A NEW SUBSPECIES OF THE AZTEC MASTIFF BAT,
*MOLLOSSUS AZTECUS* SAUSSURE, FROM
SOUTHERN MEXICO

*By Alfred L. Gardner*
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DAVID K. CALDWELL
Editor
A NEW SUBSPECIES OF THE AZTEC MASTIFF BAT, *MOLOSSUS AZTECUS* SAUSSURE, FROM SOUTHERN MEXICO

By Alfred L. Gardner1

Abstract: A new subspecies of the Aztec mastiff bat is described from Chiapas, México. Included also are additional records of the species in western México and the first report of another species of mastiff bat for the Republic of México. The latter closely resembles *Mo1ossus pygmaeus* Miller, and was earlier confused with *Mo1ossus aztecus* Saussure.

Since Saussure’s original description of *Mo1ossus aztecus* from Amecameca, México, México, in 1860, only four reports of additional specimens from México of this small mastiff bat have been published. Allen (1906: 260) reported two specimens from Los Masos, Jalisco, under the name *M. obscurus* Geoffroy. Miller (1913: 91) reported having examined specimens of *M. aztecus* from Huehuetán, Chiapas. Later, Dalquest (1953: 68) reported five specimens from Rio Verde, San Luis Potosí. Finally, Alvarez and Aviña (1964: 250) reported three specimens, one from each of the following localities: Juchitán, Oaxaca; Pueblo Juárez, Colima; 3 km. north of El Limón, Tamaulipas.

Recent collecting activities in western and southern México and the examination of comparative material indicate the presence of a heretofore undescribed subspecies of *M. aztecus* that may be known as:

*Mo1ossus aztecus lambi*, new subspecies

*Holotype*: An adult male, skin with skull, Los Angeles County Museum of Natural History No. 27001 (UA 9525), collected by A. L. Gardner (original No. 5139) from 11 km. northwest from Escuintla, Chiapas, México, ca. 100 feet elevation, 18 November, 1962.

*Allotype*: An adult female, skin with skull, LACM No. 27002 (UA 9519), collected by A. L. Gardner (original No. 5053) from 11 km. northwest from Escuintla, Chiapas, México, ca. 100 feet elevation, 15 November, 1962.

*Diagnosis*: Size, small for species; two color phases present, dark phase blackish, approaching Fuscous and the light phase approaching Sudan Brown (capitalized color terms after Ridgway, 1912); light basal portion of bicolor ed fur short; flight membranes and ears black.

*Description*: Both the holotype and the allotype are in the dark color phase. Measurements in millimeters of the holotype followed by measurements of the allotype: Total length, 98, 92; tail, 36, 33; hind foot, 9, 8; ear from

1Department of Zoology, University of Arizona. (Present address: Museum of Zoology, Louisiana State University, Baton Rouge, Louisiana 70803.)
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TABLE I

Notations:
- (X) = Male
- (F) = Female
- (C) = Child
- (M) = Male
- (F) = Female
- (C) = Child
- (X) = Male
- (F) = Female
- (C) = Child

Additional notes:
- * = Adult
- + = Subadult
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- + = Subadult
- * = Adult
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- * = Adult
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- * = Adult
- + = Subadult

Selected measurements in millimeters of Molossus a. alicuta, Molossus a. alicuta, and Molossus a. alicuta.
notch, 15, 14; tragus, 5, 4; forearm, 36.50, 35.15; weight, 17 gr., 15 gr.;
greatest length of skull, 18.25, 17.20; condylobasal length, 15.40, 15.00;
inter-orbital constriction, 4.00, 3.90; zygomatic breadth, 11.10, 10.85; mastoid
breadth, 11.20, 10.65; breadth of brain case, 9.10, 9.00; depth of brain case,
6.25, 6.10; breadth across $M^2$–$M^3$, 7.40, 7.50; breadth across canines, 4.50,
4.10; length of maxillary tooth row, 6.20, 6.10; length of mandible, 12.50,
12.20; mandibular tooth row, 6.85, 6.60.

Paratypes: Eleven additional specimens from the type locality are design-
nated paratypes. The males (UA Nos.) are: 9517 ad.; 9520 juv.; 9522 ad.;
9524 ad.; 9527 ad.; 9528 subad.; 9529 juv. The females (UA Nos.) are: 9518
ad.; 9523 subad.; 9526 subad.; 9530 ad. All specimens except UA 9526 are in
the dark color phase; UA 9526 is in the light color phase.

Specimens Examined: Specimens examined and referred to $M. a. lambi$
are from the following localities: 13 mi. SW Las Cruces (KU, 2); 15 mi. SW
Las Cruces (KU, 1); 12 mi. E Ortiz Rubio on Villa Flores Rd. (UA, 1); 20
km. SE Pijijiapan (LACM, 4; UA, 1); 11 mi. NW Escuintla, ca. 100 ft.
(LACM, 2; UA, 11).

Range: Presently known from southwestern Chiapas and the Pacific
slope of the Sierra Madre del Sur de Chiapas, México.

