

THE EVOLUTION OF DINOSAURS, CROCODYLIFORMS AND MAMMALS IN GONDWANA

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The Cretaceous record of dinosaurs, mammals, and terrestrial crocodyliforms has considerably increased in the last years in the Gondwanan continents (i.e.; South America, Africa, Madagascar, India, Antarctica, and Australia). Most of the fossil record comes from Hauterivian through Maastrichtian age beds. As already noted by several researchers, the taxonomic composition of Cretaceous vertebrates faunas from Gondwana shows remarkable distinctions with respect to those from the northern hemisphere (mainly North America and Asia). Such distinctions are interpreted reflecting a long and physically isolated evolutionary history of the southern lineages with respect to their northern relatives. Among dinosaurs, groups that are widely represented in Gondwana include theropods (e. g.; megaraptorans, carcharodontosaurids, unenlagiids, abelisaurids, noasaurids), sauropods (e. g.; dicraeosaurids, rebbachisaurids, titanosaurids), and ornithischians (e. g.; stegosaurs, iguanodontians, ankylosaurs). Cretaceous rocks from Gondwana also document a singular radiation of crocodyliforms, including the speciose and highly diversified Notosuchia, and big-game aquatic forms such as pholidosaurids. Remains of fossil mammals mainly come from Maastrichtian age beds, revealing the presence of highly diversified lineages (i.e.; dryolestoids) that on the northern continents became extinct in the Early Cretaceous. Such variegated fossil record of Cretaceous terrestrial vertebrates invite to explore different study topics, such as the influence of the continental break-up into the paleogeographical distribution of these animals, recognize patterns of diversification and faunal sucesions, as well as the identification of extinction events previous to that occurred at the KT boundary.