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TADARIDA AURISPINOSA (PEALE) (CHIROPTERA:
MOLOSSIDAE) IN NORTH AMERICA

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On 20-21 November 1959, Clyde F. Herreid, Arturo Jiménez, and the senior author visited the Cueva del Abra, 6 miles NNE of Antiguo Morelos, Tamaulipas, México (see Villa, Jour. Mamm., 41: 314-319, 1960) where they collected more than 100 specimens of *Tadarida yucatanica* (Miller) (= *T. laticaudata ferruginea* Goodwin). Also collected were four specimens of a larger bat which at the time was thought to be *T. femorosacca* (Merriam). Three of the larger *Tadarida* were alive and were taken back to the Instituto de Biología, Universidad Nacional Autónoma de México, by Jiménez who wished to examine them for rabies. The fourth specimen was prepared as a skin and skull and deposited in the Texas Co-operative Wildlife Collection as No. 6573. Jiménez later prepared his three specimens as skins and skulls for the Instituto de Biología mammal collection (Nos. 4838, 4839, and 4841). All the bats were collected with a .22-calibre shot pistol and a .410-gauge shotgun either from the walls and ceiling of the cave or from the evening flight as the bats left the cave. Whether the larger bats came from the walls and ceiling or from the evening flight is not known.

On 17 June 1960, Craig E. Nelson and the senior author again collected *Tadarida* from the evening flight as the bats left Cueva del Abra. As in November 1959, there were 10,000 to 20,000 *Tadarida* in the cave. *T. yucatanica* left the cave more or less in groups of varying size and occasionally bats of a size larger than *T. yucatanica* were seen leaving the cave. One of them (TCWC 6574) was collected, and it proved to

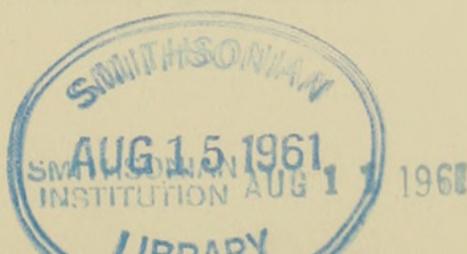


TABLE 1.—External measurements of bats referred to *Tadarida aurispinosa*. The type (No. 3726) and No. 6574 TCWC were measured by Handley, the other five by Carter.

MUS. NO.	LOCALITY	HIND FOOT	TIBIA	FOREARM	III META-CARPAL	DIGIT III, PHALANX 1	DIGIT III, PHALANX 2	IV META-CARPAL	DIGIT IV, PHALANX 1	DIGIT IV, PHALANX 2	V META-CARPAL	DIGIT V, PHALANX 1	DIGIT V, PHALANX 2
USNM 3726 ♂	Brazil	11.0	13.6	50.0	50.1	21.1	19.9	48.1	18.8	3.2	28.7	15.3	3.7
CNHM 68561 ♀	Cuzco, Peru	9.9	13.8	51.4	48.4	21.1	18.5	46.8	18.1	2.8	26.9	14.6	3.4
TCWC 6573 ♂	Tamaulipas, México	10.3	13.7	50.3	47.9	21.5	19.4	47.3	18.6	2.8	27.5	14.1	3.7
TCWC 6574 ♂	Tamaulipas, México	10.0	13.3	49.9	49.3	20.3	18.5	47.4	17.4	2.4	27.9	14.7	3.7
IB 4838 ♂	Tamaulipas, México	10.4	13.1	49.7	48.2	21.4	18.8	46.8	18.7	2.9	26.6	15.0	3.7
IB 4839 ♀	Tamaulipas, México	9.9	13.2	49.2	46.9	21.2	17.4	46.4	17.8	2.7	27.0	13.8	3.9
IB 4841 ♀	Tamaulipas, México	10.5	13.7	47.8	46.2	20.9	18.3	44.9	17.6	3.2	26.0	14.3	3.8

be the same as the large *Tadarida* previously collected there. Since the small clusters of bats seen on the walls and ceiling can account for only a small part of the numbers that roost in the cave, the great majority of the *Tadarida* spend the day in the numerous crevices.

Upon comparison with *T. femorosacca*, it became obvious that the large bats from Cueva del Abra could not be associated with that species. They are larger than *T. yucatanica*, *T. femorosacca*, *T. laticaudata* (E. Geoffroy), and *T. europs* (H. Allen), but smaller than *T. molossa* (Pallas). They compared favorably with *T. similis* Sanborn. One of the specimens was sent to Charles O. Handley, U.S. National Museum, to be compared with the type of *T. aurispinosa* (Peale). Handley made the following comments. "Externally, I cannot see any means of distinguishing your specimen from *aurispinosa*. Measurements coincide almost exactly . . . and coloration apparently is similar." The other Mexican specimens (collected in November) are somewhat grayish in color and would seem to correspond more closely to the type of *T. similis* which is described as grayish brown. As shown in the tables, the Mexican

TABLE 2.—Cranial measurements of bats referred to *Tadarida aurispinosa*. Measurements of the type of “*similis*” (CNHM 48560) after Sanborn.

