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THE STATUS OF THE BAT *MYOTIS VELIFER COBANENSIS* GOODWIN

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Myotis velifer cobanensis Goodwin (Amer. Mus. Nov. No. 1744: 2, 1955) was described from an individual taken in Cobán, Guatemala, and was characterized by small size, dark color, second lower premolar crowded between the first and third premolars, overlapping lower incisors, and distinct cranial characters.

The questions that immediately arise are the following: Are the previously recorded specimens from Guatemala *Myotis velifer velifer* J. A. Allen, 1890, or *Myotis velifer cobanensis* Goodwin, 1955? If both subspecies occur in Guatemala what is their distribution, and what is the evidence that they are subspecies? Is the single individual a small specimen of *M. v. velifer?*

The study of the available material of *M. velifer* from Southern México and Guatemala, including the type and topotypes of *M. v. velifer*, clearly indicates that *Myotis velifer velifer* occurs in Guatemala. The probable distribution of this bat throughout the southern highlands of México and in Guatemala is outlined in Figure 7. The Guatemalan records indicated represent the southernmost known limits of the range of *M. velifer.* I find the specimens from Panajachél, Chocoyos, and Santa Clara, in Guatemala, indistinguishable in size and color from specimens of *M. v. velifer* from La Palma, Tancítaro, and Pátzcuaro in Michoacán, México. In forearm size, for example, 64 specimens from Chocoyos, Guatemala, average 45.0 mm with a range from 42.0 mm to 47.1 mm, while a series of 60 specimens from La Palma, Michoacán, México, averages 44.3 mm and ranges from 42.1 mm to 47.1 mm. Forearm measurements of the Santa Clara specimens are 44.2 mm, 44.5 mm, and 45.4 mm. In skull size no significant difference is seen between the Mexican and the Guatemalan specimens. Six skulls from western Guatemala average 16.5 mm in greatest length, ranging from 16.3 to 16.9 mm. The single skull available (cleaned) from Santa Clara measures 17.0 mm.

The Guatemalan specimens agree with the Mexican *M. v. velifer* in color and size rather than with *M. v. cobanensis* (forearm 41.1 mm, greatest length of skull, 15.4 mm). It is of interest that even the three

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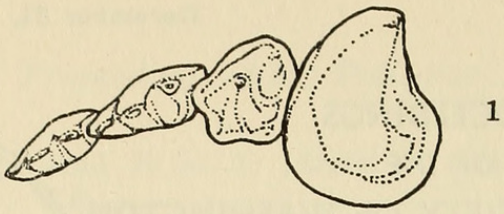

