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Eumops dabbenei.

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Eumops dabbenei Thomas, 1914

Dabbene's Mastiff Bat

Eumops dabbenei Thomas, 1914:480. Type locality "[Tartagal—Barquez and Lougheed 1990:262], Chaco [Province], Argentina."

Eumops underwoodi mederai Massoia, 1976:257. Type locality "Santa Fe, San Javier."

CONTEXT AND CONTENT. Order Chiroptera, suborder Microchiroptera, family Molossidae. The genus *Eumops* contains 9 species: *E. auripendulus*, *E. bonariensis*, *E. dabbenei*, *E. glaucinus*, *E. hansae*, *E. maurus*, *E. patagonicus*, *E. perotis*, and *E. underwoodi* (Barquez et al. 1999; Freeman 1981; Koopman 1993, 1994). *E. dabbenei* is monotypic (Eger 1977; Koopman 1994).

DIAGNOSIS. Ears, tragus, and pelage are similar to *E. underwoodi*, but *E. dabbenei* is proportionally larger in wing characters and smaller in skull characters. Size and color of *E. dabbenei* are similar to those of *E. perotis*, but *E. dabbenei* has shorter ears, smaller antitragus, heavier and more massive skull, and shallower, less-developed basisphenoid pits (Barquez et al. 1999; Eger 1977). Compared with *E. perotis*, which has a long and narrow palate, deep basisphenoid pits, moderately developed lambdoidal crest, tubular nostrils, a noncrowded anterior upper premolar, narrow molars, no baculum, and no vibrissae on rump, *E. dabbenei* has a short and broad palate, shallow basisphenoid pits, well-developed lambdoidal crest, nontubular nostrils, crowded anterior upper premolar, well-developed hypocone of molars, baculum, and posteriorly directed bristles (vibrissae) projecting from the rump over the uropatagium (Fig. 1; Myers and Wetzel 1983). Tragus of *E. dabbenei* is narrower (ca. 3 by 1 mm) than that of *E. perotis* (Thomas 1914).

GENERAL CHARACTERS. Dabbene's mastiff bat is a large bat. Ears are broad and join medially but do not extend beyond tip of snout when pushed forward (Barquez et al. 1993).

Dorsal color is ochraceous chestnut; bases of hairs are paler than distal ends. Ventral color is paler (Barquez et al. 1993). Some individuals are dark gray with base of hairs pale (Barquez et al. 1991).

Average of external and cranial measurements (in mm) of 3 females from Argentina, Colombia, and Venezuela are: length of forearm, 77.1; total length of cranium, 33.8; condyloincisive length, 30.8; zygomatic breadth, 19.5; mastoidal width, 16.4; height of braincase, 10.9; length of upper maxillary toothrow, 13.0; postorbital constriction, 5.9 (Eger 1977). Average and range of external and cranial measurements (in mm) of 2 adult males from Venezuela are: length of forearm, 84.9 (84.0–85.7); greatest length of cranium, 37.8 (37.5–38.0); zygomatic breadth, 22.1 (22.0–22.2); interorbital width, 6.8 (6.6–7.0); mastoidal breadth, 18.1 (18.0–18.1); length of upper maxillary toothrow, 13.7 (13.7–13.7—Ibáñez 1979). Average and range of external and cranial measurements (in mm) of 3 males and 3 females from Paraguay, respectively, are: length of forearm, 78.1 (78.0–78.1), 78.1 (78.1–78.1); length of 3rd metacarpal (includes carpals), 79.2 (79.2–79.2), 80.5 (80.5–80.5); greatest length of cranium, 32.1 (31.8–32.4), 30.9 (29.7–31.9); condylobasal length, 31.6 (31.3–31.9), 30.0 (28.4–30.9); zygomatic breadth, 20.1 (19.9–20.3), 19.7 (19.7–19.7); least interorbital constriction, 6.3 (6.1–6.6), 6.0 (5.8–6.2); mastoidal breadth, 17.1 (17.1–17.2), 16.8 (16.7–16.9); breadth of palate, 13.7 (13.5–14.0), 13.4 (13.1–13.6); breadth across labial cingula of canines, 8.7 (8.6–8.8), 8.3 (8.2–8.4); length of maxillary toothrow, 13.5 (13.4–13.6), 13.0 (12.5–13.3); total length, 190 (188–192), 188 (184–191); length of tail, 63 (62–66), 63 (59–66); length of foot, 18 (18–18), 18 (18–18); length of ear, 32 (31–32), 29 (28–30—Myers and Wetzel 1983). Mass of an adult male from Venezuela was 100 g (Ibáñez 1979).

