MAMMALIAN SPECIES No. 477, pp. 1–3, 4 figs.

Reithrodontomys tenuirostris.

By Elizabeth Arellano and Duke S. Rogers

Published 2 December 1994 by The American Society of Mammalogists

Reithrodontomys tenuirostris Merriam, 1901

Narrow-nosed Harvest Mouse

Reithrodontomys tenuirostris Merriam, 1901:547. Type locality "Todos Santos, Dept. Huehuetenango, 10,000 ft., Guatemala."

CONTEXT AND CONTENT. Order Rodentia, Suborder Sciurognathi, Superfamily Muroidea, Family Muridae, Subfamily Sigmodontinae (Carleton, 1984; Musser and Carleton, 1993), genus *Reithrodontomys*. The genus *Reithrodontomys* includes 17 extant species divided into two subgenera (Hall, 1981; Hooper, 1952). *Reithrodontomys tenuirostris* is the type species of the subgenus *Aporodon* (Howell, 1914). Within the subgenus *Aporodon*, Hooper (1952) associated *R. tenuirostris*, *R. microdon*, *R. rodriguezi*, and *R. creper* as members of the *tenuirostris* species group and set them apart from the *mexicanus* group (= *R. mexicanus*, *R. brevirostris*, *R. gracilis*, and *R. dariensis*). Hall (1981) considered *R. tenuirostris* to be monotypic, although Howell (1914) recognized two subspecies, *R. t. tenuirostris* and *R. t. aureus* (Merriam).

DIAGNOSIS. Compared with members of the subgenus *Reithrodontomys*, species in the subgenus *Aporodon* generally are larger in external measurements and in size of skull. Dorsal pelage coloration among species of *Aporodon* is darker and more reddish, whereas the venter is paler in the subgenus *Reithrodontomys* (Hooper, 1952). A comparison of zygomasseteric musculature indicates that the internal pterygoids in the subgenus *Aporodon* (*R. mexicanus*) are smaller and the temporal muscles are larger than in the subgenus *Reithrodontomys* (*R. megalotis*—Rinker and Hooper, 1950). Compared with species in the subgenus *Reithrodontomys*, the braincase is larger in species of the subgenus *Aporodon*, the mesopterygoid fossa is broader, and the zygomatic plate is narrower (Hooper, 1952). Members of the subgenus *Aporodon* have relatively complex molars with the primary cusps arranged in an intermediate pattern, at least 37 caudal vertebrae, and discoglandular gastric epithelium. In contrast, species in the subgenus *Reithrodontomys* possess simple molars, alternating cusps, 36 or fewer caudal vertebrae, and an "intermediate grade" of gastric morphology (Carleton, 1980).

Species in the *Reithrodontomys tenuirostris* group are distinguished from other taxa in the subgenus *Aporodon* by possession of a long, narrow rostra, narrow frontals, and large, rounded braincases. *Reithrodontomys tenuirostris* is the largest and one of the darkest harvest mice in the subgenus *Aporodon* from Guatemala and México. Where sympatric with *R. microdon*, *R. tenuirostris* can be distinguished by its larger size and darker underparts, overall larger skull and greater zygomatic breadth (Hooper, 1952).

GENERAL CHARACTERS. *Reithrodontomys tenuirostris* (Fig. 1) is a large, darkish, harvest mouse, characterized as follows: "Size large, tail and ears long and dark; fore feet very large; fur long, soft and full; color intense fulvous. Upperparts rich deep fulvous, becoming intense ferruginous on posterior part of back and rump, somewhat more yellowish anteriorly; palest on top of head; underparts salmon fulvous; chin and lips much paler, almost whitish; wrists and middle part of fore feet dark brown; outer side of feet and toes white; ankles and hind feet nearly to base of toes, dark brown; toes whitish; tail dark brown or dusky all around; a small dark ring around eye" (Merriam, 1901:547).

Pelage color (see Ridgway, 1912 for color terminology) differs between subadults and adults (Hooper, 1952). In subadults, the dorsal color is duller and more blackish in subadults than in adults. "Ground color nearer Ochraceous-Tawny than Tawny. Upperparts Pale Pinkish Buff to Light Pinkish Cinnamon, basal bands of the hairs Dark Mouse Gray, scarcely obscured by pinkish tips" (Hooper, 1952:173). In adults, "upper parts near Tawny or Orange-Cinnamon, obscured everywhere except on lower sides by numerous black hairs, the mass effect near Ochraceous-Tawny or Cinnamon-Brown. Underparts Pinkish-Cinnamon, the cinnamon colored bands of the hairs obscuring most of the long Dark Mouse Gray basal bands" (Hooper, 1952:173).

The cranial shape of *R. tenuirostris* (Fig. 2) is similar to those of the other species of the *tenuirostris* group but differs from other harvest mice in that the brain case is broader and deeper, the rostrum and incisive foramina are longer, and the molars are broader and longer (Hooper, 1952). Cranial characters distinguishing *R. tenuirostris* are: "Brain case inflated, subglobular, abruptly contracted anteriorly at posterior corner of orbits; zygomata squarely spreading anteriorly, their outer sides nearly parallel; rostrum and nasals long and slender, slightly upturned from plane of frontals; nasals acute posteriorly, ending on plane of premaxillae; incisive foramina long and rather slender; bullae small, set very obliquely to axis of skull; molars rather large" (Merriam, 1901:547).

