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Nuevo Leon, Mexico, by J. Knox Jones**

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Author: J. Knox Jones

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*** START OF THE PROJECT GUTENBERG EBOOK PLEISTOCENE BATS FROM SAN JOSECITO CAVE, NUEVO LEON, MEXICO ***

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Pleistocene Bats from San Josecito Cave, Nuevo León, México

[Pg 391]

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J. KNOX JONES, JR.

Some of the Pleistocene mammals from San Josecito Cave, near Aramberri, Nuevo León, México, collected by field parties of the California Institute of Technology under the direction of the late Professor Chester Stock, have been reported previously (see Furlong, 1943; Cushing, 1945; Stock, 1950; Hooper, 1952; Findley, 1953; Stock, 1953; Handley, 1955; Jackway, 1958). In 1950, Professor Stock loaned a portion of the San Josecito material to the University of Kansas for identification. Included therein were 89 crania and rami of bats, representing three families (Phyllostomidae, Desmodontidae and Vespertilionidae) and five genera, each represented by a single species. One of the species is here described as new. Three of the kinds are known only from the Pleistocene and two are Recent species.

The only previous mention of fossil bats from México known to me concerns material from San Josecito Cave. Cushing (1945:182) mentioned a "vampire bat" from the cave (see also Maldonado-Koerdell, 1948:17), and Handley (1955:48) based his description of *Corynorhinus tetralophodon* on a specimen from San Josecito.

Brief descriptions of the cave have been published by Miller (1943) and Stock (1943). The precise age of the deposits is unknown; stratification data did not accompany the material sent on loan to the University of Kansas. However, most of the micro-fauna is thought to have come from the higher levels in the cave and is probably late Pleistocene.

The San Josecito Cave collections are currently the property of the Los Angeles County Museum.

I am grateful to Dr. E. Raymond Hall for permission to study the bats from San Josecito Cave, to Dr. Robert W. Wilson for criticism of the manuscript, and to Mr. Philip Hershkovitz for permission to use comparative material at the Chicago Natural History Museum. Lucy Rempel made the drawings from photographs by John M. Legler.

Leptonycteris nivalis (Saussure)

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Referred material.—Seventy crania, LACM (CIT) 2951-54, 2956-64, 3114-22, 3124-25, 3127, 3131-35, 3137-41, 3143-55, 3942, 21 unnumbered, of which 35 are nearly complete, lacking zygomatic arches, auditory bullae and some teeth; three rami, one right, LACM (CIT) 3126, and two left, unnumbered.

Remarks.—The long-nosed bats from San Josecito Cave do not differ appreciably from *Leptonycteris nivalis longala* Stains, the largest Recent subspecies of the species, and the subspecies that occurs in the same geographic area today. Average and extremes of three cranial measurements of 22 specimens from San Josecito Cave, followed in parentheses by the average and extreme measurements of 23 adult *L. n. longala* from the type locality, 12 mi. S and 2 mi. E Arteaga, 7500 ft., Coahuila (after Stains, 1957: 356), are: Greatest length of skull, 28.2, 27.2-28.9 (27.5, 26.1-29.0); least interorbital constriction, 5.0, 4.8-5.4 (4.8, 4.1-5.4); breadth of braincase, 11.1, 10.6-11.6 (10.7, 10.1-11.2). The San Josecito specimens average larger than the series of Recent specimens in all of these measurements, especially breadth of braincase, but there is considerable overlap in each case and the extremes of greatest length of skull and of least interorbital constriction do not exceed the extremes in the Recent series.

