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Results of the Puritan-American Museum of Natural History Expedition to Western Mexico

8. A New *Antrozous* (Mammalia, Vespertilionidae) from the Tres Mariás Islands, Nayarit, Mexico

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The Puritan-American Museum Expedition spent 17 days in the vicinity of the Tres Mariás Islands, Nayarit, Mexico, during which time collections of mammals from the islands and the surrounding waters were made. Although only 73 specimens were obtained in this period, from March 23 to April 8, 1957, at least 12 genera are represented, including several that had never before been recorded from these islands. The most remarkable of these new records is that of a large, dark-colored *Antrozous* that differs so markedly from the known members of the genus that it is here described as a new subgenus.

BAUERUS, NEW SUBGENUS¹

DIAGNOSIS: First lower incisor trilobed anteriorly, with distinct posterior lobe; I_2 quadrate, three or four crowded antero-external lobes plus a posterior lobe; M^1 and M^2 with slightly developed hypocone connected to protocone by commissure. Sagittal crest pronounced, con-

¹ Named for the sponsor of the Puritan-American Museum Expedition, Mr. Harry J. Bauer.

tinuous, and extended posteriorly as an inion. Rostrum elevated and broad. Auditory bullae very small and narrow, exposing more than half of the overlying cochleae; bullae attenuated anteriorly. Lower incisors crowded. Mandible angled strongly upward posteriorly; angular process projecting almost horizontally. Hair darker at base and lighter distally.

***Antrozous (Bauerus) dubiaquercus*, new species²**

TYPE: A.M.N.H. No. 180565, adult male, from María Magdalena Island, Tres Mariás Islands, Nayarit, Mexico. Original no. 1120, R. G. Van Gelder, collected by Richard G. Zweifel and Oakes A. Plimpton, April 1, 1957.

DISTRIBUTION: Known only from María Magdalena Island, but probably also occurs on María Madre Island.

MEASUREMENTS: External measurements of the type and an adult female are, respectively: total length, 120, 123; tail, 57, 55; hind foot, 14, 14; ear, 26, 26; tragus (measured dry), 8, 8; forearm, 55, 54. Cranial measurements of the type, two adult males (skulls removed from specimens in alcohol), and an adult female are, respectively: greatest length of skull, 20.3, 20.5, 20.4, 20.2; condylobasal length, 17.9, 18.0, 17.7, 17.4; zygomatic breadth, 12.7, 12.9, 12.7, 12.4; least interorbital breadth, 3.8, 3.7, 3.7, 3.8; occipital depth, 6.5, 6.6, 6.3, 6.2; length of maxillary tooth row, 7.1, 7.0, 6.9, 7.2; maxillary breadth at M₃, 7.9, 8.0, 7.8, 7.6; greatest length of bulla, 3.5, 3.4, 3.3, 3.5; greatest width of bulla, 2.4, 3.2, 3.0, 2.9; least width between bullae, 3.8, 3.4, 3.5, 3.6; greatest width across both bullae, 8.3, 9.0, 8.7, 8.5.

COLOR: The color of the type and a female topotype prepared as study skins in the field is near Sepia (Ridgway, 1912) in general coloration. The distal one-third to two-fifths of the dorsal hairs is near Warm Buff, and the darker basal portion is Vandyke Brown to Black. The distal one-quarter of the ventral hairs is Light Ochraceous Buff, and the basal three-quarters is near Mars Brown. The hair is soft and lax, and about 9 mm. long dorsally, compared with dorsal hair lengths of about 5 to 7 mm. in subgenus *Antrozous*. There is no sign of an interscapular bare or pale patch. The flight membranes and ears are dark blackish brown.

In addition to the diagnostic subgeneric characters, *Antrozous (Bauerus) dubiaquercus* differs from the subgenus *Antrozous* in having more space between the first upper incisors and more crowded lower

² Named in honor of the collectors.

