NOTEWORTHY RECORD OF THE WESTERN SMALL-FOOTED MYOTIS (MAMMALIA: CHIROPTERA: *MYOTIS CILIOLABRUM*)

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Myotis ciliolabrum is known to be distributed from British Columbia, Alberta, and Saskatchewan, Canada, south through the western United States, and well into Mexico, primarily along the Sierra Madre Occidental (Hall, 1981; van Zyll de Jong, 1984). In northern Mexico, the distribution ranges from Baja California Norte (Huey, 1964) to Chihuahua (Anderson, 1972) and Coahuila (Easterla and Baccus, 1973). At its southern limits, the distribution of *M. ciliolabrum* has been thought to be much narrower, and confined to high plateau and mountainous regions of Zacatecas (Best et al., 1972; Matson and Baker, 1986). We report herein on two specimens likely representing a population in the central portion of the Transverse Volcanic Range of Mexico, thus expanding both the known distribution and the biotic province associations of this temperate-zone bat species.

On 28 January 1984, an adult female [Universidad Autónoma Metropolitana-Iztapalapa (UAMI) 4738] *Myotis ciliolabrum* was netted over a pond at Tecomalucan 10 km E Tlaxco, Tlaxcala, 2,900 m, Mexico. On 25 April 1984, an adult male (UAMI 5237) was collected at essentially the same locality, but in a forested area on a nearby mountain at 3,220 m, in an abandoned man-made tunnel entrance. The external and cranial measurements (in mm except where noted) for the female, followed by those of the male, are as follows: total length, 85, 85; length of tail, 40, 40; length of hind foot, 7, 7; length of ear from notch, 14, 17; length of forearm, 32.4, 33.0; weight, 4.4 g, 5.0 g; greatest length of skull, 13.9, 14.5; condylocanine length, 12.3, 13.1; breadth of braincase, 6.3, 6.4; interorbital breadth, 3.3, 3.2; length of maxillary toothrow, 5.1, 5.5.

Because these two individuals represent both sexes, and are from different times of the year, it is likely that they represent a heretofore undetected population of *M. ciliolabrum*. These new records are the southernmost for the species, and extend the known distribution about 148 km E and 103 km S from the previous southernmost locality (10 mi NW Yahualica, 7,100 ft.—Matson and Baker, 1986). More importantly, these are the first southern records of this species from a mountain association other than the Sierra Madre Occidental. Considerable collecting has been conducted by several workers in the region where the Transverse Volcanic Range and the Sierra Madre Occidental abut (e.g., Alvarez, 1969; Kennedy et al., 1984; Polaco and Muñiz M., 1987). However, no specimens of *M. ciliolabrum* have been reported from this region or any other area between Zacatecas and Tlaxcala. Thus, it is tempting to conclude, at least provisionally, that our specimens represent a disjunct population. If so, then this population could be a Pleistocene relict. Other possibilities are that it is the result of pre- or post-Columbian human modifications of habitat corridors or the result of some other fragmentation mechanism, including dispersal. At present, we have no way of determining the genetic or morphometric affinities of this population, nor even of being certain that it is disjunct. There continues to be a need for intensive biotic survey and inventory studies in this region.

Nothwithstanding the probable disjunct nature of this population from others of *M. ciliolabrum*, these two specimens appear to be clearly referable to *Myotis ciliolabrum melanorhinus*.

LITERATURE CITED

ALVAREZ, T. 1969. Notas sobre una colección de mamíferos de la región costera del Río Balsas entre Michoacán y Guerrero. Rev. Soc. Méx. Hist. Nat., 29:21–35.

ANDERSON, S. 1972. Mammals of Chihuahua: taxonomy and distribution. Bull. Amer. Mus. Nat. Hist., 148:149–410.

BEST, T. L., J. K. GREER, AND F. F. B. ELDER. 1972. Two bat records from Zacatecas, Mexico. Southwestern Nat., 17:97–98.

EASTERLA, D. A., AND J. BACCUS. 1973. A collection of bats from the Fronteriza Mountains, Coahuila, Mexico. Southwestern Nat., 17:424–427.

HALL, E. R. 1981. The Mammals of North America. Second ed. John Wiley & Sons, New York.

HUEY, L. M. 1964. The mammals of Baja California, Mexico. Trans. San Diego Soc. Nat. Hist., 13:85–168.

KENNEDY, M. L., T. L. BEST, AND M. J. HARVEY. 1984. Bats of Colima, Mexico. Mammalia, 48: 397–408.

MATSON, J. O., AND R. H. BAKER. 1986. Mammals of Zacatecas. Spec. Publ. Mus., Texas Tech Univ., 24:1–88.

POLACO, O. J., AND R. MUÑIZ M. 1987. Los murciélagos de la costa del Michoacán, México. An. Esc. Nac. Cienc. Biol., México, 31:68–89.

VAN ZYLL DE JONG, C. G. 1984. Taxonomic relationships of Nearctic small-footed bats of the *Myotis leibii* group (Chiroptera: Vespertilionidae). Canadian J. Zool., 63:2519–2526.

LONGEVITY OF ILLINOIS BUNDLE FLOWER (*DESMANTHUS ILLINOENSIS*) SEEDS

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Illinois bundle flower (*Desmanthus illinoensis* (Michx.) MacM.) is an important native legume that is readily eaten by all classes of livestock and is frequently used in range revegetation programs (McGregor, 1986). This species is widely, but sparsely, distributed throughout midwestern and southeastern United States (Latting, 1961).

Seeds germinate readily soon after maturity, but seed coats become quite impermeable on most seeds within a few months. A series of seeds was collected in the autumn of 1961 from various sites (Table 1). Seeds were stored at room temperatures (18 to 24°C) in an office cabinet with no attempts made to protect them from insects, molds, etc. until 1992.

In 1992, 200 well-developed and undamaged seeds were selected from each locality. Experimental seeds (n = 100) were scarified by cutting off a small piece of the chalazal end with a razor blade, while the control seeds (n = 100) were left intact. Seeds were then placed in Petri dishes (25 seeds per dish) between layers of filter paper, moistened with distilled water, and placed in a cabinet drawer for 7 days. The filter papers were kept moist during the 7-day period. Germination was assumed when the radicle was greater than 2 cm long. For control seeds, the number that germinated was noted as well as the number swollen but not germinating. For the experimental seeds, only the number germinating was recorded since all seeds had swollen.

The number of seeds that swelled but did not germinate indicates that the seed coats were permeable at least to water. It would appear that fewer embryos would survive over the years if the seed coats were permeable to moisture. This assumption was not borne out by the data (Table 1). The largest number of seeds germinating in the treated groups was from Nashville (89) while the smallest number of the controls was also from this group, thereby showing some correlation between seed-coat permeability and embryo viability. However, the Norman control group showed that 90 of the seeds had permeable seed coats and yet over one-half (48 out of 90) of the embryos were viable.

TABLE 1—Numbers of scarified and control seeds of *Desmanthus illinoensis* that were collected in 1961 and germinated when tested in 1992. For control seeds, parentheses show the numbers that swelled only. For all groups, n = 100.

Locality	Scarified	Control
Chicago[1]	60	11 (5)
Wolf Lake[1]	79	13 (2)
Nashville[2]	89	5 (4)
Tulsa[3]	68	43 (7)
Norman[3]	76	48 (42)

[1] Illinois.
[2] Tennessee.
[3] Oklahoma.