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NOTEWORTHY RECORDS OF MAMMALS FROM MICHOACÁN, MÉXICO

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Michoacán is located in west-central México, where there is extreme topographic variation. Thus, the state has a high diversity of climatic regions and vegetation types, and there is considerable interface or interdigitation between Nearctic and Neotropical biota. Of the ca. 450 species of terrestrial mammals recorded from México, Michoacán has 170 (38 percent, including the records cited herein), of which 23 percent are endemic to México. This state has received considerable attention from mammalogists (Hall and Villa R., 1950; Álvarez, 1968; Uribe et al., 1981; Sánchez Hernández et al., 1985; Polaco and Muñoz-Martínez, 1987; Huerta M., 1989; Sánchez Hernández et al., 1992; Núñez-Garduño et al., 1996), but knowledge about the distributions, habitat preferences, and reproduction for mammals from this state is still limited. In 1992 three of us (RDO, RLW, CSH) developed a plan to survey the small mammals of Michoacán. Preliminary collections had been made by CSH and some of his students since 1977, but intensive work did not begin until 1994 and 1995, when we made comprehensive field collections and examined specimens deposited at several museums in México and the United States. In this preliminary report we document seven new species for the state and provide additional records for

four other species. The new state records represent an increase of 4.3 percent above the previous number of 163 terrestrial species, indicating that the mammalian fauna for this region still deserves further investigation.

Specimens from existing museum collections are indicated by their catalog numbers and museum initials, as follows: FMNH, Field Museum of Natural History; KU, Museum of Natural History, University of Kansas; UMSNH, Universidad Michoacana de San Nicolás de Hidalgo; IBUN-AM, Instituto de Biología, Universidad Nacional Autónoma de México. Uncataloged specimens are listed by field catalog number, using the following initials for collector: AERM, Alberto Enrique Rojas-Martínez; ANG, Arturo Núñez-Garduño; CBCT, Catalina Beatriz Chávez-Tapia; CSH, Cornelio Sánchez-Hernández; DGR, David Garrido; MLRA, María de Lourdes Romero-Almaraz; RHM, René Hinojosa-Mercado. External, embryo, and testis measurements are in millimeters and mass is in grams.

Peropteryx macrotis macrotis (Wagner, 1843). Tancítaro, 19°20'45"N, 102°22'14"W. 1 female (FMNH 51431). This adult, lactating female was collected on 19 August 1940. This is the first record of *P. macrotis* from Michoacán, and the locality is 365 km NW of the nearest reported locality (5 km S Agua de Obispo, Guer-

rero; Jones and Dunnigan, 1965). Measurements: forearm, 40.8; tibia, 16.9.

Micronycteris sylvestris (Thomas, 1896). Municipio de Aquila, Los Tenamastes, 6 km NE Aquila, 246 m, 18°37'09"N, 103°29'15"W. 1 female (CBCT 319). One non-pregnant adult female was collected on 21 May 1977 in a net set over a dry water course, in tropical subdeciduous forest with rocky ground. This is the first record of *M. sylvestris* from the state and the locality is 80 km SE of the nearest previous locality (El Mixcoate, 9 km W Pueblo Juárez, Colima; Villa R., 1967). Measurements: total length, 63; tail, 7; hindfoot, 9; ear, 23; forearm, 43.9; third metacarpal, 40.0; tibia, 18.3.

Glossophaga commissarisi Gardner, 1962. minas Tiamaro, 4 km SE Lajas del Bosque, 990 to 1,010 m, 19°13'43"N, 100°28'39"W. 2 males (RHM 37, 42). 3 km NW (by road La Huacana-Pátzcuaro), La Huacana, 900 m, 18°56'54"N, 101°47'51"W. 1 female (MLRA 1974). 7 km SW (by road La Huacana-Zicuirán), La Huacana, 18°53'18"N, 101°58'30"W. 1 female (MLRA 2028). La Guagua, km 88 carretera Playa Azul-Tecomán, 80 m, 18°10'45"N, 103°00'42"W. 1 male (MLRA 238). At minas Tiamaro we collected two males on 12 July 1993, the first with inguinal testes (4 by 3), and the second with scrotal testes (5 by 2), in tropical subdeciduous forest. At 3 km NW La Huacana we caught a female with one embryo (7 by 7) on 16 July 1994, in a net placed in an orchard with mango, tamarindo, and guayabo trees. At 7 km SW La Huacana we caught a female with one embryo (7 by 3), on 19 July 1994. The specimen was captured in a culvert under the road where the surrounding vegetation was shrub with Leguminosae and second-growth vegetation. At La Guagua we caught one male with small testes (2 by 1), on 2 February 1987. This specimen was captured in a net placed over a river in tropical subdeciduous forest, where there are some houses with orchards. These records provide the first documentation of *G. commissarisi* from Michoacán, and the minas Tiamaro locality is 370 km E of the nearest previous locality (El Mixcoate, 9 km W Pueblo Juárez, Colima, 1,347 m; Ramírez-Pulido and Múdespacher, 1987). Measurements (two females followed by three males): total length, 57, 58, 57, 57, 61; tail, 7, 7, 6, 7, 7; hindfoot, 10, 9, 10, 10, 10; ear, 13, 12, 10, 14, 16; mass, 8.1, 7.1, 6.0, 6.5, 10.0. Measurements (two females followed by two