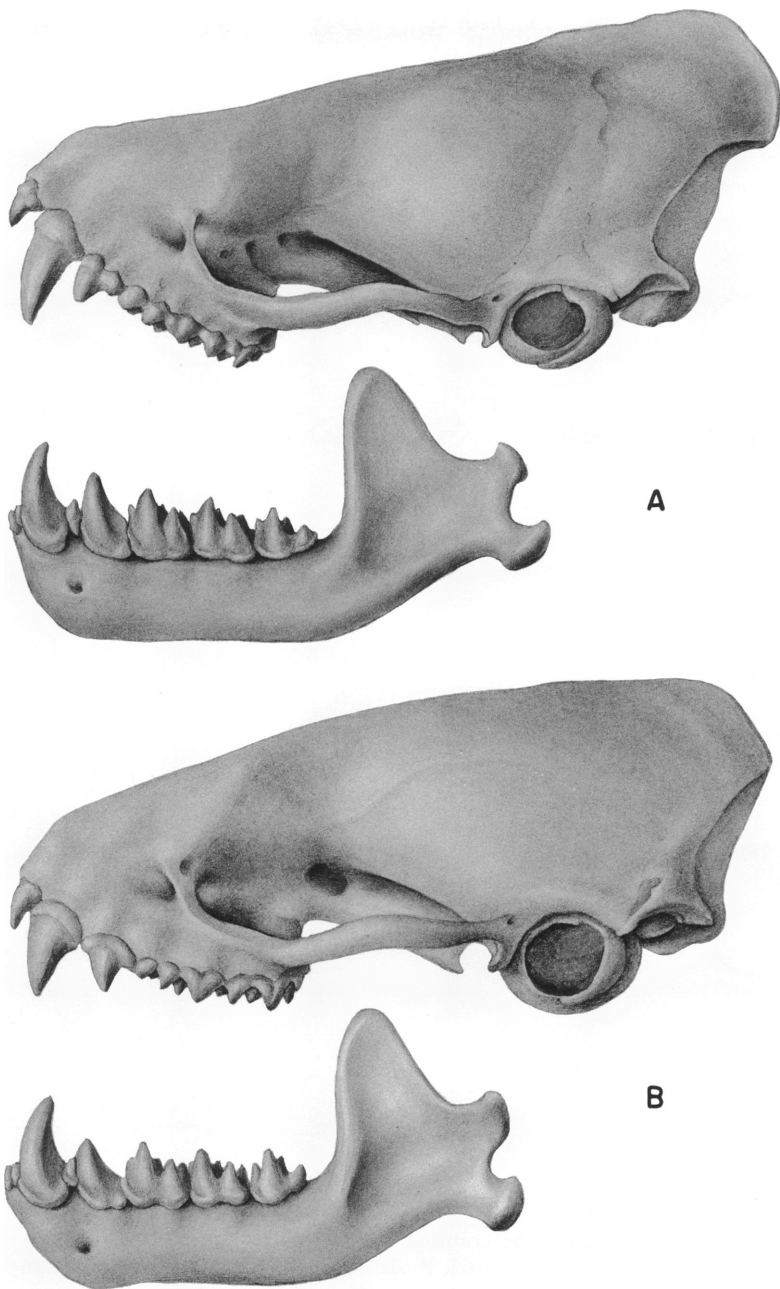


FIG. 1. Lateral view of the skull. A. *Antrozous (Bauerus) dubiaquercus*, adult male, A.M.N.H. No. 180565. B. *Antrozous (Antrozous) pallidus pallidus*, adult female, A.M.N.H. No. 2159, from Guadalajara, Mexico. Both $\times 5$.

