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Peromyscus mexicanus (Rodentia: Cricetidae)

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Abstract: *Peromyscus mexicanus* (Saussure, 1860) is a medium-sized cricetid commonly called the Mexican deermouse. It is 1 of 56 species but can be readily distinguished from nearly all other species of *Peromyscus* by the near absence of hair on the tail. It is found from the tropical lowlands of Mexico to Panama and it exhibits geographic and seasonal variation in coat color. Its preferred habitat includes forested regions where it is often found in burrows beneath fallen logs and among the underbrush and roots of trees. *P. mexicanus* prefers deep forest to edge forest. The Mexican government does not consider this species as endangered. DOI: 10.1644/858.1.

Key words: cricetid, forest dweller, Mexican deermouse, Mexico, peromyscine, rodent

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Peromyscus mexicanus (Saussure, 1860)
Mexican Deermouse

H[*esperomys*]. *mexicanus* Saussure, 1860:103. Type locality "Mexico;" assumed to be vicinity of Mirador, Veracruz; restricted to "10 km E Mirador" by Dalquest (1950:8).

Hesperomys mexicanus: True, 1884:597. Name combination.

Hesperomys (*Vesperimus*?) *nudipes* J. A. Allen, 1891:213. Type locality "La Carpintera," Cartago, Costa Rica.

P[*eromyscus*]. *mexicanus*: Thomas, 1894:364. First use of current name combination.

Peromyscus mexicanus orizabae Merriam, 1898:121. Type locality "Orizaba, Vera Cruz, Mexico (alt. 4200 ft.)."

Peromyscus totontepecus Merriam, 1898:120. Type locality "Totontepec, Oaxaca, Mexico (alt. 6500 ft.)."

Peromyscus tehuantepecus Merriam, 1898:122. Type locality "Tehuantepec, Oaxaca, Mexico."

Peromyscus cacabatus Bangs, 1902:29. Type locality "Boquete, 5,000 ft.," Chiriquí, Panama.

Peromyscus banderanus angelensis Osgood, 1904:69. Type locality "Puerto Angel, Oaxaca, Mexico."

Peromyscus altilaneus Osgood, 1904:74. "Todos Santos, Guatemala (altitude 10,000 feet);" see "Nomenclatural Notes."

Peromyscus nicaraguae J. A. Allen, 1908:658. Type locality "Matagalpa (altitude about 4000 feet), Nicaragua."

Peromyscus mexicanus philombrius Dickey, 1928:4. Type locality "Los Esemiles, 8000 ft., Chalatenango, El Salvador."

Peromyscus mexicanus salvadorensis Dickey, 1928:4. Type locality "Mt. Cacaguatique, 3500 ft., San Miguel, El Salvador."

Peromyscus guatemalensis tropicalis Goodwin, 1932:3. Type locality "Chimoxan, Guatemala, 1500 feet elevation."

Peromyscus nudipes orientalis Goodwin, 1938:3. Type locality "El Sauce Peralta, Costa Rica, a farm on the Atlantic railroad, less than halfway from San José to Limon; altitude about 1000 feet."

Peromyscus nudipes hesperus Harris, 1940:1. Type locality "Hacienda Santa María, Province de Guanacaste, Costa

Fig. 1.—*Peromyscus mexicanus* drawn from an adult male (159,661; Museum of Vertebrate Zoology); from 8.8 miles SE (by road) Catemaco. Drawing by Oscar Armendariz.

Rica … about fifteen miles northeast of Liberia at an altitude of 3200 feet.''

Peromyscus banderanus sloeops Goodwin, 1955:2. Type locality ''Rio Mono Blanco, in the pine and oak woods, 25 kilometers northeast of Zanatepec, alititude about 3000 feet, District Juchitán, Oaxaca, México.''

Peromyscus megalops azulensis Goodwin, 1956:6. Type locality ''Cerro Azul, District of Juchitan, Oaxaca, Mexico. Altitude about 7000 feet.''

Peromyscus banderanus coatlanensis Goodwin, 1956:7. Type locality ''Agua Sarca [Agua Zarca], about 7 kilometers southwest of Coatlán, District of Tehuantepec, Oaxaca, México.''

