of fine to very fine sandstone and mudstone facies deposited in a floodplain environment with well-developed paleosol profiles. The profiles show evidence of seasonal changes in moisture content attested by frequent intercalations of alluvial clay skins and carbonate nodules. In this study, we perform a comparison of the vertebrate fauna of these formations and their paleoenvironmental context. Most of the vertebrates from the Itapecuru Formation are very similar to those collected in the Alcântara deposits (e.g., *Mawsonia*, *Lepidotes*, *Ceratodus brasiliensis*, *Arganodus* sp., *Candidodon itapecuruense*, *Carcharodontosaurus* sp., *Spinosaurus* sp. and undetermined diplodocoids and titanosauria). Nonetheless, *Amazonsaurus maranhensis*, from the Itapecuru deposits, has not yet been identified amongst the dozens of diplodocoid caudal vertebrae collected in the Alcântara region. The diplodocoid vertebral centra collected from the deposits of Alcântara Formation belong to another rebbachisaurid related to *Limaysaurus* (= *Rayososaurus*) *tessonei*. This scenario strongly indicates that some particular environmental parameters were present in both regions and that only discrete evolutionary changes occurred in the vertebrate fauna from the end of the Aptian to the beginning of the Cenomanian. These changes were possibly at the species level and, in some cases, genera, leading to modifications imperceptible in the disarticulated and fragmented material available. *Spinosaurus*, *Mawsonia*, dipnoans and undetermined aquatic crocodiles were certainly ecologically integrated and indicate environments with fluvial influence. The lungfish indicates a well-marked seasonal regime with episodes of drought, a circumstance that is also evidenced by the dryness of the xylematic tissue in conifers of the Alcântara Formation. The continuance of the same faunistic (aquatic and terrestrial) components along the end of the Aptian, the entire Albian and the beginning of the Cenomanian in northeastern South America indicates stability of the environmental conditions and climate during this interval.

