

SOUTH AMERICAN HERBIVORE COMMUNITIES AND THE EOCENE-OLIGOCENE TRANSITION

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The Eocene-Oligocene transition is commonly regarded as one of the most significant events of the Cenozoic. This world-wide climatic shift between the warm, equitable Eocene and the cooler Oligocene coincided with the extinction of numerous "archaic" mammal groups and the diversification of newer lineages of mammals, most with extant representatives. However, this has only been well-demonstrated for northern hemisphere continents. Due to gaps in the fossil record and uncertain dating of most Paleogene fossil-bearing strata, little has been known of this transition in South America. A more complete understanding of the effects of this transition on southern continents is necessary if we are to begin to understand how local communities react to worldwide climatic change.

Recent improvements in dating of South American Land Mammal Ages and the recognition of a new interval in the South American fossil land mammal record have made possible a more rigorous examination of how the Eocene-Oligocene transition affected South American mammalian ecosystems. Focusing on the Tinguiririca Fauna, a recently described late Eocene or early Oligocene mammal fauna from central Chile, the effects of this transition on taxonomic, ecologic, and morphologic diversity within the herbivore paleoguild are investigated.

Although morphologic indicators of diet (e.g. cheek-tooth crown height) suggest that many South American herbivores shifted to a predominantly grazing lifestyle in the late Eocene and early Oligocene, cenogram analyses of body size distributions do not support the hypothesis that open habitats like savannas were present at this time. Possible explanations for these contradictory lines of evidence are discussed.