MAMMALIAN SPECIES No. 687, pp. 1–3, 2 figs.

# Eumops hansae.

By Troy L. Best, John L. Hunt, Lisa A. McWilliams, and Kevin G. Smith

Published 26 December 2001 by the American Society of Mammalogists

## *Eumops hansae* Sanborn, 1932

Hansa Mastiff Bat

*Eumops hansae* Sanborn, 1932:356. Type locality "Colonia Hansa, near Joinville, Santa Catherina, Brazil." Restricted to state of Santa Caterina (Cabrera, 1958:126).

*Eumops amazonicus* Handley, 1955:177. Type locality "Manáos [= Manaus], Amazonas, Brazil."

**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; Mares et al. 1996). *E. hansae* is monotypic (Eger 1977; Jones et al. 1988; Koopman 1994).

**DIAGNOSIS.** *Eumops hansae* has a darker color than *E. bonariensis* (Eger 1977; Eisenberg 1989; Hall 1981). Skull of *E. hansae* (Fig. 1) is similar to that of *E. bonariensis*, but is larger, longer, has a narrower rostrum, a longer palate, and a more developed lambdoidal crest. Basisphenoid pits of *E. hansae* are deeper and rounder, and palate projects beyond the last molars, whereas in *E. bonariensis* palate ends almost on a level with last molars (Gardner et al. 1970; Sanborn 1932). *E. hansae* has medium dentary thickness, the most elevated jaw joint of the genus, and the most complete toothrow with full N-shape on M3 and moderate P3 (Freeman 1981).

**GENERAL CHARACTERS.** *Eumops hansae* is relatively small for the genus. Tail extends beyond posterior margin of uropatagium. Pelage is rich blackish-brown dorsally, paler ventrally, and hair on ventrum is tricolored (Eger 1977).

The Hansa mastiff bat exhibits pronounced sexual dimorphism in size (Eger 1977; Eisenberg 1989). Length of head and body for a typical male is ca. 75 mm and for females is ca. 71 mm (Eisenberg 1989). External and cranial measurements (in mm) of 2 females from Bolivia are: total length, 106, 95; length of tail, 41, 30; length of foot, 8.5, 9.0; length of ear, 20, 17; length of forearm, 39, 38; length of cranium, 18.2, —; condylobasal length, —, 17.3; zygomatic breadth, 11.3, 10.8; length of upper maxillary toothrow, 8.2, — (Anderson 1997). Average of external and cranial measurements (in mm) of 3 males and 5 females, respectively, from the Neotropics are: length of forearm, 41.2, 37.8; total length of cranium, 20.9, 18.9; condyloincisive length, 19.8, 17.9; zygomatic breadth, 12.1, 10.8; mastoidal width, 10.7, 9.9; height of braincase, 7.0, 6.1; length of upper maxillary toothrow, 7.6, 6.9; postorbital constriction, 4.2, 4.0 (Eger 1977). Mass of 1 female from the Neotropics was 15.4 g (Eisenberg 1989) and mass of males in Peru (no sample size) was 14.7 g (Graham and Barkley 1984). Mass of 2 females from Bolivia was 17.3 and 16.0 g (Anderson 1997), and mass of 1 female from French Guiana was 13.2 g (Simmons and Voss 1998).

**DISTRIBUTION.** The Hansa mastiff bat is known from Mexico, Honduras, Costa Rica, and Panama in Central America, and Venezuela, Guyana, French Guiana, Peru, Bolivia, and Brazil in South America (Fig. 2; Alvarez and Alvarez-Castañeda 1990; Alvarez-Castañeda and Alvarez 1991; da Fonseca et al. 1996; Eger 1977; Hall 1981; Ibáñez and Ochoa G. 1989; Koopman 1993, 1994; Lee and Bradley 1992; Simmons and Voss 1998). It occurs at elevations ≤45 m in French Guiana (Simmons and Voss 1998), ≤155 m in Venezuela (Eisenberg 1989; Handley 1976), and at 320 m in Peru (Graham and Barkley 1984). No fossils are known.

**FORM AND FUNCTION.** Wing tips are narrow (average relative length of 2nd phalange is 5.5% of total length of 4th digit).


FIG. 1. Dorsal, ventral, and lateral views of cranium and lateral view of mandible of *Eumops hansae* from 3 mi S Ituni, Demerara Arampa, Guyana (male, Royal Ontario Museum 57330). Greatest length of cranium is 20.5 mm.

