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A PLEISTOCENE VAMPIRE BAT (*Desmodus stocki*)
FROM POTTER CREEK CAVE,
SHASTA COUNTY, CALIFORNIA

by
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The range of Recent and previously known fossil vampire bats, Desmodontidae, does not extend farther north than 30° north latitude or farther west than 113° west longitude (Hall and Kelson, 1959). The discovery of Desmodus limb bones in the original 1902 and 1903 collections of W. J. Sinclair and E. L. Furlong from Potter Creek Cave, Shasta County, California, thus considerably extends the range of the genus to the north and west (Fig. 1). The Potter Creek Cave site, University of California Museum of Paleontology locality 1055, is at an elevation of 1500 ft., 40° 47' 02" north and 122° 16' 51" west, and presently within the Transition life zone. Although several extinct late Pleistocene (Rancholabrean) taxa are reported from this site by Sinclair (1904, 1905), Miller (1911), and Stock (1918), most of the non-extinct fauna still lives in the area.

The Desmodus material, UCMP 4017 (Fig. 2), from Potter Creek Cave consists of seven humeri, most are partly damaged. Although the means of the measurements of the humeri (Table 1) from Potter Creek Cave average slightly greater than those from other Pleistocene localities, I could detect no morphological differences among the various Pleistocene forms.

Two extinct species of Desmodus have been described from the late Pleistocene deposits of North America: D. stocki Jones (1958) from Nuevo León, Mexico, and D. magnus Gut (1959) from central Florida. Both species are larger than the only living species of D. rotundus (Geoffroy St. Hilaire). The description of D. magnus was submitted only eleven days after that of D. stocki and neither author was apparently aware of the other's work. Olsen (1960) attempted to distinguish D. magnus from D. stocki on additional material of the former,

but he did not compare his material with actual specimens of D. stocki. He assumed that D. stocki resembled D. rotundus in the skull features. Thus, the distinctiveness of D. magnus cannot be considered as demonstrated.

Comparison of the type skull of D. stocki, Los Angeles County Museum No. 2129, with Olsen's description and figures of the skull of D. magnus indicate the following similarities. The glenoid fossae are relatively as large, and the step or swelling at the point of fusion between the basisphenoid and basioccipital is as great. The foramen hypoglossi are equally well pronounced. I had difficulty in determining the "decided ventral deflection" of the paroccipital process in the specimen of D. rotundus that I examined. The differences between the living and fossil forms seem rather subjective and are not apparent in Olsen's figures

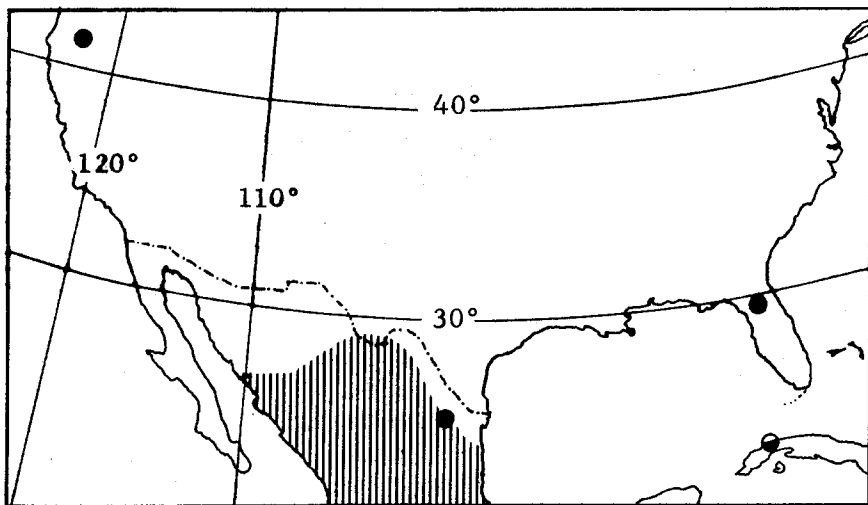


Figure 1 - Distribution of fossil and Recent Desmodus in North America. Shaded area indicates the geographic range of Recent D. rotundus; closed circles indicate D. stocki localities; the half closed circle indicates locality of extinct Cuban D. rotundus population.

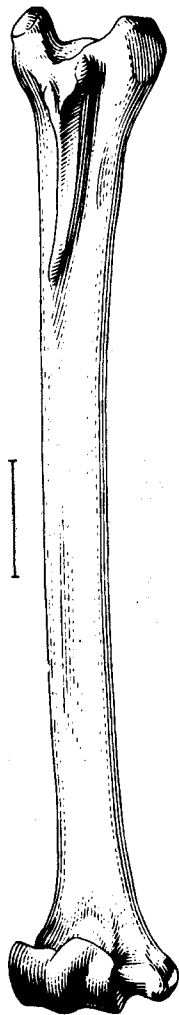


Figure 2 - Desmodus stocki, UCMP 4017, right humerus with small areas of the deltoid crest restored from other specimens. Anterior view. Potter Creek Cave, Shasta County, California. Scale equals five millimeters.

TABLE 1

Measurements of the humeri of Desmodus stocki in millimeters.

Measurement	California Potter Creek Cave			Nuevo León San Josecito Cave			Florida Reddick		
	Mean	(Range)	No.	Mean	(Range)	No.	Mean	(Range)	No.
Length	43.8*		1	43.63	(39.3-47.5)	42	41.14	(38.5-53.5)	21
Proximal width	6.77	(6.75, 6.8)	2	6.27	(5.8-6.8)	47	6.43	(6.1-6.9)	46
Distal width	6.95	(6.5-7.1)	5	6.78	(6.4-7.3)	52	6.69	(6.3-7.3)	66
Medial width	2.67	(2.5-2.8)	7	2.52	(2.0-2.9)	56	2.67	(2.4-2.9)	49

*Two other specimens were damaged but both were over 42.0 mm. as preserved.

Highlighted text should
read 43.5

of D. magnus. The mastoid and paroccipital processes of the D. stocki specimen are damaged and thus not comparable.

Considering the known similarities between the fossil forms, there seems little reason to retain D. magnus as distinct from D. stocki. The known Pleistocene continental forms may thus be considered as single species on the basis of size and a few skull features. The Potter Creek Cave Desmodus is referred to D. stocki on the basis of size.

Some confusion has arisen in the literature as to the exact localities of specimens of the Florida Desmodus. Brodkorb (1959) listed Desmodus, n. sp., from Arredondo and referred to Gut, in press at that time. Gut (1959) in describing the new species, D. magnus, designated as the holotype a specimen from Reddick and referred a humerus from Haile to the new species. Gut made no mention of any specimens from Arredondo. Olsen (1960) stated: "However, the Florida vampire, Desmodus magnus, is known only from a Pleistocene cave in Marion County near Reddick, Florida (Gut, 1959). Although well known Pleistocene deposits are present in Sabertooth Cave, a few miles to the south and Haile and Arredondo, a few miles to the north, none of these localities has yielded up a single bone collected from these sites." This statement is, in part, in direct contradiction to previous reports. In examining collections from Arredondo II and Haile XIB, I found additional material of Desmodus. This material as well as additional material donated by Gut from both Reddick and Arredondo is preserved in the collections of the Florida State Museum in Gainesville. Desmodus stocki thus seems to be of common occurrence in the late Pleistocene cave and fissure deposits of Florida and more widely distributed in North America than previously suspected.

I wish to thank Dr. J. R. Macdonald for the loan of the type specimen and limb bones of Desmodus stocki, and R. Wolff for photographic assistance. Figure 1 is by Mr. Owen J. Poe.

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