MAMMALIAN SPECIES No. 32, pp. 1–2, 2 figs.

# Hylonycteris underwoodi.

By J. Knox Jones, Jr., and Jacqueline A. Homan

Published 2 May 1974 by The American Society of Mammalogists

## *Hylonycteris* Thomas, 1903

*Hylonycteris* Thomas, 1903:286. Type species *Hylonycteris underwoodi* Thomas.

**CONTEXT AND CONTENT.** Order Chiroptera, Family Phyllostomatidae, Subfamily Glossophaginae. The genus *Hylonycteris* is monotypic.

## *Hylonycteris underwoodi* Thomas, 1903

*Hylonycteris underwoodi* Thomas, 1903:286. Type locality Rancho Redondo, San José, Costa Rica.

**CONTEXT AND CONTENT.** See generic summary above. Two subspecies of *Hylonycteris underwoodi* currently are recognized:

*H. u. underwoodi* Thomas, 1903:286, see above.

*H. u. minor* Phillips and Jones, 1971:77. Type locality 10 mi. SE Tuxpan, 4200 ft., Jalisco.

**DIAGNOSIS.** Inasmuch as the genus is monotypic, the diagnosis applies to both genus and species. Overall size small for glossophagines; tail short, all but tip encased in uropatagium; muzzle moderately long; ears small, more or less rounded; color brownish black on dorsum, slightly paler on venter, tips of dorsal hairs dark, paler proximally, bases dark in some specimens, resulting in a bicolored or tricolored appearance when pelage is parted. Skull relatively small, delicate, zygomatic arches incomplete (figure 1); resembles that of *Choeroniscus* except that pterygoids short and not in contact with auditory bullae; dental formula, i 2/0, c 1/1, p 2/3, m 3/3, total 30; upper incisors small and not in contact; canines simple, narrow; premolars relatively high, not in contact, P3 slightly smaller than P4, first two lower premolars smaller than p4; molars widely spaced above, uncrowded and usually not in contact below. For details see Thomas (1903: 286–287), Miller (1907:142), and Phillips (1971:82–84).

**GENERAL CHARACTERS.** Females of *Hylonycteris underwoodi* average larger than do males and individuals representing *H. u. minor* from the northern part of the range of the species are smaller than those from the south.

Mean and extreme measurements (in millimeters) of 14 males and seven females of *H. u. underwoodi* from Costa Rica (Gardner *et al.*, 1970:719) are, respectively: length of forearm, 32.7 (31.9 to 33.6), 33.1 (31.5 to 34.2); greatest length of skull, 21.3 (20.8 to 22.2), 21.8 (21.1 to 22.8, six specimens only); condylobasal length, 20.4 (20.0 to 21.3), 21.0 (20.3 to 21.7, six specimens only), zygomatic breadth, 8.4 (8.1 to 8.8), 8.7 (8.5 to 8.8, four specimens only); breadth of braincase, 8.4 (8.0 to 8.7), 8.3 (8.1 to 8.8); postorbital constriction, 4.1 (3.9 to 4.3), 4.0 (3.8 to 4.3); breadth across M3-M3, 4.4 (4.1 to 4.6), 4.3 (3.9 to 4.9); length of maxillary toothrow, 7.2 (6.8 to 7.8), 7.6 (7.1 to 8.0); length of mandibular toothrow, 7.6 (7.2 to 8.3), 7.9 (7.5 to 8.4). Total length of three females from Costa Rica averaged 67.0 (65 to 70); six males weighed an average of 6.6 (6.0 to 7.0) g, whereas two females weighed 8.0 and 9.0.

Mean and extreme measurements of four males and six females of *H. u. minor* from Jalisco (Phillips and Jones, 1971: 77) are, respectively: length of forearm, 32.0 (31.4 to 33.1), 34.1 (32.8 to 35.9); greatest length of skull, 20.3 (20.2 to 20.5), 21.0 (20.6 to 21.7); breadth of braincase, 8.2 (8.1 to 8.3), 8.3 (8.2 to 8.6); least interorbital breadth, 3.4 (3.3 to 3.5), 3.6 (3.4 to 3.7); mastoid breadth, 8.1 (8.0 to 8.4), 8.3 (8.0 to 8.5); length of maxillary toothrow, 6.9 (6.8 to 7.1), 7.4 (7.1 to 7.6). For additional measurements, see especially Davis and Carter (1962:70), Jones (1964:511), and Goodwin (1969:68).