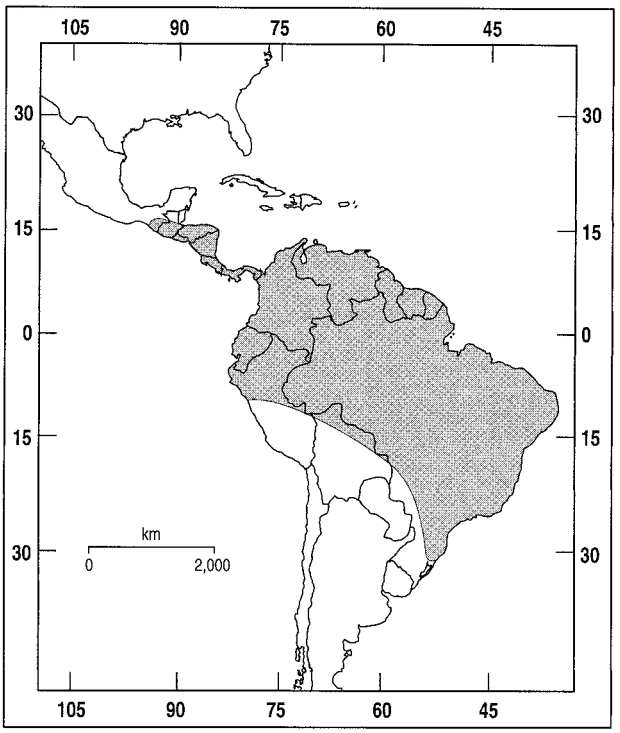


FIG. 2. Distribution of *Eumops hansae* in Central and South America (Alvarez-Castañeda and Alvarez 1991; Eger 1977; Eisenberg 1989; Graham and Barkley 1984; Koopman 1982, 1993, 1994; Lee and Bradley 1992).

Lips have microscopic wrinkles that are not deep (Freeman 1981). Basisphenoid pits are well developed, sharply defined, and moderate to deep (Eger 1977; Freeman 1981). Lateral lambdoidal crests are not well developed (Freeman 1981).

Dental formula is i 1/2, c 1/1, p 2/2, m 3/3, total 30 (Eisenberg 1989; Mares et al. 1989). Lower incisors of *E. hansae* are nearly in a straight line. Outer incisor (I2) is ca. ½ the size of inner one (I1), and edge of crown projects over anterior face of I1. Tips of upper incisors are ca. 1 mm apart (Gardner et al. 1970; Sanborn 1932). The 3rd commissure of M3 is well developed and is as long as 2nd (Eger 1977).

**ONTOGENY AND REPRODUCTION.** In Peru, an adult male had testes that were 6 by 3 mm on 3 November (Graham and Barkley 1984). In Mexico, 2 females observed in May were not reproductively active (Alvarez-Castañeda and Alvarez 1991). In Bolivia, a sexually inactive female was present on 28 August (Ibáñez and Ochoa G. 1989).

**ECOLOGY AND BEHAVIOR.** The Hansa mastiff bat flies in the upper levels of the canopy (Fenton 1972). *E. hansae* occurs in tropical forests off coastal areas in Mexico (Alvarez-Castañeda and Alvarez 1991) and from a site on the Caribbean coast in Honduras that once was characterized by dense broadleaf evergreen forest; some of which still remains (Lee and Bradley 1992). In South America, it occurs in the eastern Brazilian highlands and coast and in the Amazon Basin (Koopman 1982). In Brazil, *E. hansae* occurs in the Amazonian and Mata Atlantican biomes (da Fonseca et al. 1996). In Venezuela, *E. hansae* occurs in low-elevation, moist-multistratal, tropical-evergreen forest (Eisenberg 1989), and has been observed over ponds, large clearings, and evergreen forests; 1 was present inside a roost cavity located in a dead standing tree in a large lagoon (Handley 1976). In French Guiana, the Hansa mastiff bat was captured in a mistnet suspended 10–13 m over a narrow dirt road in lowland rainforest (Simmons and Voss 1998). In Peru, *E. hansae* flew over a small river bordered by tall, tropical, lowland forest in hilly terrain (Graham and Barkley 1984). In Bolivia, the Hansa mastiff bat occurred in a savanna area near the edge of a forest (Ibáñez and Ochoa G. 1989); 1 specimen was captured in a net between 2000 and 2200 h (Anderson 1997).