Context and Content. Order Rodentia, suborder Myomorpha, superfamily Muroidea, family Cricetidae, subfamily Neotominae, tribe Reithrodontomyini (Musser and Carleton 2005), subgenus *Peromyscus*, species group *mexicanus*. Seven subspecies are recognized (Carleton 1989):

P. m. angelensis Osgood, 1904:69. See above.

P. m. azulensis Goodwin, 1956:6. See above.

P. m. mexicanus (Saussure, 1860:103). See above.

P. m. putlaensis Goodwin, 1964:5. Type locality ''San Vicente, District of Putla, Oaxaca, Mexico, at an altitude of 4000 feet.''

P. m. saxatilis Merriam, 1898:121. Type locality ''Jacaltenango, Huehuetenango, Guatemala.''

P. m. teapensis Osgood, 1904:69. Type locality ''Teapa, Tabasco, Mexico.''

P. m. totontepecus Merriam, 1898:120. See above.

Nomenclatural Notes. *Peromyscus mexicanus* was considered by Osgood (1909) to be an emblematic species belonging to the species complex named the *mexicanus* species group, in the subgenus *Peromyscus*. Hooper (1958) moved *P. mexicanus* to the *boylii* species group, but later returned it to the *mexicanus* species group (Hooper and Musser 1964). Petersen (1968) moved the species to the subgenus *Haplomylomys*, but this was not accepted, and *P. mexicanus* was retained in the *mexicanus* species group in the subgenus *Peromyscus* (Huckaby 1980).

Evidence from Musser (1969) and Huckaby (1980) supports the inclusion in *P. mexicanus* of *P. guatemalensis tropicalis* and 3 forms (*angelensis*, *coatlanensis*, and *sloeops*) that were formerly considered subspecies of *Osgoodomys banderanus*. In addition, Huckaby (1980) supports the inclusion of *P. megalops azulensis* in *P. mexicanus* based on the lack of a beaded supraorbital ridge that is characteristic of *P. megalops*. These taxa were erroneously associated by their original describers.

Specimens recorded in Honduras as *P. mexicanus* are considered to be *P. oaxacensis* (Musser 1969). In particular, southern populations identified as *P. nudipes*, arranged as a synonym (Carleton 1989; Huckaby 1980), have been considered a distinct species (Hooper 1968; Osgood 1909) and deserve additional scrutiny. Euchromatic banding patterns of *P. nudipes* are identical to those in *P. mexicanus* (Smith et al. 1986). The type of *P. nudipes* is not representative of the species (Goodwin 1946). The status of *altilaneus* also is problematic. Originally described by Osgood (1904), *altilaneus* shares the same type locality as *P. guatemalensis*. There are cranial similarities between *altilaneus* and *mexicanus*; however, the elevational range for *P. mexicanus* sensu lato (Huckaby 1980) does not include the type locality of *altilaneus* (Musser and Carleton 2005).

The specific name *mexicanus* is derived from the word Mexico because it was the country in which *P. mexicanus* was 1st collected. The following subspecies are named after the nearby town or region of the type locality in the state of Oaxaca, Mexico: *angelensis*, Puerto Angel (Osgood 1904); *azulensis*, Montaña Azul in the Tehuantepec region (Goodwin 1956); *putlaensis*, district of Putla (Goodwin 1964); *totontepecus*, Totontepec (Osgood 1904); and *teapensis*, Teapa, state of Tabasco. The name *saxatilis* derived from the Latin words *saxum*, a stone, and *saxatilis*, dwelling or growing among rocks (Jaeger 1966).

The most frequently used common name of *P. mexicanus* is Mexican deermouse. Because the name of deermouse is more in reference to the *maniculatus* species group from which *P. mexicanus* differs in external coloration, we considered that the common name should be only Mexican mouse.

DIAGNOSIS

Peromyscus mexicanus (Fig. 1) is of medium size, about as large as *P. oaxacensis* (currently included in *aztecus*—Aztec deermouse) and decidedly smaller than the broad-faced deermouse (*P. megalops*) and the Guatemalan deermouse (*P. guatemalensis*). *P. mexicanus* is readily distinguishable from nearly all other species of *Peromyscus* by having a tail with very short, scarcely obvious hair. Skull has relatively small molars and bullae in relation to other species of *Peromyscus*. The skull of *P. mexicanus* is smaller than that of *P. megalops* and *P. guatemalensis*; and is similar in size or slightly larger than that of *P. oaxacensis* and the transvolcanic deermouse (*P. hylocetes*—Osgood 1909).

