EVOLUTIONARY HISTORY OF SIGMODONTINE RODENTS (MAMMALIA, CRICETIDAE): THE PALEONTOLOGICAL PERSPECTIVE

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Sigmodontinae is the largest mammal subfamily that currently inhabits the Neotropics and the second most diverse group worldwide. After two decades of contributions mostly focused on molecular markers, the evolutionary history of the subfamily was rewritten almost without paleontological evidence. Here we present a “state of the art” for the fossil record of sigmodontine rodents. A poorly understood stock of North American (Mexico and United States) muroids composed of the polytypic genus †*Copemys* and related forms has been proposed as ancestral to sigmodontines, tylomyines and neotomines between about 15-5 Ma; a plausible hypothesis, at least from morphological and chronological perspectives. Another group of Mio-Pliocene North American muroids previously associated with the origin of the sigmodontines, including emblematic forms such as †*Bensonomys*, †*Prosigmodon*, and † *Symmetrodontomys*, needs a systematic revision. The oldest undisputed cricetid records in South America come from Argentina, including †*Kraglievichimys formosus* (formerly, *Auliscomys formosus*; Phyllotini) and †“*Necromys*” *bonapartei* (new unnamed genus; incertae sedis). Although both are present in the basal levels of the Fm. Monte Hermoso, a problematic issue is the antiquity of this unit; it is probably not older than 4 Ma. If †*Prosigmodon* is disconnected from *Sigmodon*, the oldest sigmodontines recorded in North America are also Early Pliocene in age. Emergence of most of the current genera of Sigmodontinae may correspond to a later radiation during the Early Pleistocene. Late Pleistocene-Holocene assemblages mostly resemble recent historical communities although regional extinctions are widely detected.