ACTA PALAEONTOLOGICA POLONICA

The oldest and youngest records of afrosoricid placentals from the Fayum Depression of northern Egypt

Erik R. Seiffert
Acta Palaeontologica Polonica 55 (4), 2010: 599-616 doi: http://dx.doi.org/10.4202/app.2010.0023

Tenrecs (Tenrecoidea) and goldenmoles (Chrysochloroidea) are among themost enigmatic mammals alive today. Molecular data strongly support their inclusion in the morphologically diverse clade Afrotheria, and suggest that the two lineages split near the K−T boundary, but the only undoubted fossil representatives of each superfamily are from early Miocene (~20 Ma) deposits in East Africa. A recent analysis of partial mandibles and maxillae of *Eochrysochloris, Jawharia*, and *Widanelfarasia*, from the latest Eocene and earliest Oligocene of Egypt, led to the suggestion that the derived "zalambdomorph" molar occlusal pattern (i.e., extreme reduction or loss of upper molar metacones and lower molar talonids) seen in tenrecoids and chrysochloroids evolved independently in the two lineages, and that tenrecoids might be derived from a dilambdomorph group of "insectivoran−grade" placentals that includes forms such as *Widanelfarasia* . Here I describe the oldest afrosoricid from the Fayum region, ~37Ma *Dilambdogale gheerbranti* gen. et sp. nov., and the youngest, ~30 Ma *Qatranilestes oligocaenus* gen. et sp. nov. *Dilambdogale* is the most generalized of the Fayum afrosoricids, exhibiting relatively broad and well−developed molar talonids and a dilambdomorph arrangement of the buccal crests on the uppermolars, whereas *Qatranilestes* is themost derived in showing relatively extreme reduction of molar talonids. These occurrences are consistent with a scenario in which features of the zalambdomorph occlusal complex were acquired independently and gradually through the later Paleogene. Phylogenetic analysis places *Dilambdogale* and *Widanelfarasia* as sister taxa to the exclusion of crown afrosoricids, but derived features that these taxa share with early Miocene *Protenrec* hint at the possibility that both taxa might be stem tenrecoids. Late Paleocene *Todralestes* and *Afrodon* from Morocco are similarly placed as stem afrosoricids, indicating that African adapisoriculids (including *Garatherium*) might also be relevant to the origin of the tenrecoid and chrysochloroid clades.

Key words: Mammalia, Adapisoriculidae, Tenrecidae, *Garatherium, Widanelfarasia*, Eocene, Oligocene, Egypt.

Erik R. Seiffert [erik.seiffert@stonybrook.edu], Department of Anatomical Sciences, Stony Brook University, Stony Brook, New York, 11794-8081, USA.

This is an open-access article distributed under the terms of the Creative Commons Attribution License (for details please see creativecommons.org), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Full text (1,200.9 kB)