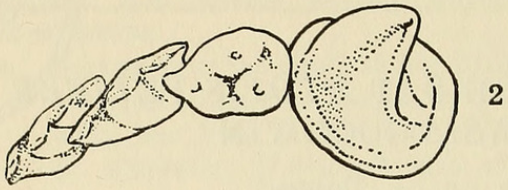

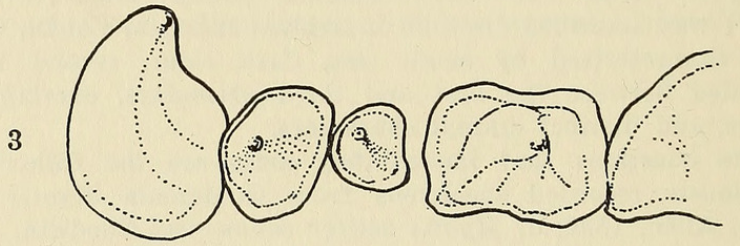

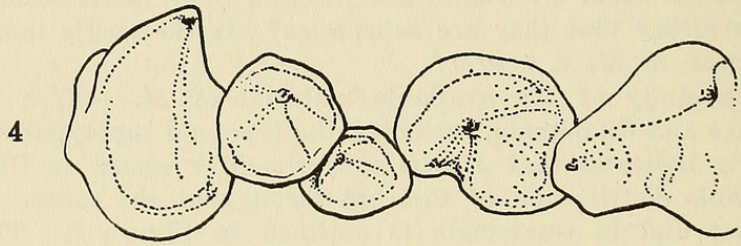

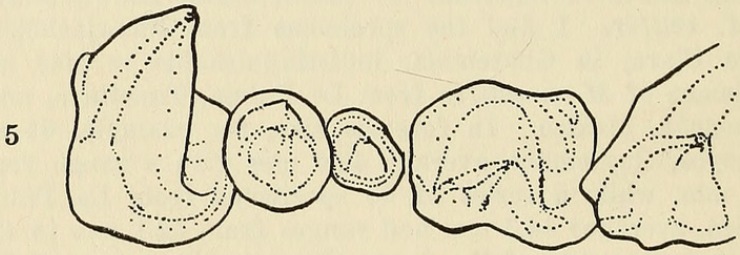

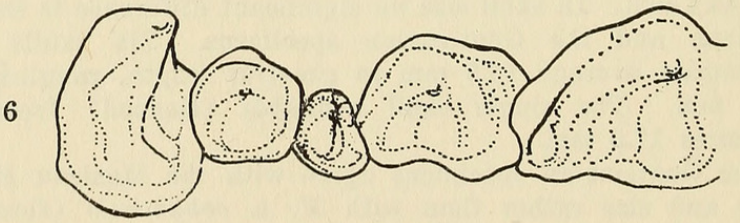

Figures 1-6. Individual variation in position of right lower incisors and right second lower premolar in specimens of *Myotis velifer velifer* from Michoacán, México (Figs. 1-4), and from Chocoyos, Guatemala (Figs, 5, 6). Drawings by E. John Pfiffner, approximately X 10.

