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SHORT COMMUNICATION

DIFFERENTIATION OF *PHIOMYS ANDREWSI* FROM *LAVOCATOMYS AEQUATORIALIS* (N. GEN., N. SP.) (RODENTIA: THRYONOMYOIDEA) IN THE OLIGO-MIOCENE INTERVAL ON CONTINENTAL AFRICA

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Phiomys andrewsi Osborn, 1908 (Mammalia: Rodentia: Hystricognathi) was originally described from the early Oligocene of the Jebel Qatrani Formation, Fayum Province, Egypt, and based on the holotype specimen AMNH 13275. Subsequently, Schlosser (1910, 1911) and Wood (1968) ascribed additional specimens from the same area to Osborn's species, *P. andrewsi.* These later attributions comprise a morphologically diverse group, and Wood (1968) revised the species in such a way that it was envisioned as a highly variable species that could have given rise to all later African hystricognath rodents (e.g., Wood, 1974, 1985).

In his revision of East African Miocene rodents, Lavocat (1973) referred a number of dentaries and a skull from the early Miocene Kenyan localities of Rusinga, Songhor, and Koru to the species *Phiomys andrewsi*. He recognized the apparent variability of Wood's concept of *P. andrewsi* and discovered that he could find no way to distinguish between the East African specimens and *P. andrewsi* as illustrated by Wood (1968).

Lavocat (1973) noted that it is interesting to find in the Miocene such a primitive Oligocene form, and we further note how unusual it would be to find a small mammal species with such a long temporal range. The type locality of *Phiomys andrewsi* is Fayum Quarry B in the early Oligocene Jebel Qatrani Formation of Egypt, with an age of approximately 33.7 Ma based on Seiffert's (2006) magnetostratigraphic correlation. The Kenyan localities of Rusinga, Songhor, and Koru are all 20 Ma or younger (Drake et al., 1988), implying a more than 13 million year range for *P. andrewsi*. Recent studies have suggested that mean and/or median mammalian species duration is between 2.1 and 2.6 million years (Alroy, 2000; Vrba and DeGusta, 2004) and that duration may be related to patterns of orbital forcing of climate (van Dam et al., 2006); taxonomic decisions suggesting unusually long species durations merit closer attention. Species durations in excess of 13 million years are not unknown (Vrba and Degusta, 2004), but such long-lived species are certainly not the norm.

In order to determine whether *Phiomys andrewsi* is an unusually long-lived rodent species, we have made a series of metric and morphologic comparisons of the Egyptian and East African specimens attributed to this taxon. For the purposes of this comparison, we restrict ourselves to Osborn's holotype specimen to represent *Phiomys andrewsi* and draw contrasts solely with it, excluding both Schlosser's and Wood's referred specimens, which have been recognized as likely representing additional taxa (e.g., Holroyd, 1994; Winkler et al., 2005). Based on these comparisons, we conclude that the East African Miocene specimens are distinct at both the genus and species level.

Abbreviations—Teeth of the upper and lower dentitions are indicated by upper and lower case letters, respectively. Tooth nomenclature follows Figure 1. **AMNH**, American Museum of Natural History, New York, New York; **KNM**, Kenyan National Museum, Nairobi, Kenya; **KNM SO**, KNM specimens from Songhor; **KNM RU**, KNM specimens from Rusinga; **YPM**, Yale Peabody Museum, New Haven, Connecticut.

SYSTEMATIC PALEONTOLOGY

RODENTIA Bowdich, 1821
HYSTRICOGNATHI Tullberg, 1899
THRYONOMYOIDEA Pocock, 1922
LAVOCATOMYS AEQUATORIALIS, gen. et sp. nov.
Fig. 2B

Phiomys andrewsi Lavocat 1973
"*Phiomys andrewsi*" Winkler, MacLatchy, and Mafabe, 2005

Other illustrations—KNM RU 2100, Lavocat (1973:plate 28, fig. 4).

Type specimen—KNM SO 879, right dp4-m3 (Fig. 2B).

Type locality—Songhor, Kenya, early Miocene.

Other localities—Rusinga, Kenya, early Miocene.

Referred specimens—KNM RU 2100, right m1-m3; KNM SO 600, left m1 or m2; KNM SO 603, right p4-m3; KNM SO 862, left m2; KNM SO 865, left m1-m2; KNM SO 868, left m1-m2; KNM SO 872, right m2; KNM SO 881, left m2-m3.

Diagnosis—Differs from Oligocene *Phiomys andrewsi* (Fig. 2C) in larger size, in lacking evidence of replacement of dp4 by p4 and relatively larger dp4; relatively smaller m3 relative to m1, and posterior arm of the protoconid/mesolophid arising from the ectolophid rather than the protoconid, and posterior arm of the protoconid/mesolophid consistently longer. Differs from early Miocene *Kenyamys* in larger size and in having an incomplete mesolophid. Differs from early Miocene *Simonimys* in smaller size and in having a more anterolingually directed hypolophid and better developed postmetacristid. Differs from early Miocene *Elmerimys* and *Myophiomys* in having more poorly individualized cusps on lower dentition. Also differs from *Myophiomys* in having a relatively larger m3 and from *Elmerimys* in larger size. Differs from early Miocene *Epiphiomys* (Fig. 2A) in possessing a crest in the position of the anteroconid on dp4, sharper buccal cusp margins on the molar protoconids and hypoconids, accompanied by a longer ectolophid. Lower molars are also slightly broader for their length than in *Epiphiomys* and enamel appears approximately half as thick. Differs from early Miocene *Ugandamys* in larger size and in having a relatively wider dp4.

Etymology—generic epithet in honor of René Lavocat, in recognition of his contributions to the study of African rodent evolution; specific epithet in reference to the geographic proximity of the type locality to the equator.

Description—Like most hystricognaths, the anteriormost cheek tooth in *Lavocatomys* is a retained dp4 (noted as p4 in Lavocat, 1972). The metaconid and anteroconid form the anterior edge of the tooth and the protoconid lies immediately posterior and slightly labial to the anteroconid. These three cusps are joined by

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