**DISTRIBUTION.** This long-tongued bat is restricted in distribution to Middle America, having been recorded from the Mexican states of Chiapas, Jalisco, Oaxaca, Tabasco, and Veracruz, and from Guatemala, Costa Rica, and western Panamá (see figure 2). The known altitudinal range is from near sea level in Costa Rica (50 m) and Guatemala (75 m) up to 6300 ft (*ca.* 1940 m) in Jalisco and 8600 ft (*ca.* 2640 m) in Costa Rica.

**FORM AND FUNCTION.** Aside from Phillips' (1971: 82–84) detailed description of the dentition of *Hylonycteris underwoodi*, virtually nothing has been published on form or function. Phillips found no developmental dental abnormalities in 24 specimens, but noted teeth lost in life in two individuals. Various authors have regarded *Hylonycteris* as closely related to *Choeronycteris* and *Choeroniscus*; Phillips (1971: 128, 130), however, regarded the genus as allied with *Scleronycteris*, *Lichonycteris*, and, more distantly, *Platalina* in his "*Glossophaga* group," principally on the basis of dental characteristics.

**REPRODUCTION.** Females bear a single young. Carter *et al.* (1966:493) reported a lactating female obtained on 2 March in Guatemala; Phillips and Jones (1971:79) recorded three pregnant females taken in early September in Jalisco with embryos measuring (crown-rump) 14, 18, and 21 mm. A male with "small testes" was taken on 12 December

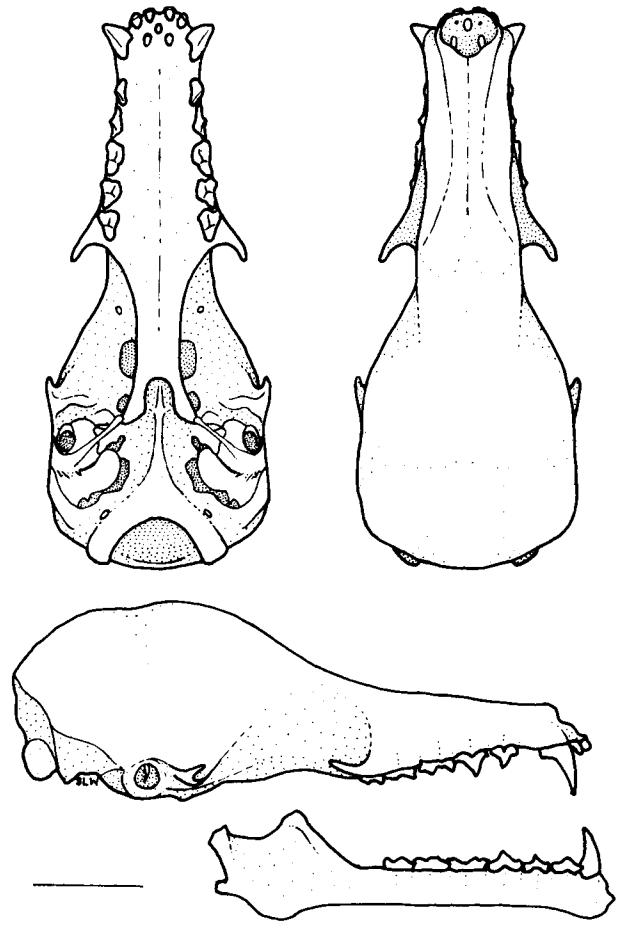

FIGURE 1. Dorsal, ventral, and lateral views of skull of *Hylonycteris underwoodi underwoodi*, female, from 1 mi. W Vara Blanca, Heredia, Costa Rica (Texas Tech Univ. no. 13142). Line at bottom represents 5 mm. Illustration by Stephen L. Williams.

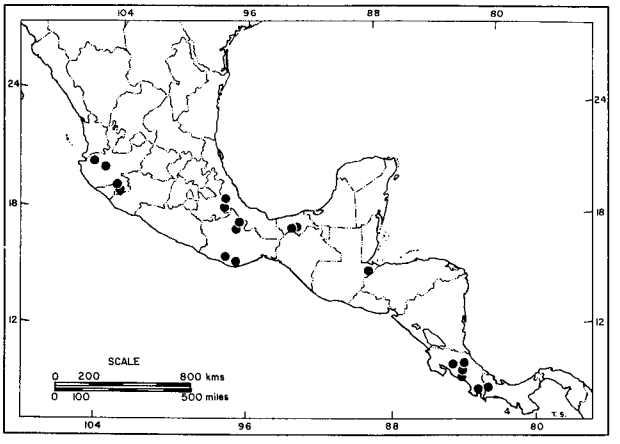


FIGURE 2. Known distribution of *Hylonycteris underwoodi*. Localities plotted in Jalisco and southern Oaxaca refer to the subspecies *minor*; the remainder represent records for the subspecies *underwoodi*. Modified after Phillips and Jones (1971: 79).