DISTRIBUTION. Although known only from specimens collected in Colombia, Venezuela, Brazil, Paraguay, and Argentina (Barquez et al. 1999; da Fonseca et al. 1996; Eger 1977; Harrison

FIG. 1. Dorsal, ventral, and lateral views of cranium, and lateral view of mandible of *Eumops dabbenei* from 24 km NW Villa Hayes, Departamento Presidente Hayes, Paraguay (male, University of Michigan Museum of Zoology 133763). Greatest length of cranium is 33.8 mm.

et al. 1979; Koopman 1994; Lopez-Gonzalez 1998; Myers and Wetzel 1983), *E. dabbenei* may be distributed across much of South America (Fig. 2). In Venezuela, Dabbene's mastiff bat occurs at elevations of 25–1,100 m (Handley 1976; Ochoa G. and Ibanez 1985). No fossils are known.

FORM AND FUNCTION. Body of *E. dabbenei* is thick, and forearms are short in proportion to bulky body and broad head. Ears are not greatly enlarged; however, they are thickened. Antitragus is ca. 8 mm in length (Thomas 1914). Tragus is small, pointed, and ca. 2 mm long (Eger 1977). Muzzle is low, rounded, and subcylindrical (Thomas 1914). Lips are smooth, tail is thick, and pad of thumb is triangular (Barquez et al. 1993).

Basisphenoid pits are moderately well developed, oval, and shallow (Eger 1977). Mesial crest is well defined, but not high, and passes posteriorly into a well-marked occipital helmet. Zygomata project laterally above m3 (Thomas 1914). Dental formula is i 1/2, c 1/1, p 2/2, m 3/3, total 30 (Barquez et al. 1999; Eisenberg 1989; Mares et al. 1989). Two commissures on M3 are well developed, but the 3rd commissure of M3 is rudimentary (Barquez et al. 1999; Eger 1977). Tips of upper incisors are separated, and bases completely fill space between canines (Barquez et al. 1999).

Males possess greatly enlarged gular glands, the secretions of which stain and mat the fur of the neck (Myers and Wetzel 1983). Baculum of a specimen from Venezuela was 0.9 mm long and 0.13 mm in greatest width (Ibáñez 1979).

ONTOGENY AND REPRODUCTION. In Paraguay, an adult male with testes 9.3 mm long was present in May (Harrison et al. 1979). In Argentina, a young individual with unfused epiphyses was present in mid-December (Barquez and Lougheed 1990; Barquez and Ojeda 1992), and a young individual with cartilaginous phalanges and deciduous teeth was observed in January (Barquez et al. 1991). In Venezuela, a young male found dead on the highway had some of its deciduous dentition. The 4 deciduous upper incisors were similar, thin, and curved posteriorly. Two permanent incisors were barely visible. The 4 deciduous canines were adjacent to permanent canines that were partially developed. No other deciduous teeth were present (Ibáñez 1979).

ECOLOGY AND BEHAVIOR. In South America, Dabbene's mastiff bat occurs in the Patagonian subregion and the northern coast and islands (Koopman 1982). In Venezuela, *E. dabbenei* probably is more common than has been documented. It occurs in habitats of low-growing vegetation, with islands of forests and gallery forests that are part of the dry tropical forests (Ibáñez 1979). It also occurs in the premontane, humid-forest life zone (Ochoa G. and Ibanez 1985). One was found dead, hanging from a pine tree (the teeth were well-worn, indicating it was an old individual), 1 was found roosting in a house (Ibáñez 1979), and 1 was captured over a stream in a pasture (Handley 1976).