GENERAL CHARACTERS

Pelage of *Peromyscus mexicanus* is soft and rather short. Following Osgood (1909) upperparts of unworn adult pelage are cinnamon rufous mixed with dusky; dorsum is darker in the middle than on sides, but dusky hairs somewhat mixed with rufescent form fine lines and the general effect on the sides from cheeks to flanks is bright russet. Top of head and shoulders are similar to the back or slightly paler. A spot at

base of whiskers and a broad orbital ring appear blackish brown. Underparts are creamy white, with or without cinnamon-rufous pectoral marking. Ears are dusky brown with a faint whitish edge. Forefeet and carpal joints white and proximal one-half of forearm is dusky overlaid by rufescent tones. Hind feet are white and tarsal joints dusky brown (Osgood 1909). Tail is coarsely annulated (about 17 annulations/cm), clothed with very short, scarcely obvious hairs, and is seldom evenly bicolored. Hairs of tail are dusky above, dull white below; scaly part of tail dusky above and yellowish below with irregular dusky blotches (Osgood 1909).

Upperparts of worn adult pelage vary from ochraceous buff to tawny mixed with darker colors; general effect varies from dark clay to russet. Middle of dorsum is usually similar to sides but sometimes darker. Dusky facial markings are reduced in area and underparts have differing amounts of slate coloring (Osgood 1909).

Pelage on the upperparts and sides of subadults is pale cinnamon fawn, uniformly mixed with dusky; general effect varies from "wood brown to broccoli brown" (Osgood 1909:200). A narrow lateral band of dark ochraceous buff is usually evident. Orbital ring is narrow and dusky in color; and area outside of ring is slightly gray (Osgood 1909). Upperparts of 1st coat of young are nearly uniform mouse gray, but sometimes paler. Sides and shoulders are smoke gray and dorsum is darker, nearly brownish slate gray (Osgood 1909).

Following Osgood (1909), the rostrum and nasals of *P. mexicanus* (Fig. 2) are moderately long. Braincase is full and deep, but not very wide. Frontal bones are rather narrow and supraorbital border is sharp-angled, often with a slight bead confined to vicinity of frontoparietal suture. Interparietal bone is large and zygomatic arch is strong, usually becoming decidedly notched anteriorly in adults. Molar teeth and auditory bullae are notched anteriorly in adults and interpterygoid fossa extends anteriorly a short distance beyond plane of last molar (Osgood 1909). Variation in cranial characters among subspecies of *P. mexicanus* is great (Osgood 1909).

External and internal measurements (mm, mean, *SD*, and parenthetical range) of *P. mexicanus* ($n = 61$) from Mount Cacaguatique (Huckaby 1980) were: length of head and body, 111.0 ± 6.84 (94–125); length of tail, 116.0 ± 8.77 (95–132); length of hind foot, 25.3 ± 0.87 (23–27); length of skull, 30.5 ± 1.05 (26.7–32.2); length of rostrum, 9.2 ± 0.44 (7.9–9.9); length of braincase, 14.0 ± 0.41 (12.6–14.7); interorbital width, 5.2 ± 0.14 (4.6–5.5); width of braincase, 13.4 ± 0.35 (12.4–14.2); length of incisive foramen, 6.2 ± 0.29 (5.5–6.8); length of molar toothrow, 4.4 ± 0.13 (4.0–4.7); length of interpterygoid fossa, 5.4 ± 0.28 (4.6–6.0); intermolar width, 3.3 ± 0.17 (2.9–3.8); width of interpterygoid fossa, 2.0 ± 0.11 (1.8–2.3); and molar width (greatest width of the crown of M1), 1.4 ± 0.05 (1.2–1.5). Mean body mass (g) and parenthetical range of adult males ($n = 20$) from Chiapas (Alvarez et al. 1984) were 47.2 (40.3–56.5) and body masses of adult females ($n = 2$) were 47.0 and 35.0.