Comparisons: This bat differs from the Mexican Plateau form, $Moellus$
azzicus azteicus, in generally smaller size, darker color, two color phases, and
lack of smoky-white wash over fur, especially ventrally. In these respects
lambi compares favorably with $M. coibensis$ Allen of Panamá, a much smaller
bat (see Table 1 and Remarks). $M. a. lambi$ was compared with seven speci-
ments of a small $Moellus$, three from Puerto Madero and four from Hue-
huetán, Chiapas. Huehuetán is on the railroad about 18 miles airline to the
southeast from the type locality of lambi and Puerto Madero is about 20 miles
airline farther south on the Pacific Coast of southern Chiapas. The specimens
from Huehuetán and Puerto Madero differ markedly from $M. a. lambi$ in fur
quality and color pattern: longer and thinner than in $M. a. lambi$ but approach-
ing the lighter color of the more northern highland populations of $M. a. azteicus$.
In general, they differ from $Moellus azteicus$ in longer forearm; smaller, nar-
rower skull; narrower, lower rostrum; infraorbital foramen situated lower,
close to maxillary tooth row; sub-posterior border of infraorbital foramen not
expanded and expansion not continuous with maxillary portion of zygomatic
arch; palate narrow and not broadly domed; separation between sphenoidal
pits narrower. See Table 1 for comparative measurements.

Remarks: In basic cranial proportion and configuration plus color pat-
tern, $M. a. lambi$ is very similar to the much smaller $M. coibensis$. Future work
may reveal that $M. a. lambi$ represents a northern intermediate between
$M. a. azteicus$ and $M. coibensis$, in which case $M. coibensis$ Allen (1904:227)
would be a synonym of $M. azteicus$ Saussure (1860).

The four specimens from Huehuetán, previously reported by Miller
(1913:91) as $M. azteicus$ (a female adult, FMNH 44254; a male adult, USNM
77661; two adult females, USNM 77662 and 77663) and the three specimens from Puerto Madero (a subadult male, KU 68780; a juvenile female and an adult female KU 68781 and 68782 respectively) all compare favorably with a northern South American form closely resembling the description of *Molossus pygmaeus* Miller (1900:162) and to which, at this time reserving a re-examination of their identity, I tentatively assign them.

The age classification referred to in this work is based upon the ossification of epiphyseal cartilages and cranial sutures. Specimens are classed as juvenile if the epiphyseal cartilages of the digital elements of the wing are not completely ossified. This is usually readily visible through the skin in the prepared specimen. This lack of ossification coincides with the unossified sutures between the presphenoid and basisphenoid, and between the basisphenoid and basioccipital bones of the skull. Specimens are designated subadult if the epiphyseal plates of the wing elements appear ossified but the suture between the basisphenoid and basioccipital bones is still open or incompletely ossified in the midline of the skull. Adults are those which have no prominent unossified sutures in the skull.

I collected nineteen of the 22 specimens of *M. a. lambi* in mist nets placed across pools or over streams at road crossings. Late one afternoon, in camp at the type locality, I noticed several bats fly out of a hole, high in a tall fig tree and swoop down over the hill toward the river. One of the bats, which proved to be *M. a. lambi*, became ensnared in a mist net already in place at the edge of a deep pool of water in a gravel pit left by bridge construction workers. Three of five females collected at 20 mi. SW Pijijiapan between 13 March and 27 March, 1961, were pregnant, each with a single embryo (crown-rump measurement of one, 11 mm.) and two contained no embryos. Another female collected 12 mi. E Ortiz Rubio on Villa Flores Rd., 26 June, 1964, contained one embryo measuring 14.1 mm. crown-rump. Males collected at the type locality, between 13 and 18 November, 1962, showed some sign of sexual activity. Three males had enlarged testes measuring 2 mm. x 5 mm., 3 mm. x 5 mm., and 4 mm. x 6 mm, respectively. Three additional males had testes not enlarged.

Two of the 22 specimens at hand show the light color phase. Two others show a partial mixing of the color phases; both, apparently in the lighter phase, are molting and the new fur is dark.

*Molossus aztecs lambi* is named in honor of the late Chester C. Lamb, a veteran field collector and naturalist who was very well acquainted with the Mexican state of Chiapas.

*Additional Specimens Examined*: Comparative material was kindly made available by the American Museum of Natural History (AMNH), the Field Museum of Natural History (FMNH), the Museum of Natural History, University of Kansas (KU), the Los Angeles County Museum of Natural History (LACM), and the United States National Museum (USNM). Specimens in the mammal collection, Department of Zoology, University of Arizona, are indicated by UA, *Molossus aztecs aztecs* from Colima: Tlapeixtes, 4 km.
ENE Manzanillo (AMNH, 2). Jalisco: Peña Colorada, Río de Talpa, ca. 10 km. N Talpa de Allende (UA, 2); Rancho de los Ocotes, ca. 6 km. N Talpa de Allende (UA, 1); Río de Talpa, Talpa de Allende (UA, 6); Los Masos (AMNH, 2). Oaxaca: 5 mi. N Juchatengo, ca. 4000 ft. (UA, 2); 3 mi. S Nejapa (KU, 1); Tehuantepec (AMNH, 1). Sinaloa: Alisos, ca. 50 km. NNE (by Rd.) from Badiraguato (UA, 1). *Molossus cf. pygmaeus* from Chiapas: Huehuetán (FMNH, 1; USNM, 3); 1 mi. SE Puerto Madero, (KU, 3).

**ACKNOWLEDGMENTS**

I am indebted to the various institutions which made comparative material available, and to Dr. E. L. Cockrum of the University of Arizona, under whose direction this description was prepared.

I wish to express appreciation to Dr. Hernandes Corzo, Prof. José A. Dávila C., and the late Señor Ing. Luis Macias A. of the Dirección General de Forestal y de Caza, México, D.F., under whose auspices my collecting permits were obtained.

**LITERATURE CITED**

Allen, J. A.

Alvarez, T. and C. E. Aviña

Dalquest, W. W.

Miller, G. S., Jr.

Ridgway, R.