In Paraguay, Dabbene's mastiff bat emerged from the top of a hollow, dead tree, ca. 5 m above ground. Interior of the trunk was laced with interconnecting narrow cracks, in which the bats apparently roosted. The tree stood along a dirt road near a small artificial lake, surrounded by thorn forest and palm savanna (Myers and Wetzel 1983). In Paraguay, *E. dabbenei* occurs in small numbers in only 2 of the country's 7 biomes (Willig et al. 2000). In Brazil, it occurs only in the Amazonian biome (da Fonseca et al. 1996). In Argentina, *E. dabbenei* roosts in hollow trees (Barquez et al. 1993), buildings (Barquez and Ojeda 1992; Barquez et al. 1993; Romaña and Abalos 1950), and thorn scrub (Barquez et al. 1991).

Eumops dabbenei is insectivorous (Barquez et al. 1993). It emits piercing shrieks as it forages (Myers and Wetzel 1983).

GENETICS. A total of 24 genic loci encoding 14 proteins were identified and scored using starch-gel electrophoresis. Electrophoretic data indicate that *E. dabbenei* shares a 95% Rogers' similarity coefficient with *E. underwoodi*. This suggests that the markedly larger size of *E. dabbenei* reflects an independent rate of change in morphology that was made possible through geographic isolation of this taxon and which proceeded without concomitant genic evolution (Dolan and Honeycutt 1978).

REMARKS. Sanborn (1932) and Cabrera (1958) considered *E. dabbenei* to be a subspecies of *E. perotis*. Myers and Wetzel (1983) predicted that populations intermediate in size between *E. dabbenei* and *E. underwoodi* will be discovered in Panama and Costa Rica and that *E. underwoodi* will be considered, at best, a subspecies of *E. dabbenei*.

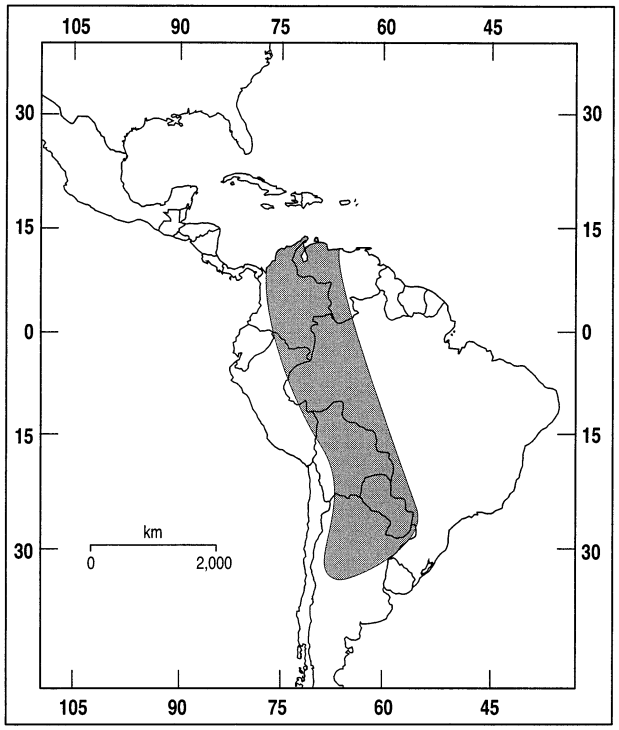

FIG. 2. Distribution of *Eumops dabbenei* in South America (Barquez et al. 1993, 1999; Eger 1977; Eisenberg 1989; Koopman 1982, 1993; Lopez-Gonzalez 1998; Redford and Eisenberg 1992).

Eumops is from the Greek prefix *eu-* meaning good or true and the Malayan *mops* meaning bat (Jaeger 1955). The specific epithet *dabbenei* is a patronym for Dr. R. Dabbene, former Conservator of Zoology at the Buenos Aires National Museum (Carter and Dolan 1978; Thomas 1914).

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