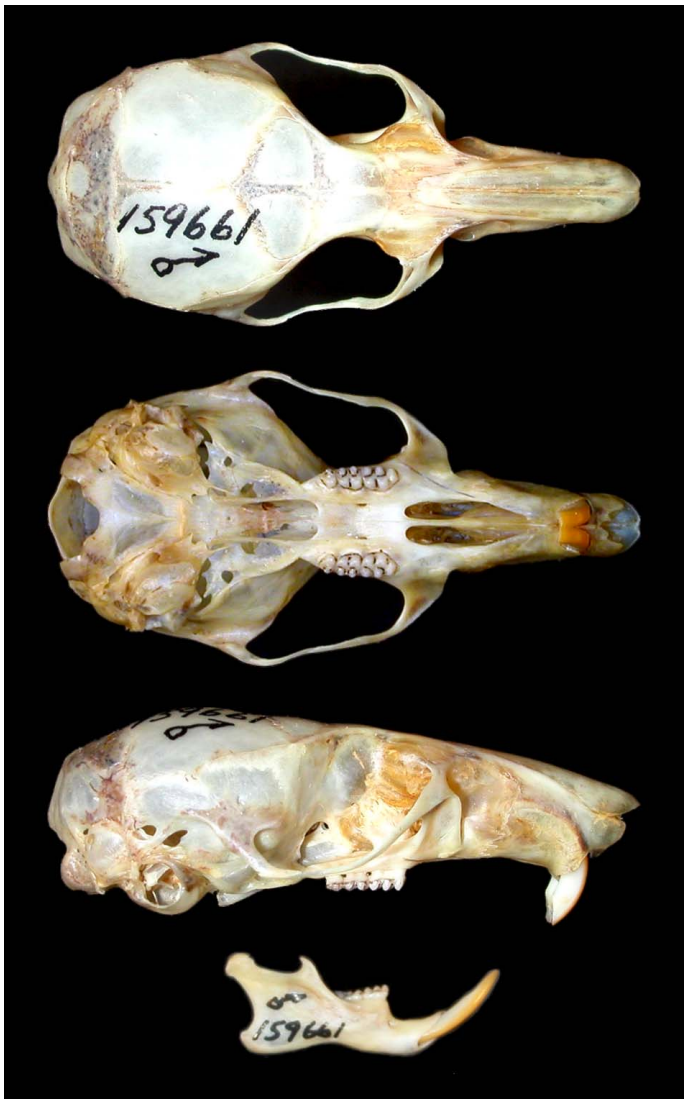

Fig. 2.—Dorsal, ventral, and lateral views of skull and lateral view of mandible of an adult male *Peromyscus mexicanus* (159,661; Museum of Vertebrate Zoology); from 8.8 miles SE (by road) Catemaco. Greatest length of skull is 32.88 mm. Photograph by Sergio Ticul Alvarez-Castañeda.

DISTRIBUTION

Peromyscus mexicanus is found from the tropical lowlands of Mexico to Panama (Fig. 3). On the eastern side of Mexico, *P. mexicanus* occurs from San Luis Potosi to the south through Veracruz and northern Oaxaca into the Isthmus of Tehuantepec and on the western side from the border of Guerrero–Oaxaca to the south, including the northern and eastern lowlands of Chiapas and neighboring

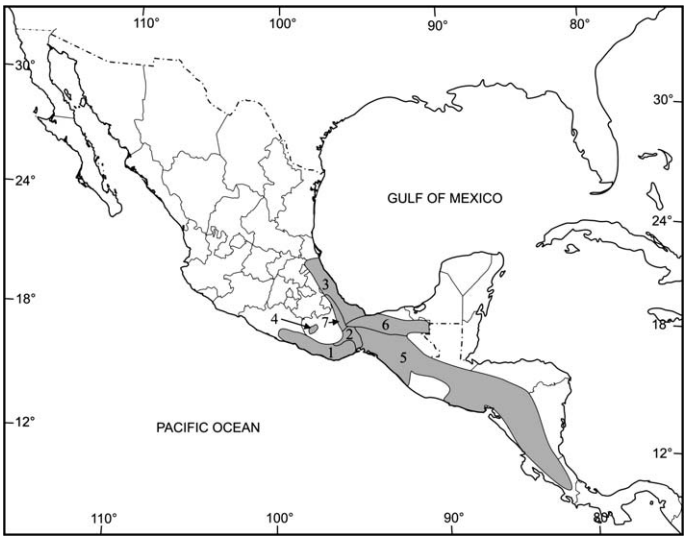

Fig. 3.—Geographic distribution of *Peromyscus mexicanus* (after Carleton 1989). 1, *Peromyscus mexicanus angelensis*; 2, *P. m. azulensis*; 3, *P. m. mexicanus*; 4, *P. m. putlaensis*; 5, *P. m. saxatilis*; 6, *P. m. teapensis*; and 7, *P. m. totontepecus*.

