

African and Malagasy tenrecs: a biogeographic parallel with lemuriform primates? R.J. ASHER, Doctoral Program in Anthropological Sciences, State University of New York, Stony Brook, NY 11794-4364

The biogeographic history of Malagasy primates is a controversial issue. Many workers have considered them to be paraphyletic and have therefore argued that primates colonized Madagascar on multiple occasions. However, subsequent phylogenetic studies have upheld Malagasy primate monophyly, and suggest that a single dispersal event can explain the presence of primates on Madagascar.

Tenrecid insectivores, like lemuriforms, consist of a diverse Malagasy fauna and a few non-Malagasy representatives (i.e., African Potamogalinae). Thus, Malagasy tenrecs may serve as a test of biogeographic patterns proposed for primates. If tenrecs diversified after the tectonic separation of Madagascar from nearby landmasses, and currently exist there due to a single dispersal event, then the Malagasy forms (the subfamilies Tenrecinae, Oryzoricinae, and Geogalinae) should comprise a monophyletic clade. Discoveries to the contrary would indicate that either 1) there were multiple colonization events of Madagascar, or 2) Malagasy tenrecs evolved in vicariance with their continental neighbors.

A morphologically-based phylogeny of 16 lipotyphlan taxa in the Tenrecidae, Solenodontidae, Soricidae, and Erinaceidae based on over 20 cranial, postcranial, and soft

tissue characters supports a tenrecine clade (Hemicentetes, Tenrec, Setifer, and Echinops), and a potamogaline (Potamogale, Micropotamogale)-Linnogale clade. The relationships of other oryzoricines (Microgale and Oryzorictes) and Geogale are less well resolved.

This phylogenetic analysis indicates that at least one Malagasy oryzoricine (Linnogale) is more closely related to African potamogalines than to Malagasy tenrecines. Hence, as has been previously suggested for primates, Malagasy tenrecs may not be monophyletic, and at least one of the preceding two possibilities (i.e., multiple colonization events or vicariance) appears necessary to explain the presence of tenrecs on Madagascar. The absence of any undisputed tenrec fossils prior to the Miocene supports the hypothesis that tenrecs colonized Madagascar on multiple occasions, since Madagascar has been well-separated from Africa since the latest Jurassic. The paraphyletic status of Malagasy tenrecs presents an interesting contrast with recent analyses of lemuriform primates, and supports the interpretation that multiple dispersal events may be responsible for some of Madagascar's mammalian fauna.