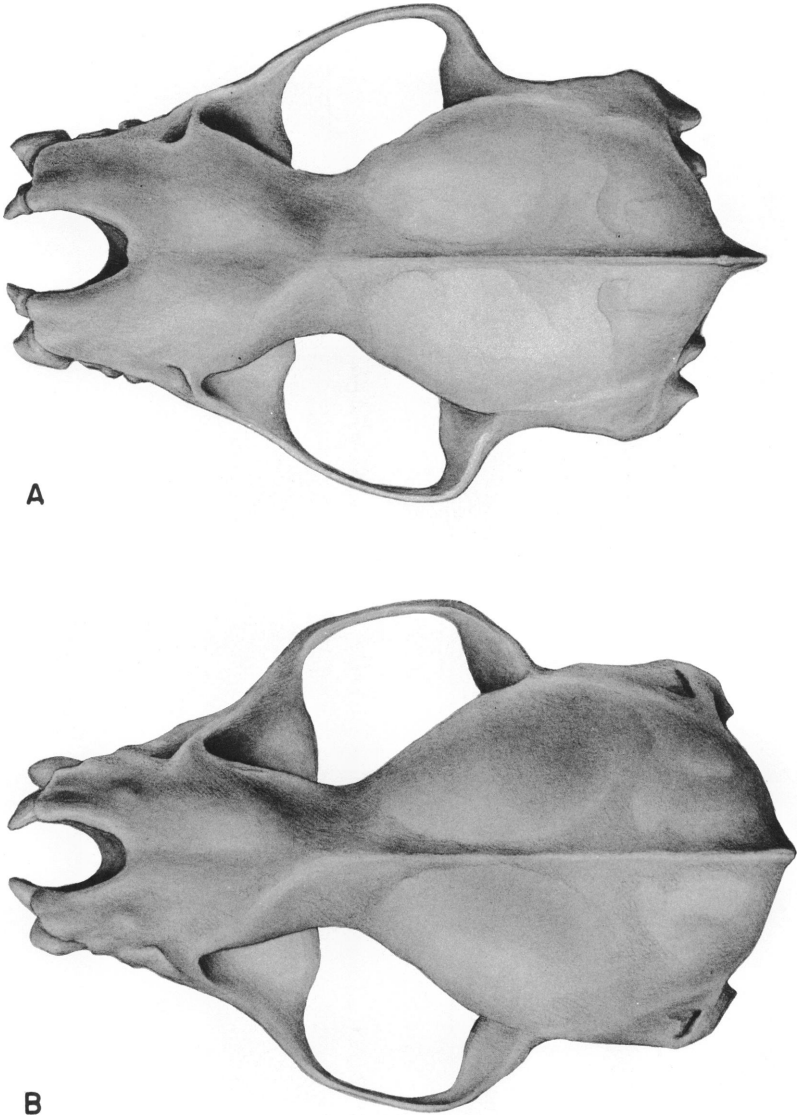


FIG. 2. Dorsal view of the cranium. A. *Antrozous (Bauerus) dubiaquercus*, adult male, A.M.N.H. No. 180565. B. *Antrozous (Antrozous) pallidus pallidus*, adult female, A.M.N.H. No. 2159, from Guadalajara, Mexico. Both $\times 5$.

