DIVERSIFICATION OF MESOTHERIIDS (MAMMALIA: NOTOUNGULATA: TYPOTHERIA) IN THE MIDDLE LATITUDES OF SOUTH AMERICA

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Much of the early and middle Cenozoic terrestrial mammal record of South America derives from the higher latitudes, especially Patagonian Argentina. Over the past 20 years, fieldwork in other parts of the continent has resulted in new insights into the evolution and distribution of many mammal clades, including the endemic South American Mesotheriidae (Notoungulata: Typotheria).

Mesotheriids are unknown in pre-late Eocene (Mustersan and earlier) faunas and are poorly known prior to the late Oligocene Deseadan South American Land Mammal "Age" (a single specimen has been reported from the earliest Oligocene Rocas Bayas locality and two specimens are known from the ?late Eocene/Oligocene Divisadero Largo Fauna). In Argentina, mesotheriids occur in most Deseadan faunas (though in low abundance), but are not recorded between the Deseadan and Mayoan SALMAs (early and middle Miocene). They are familiar components of late Miocene through early Pleistocene Argentine faunas.

In contrast, mesotheriids are common and diverse in most middle Cenozoic faunas of northern Chile and Bolivia, and hence there is no hiatus in their stratigraphic occurrence at intermediate latitudes. The Chucal Fauna of northern Chile, likely of Santacrucian (late early Miocene) age, includes abundant and well-preserved remains of three new mesotheriid species. These species are closely related to the basal mesotheriine Microtypotherium, otherwise known only from Bolivia, and help clarify the early evolution of the Mesotheriinae. Plesiotypotherium, common in Bolivian faunas of Friasian (s.l.) age (middle Miocene) is unrepresented at Chucal. The late Miocene Caragua locality (~40 km west of Chucal) has yielded only three fossil specimens, all appearing to pertain to a previously unrecognized species of mesotheriine, closely related to Plesiotypotherium and later-occurring Argentine taxa.

These distributional patterns suggest that the intermediate latitudes, possibly more montane areas, may have been biogeographically distinct from both equatorial and Patagonian regions, and possibly served as a center of diversification for mesotheriids and other groups of indigenous South American mammals.