Tabasco eastward through the foothills of the Guatemalan highlands, the central valley of Chiapas and adjacent Guatemala and through El Salvador, extending as far south as extreme western Panama (Huckaby 1980). *P. mexicanus* appears to be absent from the forests of El Peten of Guatemala and Belize. Limits of range are unknown in the northern extension on the Pacific coast in the state of Guerrero and the eastern extension in the highlands of western Panama (Carleton 1989; Huckaby 1980). No fossils of *P. mexicanus* are known.

FORM AND FUNCTION

Dorsal pelage coloration of *P. mexicanus* exhibits geographical and seasonal differences that appear to be associated with temperature, precipitation, and habitat composition (Huckaby 1980). The dorsum is pale buffy brown in warmer areas and more grayish in cooler areas. Pelage may vary from nearly black in humid cool areas to pale gray in dryer areas. Those areas with a long dry season and open, scrubby, deciduous vegetation will have the palest specimens (Pacific coastal region of Oaxaca—Huckaby 1980). These mice exhibit a seasonal change in pelage that consists of a darker pelage during the wet season than during the dry season. The darkest specimens are found on the northern slopes in Oaxaca, the northern lowlands of Chiapas, and adjacent Tabasco and Costa Rica. These areas consist of evergreen forests with a short dry season and high rainfall (Huckaby 1980). Specimens associated with habitats with intermediate climate and vegetation will have pelage of intermediate color. Specimens in molt from Chiapas occurred between November and January (Villa 1948).

The reproductive tract of males includes a bilobed dorsal prostate; lateral lobe is extremely diffuse and divided into more or less separate lobes. Of 4 specimens examined (Linzey and Layne 1969), 1 had pronounced bifurcation of the penis bulb, 1 had slight bifurcation, and bifurcation was absent in 2. A single pair of ventral prostates were found in 3 specimens and 1 specimen exhibited a medial and lateral pair, which is the norm for the *mexicanus* species group. Lateral ducts were associated with the medial ventral prostates in the latter individual (Linzey and Layne 1969). Measurements (mm, mean) of male ($n = 4$) reproductive structures (Linzey and Layne 1969) were: length of testis, 10.6; width of testis, 6.2; length of vas deferens duct, 16.3; length of urethra, 23.5; length of ampullary, 1.9; width of ampullary, 2.3; length of vesicular, 7.8; width of vesicular, 2.3; length of anterior prostate, 4.2; width of anterior prostate, 1.8; length of dorsal prostate, 4.0; width of dorsal prostate, 2.3; length of ventral prostate, 4.9; width of ventral prostate, 3.7; length of bulbourethral, 2.8; and width of bulbourethral, 2.9.

In 3 specimens, the phallus was an elongated rod (11.8 mm in length), extending 17% of its greatest diameter and 47% of length of hind foot (25 mm—Hooper 1958). The phallus has 2 dorsal lappets and a single ventral lip at base of protractile tip. Surface of phallus, excluding the protractile tip, is covered with recurved spines (Hooper 1958). Baculum is small in diameter and in 1 specimen measured 15.6 mm in length, and 62% of length of hind foot. Base of baculum is usually small, slightly expanded, and flattened; a minute cone of cartilage is in the baculum tip (Hooper 1958).

Peromyscus mexicanus possesses sperm that have a head hook similar to that of other cricetids and murids. A detailed description of sperm morphology is presented by Linzey and Layne (1974). Measurements (μm, mean ± *SD*) of spermatozoa ($n = 10$—Linzey and Layne 1974) from specimens of *P. mexicanus* were: length of head, 5.5 ± 0.19; width of head, 2.6 ± 0.10; length of midpiece, 17.4 ± 0.24; and length of tail, 49.3 ± 3.62. Percentages in relation to the entire sperm were: length of head, 7.6; width of head, 3.6; length of midpiece, 24.1; and length of tail, 68.3 (Linzey and Layne 1974).