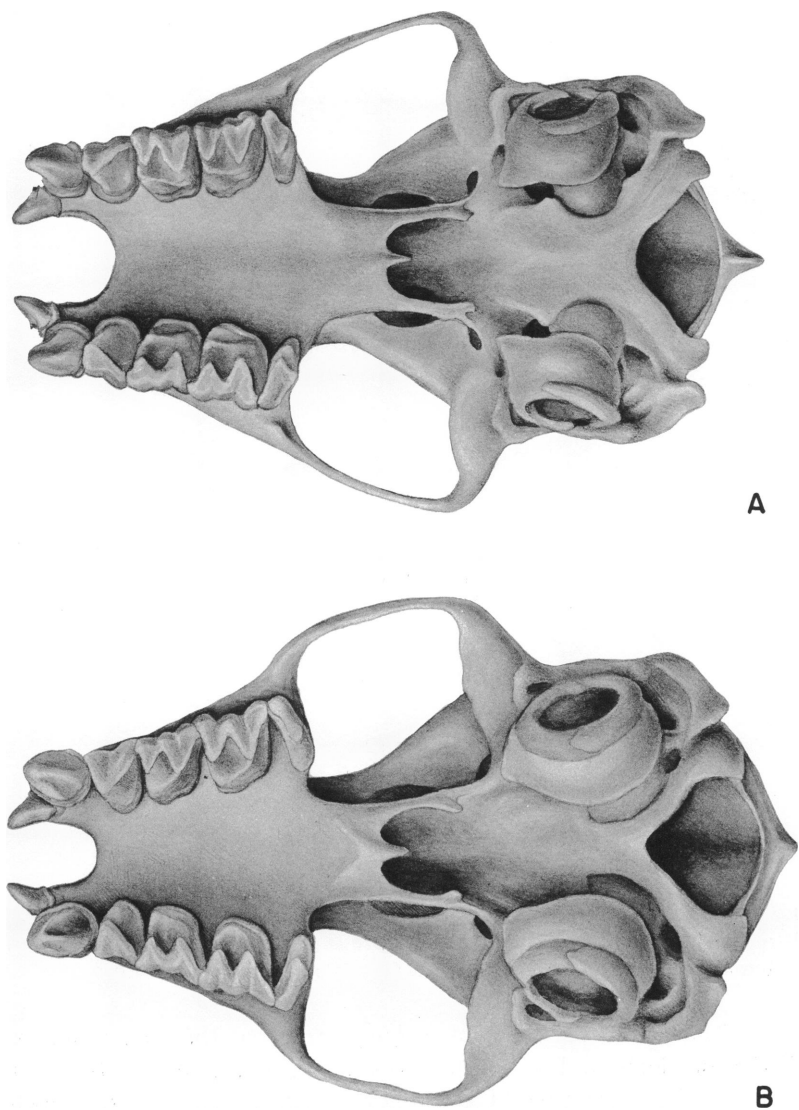


FIG. 3. Ventral view of the cranium. A. *Antrozous (Bauerus) dubiaquercus*, adult male, A.M.N.H. No. 180565. B. *Antrozous (Antrozous) pallidus pallidus*, adult female, A.M.N.H. No. 2159, from Guadalajara, Mexico. Both $\times 5$.

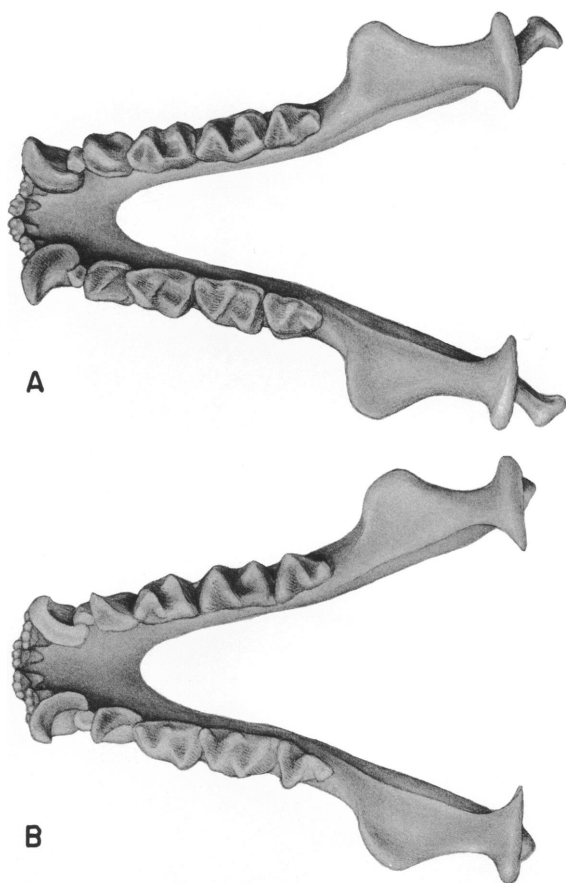


FIG. 4. Dorsal view of the mandible. A. *Antrozous (Bauerus) dubiaquercus*, adult male, A.M.N.H. No. 180565. B. *Antrozous (Antrozous) pallidus pallidus*, adult female, A.M.N.H. No. 2159, from Guadalajara, Mexico. Both $\times 5$.

incisors. The upper premolar of *dubiaquercus* has the base more expanded posteriorly and is in closer contact with the first molar for a greater length of its lingual extent. The upper canines are longer and the interorbital foramen is larger in *dubiaquercus*. The intermaxillary space is greater than in *Antrozous*, and the space between the bullae is both actually and proportionately larger (table 1). The coronoid process of the mandible is angled forward more sharply in *Bauerus*, and the tail is actually and proportionately longer than in *Antrozous*. The dark color of *dubiaquercus* readily distinguishes it from all other species of the genus.

Antrozous dubiaquercus is found some 150 or more miles from the nearest places of occurrence recorded for related species. The subspecies *Antrozous pallidus minor* is recorded from the southern tip of Baja California (Miller, 1897, p. 45) at Cape San Lucas, and *A. p. pallidus* is recorded from 1 mile north of Chorro, Durango (Hall and Kelson, 1959, p. 202). In addition to comparisons with various subspecies of *A. pallidus*, *dubiaquercus* has been compared with *Antrozous bunker*i, a species of dubious validity. Krutzsch and Vaughan (1955, p. 97) regard *bunker*i as only subspecifically distinct from *pallidus*.

