EARLY ARIKAREEAN (LATE OLIGOCENE) EOMYIDAE (MAMMALIA, RODENTIA) FROM NEBRASKA

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ABSTRACT

Five species of eomyid rodents are recognized from the earliest Arikareean (late Oligocene) Ridgeview local fauna of Nebraska. This is the greatest diversity of Arikareean eomyids of any fauna known from North America. The species recognized are *Leptodonotmys douglassi* (Burke), *Leptodontomys* sp., *Neoadjidaumo hemedapus* n. gen. et n. sp., *Pentabuneomys engesseri* n. sp., and *Zophoapeomys* sp. It is suggested that nearly all of these species were derived from earlier North American eomyids. Based on the early occurrence in the Ridgeview fauna, *Pentabuneomys* and subfamily Apeomyinae likely migrated to Europe from North America near the beginning of the Miocene. *Neoadjidaumo* is viewed as being derived from earlier North American eomyids but developed some dental morphologies convergent with those of the European Miocene genus *Ritteneria* Stehlin and Schaub.

INTRODUCTION

Eomyid rodents first appear in North America in the Uintan (middle Eocene) and persist until the end of the Hemphillian (late Miocene), reaching their greatest diversity in the Chadronian and Orellan (latest Eocene to early Oligocene [Korth, 1994]). Since the Orellan, no more than four species of eomyids are known from any time interval. Although eomyids are known from several North American Arikareean faunas (Macdonald, 1972; Korth, 1992; Albright, 1996, 1998; Storer, 2002), they are usually represented by only a few isolated cheek teeth. The most diverse Arikareean eomyid fauna previously cited was from Saskatchewan, where three different species have been recognized, but this fauna was based on only ten isolated cheek teeth (Storer, 2002).

The best represented species of eomyid previously known from the Arikareean was *Leptodontomys douglassi*, known from several jaws and maxillary fragments from a single fossil quarry in Dawes County, Nebraska (Korth and Bailey, 1992). This quarry has since been more extensively excavated and referred to as the Ridgeview local fauna (Bailey, 2004). The material described below is from the Ridgeview fauna and is the most diverse and best represented fauna of eomyids (greater number and more complete specimens) from the Arikareean of North America. Five species of eomyids are recognized from the Ridgeview fauna, based on over 60 specimens including complete upper and lower dentitions. The diversity of eomyids from the Ridgeview fauna increases the number of known eomyids from the Arikareean of North America to six genera and at least seven different species.

All of the specimens described below are from the Ridgeview local fauna that is dated as the earliest Arikareean (Ar1 of Tedford et al., 2004), which has been referred to the latest Oligocene. The stratigraphy, locality data, and age of this fauna are described in detail by Bailey (2004).

Dental nomenclature used below is modified from Wood and Wilson (1936). Abbreviation used for University of Nebraska State Museum specimens and localities is UNSM.

SYSTEMATIC PALEONTOLOGY

Family Eomyidae Winge, 1887
Subfamily Eomyinae Winge, 1887
*Leptodontomys* Shotwell, 1956
*Leptodontomys douglassi* (Burke, 1934)
(Figures 1, 2B; Table 1)

*Adjidaumo douglassi* Burke, 1934
*Leptodontomys douglassi* (Burke) Korth and Bailey, 1992

Referred Specimens—UNSM 26533, 130288 to 130295, 130398 to 130425, 130431, 130432, lower dental elements; UNSM 26511, 26523, 130284, 130426 to 130430, maxillae with upper cheek teeth.

Description—Specimens of *Leptodontomys douglassi* from UNSM locality Dw-121 (Ridgeview fauna) have been described previously (Korth and Bailey, 1992). However, the description of the upper cheek teeth was based on a specimen (UNSM 26531)