

EXPERIMENTS IN HERBIVORY: EVOLUTION IN THE ARCHAEOHYRACIDAE
(MAMMALIA: NOTOUNGULATA)

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Due to its geographic isolation for most of the Cenozoic, the fossil fauna of South America is an independent experiment in community ecology particularly useful for exploring the evolution and diversification of mammalian herbivores. Previously, such studies have been hampered by the presence of several gaps in the South American land mammal record. The Tinguiririca Fauna of Chile (L. Eocene - E. Oligocene) partially fills the largest of these gaps (10-15 million years) and permits a more thorough investigation of these processes.

The most dominant herbivores in South America during the Paleogene were the notoungulates. The relationships among the notoungulates are not well understood, and one of the most enigmatic notoungulate families is the Archaeohyracidae. In the Tinguiririca Fauna, however, archaeohyracids are the most abundant group of herbivores, comprising at least 9 new taxa, 7 generically distinct. A cladistic analysis of 8 of these new taxa in addition to 5 currently recognized archaeohyracids, 5 mesotheres, and 10 hegetotheres supports the monophyly of Mesotheriidae and Hegetotheriidae, but does not support of the monophyly of Archaeohyracidae; rather, only a subset of archaeohyracids form a monophyletic group. It appears that many specializations for herbivory were acquired independently in these three families.

The Tinguirirican archaeohyracids demonstrate a diversity of dental adaptations for herbivory, indicating they occupied a wide variety of herbivore niches.