

Late Miocene capybaras from Argentina: Skull anatomy, taxonomy, evolution, and biochronology

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Fossil capybaras are morphologically extremely varied, but previous studies have disagreed on whether this diversity reflects intraspecific variation or the existence of multiple species. Here, we review the capybaras from the classic Argentinian Late Miocene localities of Paraná River cliffs (“conglomerado osífero” of the Ituzaingó Formation, Entre Ríos), and Chillhué and Guatraché shallow lakes (Cerro Azul Formation, La Pampa), and perform a morphometric analysis of their upper cheek teeth and the posterior portion of the rostrum. Our results confirm that all of the specimens from the “conglomerado osífero” belong to the single species *Cardiatherium paranense*. In addition, we refer a specimen from Tupungato (Río de los Pozos Formation, Mendoza) to *C. paranense*, thus expanding its geographical range. The material from La Pampa represents a different taxon, and is here preliminary referred to *Cardiatherium* aff. *orientalis*. Our systematic interpretation of Late Miocene capybaras suggests that the early radiation of this group was not as explosive as previously thought, and was likely constrained by the early acquisition of large size, increasing complexity of the cheek teeth, and probably semi-aquatic habits.

Key words: Mammalia, Rodentia, Caviioidea, Hydrochoerinae, anatomy, morphometrics, taxonomy, biostratigraphy, Miocene, Argentina.

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