males): forearm, 32.3, 34.7, 33.0, 33.9; third metacarpal, 32.1, 32.7, 32.6, 33.5; tibia, 10.2, 13.5, 12.2, 14.2.

Glossophaga leachii Gray, 1844. Municipio de Aquila, 4 km N Ojo de Agua (by road), 40 m, 18°39'49"N, 103°40'10"W, 1 male (CSH 2308). minas Tiamaro, 4 km SE Lajas del Bosque, 990 to 1,010 m, 19°13'43"N, 100°28'39"W. 1 male (RHM 36). Cenobio Moreno, 525 m, 19°05'55"N, 102°29'59"W. 1 male (MLRA 2392). Apatzingán, 19°03'48"N, 102°19'38"W. 1 male (MLRA 2377). 8 km N La Huacana, 18°58'02"N, 101°48'56"W. 1 female (MLRA 2172). 3 km NW Huacana (by road La Huacana-Pátzcuaro), 900 m, 18°56'54"N, 101°47'51"W. 2 females, 1 male (MLRA 1986, 1988, 1992). municipio de Arteaga, rancho El Reparito (km 219 carretera Apatzingán-Playa Azul), 35 km NW presa El Infiernillo, 18°35'N, 101°55'W, 2 females (AERM 323, 326). Lázaro Cárdenas, 10 m, 17°57'29"N, 102°11'57"W. 1 male (DGR 83). At 4 km N Ojo de Agua we caught one male with inguinal testes (1 by 1) on 12 April 1977, in tropical semideciduous forest. At minas Tiamaro we caught one male with abdominal testes (3 by 2) on 12 July 1993, in tropical subdeciduous forest. At Cenobio Moreno we caught a male with small testes (2 by 1), on 9 January 1995, in tropical subdeciduous to semideciduous forest. At Apatzingán we caught one male with small testes (2 by 2), on 7 January 1994. The specimen was captured in a net placed over a stream bed in tropical subdeciduous forest. At 8 km N La Huacana we caught a female with one embryo (22 by 11) on 8 August 1995. This specimen was captured in a culvert under the road, in association with *Micronycteris megalotis*. At 3 km NW Huacana we caught two females and one male on 16 July and 18 July 1994, respectively. These included an immature female, a pregnant female with one embryo (4 by 3), and a male with abdominal testes (3 by 2). These specimens were captured together with *G. c. hespera*, which represents the first time these taxa have been taken together. At rancho El Reparito, we caught one female *G. leachii* with a female infant that was born the night of capture, on 18 November 1987, in tropical subdeciduous forest with cactus. At Lázaro Cárdenas, we caught one male with abdominal testes on 26 March 1979, in tropical subdeciduous forest. Although this species recently was reported from

Michoacán (González-Ruíz and Villalpando-R., 1997), our 11 specimens further indicate that the species is widely distributed across the southern half of the state. Measurements (means and ranges for four females and for six males, respectively): total length, 65.0 (62–71), 59.8 (54–67); tail, 6.0 (5–8), 6.2 (5–7); hindfoot, 9.2 (8–10), 8.8 (5–11); ear, 12.7 (11–14), 12.3 (10–15); mass, 9.2 (6.0–11.6), 7.7 (6.0–9.1); forearm, 33.5 (31.5–35.4), 34.3 (33.1–35.6). Measurements (means and ranges for four females and for four males, respectively): third metacarpal, 33.1 (31.4–35.3), 32.8 (32.2–34.9); tibia, 13.5 (12.6–14.6), 13.0 (12.7–13.5).

Myotis nigricans carteri LaVal, 1973. 1.6 km N Emiliano Zapata. 2 males (FMNH 150640, 150641). Michoacán. 1 female (UMSNH 1297). We examined two males from Emiliano Zapata that were collected on 17 May 1971, and one non-pregnant adult female, whose specimen tag shows “Michoacán” as the locality, collected on 11 June 1978. This species was known from Michoacán by one specimen (Polaco and Muñoz-Martínez, 1987; reported as *M. carteri*). These additional records suggest that, although uncommon, the species may be more widely distributed in the state than previously thought. Measurements (one female): forearm, 34.6; third metacarpal, 30.4; tibia, 14.9.