in Veracruz (Hall and Dalquest, 1963:229), whereas three collected in Costa Rica in February and one each in April and July (Gardner *et al.*, 1970:719) had "moderately enlarged testes (averaging 2.7 × 2.3)."

**ECOLOGY.** *Hylonycteris underwoodi* generally is regarded as a pollen-feeding and nectar-feeding bat, although Walker *et al.* (1964:293) supposed that it also eats fruit and some insects. Goodwin (1946:314) noted that this bat "roosts in caves or tunnels but apparently in very small colonies." He cited no evidence, however.

In Veracruz, specimens have been taken in "a cave or mine tunnel" (Allen, 1942:97), in a tunnel under a power plant (Davis and Carter, 1962:69), in mist nets in cloud forest (Jones, 1964:511), and in a small cave in a barranca (Hall and Dalquest, 1963:229). In the latter instance, four or five individuals were found "behind a ledge, clinging to the highest, darkest place." A female from Guatemala was caught in a mist net near an unidentified plant bearing night-blooming flowers along with two kinds of *Glossophaga*, *Lichonycteris obscura*, and several common bat species (Carter *et al.*, 1966: 493). In Costa Rica, Gardner *et al.* (1970) reported netting *H. underwoodi* in a variety of forested areas, frequently over or near water, and in a banana grove.

As pointed out by Baker and Womochel (1966:306), the distribution of *H. underwoodi* "in Veracruz and Oaxaca seems to be divided into a Gulf-side population and a Pacific-side population, with the bats being taken in tropical vegetation on the seaward mountain slopes." In southern Oaxaca, Davis and Carter (1962:69) reported a male and female taken in a highway culvert in cut-over deciduous forest; two males reported by Baker and Womochel (*loc. cit.*) have specimen labels that bear the notation "mist net in pine-oak," but were obtained on a hillside not far above humid, tropical forest. All specimens presently known from Jalisco were captured in mist nets (Watkins *et al.*, 1972:14–15) over a small stream lined with dense vegetation, under deciduous trees in a canyon below oak-covered hillsides, over a creek where the deciduous trees that lined the bank formed a complete canopy in some places, or over a creek lined with dense tropical deciduous forest. Other bats netted with *Hylonycteris* in Jalisco included *Pteronotus davyi, P. parnellii, Glossophaga soricina, Leptonycteris sanborni, Anoura geoffroyi, Sturnira lilium, S. ludovici, Artibeus jamaicensis, A. lituratus, A. phaeotis, A. toltecus, Chiroderma salvini, Desmodus rotundus, Myotis californicus, Eptesicus furinalis,* and *E. fuscus.*

Hall and Dalquest (1963:229) reported finding no ectoparasites on a male from Veracruz. In two stomachs examined from Chiapas, Alvarez and Gonzalez Quintero (1970:151) found that pollen of *Lonchocarpus* made up 99.8% of the contents, along with trace amounts of *Agave* and *Pinus* pollen.

**GENETICS.** According to Baker (1973) *H. underwoodi* has a 2*N* complement of 16 chromosomes and a fundamental number of 24 chromosomal arms.

**REMARKS.** Only about 50 specimens of Underwood's long-tongued bat, or long-nosed bat, are on record. The species is unrecorded for vast areas of Middle America (the region from southern Guatemala, through El Salvador, Honduras, and Nicaragua, for example) in at least some of which it presumably occurs.

**ETYMOLOGY.** The generic name *Hylonycteris* is formed from two Greek words meaning forest and bat. The specific name *underwoodi* honors C. F. Underwood, who collected the specimens on which Thomas based the original description of the genus and species. The subspecific name *minor* relates to the small size of the northern population.

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J. K. JONES, JR., AND J. A. HOMAN, THE MUSEUM AND DEPARTMENT OF BIOLOGICAL SCIENCES, TEXAS TECH UNIVERSITY, LUBBOCK, 79409.