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A new azhdarchoid pterosaur from the Lower Cretaceous of Brazil and the paleobiogeography of the Tapejaridae

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The Tapejaridae were an apparently worldwide distributed clade of edentulous pterosaurs, being a major component of several Lower Cretaceous terrestrial faunas. Despite their distribution across Gondwana and Laurasia, the oldest tapejarid remains were found in Barremian units from Europe, what led to the assumption that the clade originated in Eurasia and later dispersed southwards. Here we present a new tapejarid pterosaur species (*Kariridraco dianae* gen. et sp. nov.) from the Lower Cretaceous Romualdo Formation of Brazil. The holotype (MPSC R 1056) comprises an incomplete, three dimensionally preserved skull, lower jaw, and cervical vertebrae. It shows a unique combination of features such as unusually tall and comparatively short nasoantorbital fenestrae, as well as a premaxillary crest forming an angle of about 45° with respect to main skull axis. Phylogenetic analyses recover the new taxon as a *Tupuxuara*-related Thalassodrominae, a clade of early-diverging tapejarids that were apparently indigenous to central Gondwana. The inclusion of the new taxon in current phylogenetic frameworks, in addition to similarity cluster analyses of Early Cretaceous tapejarid-bearing pterosaur faunas, indicate Gondwana as the most parsimonious origin center for Tapejaridae, and show that pterosaur communities were affected by large scale tectonic-driven vicariant events.

Key words: Pterosauria, Azhdarchoidea, phylogeny, biogeography, Cretaceous, Romualdo Formation, Araripe Basin, Brazil.

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