

**Zegdoumyidae (Rodentia, Mammalia), stem anomaluroid rodents
from the Early to Middle Eocene of Algeria (Gour Lazib, Western
Sahara): new dental evidence**

Laurent Marivaux, Mohammed Adaci, Mustapha Bensalah, Helder Gomes Rodrigues, Lionel Hautier, M'hammed Mahboubi, Fateh Mebrouk, Rodolphe Tabuce, Monique Vianey-Liaud

Abstract :

The Palaeogene fossil record of rodents in Africa is very poor compared to that of North America or Eurasia. Despite this, Africa has long appeared to be a centre of adaptive radiation for two distinct groups of Rodentia: Hystricognathi and Anomaluroidae. The >45-million-year-old enigmatic Zegdoumyidae is the oldest and only rodent family known of this age from Africa (Algeria and Tunisia). Zegdoumyids have been tentatively regarded as a possible early African stem group for Anomaluridae, a link that has never been clearly established because of the highly fragmentary nature of zegdoumyid fossils, as well as the major temporal and morphological gaps between zegdoumyids and the first true anomaluroids from the Late Eocene. About 200 rodent teeth have been sorted after acid treatment of indurated sediments from several new localities in the Gour Lazib of western Algeria dating from the late Early or early Middle Eocene. These new fossils allow us to better describe the morphology of the Zegdoumyidae (especially *Glibia* and *Zegdoumys*) and to identify a new taxon, *Lazibemys zegdouensis* gen. et sp. nov. With this material, we investigated the phylogenetic position of the Zegdoumyidae in

a high-level rodent phylogeny with cladistic assessment of the dental evidence. Our analyses have yielded six equally most-parsimonious trees in which zegdoumyids represent the earliest offshoots (pectinately arranged) of a large clade that embraces Eocene anomaluroids plus stem and crown Anomaluridae. This phylogenetic assumption underscores the great antiquity of the Anomaluroidea clade in Africa, as expected given the high morphological divergence of the Late Eocene African anomaluroids. Zegdoumyids exhibit a variety of dental morphologies and provide some suggestions on evolutionary trends within the Anomaluroidea (early stages of pentalphodonty, incisor enamel microstructure transitional from the pauciserial to the uniserial condition). The source of Zegdoumyidae is still unclear inasmuch as there is no well-identified sister group among early Palaeogene rodents. Zegdoumyids seem to share a common ancestry with both stem Myodonta and North American Sciuravidae. Given the high degree of dental specialization of zegdoumyids, we cannot exclude the possibility that zegdoumyids are rooted in a more primitive, as yet unknown, African rodent lineage older than the Early-Middle Eocene.

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