Desmodus stocki, new species

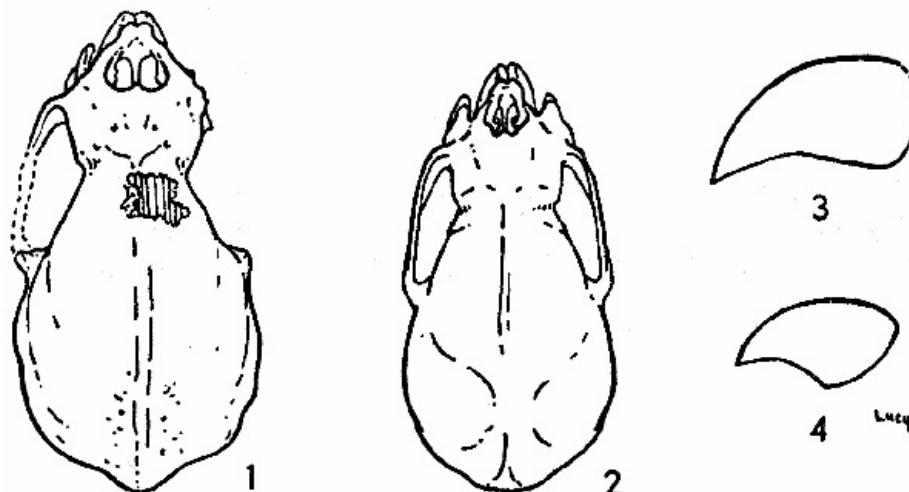
Holotype.—Cranium, lacking post-incisor dentition on the left side, zygomatic arches and auditory bullae; Los Angeles County Museum (CIT) No. 3129; from Pleistocene deposits of San Josecito Cave, near Aramberri, Nuevo León, México.

Referred material.—Twelve additional partial crania, LACM (CIT) 2946-50, 3127-30, 3940-41, 2 unnumbered.

Diagnosis.—Resembling the Recent *Desmodus rotundus* but differing from it as follows: Skull larger (see measurements and [Figs. 1-2](#)), heavier and more massive; rostrum and braincase relatively as well as actually broader, interorbital region relatively more constricted; braincase more rounded (less elongate) as viewed from above; nasals less concave in lateral view; narial vacuity broader in relation to greatest length of skull, more nearly heart-shaped; palate broad, less concave medially; mesopterygoid fossa relatively and actually broader anteriorly, the sides nearly parallel; zygomatic arches (judging from No. 2950, the only specimen with a complete arch, the left) less rounded in outline, appearing broader owing to the more constricted interorbital region.

Dentition larger and heavier than that in *rotundus*, but otherwise differing only slightly from it; upper incisor less concave on cutting surface (see Figs. 3-4); premolar and molar slightly less blade-like, with heavier roots.

The peculiar shape of the incisor of *stocki* is shared to some extent with *Diaemus youngi*, a Recent South American desmodontid. However, *stocki* does not otherwise resemble *D. youngi*, differing from it as follows: Skull larger and heavier; interorbital constriction much narrower; zygomatic arches less strongly bowed; skull less compact, more elongate; braincase and rostrum relatively much narrower in relation to greatest length of skull. Furthermore, specimens of *stocki* show no trace of the minute M2 attributed to *youngi* by de la Torre (Proc. Biol. Soc. Washington, 69: 191, 1956). For cranial measurements of *youngi* see Sanborn (Jour. Mamm., 30: 283, 1949).



Figs. 1-4. Fig. 1. Dorsal view of holotype of *Desmodus stocki*, $\times 1\frac{1}{2}$. Fig. 2. Dorsal view of *Desmodus rotundus murinus*, σ , KU 54969, La Mula, 13 mi. N Jaumave, Tamaulipas, $\times 1\frac{1}{2}$. Fig. 3. Lateral view of left upper incisor of *D. stocki*, LACM (CIT) 2950, $\times 2\frac{1}{2}$. Fig. 4. Lateral view of left upper incisor of *D. r. murinus*, f , KU 54967, La Mula, 13 mi. N Jaumave, Tamaulipas, $\times 2\frac{1}{2}$.

Remarks.—The essential differences between *D. stocki* and *D. rotundus* are in size and proportion. I do not doubt that the two species are closely related; possibly *stocki* is ancestral to *rotundus*.

The species is named in honor of the late Professor Chester Stock, under whose direction the fossil materials from San Josecito Cave were obtained, and who, at the time of his death, was studying the mammalian fauna from the cave.

***Eptesicus cf. grandis* (Brown)**

Referred material.—One rostrum, with P4-M3 on the right side and P4 only on the left, LACM (CIT) 2990.