Teeth are short-crowned and stocky, but not as complexly patterned as teeth of the southern rock deermouse (*P. difficilis*) and *P. hylocetes*. Mesoloph is short and incomplete or not fused with the mesostyle. Upper teeth are more complex than lower teeth; mesostyle and mesoloph are usually present (Hooper 1957). Lower molars differ from upper molars in that mesostylid is less frequently present. Mesolophid is usually present, and lophid is low and inconspicuous (Hooper 1957). Dental formula is i 2/2, c 0/0, p 0/0, m 3/3, total 20.

In an analysis of stomach morphology (Carleton 1973), most of the species of *Peromyscus* examined (31 out of 39) exhibited a bilocular-discoglandular stomach. Individuals of *P. mexicanus* exhibited a modification in which the glandular epithelium was located within a well-formed pouch (Carleton 1973).

ONTOGENY AND REPRODUCTION

Ontogeny.—Sex ratio (male : female) of *Peromyscus mexicanus* born in captivity was 2.25 (n = 13—Rickart 1977). First skin pigmentation appears in the shoulders and neck region by day 2 of life; pigmentation is complete by day 4. On day 6, hair 1st appears on the anterior dorsum and spreads posteriorly and laterally. By day 14 or 15, short juvenile pelage is complete (Rickart 1977). On average, 1st molt begins at 58.8 days (range 49–77 days) and is completed by 119.0 days (91–154 days—Rickart 1977).

Young *P. mexicanus* can crawl and right themselves beginning at day 6 or 7. By day 8 young possess a strong tactile response and can stand at day 10. By days 12–13 young begin to run and climb, and attempt to bite when handled at day 14 (Rickart 1977). Sexual maturity can be determined by changes in external genitalia; scrotal swelling in males (49, 63, and 77 days; $\bar{X}$ = 66.5, n = 4) and perforation of the vulva in females (46 days, n = 1—Rickart 1977).

The sex ratio of litters of *P. mexicanus* shows equal numbers of males and females, and parents may allocate resources equally to offspring of both sexes. Overall reproductive success in *P. mexicanus* is low and adjustment of litter composition (sex ratio) may be too risky of a strategy to be maintained (Duquette and Millar 1998).

Supplemental food has different effects in female *P. mexicanus*. If consumed during the prenatal period it has a positive effect on age of 1st reproduction, but it does not have an effect in the probability of litter success. On the other hand, food availability in immediate postnatal period influences the probability of litter success. There is no evidence that variation in food availability has an influence on the age and body mass at sexual maturity, the pregnancy rate of multiparous females, and the size of a successful litter (Duquette and Millar 1995a).

Reproduction.—Breeding season may extend throughout the year (Dalquest 1950). In Oaxaca, females captured in August were lactating (Baker and Greer 1960), and in Nicaragua, lactating females were captured in March, April, and July (Jones and Yates 1983). In San Luis Potosí, females with embryos were collected in July; 1 female had 2 embryos (Dalquest 1953). In Veracruz, 1 female had 1 embryo (Davis 1944) and in Nicaragua, 9 females, collected in March, April, June, and July, had an average of 2.4 embryos (range 1–4 embryos—Jones and Yates 1983). The average length (mm) of testis (range) for adults (n = 20) from Chiapas (Alvarez et al. 1984) was 13.5 (12–15); for subadults (n = 10) average length was 11.9 (6–18). Length of testis for specimens from Nicaragua ranged from 10.0 to 17.0 in March, 15.0 to 17.0 in April and June, and was 15.0 in July (Jones and Yates 1983).

Juveniles were collected in San Luis Potosi in almost all months of the year (Dalquest 1953), and in Nicaragua, juveniles were collected from November through January and March through July (Jones and Yates 1983).

Postpartum estrus occurs and gestation lasts 28–32 days (Rickart 1977; Sánchez-Cordero 1985). During their lifetime, the females have a few small litters (mean ± *SD*) of 1.9 ± 0.10 litters, with 1.7 ± 0.08 weaned pups per litter (Duquette and Millar 1995b).

