New record and southern range extension for the Mearn's grasshopper mouse (Onychomys arenicola Mearns, 1896) in Veracruz, Mexico

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Mearn’s grasshopper mouse (Onychomys arenicola Mearns, 1896) is a polytypic species represented in Mexico by the subspecies O. a. canus Merriam, 1904 and O. a. surrufus Hollister, 1914 (Ramírez-Pulido et al. 2000, Musser and Carleton 2005). Historically it has been reported infrequently; hence its presence in scientific collections is relatively uncommon (Hinesley 1979, Musser and Carleton 1993, Davis and Schmidly 1997, Clary et al. 1999). In Mexico, there are records of O. arenicola in the Chihuahuan Desert and in the states of Durango, Jalisco, San Luis Potosí, Zacatecas, Nuevo León, and Tamaulipas. The southernmost state in which both the species and the genus have been recorded is San Luis Potosí (Riddle and Honeycutt 1990, López-Wilchis and López-Jardines 1998, Ramírez-Pulido et al. 2000, 2005, Villa and Cervantes 2003, Godínez 2005). Mearn’s grasshopper mouse inhabits areas of low vegetation on sandy or gravel-covered arid land, where the vegetation is mainly xerophytic shrubs, mesquite, or other shrub species typical of the central plateau of Mexico (Davis and Schmidly 1997, Godínez 2005). Mearn’s grasshopper mouse inhabits areas of low vegetation on sandy or gravel-covered arid land, where the vegetation is mainly xerophytic shrubs, mesquite, or other shrub species typical of the central plateau of Mexico (Davis and Schmidly 1997, Godínez 2005). Although the species has a wide distribution in the aforementioned areas of Mexico, it has not been previously reported in the central southern states of Querétaro, Guanajuato, Hidalgo, Puebla, Tlaxcala, or Veracruz, even though the habitat preferred by the species occurs in these states.

From 2000 to 2005, 7 specimens belonging to the genus Onychomys were captured in Sherman traps at 5 sites in the Perote Valley, central Veracruz. The sites are 17 km northwest of Cofre de Perote National Park and very close to the village of El Frijol Colorado in the municipality of Perote (Fig. 1). The climate at the collecting sites is classified as BSkw(i)c4977, the most humid of the semiarid climates (Soto and Angulo 1990). The dominant vegetation is a desert scrub association of Nolina parviflora, Yucca periculosa, Agave obscura, and Distichlis spicata that has been gradually replaced by grassland (Bouteloua hirsuta and Suaeda nigra) and crops. Mean annual temperature is 13.5 °C but drops to an average of –3 °C during the coldest month (González-Christen et al. 2006). Mean annual precipitation is 380 mm, and the average elevation is 2456 m above sea level. Three specimens were sacrificed, and their skins and skulls were deposited as voucher specimens (Ramírez-Pulido et al. 1989) in the mammal collection (VER-MAM-191-10-06) at the Institute of Biological Research, University of Veracruz, Xalapa (Cat. IIB-UV 2594, 2767, 2604). Two specimens were marked and released in situ; 2 others were photographed and released in situ for the photographic catalog (Botello et al. 2007) of the university’s collection (IIB-UV 0001f, 0002f; Table 1).

Key words: grasshopper mouse, Onychomys arenicola, distribution, record, Perote, Veracruz, Mexico.
We took 5 body measurements and 20 cranial and jaw measurements of the voucher specimens (Table 2) using a Mitutoyo digimatic caliper (precision 0.01 mm; Gaona 1997). The specimens were identified as *Onychomys arenicola* using identification keys and a specialized bibliography (Hinesley 1979, Hall 1981, Davis and Schmidly 1997). These new records for *O. arenicola* extend the known distribution of the species toward the central region of the state of Veracruz, as far west as its border with the state of Puebla (Fig. 1). The previous southernmost collecting site is 470 km west-northwest (straight-line distance) from the new record in Veracruz. There, 14 specimens were collected 16 km northeast of San Luis Potosí in the municipality of Soledad de Graciano Sánchez (GBIF 2007).

The occurrence of *O. arenicola* in the state of Veracruz increases the cumulative alpha diversity of terrestrial mammals in that state to 192 species (Gaona et al. 2003, González-Christen...
et al. 2002, 2006). The presence of Mearn’s grasshopper mouse in central Veracruz merits further research. In addition to conducting genetic studies on the population, it is also important to define the population’s geographical distribution (Musser and Carleton 2005). Increased collection effort is recommended for the states of Querétaro, Puebla, Tlaxcala, and Veracruz; this effort would produce records that would be helpful in defining the ecological niche of the Mearn’s grasshopper mouse (Anderson and Martínez-Meyer 2004), and this, in turn, would facilitate identification of areas critical to its conservation and management.

LITERATURE CITED


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