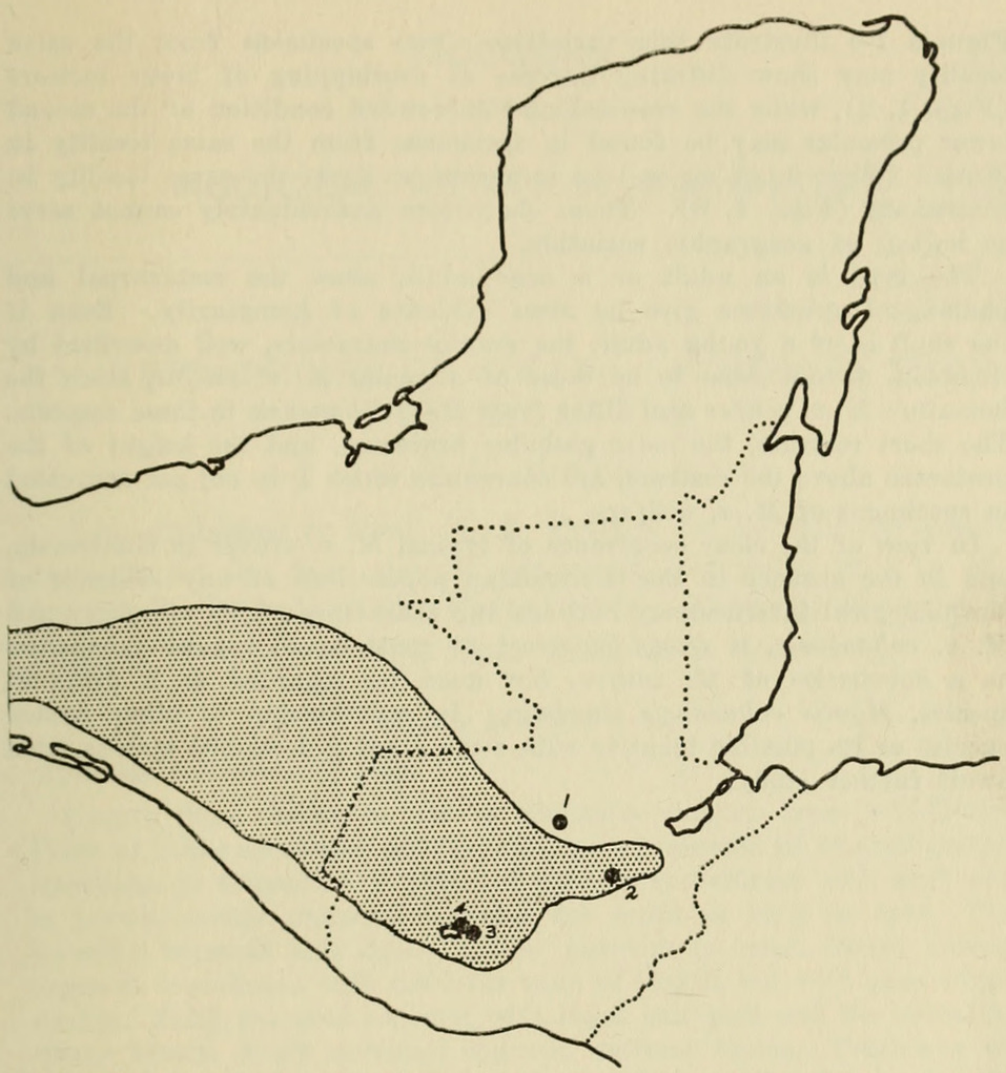

Figure 7. Guatemalan locality records of *Myotis velifer velifer*, and the type locality of *Myotis velifer cobanensis*. 1. Cobán, Alta Verapáz (type locality of *M. v. cobanensis*). 2. Santa Clara, Zacapa. 3. Chocoyos, Chimaltenango. 4. Panajachél, Sololá.

specimens from Santa Clara, a locality but 50 miles southeast of Cobán (see Fig. 7), show no approach nor gradation toward the characters of *cobanensis*. In fact, one skin from this locality is the lightest of the Guatemalan series. Thus, in the absence of a gradation in morphology, one can only doubt that a genetic connection exists.

The type specimen of *cobanensis* was later examined and compared with adult and immature individuals of *M. v. velifer*. My measurements of the type, in millimeters, are as follows: Forearm, including carpals, 41.1; metacarpal III, including carpals, 39.3; foot, 9.9 tibia, 15.6; greatest length of skull, 15.4; condylobasal length of skull, 14.1; mastoid breadth, 7.8; palatilar length, 6.5; postorbital constriction, 3.8; braincase breadth, 7.2; greatest breadth across molars, including molars, 6.3; maxillary tooth row, 6.2; mandibular tooth row, 6.6; greatest length of mandible, 11.4.

The dental characters pointed out as distinguishing this type specimen from *M. v. velifer* are extremely variable in any population of *M. velifer*.

Figures 1-6 illustrate this variation. Two specimens from the same locality may show differing degrees of overlapping of lower incisors (Figs. 1, 2), while the crowded and uncrowded condition of the second lower premolar may be found in specimens from the same locality in México (Figs. 3, 4) as well as in specimens from the same locality in Guatemala (Figs. 5, 6). These characters unfortunately cannot serve as indices of geographic variation.

The type is an adult or a near adult, since the metacarpal and phalangeal epiphyses give no clear evidence of immaturity. Even if the skull is of a young adult, the cranial characters, well described by Goodwin, do not seem to be those of a young *M. v. velifer,* since the immature *M. v. velifer* also differ from *M. v. cobanensis* in these respects. The short rostrum, the more globular braincase, and the height of the braincase above the rostrum, are characters which I do not see expressed in specimens of *M. v. velifer.*

In view of the clear occurrence of typical *M. v. velifer* in Guatemala, and in the absence in the Guatemalan populations of any evidence of morphological intermediacy between the characters of *M. v. velifer* and *M. v. cobanensis,* it seems incorrect to continue to regard *cobanensis* as a subspecies of *M. velifer,* but must be regarded as a different species, *Myotis cobanensis* Goodwin. Its relationship to other named species or its possible identity with some already described species must await further study.