ECOLOGY

Peromyscus mexicanus is a forest-dwelling species, and the most common mammal collected in the deep forest (Hall and Dalquest 1963). *P. mexicanus* is rarely plentiful, even locally, except where there is abundant ground cover of limestone rocks or cliffs. *P. mexicanus* commonly lives in burrows beneath fallen logs or underbrush or among the roots of trees; it is occasionally captured in dense beds of succulent plants along the borders of streams or in sugarcane fields (Dalquest 1953; Hall and Dalquest 1963). It is less common in forest edges and in clearings (Hall and Dalquest 1963). *P. mexicanus* also was collected near rocky canyon walls (Davis 1944), and *P. banderanus coatlanensis* (sensu *P. mexicanus*), in Oaxaca on large rocks in pine and oak forests (Goodwin 1956). *P. mexicanus* is not arboreal (Dalquest 1953; Hall and Dalquest 1963).

In Veracruz, Mexico, *P. mexicanus* was the most abundant cricetid in all habitats, including forest, cacao and coffee plantations, mixed live fences, and pastures (Estrada et al. 1994). In Honduras, specimens were collected in second-growth timber and thick forest (Goodwin 1942), but Musser (1969) considers all these specimens to be *P. oaxacensis*. In Oaxaca, *P. mexicanus* is present in many habitats and has great variation in external and cranial characteristics (Goodwin 1969). In Chiapas, captures of *P. mexicanus* decreased with increasing elevation (Hooper 1947). Home range of *P. mexicanus* can be >0.5 ha, and 30 individuals/ha have been surveyed (García-Franco and Rico-Gray 1996). A population of *P. mexicanus* from Los Tuxtlas, Veracruz, fluctuated between 50 and 150 individuals in 1.4 ha over 17 months (Sánchez-Cordero et al. 1997). Over a 1-year period supplemental feeding had no clear effect on population density (Duquette and Millar 1995b).

Peromyscus mexicanus shows a peculiar mixture of r and K responses (Robertson 1975). *P. mexicanus* produces small litters in size and relative weight and appears to have rather stable populations maintained at high densities. These factors would indicate that *P. mexicanus* is K selected. Seasonal breeding, evidence of postpartum estrus, and occasional breeding by subadult females appear to be r responses (Robertson 1975).

Peromyscus mexicanus has been collected sympatrically with other species of the genus *Peromyscus*, such as blackish deermouse (*P. furvus*), black-wristed deermouse (*P. melanocarpus*), black-tailed deermouse (*P. melanurus*), *P. oaxacen-*

sis (formerly *P. aztecus*), Stirton's deermouse (*P. stirtoni*), and Chiapan deermouse (*P. zarhynchus*). Parapatrically *P. mexicanus* has been collected with the large deermouse (*P. grandis*), *P. guatemalensis*, naked-ear deermouse (*P. gymnotis*), *P. megalops*, El Carrizo deermouse (*P. ochraventer*), and Yucatán deermouse (*P. yucatanicus*—Hooper 1947; Huckaby 1980), which were collected downhill on the same slopes as *P. megalops* (Huckaby 1980). Other sympatrically recorded species are big Mexican small-eared shrew (*Cryptotis magna*), crested-tailed deermouse (*Habromys lophurus*), Desmarest's spiny pocket mouse (*Heteromys lepturus*; now included in *H. desmarestianus*), fulvous colilargo (*Oligoryzomys fulvescens*), Alfaro's oryzomys (*Oryzomys alfaroi*), black-eared oryzomys (*O. melanotis*), marsh oryzomys (*O. palustris*), short-nosed harvest mouse (*Reithrodontomys brevirostris*), Saussure's shrew (*Sorex saussurei*), and Verapaz shrew (*S. veraepacis*—Hall and Dalquest 1963; Jones and Yates 1983; Rickart 1977).

Diet of *P. mexicanus* includes tropical fruits (mango and wild plums) and numerous seeds; small piles of coffee beans are commonly found in sheltered places beneath logs or stones in coffee groves where *P. mexicanus* dwells (Dalquest 1953). In tropical deciduous forests, *P. mexicanus* has been recorded as eating fruit of *Bdallophyton bambusarum*, which can be dispersed over 45–78 m (García-Franco and Rico-Gray 1996). *P. mexicanus* feeds on seeds in groves of *Albezia*, *Dioon edule*, *Diospiros veraecrucis*, *Leucaena*, *Mucura prurians*, *Pseudobombax ellipticum*, and *Quercus*; and Gastropoda, coleopterans, and small vertebrates also are eaten (González 1990). When fed a diet of 50% *D. edule* and 50% *Zea mays*, 95% of *P. mexicanus* survived 10 days. *D. edule* contains the neurotoxic components cicacina and macrozamina (González 1990).