Molossus molossus (Pallas, 1766). 3 km NW Aguililla, 780 m, 18°45'19"N, 102°45'56"W. 1 female (RLW 868). One female was collected on 27 January 1995, in a net set over a swimming-pool near a stream. Other bats captured in the same net were *Glossophaga*, *Sturnira*, *Desmodus rotundus*, *Leptonycteris curasoe*, and *Artibeus jamaicensis*. This specimen represents the first *M. molossus* recorded from the state and is 170 km SE of the nearest previous locality (Tlapeixtes, 4 km NW Manzanillo, Colima; Gardner, 1966). Measurements: total length, 98; tail, 35; hindfoot, 8; ear, 12; mass, 13.2; forearm, 35.1; third metacarpal, 38.1; tibia, 11.1.

Orthogeomys grandis alleni Nelson and Goldman, 1930. Municipio de Aquila, Playa Colola, Rincón de Argumen, 18°17'45"N, 103°23'37"W. 2 males (UMSNH 909, 1987). municipio de Arteaga, 5.3 km N Arteaga, 900 m, 18°23'00"N, 102°15'10"W. 1 female (IBUNAM 37208). Municipio La Mira, 0.8 km E La Mira, 300 m, 18°02'15"N, 102°19'10"W. 1 female (KU 39807). We examined two males from Playa Colola, one with scrotal testes and one with inguinal

testes, that were collected on 24 October 1984 and 30 November 1985, respectively. At 5.3 km N Arteaga we collected a non-pregnant adult female on 3 May 1993. We also examined one female from 0.8 km E La Mira that had one embryo (19) when it was collected on 4 December 1950. This species was previously known from Michoacán (Genoways and Jones, 1969; Hafner, 1991), but the specimens from Playa Colola provide the nearest record to the coast. The vegetation of this locality is strongly altered (most is cultivated), and the ground is very rocky and hard. In 1991 and 1992 we again attempted to collect gophers at this locality. We obtained only hairs in traps, indicating that the population was still present at that time. Measurements (two females and two males): total length, 348, 372, 350, 365; tail, 112, 104, 115, 120; hindfoot, 48, 53, 50, 51; ear, 11, 13, —, —; mass, 550, —, —, —.

Perognathus flavus parviceps Baker, 1954. Municipio de Cuitzeo, 3 km W (by road) San Agustín del Pulque, 19°58'09"N, 101°04'42"W. 1 male (UMSNH 52). One adult male with inguinal testes was collected on 4 June 1978. This is the first record of *P. flavus* for the state. The locality is 70 km SW of the nearest previous locality (8 km E Celaya, Guanajuato; Baker, 1954). Although our locality is closer to the distribution of *P. f. medius* (Baker, 1954), the measurements of our specimen agree more closely with those for *P. f. parviceps*. Measurements: total length, 106; tail, 49; hindfoot, 17; ear, 7; greatest length of skull, 20.2; frontonasal length, 13.9; mastoidal breadth, 11.7; length of bulla, 7.8; interorbital breadth, 4.5; alveolar length of upper molariform toothrow, 3.0; interparietal width, 3.3.

Nyctomys sumichrasti colimensis Laurie, 1953. río Cachán, 20 m, 18°14'45"N, 103°15'04"W. 1 female, 2 males (CSH 4093, 4094, 4095). On 15 June 1980 we caught a pregnant female 1.8 m above the ground among the branches of a tree near a river in a tropical subdeciduous forest. During the night of capture the female gave birth to two males in the trap. This family was maintained in captivity for two months on a diet of rolled oats, banana, and apple. During this time the males reached the subadult stage of development with abdominal testes of 5 by 3 and 4 by 3 mm, respectively. These specimens are the first reported from Michoacán and the locality is 115 km SE of the nearest

previous locality (Pueblo Juárez, Colima; Laurie, 1953; Schaldach, 1960). Measurements (female and two subadult males): total length, 204, 170, 162; tail, 115, 92, 83; hindfoot, 21, 20, 17; ear, 18, 16, 17; mass, 27.5, 22.3, 17.6.