Bats captured with *E. hansae* include *Artibeus jamaicensis, A. lituratus, Carollia perspicillata, C. subrufa, Centurio senex, Choeroniscus godmani, Dermanura phaeotis, Eptesicus furinalis, Glossophaga commissarisi, G. soricina, Micronycteris minuta, Mimon bennettii, Molossops greenhalli, Molossus ater, Molossus molossus, Phyllostomus discolor, Pteronotus davyi, Rhogeessa tumida, Saccopteryx bilineata, Sturnira lilium, Uroderma bilobatum, Vampyressa pusilla, Vampyrops helleri,* and *Vampyrum spectrum* in Honduras (Lee and Bradley 1992); *Lonchophylla robusta, Molossops abrasus,* and 19 other species of bats in Peru (Graham and Barkley 1984); and *Eptesicus furinalis* in Bolivia (Ibáñez and Ochoa G. 1989).

The stomach of a specimen from Bolivia contained Orthoptera (Grillidae-Anderson 1997). No internal or external parasites are known.

**GENETICS.** The 2n = 48 and FN = 56 (Varella-Garcia et al. 1989). Twenty-four genetic loci encoding for 14 proteins indicate that *E. hansae* is divergent genetically and morphologically from other species of *Eumops* (Dolan and Honeycutt 1978).

**REMARKS.** *Eumops* is from the Greek prefix *eu* meaning "good" or "true" and the Malayan *mops* meaning bat (Jaeger 1955). The specific epithet *hansae* refers to the type locality Colonia Hansa, Brazil.

We thank L. L. Thornton, A. M. Krista, and other personnel in the Interlibrary Loan Department at Auburn University R. B. Draughon Library for assistance in obtaining articles from other institutions; J. L. Eger and M. D. Engstrom for loaning us the specimen illustrated in Fig. 1; W. B. Robinson for helping in the preparation of Fig. 1; T. E. Rodriguez for preparing Fig. 2; J. C. Rainey for assistance in translating Spanish and Portuguese articles; and J. B. Armstrong, M. K. Causey, C. López-González, R. Gregorin, and S. J. Presley for critically evaluating an early draft of the manuscript. This is journal article 15-985997 of the Alabama Agricultural Experiment Station.

## LITERATURE CITED

ALVAREZ, T., AND S. T. ALVAREZ-CASTAÑEDA. 1990. Cuatro nuevos registros de murciélagos (Chiroptera) del estado de Chiapas. Anales de la Escuela Nacional de Ciencias Biologicas 55:157–161.

ALVAREZ-CASTAÑEDA, S. T., AND T. ALVAREZ. 1991. Los murcielagos de Chiapas. Instituto Politecnico Nacional, Escuela Nacional de Ciencias Biológicas, México, Distrito Federal, México.

ANDERSON, S. 1997. Mammals of Bolivia, taxonomy and distribution. Bulletin of the American Museum of Natural History 231:1–652.

BARQUEZ, R. M., M. A. MARES, AND J. K. BRAUN. 1999. The bats of Argentina. Special Publications, The Museum, Texas Tech University 42:1–275.

CABRERA, A. 1958. Catalogo de los mamiferos de America del Sur. Revista del Museo Argentino de Ciencias Naturelles "Bernardino Rivadavia" 4:1–732.

DA FONSECA, G. A. B., G. HERRMANN, Y. L. R. LEITE, R. A. MITTERMEIER, A. B. RYLANDS, AND J. L. PATTON. 1996. Lista anotada los mamíferos do Brasil. Occasional Papers in Conservation Biology (Conservation International) 4:1–38.

DOLAN, P. G., AND R. L. HONEYCUTT. 1978. Systematic and evolutionary implications of genic variation in the mastiff bat, Eumops (Chiroptera: Molossidae). Bat Research News 19:72.

EGER, J. L. 1977. Systematics of the genus *Eumops* (Chiroptera: Molossidae). Life Sciences Contributions, Royal Ontario Museum 110:1–69.

EISENBERG, J. F. 1989. Mammals of the Neotropics. The northern Neotropics: Panama, Colombia, Venezuela, Guyana, Suriname, French Guiana. The University of Chicago Press, Chicago, Illinois 1:1–449.