Stomach contents of 27 specimens collected in March in Chiapas were composed of 33% plant fragments (23% seeds [Solanacea and Compositae] and 10% stems) and 67% arthropods. Of the arthropods, Coleoptera (Tenebrionidae, Carabidae, Cerambicidae, and Curculionidae) comprised 30%, Aranea 25%, Orthoptera (Acrididae) 25%, Hymenoptera (Formicidae) 22%, and Diptera (Muscidae), Homoptera (Cicadelidae), and lepidopteran larvae less than 3% (Alvarez et al. 1984).

Ectoparasites infecting *P. mexicanus* include Mesostigmata, Laelapidae, *Hirstionyssus alvarezi* (Bassols-Batalla et al. 1991); *Androlaelaps circularis* and *A. fahrenholzi* (Bassols 1981); *Acarina trombiculidae* and *Pseudoschöngastia brennani* (Hoffmann 1960); *P. extrinseca* (Brennan 1960); *Walchia gouldi* and *Novotrombicula suriana* (Hoffmann 1954); Siphonaptera, Caratophyllidae, *Orchopeas leucopus* (Barrera 1951); and Coleoptera, Staphylinidae, Amblyopininae, *Amblyopinus barrerai* (Zaragoza and Sánchez 1993). The endoparasite *Trypanosoma cruzi* has been found in *P. mexicanus* (Dominguez et al. 1990).

GENETICS

The diploid number (2n) of *Peromyscus mexicanus* is 48 chromosomes and the fundamental number (FN) is 58. All autosomal chromosomes are acrocentric except pairs 1, 2, 3, 9, 22, and 23 and autosomal heterochromatin is restricted to the centromeric regions (Rogers et al. 1984). The X chromosome is a large submetacentric, and the Y chromosome is a small acrocentric (Rogers et al. 1984). G-band analysis shows that chromosomes 2, 3, and 9 are inverted (Rogers et al. 1984). Autosomal karyotypes of all species in the *mexicanus* species group exhibit little or no detectable interspecific differentiation (Smith et al. 1986). Karyotype of *P. m. saxatilis* (2n = 48, FN = 56) differs from that originally described for *P. mexicanus*, in having 2 large pairs of chromosomes, 1 medium pair, and 2 small pairs of biarmed chromosomes in addition to 18 pairs of acrocentric chromosomes; Y chromosome is a small metacentric (Bradley and Enskink 1987).

A phylogenetic analysis of 28 presumptive loci (allozymes) for *P. mexicanus* and 9 members of the *mexicanus* species group (Rogers and Engstrom 1992) revealed that the most similar species to *P. mexicanus* were *P. guatemalensis*, *P. gymnotis*, *P. nudipes* (currently in *mexicanus*), *P. yucatanicus*, and *P. zarhynchus*. However, *P. gymnotis* is morphologically distinct from *P. mexicanus* (Huckaby 1973; Jones and Yates 1983; Musser 1971). Genetic distances between *P. yucatanicus* and samples of *P. mexicanus* are below a level usually observed among cospecific populations within other species of *Peromyscus* (Rogers and Engstrom 1992). Genetic data are consistent with the hypothesis that *P. yucatanicus* is closely allied to the *P. mexicanus*–like complex of taxa and that morphological divergence of *P. yucatanicus* from a *P. mexicanus*–like ancestor was a relatively recent event. Allozymically, *P. mexicanus* failed to associate, exclusive of other species in the *mexicanus* species group and *P. mexicanus*, as presently defined, appears to be paraphyletic (sensu Farris 1974—Rogers and Engstrom 1992).

The electrophoresis of blood serum patterns shows that *P. mexicanus* has a prominent double transferrin (t) curve. Presence of 1 prealbumin (po.A) band and three 6-8-globulin (G) bands placed the species in the *Haplomylomys* subgenus of the genus *Peromyscus* (Petersen 1968).

CONSERVATION

Peromyscus mexicanus is not considered endangered by the Mexican government (Convention on International Trade in Endangered Species of Wild Fauna and Flora 2007; Norma Oficial Mexicana 2002). The International Union for Conservation of Nature and Natural Resources list the species as "Least Concern" with a stable population trend and no known threats (Reid and Pino 2008).

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