Remarks.—This specimen is referred provisionally to *E. grandis*. The dentition is larger and heavier, and the ridges and depressions on the dorsal surface of the rostrum are more pronounced than in Recent *E. fuscus*. The P4-M3 length is 6.1 (approximately 6.1 in the holotype of *grandis*, less in *fuscus*); least interorbital constriction, 4.2 (4.3 in the holotype of *grandis*, more in *fuscus*); breadth of rostrum between infraorbital canals, 6.4; breadth across P4, 7.3.

TABLE 1.—Cranial measurements of two species of *Desmodus*.

| Catalogue number or number of specimens averaged | Greatest length of skull | Condylobasal length | Zygomatic breadth | Breadth of braincase | Least interorbital constriction | Breadth of foramen magnum |
|--|--------------------------|---------------------|-------------------|----------------------|---------------------------------|---------------------------|
| <i>Desmodus rotundus murinus</i>, La Mula, 13 mi. N Jaumave, Tamaulipas | | | | | | |
| 10 (3 σ , 7 f) Ave. | 24.3 | 21.4 | 12.0 | 12.1 | 5.5 | 5.2 |
| Max. | 24.9 | 22.0 | 12.5 | 12.5 | 5.6 | 5.3 |
| Min. | 23.9 | 21.0 | 11.7 | 11.9 | 5.3 | 5.1 |
| <i>Desmodus stocki</i>, San Josecito Cave, Nuevo León | | | | | | |
| 2946 | 27.3 | 24.5 | | 14.2 | 6.1 | 5.8 |
| 2947 | | | | 13.6 | | 5.7 |
| 2948 | | 24.3 | | 13.9 | 6.2 | 5.3 |
| 2949 | | 24.7 | | 13.9 | 6.1 | 5.5 |
| 2950 | | | 14.1 | 13.5 | | 5.7 |
| 3127 | | | | 13.5 | 6.0 | 5.7 |
| 3128 | 26.5 | | | 13.5 | 6.2 | 5.5 |

| | | | | | |
|-------------|------|------|------|------|-----|
| 3129 (type) | 28.2 | 24.5 | 13.7 | 5.9 | 5.7 |
| 3940 | 27.4 | 24.4 | 13.8 | 6.2 | |
| 3941 | | 24.6 | 14.0 | 13.7 | 6.0 |

Brown (1908:174) originally named *grandis* as a subspecies of *fuscus*. Gidley and Gazin (1938:11) considered it a distinct species. Whether *grandis* is only a subspecies of *E. fuscus* or a separate species, *grandis* is closely related to *fuscus*, and probably is ancestral to it.

***Lasiurus cinereus* (Palisot de Beauvois)**

Referred material.—One cranium, lacking basioccipital, tympanic and mastoid regions, and most of the dentition, having only M3 on the right side and M2-M3 on the left, LACM (CIT) 3160.

Remarks.—The cranium of No. 3160 is inseparable from those of 10 spring-taken specimens of *L. c. cinereus* from the San Gabriel Mts., Los Angeles Co., California (KU 49727, 49729-37). Measurements of No. 3160, followed by the average and extremes (in parentheses) of the Californian series, are: Condylbasal length, 16.1, 16.5 (15.9-17.2); zygomatic breadth, 12.3, 12.4 (12.0-12.7); least interorbital constriction, 5.2, 5.4 (5.2-5.6); breadth of braincase, 8.7, 9.0 (8.5-9.3); length of palate not including terminal spine, 5.1, 5.3 (4.8-5.9). The teeth of the San Josecito specimen are comparatively unworn. A label with the skull bears the notation "talus" in parentheses, which, in so far as I am able to determine, indicates surface talus inside the cave. Therefore, the specimen in question may be of Recent origin.

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It is perhaps worthy of note that *Lasiurus cinereus* is primarily a tree-dwelling bat, although a few Recent specimens have been reported from caves (see Beer, 1954:116).

***Corynorhinus tetralophodon* Handley**

A single cranium of a *Corynorhinus* LACM (CIT) 2989 was included in the original materials sent to Kansas by Professor Stock. Subsequently, this specimen was loaned to Charles O. Handley, Jr., who described it as a new species, *C. tetralophodon*. The latter is said to differ from all other plecotine bats by the retention of a well-developed fourth commissure (ridge extending posteroexternally from metacone) on the M3 (Handley, 1955:48).

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