Neotoma mexicana torquata Ward, 1891. Estación de microondas La Piedad, Cerro Grande, 14 km NW La Piedad, 2,510 m, 20°18'15"N, 102°06'55"W. 2 females (MLRA 2609, 2612). Repetidora Urascato, 20 km S by carretera Zamora-Los Reyes then 2 km W, 2,270 m, 19°52'23"N, 102°25'42"W, 1 female, 1 male (MLRA 2634, 2635). 1.5 km E Queréndaro, 1,990 m, 19°48'22"N, 100°51'55"W. 1 female (MLRA 2584). Cerro El Tule, 15 km NW El Pueblito (by road), 3,100 m, 19°51'38"N, 101°54'33"W. 1 female (MLRA 2279). 13 km NW Quiroga (by road to Zacapu), 2,250 m, 19°42'54"N, 101°36'46"W, 1 female, 2 males (MLRA 2252, 2253, 2254). 8 km NW Quiroga (by road to Zacapu), 2,230 m, 19°41'31"N, 101°35'33"W. 1 female (MLRA 2230). At estación de microondas La Piedad, Cerro Grande, we collected two females on 23 May 1995, in an oak forest with an understory of shrubs and grasses, on rocky ground. Traps were placed at the bases of oak trees close to rocks. One female had two embryos (1 by 1). At Repetidora Urascato we collected a pre-reproductive adult female and an adult male (scrotal testes) on 25 May 1995, in pine-oak forest with an understory of shrubs and cacti (with much of the area burned). At 1.5 km E Queréndaro we collected a pre-reproductive adult female on 25 May 1995, in a shrub habitat with cactus and rocky ground. At Cerro El Tule we collected a lactating female on 3 January 1995, in pine-oak forest with grasses on rocky ground. At 13 km NW Quiroga we collected a lactating female and two males with scrotal testes (16 by 11 and 26 by 16), on 1 January 1995, in a pine-oak forest with rocky ground. At 8 km NW Quiroga we collected a lactating female on 31 December 1994, in a pine-oak forest with shrubs and grasses.

Although *N. mexicana tenuicauda* is known from Michoacán, our specimens constitute the first record from the state for *N. m. torquata*. The locality of Repetidora Urascato, in western Michoacán, extends the known distribution for this subspecies 275 km westward from the nearest previous locality (N slope volcán Nevado de Toluca, Estado de México; Goldman, 1910). Furthermore, this locality is well within the rec-

ognized distribution of *N. m. tenuicauda* (Hall, 1981). As Goldman (1910) noted, specimens of *N. m. torquata* are larger, the tail is thicker, and their color is more buffy ochraceous than in *N. m. tenuicauda*. The external distinctiveness of these two taxa, along with this new information indicating possible sympatry or parapatry, suggests that additional systematic work is needed to clarify their evolutionary and taxonomic relationships. Measurements (means and ranges for seven females and three males, respectively): total length, 322 (300–346), 336 (305–362); tail, 151 (124–170), 153 (143–158); hindfoot, 32 (30–34), 34 (32–35); ear, 26 (22–28), 27 (26–29); mass, 139 (111–158), 156 (101–200).

Spilogale pygmaea pygmaea Thomas, 1898. Municipio de Aguila, 500 m E El Faro, 18°21'00"N, 103°30'42"W. 1 male (UMSNH 1253). 2 km N, 2 km W Caleta de Campos, 50 m, 18°05'11"N, 102°46'38"W. 1 male (MLRA 1552). We collected a male with abdominal testes on 13 January 1990, at Municipio de Aguila, and another male on 3 January 1994, from Caleta de Campos. The second specimen was taken on a small hill near the coast, where dominant vegetation is second-growth tropical subdeciduous forest and the ground is very rocky. These localities are within the suspected distribution of this species, which extends from 17 km S Ciudad de Colima, Colima (Greer and Greer, 1970) southward to municipio de Acapulco, Puerto Marqués, Guerrero (López-Forment and Urbano-V., 1978), but they are the first documented records from Michoacán. On the basis of size, we allocate these specimens to *S. p. pygmaea*, but we recognize the need for additional taxonomic evaluation of this species. Measurements (of the second male): total length, 270; tail, 72; hindfoot, 33; ear, 23; mass, 186.5.

Resumen—Se aporta información para 11 especies de mamíferos del estado de Michoacán, sobre distribución, medidas, aspectos reproductores y hábitat. Siete especies son nuevos registros y representan el 4.3% de las 163 especies conocidas. *Peropteryx macrotis* y *Glossophaga commissarisi* amplían su distribución en aproximadamente 400 km. Las localidades de captura de *Glossophaga leachii* demuestran que tiene una amplia distribución en el centro-sur del estado. Cuatro registros se basan en un espécimen, lo que muestra que aún es poco lo que se conoce sobre los mamíferos de este estado.