From *A. p. minor* from Baja California *dubiaquercus* differs in characters additional to the subgeneric ones. The Tres Marias animals are larger in external measurements, and they are larger in all average cranial measurements except interorbital breadth (9% smaller), length of bulla (12% smaller), and width of bulla (17% smaller). The cingula of the upper incisors and canines are better developed than in *minor*, and the ventral lip of the foramen magnum is somewhat pointed in *minor* and rounded in *dubiaquercus*. The paroccipital processes of the latter are larger, and the mandible is deeper. The mandibular condyles are 12 per cent shorter in *minor*.

From *Antrozous* (*Antrozous*) *pallidus pallidus*, *dubiaquercus* differs in being larger in all external measurements except the length of the ear, and slightly smaller in cranial measurements except zygomatic breadth. The other differences between *A. p. minor* and *dubiaquercus* are also true when the latter is compared with *pallidus*, except that the paroccipital processes and the mandibular condyles are of equal size in the two kinds of bats.

In comparison with *bunker*i, *dubiaquercus* averages slightly larger in total length, considerably larger (16%) in length of tail, approximately the same in length of hind foot, and smaller in length of ear and forearm. The differences between *minor* and *dubiaquercus* cited previously hold true for *bunker*i except that the cingula of the canines and incisors are equally developed, the ventral tip of the foramen magnum is rounded in both *bunker*i and *dubiaquercus*, and the mandibles and condyles are equal in depth and length, respectively, in both taxa.

In the field *A. (Bauerus) dubiaquercus* is readily distinguishable from all other North American chiropterans as being the only large-eared, dark brown vespertilionid. When the specimens were first received, they were not associated with *Antrozous*, with which I was quite familiar, because of their dark color. In the laboratory *dubia-*