MUS. NO.	LOCALITY	TOTAL LENGTH	ZYGOMATIC BREADTH	INTERORBITAL BREADTH	OCCIPITAL DEPTH	CRANIAL BREADTH	MASTOIDAL BREADTH	CONDYLOBASAL LENGTH	BASAL LENGTH	MAXILLARY TOOTHROW	BREADTH AT M ³	BREADTH AT CANINES	MANDIBULAR TOOTHROW
CNHM 48560 ♂	Bogotá, Colombia	20.7	11.6	3.9	—	9.3	10.4	18.8	—	7.8	8.5	4.7	8.5
CNHM 68561 ♀	Cuzco, Peru	20.8	11.7	3.6	7.5	9.5	10.9	19.1	17.3	7.8	8.4	4.8	8.9
TCWC 6573 ♂	Tamaulipas, México	21.2	11.9	3.7	7.3	9.5	11.3	20.0	18.2	8.2	8.4	4.8	9.4
TCWC 6574 ♂	Tamaulipas, México	21.6	11.7	—	7.1	9.1	10.2	19.9	17.9	8.1	8.1	4.7	9.1
IB 4838 ♂	Tamaulipas, México	21.2	12.0	4.0	7.1	9.7	11.1	19.7	17.8	7.9	8.4	4.6	8.9
IB 4839 ♀	Tamaulipas, México	20.5	11.4	3.7	7.0	9.2	11.0	19.1	17.1	7.8	8.2	4.9	8.8
IB 4841 ♀	Tamaulipas, México	20.7	11.8	3.8	7.2	9.5	11.1	19.1	17.4	7.8	8.6	4.4	9.0

specimens are indistinguishable from either *T. similis* or *T. aurispinosa*.

Shamel (Proc. U.S. Nat. Mus., 78: 1–27, 1931) considered *T. aurispinosa* a synonym of *T. laticaudata*. Sanborn (Field Mus. Nat. Hist., Zool. Ser., 27: 371–387, 1941) named *T. similis* on the basis of one specimen from Bogotá, Colombia, and said that it is a west coast representative of *T. aurispinosa*. Sanborn (Publ. Mus. Hist. Nat. “Javier Prado,” Ser. A. Zool., no. 6, 26 pp., 1951) also reported a second specimen of *T. similis* taken with three *T. molossa* in a cave at Huajyumbé, Cuzco, Peru. He defends the recognition of the Colombian and Peruvian specimens as representing a distinct species mainly on the basis that the altitude at Bogotá is high for a tropical bat (*T. aurispinosa*). Since there is no skull for the type of *T. aurispinosa*, Sanborn proposed that the name *T. similis* should be retained at least until more specimens of *T. aurispinosa* were available for study. Now that the five Mexican specimens are available and compare so closely with the type of *T. aurispinosa* and also with the two known specimens of *T. similis*, it is apparent, at least to us, that the two are conspecific and

that the name *T. similis* Sanborn should be placed as a synonym of *Tadarida aurispinosa* (Peale). A full synonymy for *T. aurispinosa* is given by Shamel (op. cit., 9–10). *T. aurispinosa* is now known by eight specimens from four localities: Brazil (type, adult male, no. 3726, U.S. Nat. Mus.), Colombia (adult male, No. 48560, Chicago Nat. Hist. Mus.), Peru (adult female, No. 68561, Chicago Nat. Hist. Mus.), and México (two adult males, nos. 6573 and 6574, Texas Cooperative Wildlife Collection; one adult male and two adult females, Nos. 4838, 4839, and 4841, Instituto de Biología, Universidad Nacional Autónoma de México).

Since the discovery of *T. aurispinosa* in Cueva del Abra constitutes the fifth form of *Tadarida* reported in the literature from that cave, comments on the similarity of three of these forms seems warranted. Villa (op. cit.) found that Goodwin's *T. l. ferruginea* falls within the range of variation of the form he (Villa) recognized as *T. yucatanica*. Dalquest and Hall (U. Kansas Publ. Mus. Nat. Hist., 1: 245–248, 1947) reported that *T. femorosacca* occurs in this same cave. The skull length and basal length of the two specimens collected by Dalquest are 18 mm and 15.0–15.2 mm, respectively. These, the authors state, are less than the minimum given by Shamel (op. cit.) for *T. femorosacca*, but otherwise the specimens agreed with that species. Total length of skull and basal length seem to be two of the three skull measurements that are useful in separating *T. yucatanica* and *T. femorosacca*. The other is the length of the maxillary toothrow, which is slightly greater in *T. femorosacca*. The fact that these two skull measurements in Dalquest's specimens fall within the range of individual variation for *T. yucatanica* from Peten, Guatemala; Yucatán, and Tamaulipas, México and not within that for *T. femorosacca* leads us to believe that Dalquest's two "*T. femorosacca*" from Cueva del Abra are the same as Villa's *T. yucatanica* and Goodwin's *T. l. ferruginea*.

Villa (op. cit.) believes this cave is occupied by large numbers of *T. mexicana* from January to April, but none is known to have been collected there. Of all the *Tadarida* collected there, only two species can be distinguished: *T. yucatanica* (= *T. l. ferruginea* = *T. femorosacca*, auct.) and *T. aurispinosa*.

Although *T. yucatanica* and *T. laticaudata* are very similar, and may in time prove to be conspecific, we prefer to assign all the small *Tadarida* from Cueva del Abra to *T. yucatanica* on geographic grounds. *T. laticaudata* is a South American bat whose geographic range seems to complement that of *T. yucatanica*.

We wish to express our gratitude to Charles O. Handley, U.S. National Museum, for comparing one of the Mexican specimens with the type of *T. aurispinosa*; to Karl F. Koopman, Chicago Natural History Museum, for the loan of the Peruvian specimen; and to Bernardo Villa R., Instituto de Biología, Universidad Nacional Autónoma de México, for the loan of three Mexican specimens.



Carter, Dilford C. and Davis, William B. 1961. "Tadarida cturispinosa (Peale) (Chiroptera: Molossidae) in North America." *Proceedings of the Biological Society of Washington* 74, 161–165.

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