FENTON, M. B. 1972. The structure of aerial-feeding bat faunas as indicated by ears and wing elements. Canadian Journal of Zoology 50:287–296.

FREEMAN, P. W. 1981. A multivariate study of the family Molossidae (Mammalia, Chiroptera): morphology, ecology, evolution. Fieldiana: Zoology, New Series 7:1–173.

GARDNER, A. L., R. K. LA VAL, AND D. E. WILSON. 1970. The distributional status of some Costa Rican bats. Journal of Mammalogy 51:712–729.

GRAHAM, G. L., AND L. J. BARKLEY. 1984. Noteworthy records of bats from Peru. Journal of Mammalogy 65:709–711.

HALL, E. R. 1981. The mammals of North America. Second edition. John Wiley & Sons, New York 1:1–600 + *90*.

HANDLEY, C. O., JR. 1955. A new species of free-tailed bat (genus *Eumops*) from Brazil. Proceedings of the Biological Society of Washington 68:177–178.

HANDLEY, C. O., JR. 1976. Mammals of the Smithsonian Venezuelan project. Brigham Young University Science Bulletin, Biological Series 20(5):1–89.

IBÁÑEZ, C., AND J. OCHOA G. 1989. New records of bats from Bolivia. Journal of Mammalogy 70:216–219.

JAEGER, E. C. 1955. A source-book of biological names and terms. Third edition. Charles C Thomas Publisher, Springfield, Illinois.

JONES, J. K., JR., J. ARROYO-CABRALES, AND R. D. OWEN. 1988. Revised checklist of bats (Chiroptera) of Mexico and Central America. Occasional Papers, The Museum, Texas Tech University 120:1–34.

KOOPMAN, K. F. 1982. Biogeography of the bats of South America. Pp. 273–302 in Mammalian biology in South America (M. A. Mares and H. H. Genoways, eds.). The Pymatuning Symposia in Ecology, Special Publication Series, Pymatuning Laboratory of Ecology, University of Pittsburgh, Pennsylvania 6:1–539.

KOOPMAN, K. F. 1993. Order Chiroptera. Pp. 137–241 in Mammal species of the world: a taxonomic and geographic reference (D. E. Wilson and D. M. Reeder, eds.). Smithsonian Institution Press, Washington, D.C.

KOOPMAN, K. F. 1994. Chiroptera: systematics. Handbook of zoology: a natural history of the phyla of the animal kingdom. VIII. Mammalia. Walter de Gruyter, New York.

LEE, T. E., JR., AND R. D. BRADLEY. 1992. New distributional records of some mammals from Honduras. The Texas Journal of Science 44:109–111.

MARES, M. A., R. M. BARQUEZ, J. K. BRAUN, AND R. A. OJEDA. 1996. Observations on the mammals of Tucumán Province, Argentina. I. Systematics, distribution, and ecology of the Didelphimorphia, Xenarthra, Chiroptera, Primates, Carnivora, Perissodactyla, Artiodactyla, and Lagomorpha. Annals of Carnegie Museum 65:89–152.

MARES, M. A., R. A. OJEDA, AND R. M. BARQUEZ. 1989. Guide to the mammals of Salta Province, Argentina. University of Oklahoma Press, Norman.

SANBORN, C. C. 1932. The bats of the genus Eumops. Journal of Mammalogy 13:347–357.

SIMMONS, N. B., AND R. S. VOSS. 1998. The mammals of Paracou, French Guiana: a Neotropical lowland rainforest fauna part 1. Bats. Bulletin of the American Museum of Natural History 237:1–219.

VARELLA-GARCIA, M., E. MORIELLE-VERSUTE, AND V. A. TADDEI. 1989. A survey of cytogenetic data on Brazilian bats. Revista Brasileira de Genetica 12:761–793.

Associate editors of this account were ELAINE ANDERSON, LESLIE N. CARRAWAY, and LUI MARINELLI. Editor was VIRGINIA HAYSSEN.

T. L. BEST, J. L. HUNT, L. A. MCWILLIAMS, AND K. G. SMITH, DEPARTMENT OF BIOLOGICAL SCIENCES AND ALABAMA AGRICULTURAL EXPERIMENT STATION, 331 FUNCHESS HALL, AUBURN UNIVERSITY, ALABAMA 36849-5414.