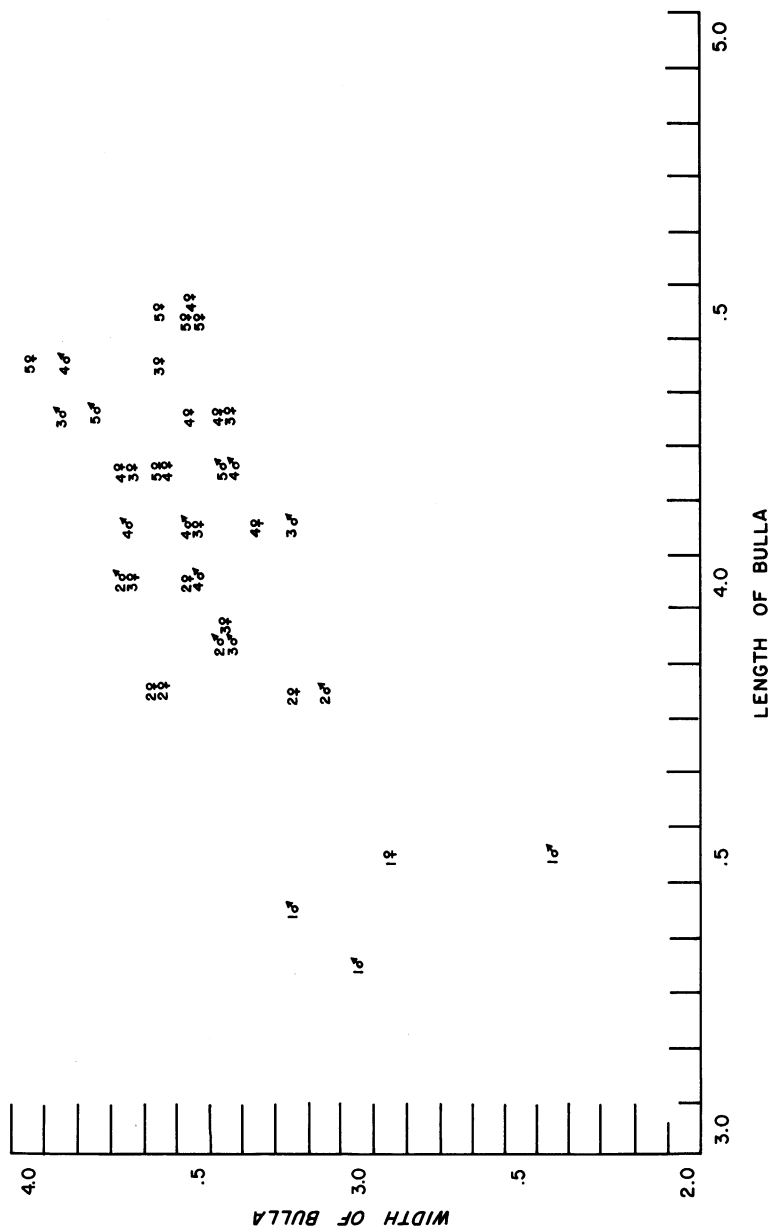


FIG. 5. Graph showing length and width of auditory bullae, in millimeters. 1. *Antrozous (Bauerus) dubiaqueus*. 2. *A. (Antrozous) pallidus minor*. 3. *A. (Antrozous) p. pallidus*. 4. *A. (Antrozous) p. pallidus*. 5. *A. (Antrozous) bunker*.



FIG. 6. Tropical deciduous forest on María Magdalena Island. The pool over which *Antrozous dubiaquercus* was collected is in the foreground. From a kodachrome by Oakes A. Plimpton.

quercus is easily distinguished from all other *Antrozous* by the large sagittal crest, straight dorsal profile, and small auditory bullae.

All the specimens of *dubiaquercus* were captured between 6 P.M. and 9 P.M. on April 1, 1957, at a small pool in the tropical deciduous forest on the north side of María Magdalena Island by Richard G. Zweifel and Oakes Ames Plimpton (fig. 6). The bats were obtained by knocking them down with small branches as they came over the water, probably to drink. Other bats captured at the same time and in the same fashion include species of *Rhogeösa*, *Myotis*, *Lasiurus*, and *Artibeus*.

For the loan of comparative material I am indebted to Dr. David Johnson of the United States National Museum (U.S.N.M.) and Dr. E. Raymond Hall and Dr. Sydney Anderson of the University of Kansas Museum of Natural History (K.U.M.N.H.). The advice of Dr. Charles O. Handley, Jr. and Dr. Karl F. Koopman is greatly appreciated. Specimens designated by the abbreviation A.M.N.H. are in the collections of the American Museum of Natural History.

SPECIMENS EXAMINED: Sixty-two, from the following localities: *Antrozous* (*Bauerus*) *dubiaquercus*: Mexico, Nayarit, Tres Mariás Islands, María Magdalena Island, five (A.M.N.H.). *Antrozous* (*Antrozous*) *pallidus pacificus*: California, Tulare County, 4 miles southeast of Porterville, nine (A.M.N.H.); 5 miles southeast of Porterville, 13 (A.M.N.H.). *Antrozous* (*Antrozous*) *pallidus pallidus*: Texas, Brewster County, south of Government Spring, two (A.M.N.H.); Arizona, Yavapai County, Prescott, one (A.M.N.H.); Santa Cruz County, 10 miles northwest of Nogales, Peña Blanca Spring, 4800 feet, one (A.M.N.H.); Mexico, Jalisco, Santa Cruz del Valle, Guadalajara, eight (A.M.N.H.). *Antrozous* (*Antrozous*) *pallidus minor*: Mexico, Baja California, Comondú, three (U.S.N.M.); Miraflores, three (A.M.N.H.); Santa Anita, one (U.S.N.M.); Cape San Lucas, six (U.S.N.M.). *Antrozous* (*Antrozous*) *bunkerii*: Kansas, Barber County, 5½ miles south of Sun City, 10 (eight, K.U.M.N.H.; two, A.M.N.H.).

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TABLE 1
MEASUREMENTS OF *Antrozous dubiaquercus*, *A. pallidus*, AND *A. bunkerii*

Taxon and Locality	Sex	Length of Tail	Greatest Length of Skull	Condylobasal Length	Zygomatic Breadth	Interorbital Breadth	Maxillary Breadth at M ³	Length of Bulla	Width of Bulla	Width Across Both Bullae	Width Between Bullae
<i>A. dubiaquercus</i> María Magdalena Island, Nayarit, Mexico	M	57	20.3	17.9	12.7	3.8	7.9	3.5	2.4	8.3	3.8
	M	—	20.5	18.0	12.9	3.7	8.0	3.4	3.2	9.0	3.4
	M	—	20.4	17.7	12.7	3.7	7.8	3.3	3.0	8.7	3.5
	F	55	20.2	17.4	12.4	3.8	7.6	3.5	2.9	8.5	3.6
<i>A. p. pallidus</i> Santa Cruz del Valle, Guadalajara, Jalisco, Mexico	M	—	21.6	18.9	12.2	4.1	8.4	3.9	3.4	—	—
	M	—	20.9	18.6	12.9	3.9	8.2	4.3	3.9	9.3	—
	F	—	20.8	18.2	12.5	3.8	8.1	3.8	3.1	8.4	2.1
	F	—	21.8	19.4	12.3	4.0	8.2	4.0	3.2	8.2	1.4
	F	—	22.3	19.6	13.2	4.3	8.2	4.1	—	—	—
	F	—	21.9	19.4	13.3	4.2	8.5	3.9	3.4	—	—
	F	—	21.8	19.1	12.9	3.9	8.2	4.3	3.9	9.3	—
	F	—	21.8	19.0	12.9	3.9	7.9	4.1	3.2	8.8	2.4

TABLE 1—(Continued)

Taxon and Locality	Sex	Length of Tail	Greatest Length of Skull	Condylbasal Length	Zygomatic Breadth	Interorbital Breadth	Maxillary Breadth at M ³	Length of Bulla	Width of Bulla	Width Across Both Bullae	Width Between Bullae
<i>A. p. minor</i>											
Cape San Lucas, Baja California, Mexico											
	M	—	19.4	17.5	11.3	4.2	7.4	3.9	3.4	8.2	2.0
	M	—	19.3	17.5	11.3	4.3	7.1	4.0	3.7	8.7	2.0
	F	—	19.0	17.5	11.4	4.1	7.3	4.0	3.5	8.6	2.0
	F	—	19.1	17.6	11.6	4.2	7.5	3.8	3.6	8.5	2.1
	F	—	19.9	17.9	11.9	4.3	7.5	3.8	3.6	8.8	2.5
	F	—	19.4	17.5	11.6	4.0	7.2	3.8	3.2	8.2	2.2
<i>A. p. pacificus</i>											
5 miles southeast of Porterville, Tulare Co., California											
	M	42	20.7	18.7	12.4	3.8	7.8	4.0	3.5	8.9	2.2
	M	45	21.3	19.6	13.0	4.0	8.3	4.2	3.4	8.8	2.3
	M	42	21.2	19.0	12.3	4.2	7.7	4.1	3.7	9.1	2.1
	M	38	20.4	18.6	12.1	4.2	7.8	4.1	3.5	9.0	2.5
	M	42	21.1	18.5	12.6	4.0	7.9	4.4	3.9	8.7	2.4
	F	42	20.9	19.0	13.0	4.3	8.0	4.3	3.4	9.5	2.6
	F	40	20.6	19.3	12.5	4.1	8.1	4.5	3.5	9.3	2.6

TABLE 1—(Continued)

Taxon and Locality	Sex	Length of Tail	Greatest Length of Skull	Condylbasal Length	Zygomatic Breadth	Interorbital Breadth	Maxillary Breadth at M ³	Length of Bulla	Width of Bulla	Width Across Both Bullae	Width Between Bullae
<i>A. bunker</i> 5½ miles south of Sun City, Barber Co., Kansas	F	40	19.8	18.8	12.3	4.2	8.0	4.3	3.5	9.1	2.5
	F	41	19.9	18.6	11.8	3.7	7.4	4.2	3.7	8.8	2.1
	F	41	19.9	18.4	12.4	4.1	8.0	4.2	3.6	9.3	2.3
	F	39	19.6	18.0	12.0	4.1	7.6	4.1	3.3	8.7	2.0
	M	47	21.3	19.5	12.6	4.2	8.9	4.2	3.4	9.2	3.2
	M	47	21.3	19.6	13.4	4.4	8.6	4.3	3.8	9.6	2.8
	F	43	22.0	19.9	13.9	4.0	9.0	4.5	3.5	9.9	2.6
	F	51	20.9	19.2	13.7	4.2	8.7	4.5	3.6	10.1	2.6
	F	44	21.1	20.3	13.3	4.5	8.9	4.4	4.0	10.0	1.4
	F	49	21.8	19.5	13.1	4.0	9.5	4.2	3.6	—	—