The means and range (in parentheses) of measurements of three individuals from Volcán Tajumulco, Guatemala are (in mm): total length, 211 (200–231); tail vertebrae, 123 (120–129); hind foot, 23 (23–23); ear from notch, 16 (15–17); length of skull, 24.9 (24.5–25.3); zygomatic breadth, 12.2 (11.8–12.6); breadth of brain case, 11.8 (11.7–11.9); depth of cranium, 9.5 (9.4–9.5); interorbital breadth, 3.9 (3.8–4.0); breadth of rostrum, 4.4 (4.1–4.7); length of rostrum, 8.6 (8.2–9.1); length of palate, 4.0 (3.9–4.1); length of molar row, 3.9 (3.9–3.9); length of incisive foramen, 5.0 (4.9–5.0); breadth of zygomatic plate, 1.6 (1.6–1.6); breadth of mesopterygoid fossa, 1.6 (1.5–1.7—Hooper, 1952).

DISTRIBUTION. In addition to the type locality, *R. tenuirostris* has been taken from the following "evergreen cloud forest" localities in Chiapas, México, and Guatemala (Fig. 3): Volcán Tajumulco, Guatemala, 2,440–3,050 m; several localities in the Sierra Madre from Volcán Tajumulco southward to Mataquescuintla, Guatemala (Hooper, 1952); Cerro Mozotol, 23.5 km NW (by road) Motozintla de Mendoza, Chiapas, México, 2,800 m; Cerro Tzontehuitz, Chiapas, México, 2,910 m (Rogers et al., 1983). There is no fossil record or information on form and function of *R. tenuirostris*.

ONTOGENY AND REPRODUCTION. Information on reproduction in the narrow-nosed harvest mouse is scanty. A female collected in December had swollen uteri with no placental scars. A

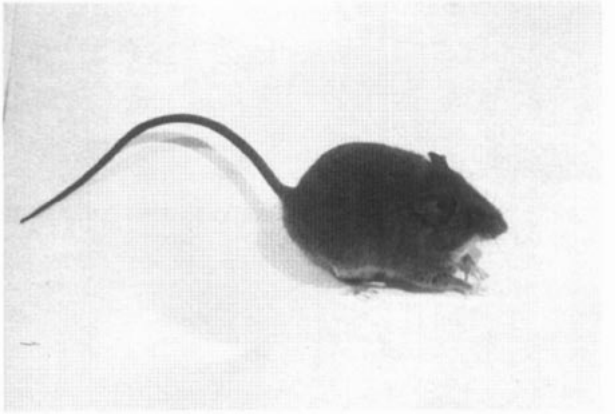

FIG. 1. Adult female *Reithrodontomys tenuirostris* from Cerro Mozotol, 23.5 km NW (by road) Motozintla de Mendoza, 2,800 m, Chiapas, México.

FIG. 2. Dorsal, ventral, and lateral views of the cranium, and dorsal and lateral views of the mandible of an adult male *Reithrodontomys tenuirostris* from Cerro Mozotol, 23.5 km NW (by road) Motozintla de Mendoza, 2,800 m, Chiapas, México. Museum of Vertebrate Zoology, University of California, Berkeley, 161250. Greatest length of skull is 26.70 mm.

male collected in December had testes measuring 6 by 4 mm, and another male taken in April had testes 10 mm in length (in litt.).

ECOLOGY. Little is known about the life history of *R. tenuirostris*. Its habits have been described as scansorial or arboreal

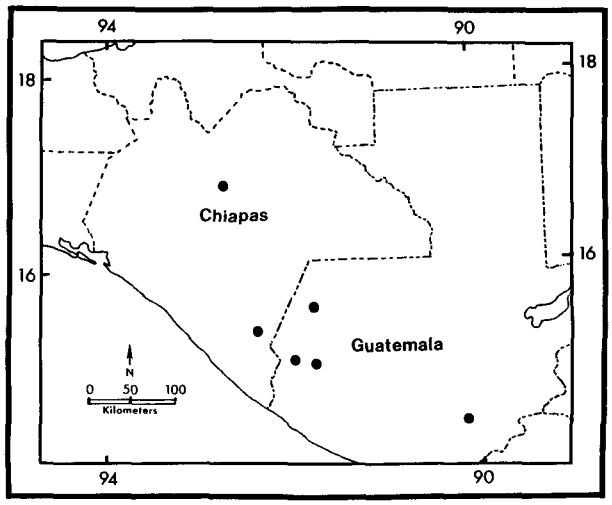

FIG. 3. Distribution of *Reithrodontomys tenuirostris* in México and Guatemala. Collection sites are indicated by solid circles.

(Hooper, 1952). Other species of mammals taken in association with *R. tenuirostris* in México (Rogers and Rogers, 1992) include: *Heteromys nelsoni, Peromyscus guatemalensis, P. levipes*, and *Reithrodontomys mexicanus*. Species of mammals taken with *R. tenuirostris* in Guatemala include *Microtus guatemalensis, P. guatemalensis, P. altilaneus* (Hall, 1981; ? = *P. mexicanus*, see Carleton, 1989), *P. lophurus*, and *R. microdon* (Carleton and Huckaby, 1975).

GENETICS. The diploid karyotype (2n) of *R. tenuirostris* consists of 52 chromosomes (Fig. 4) with a fundamental number (FN) of 50. The twenty-six pairs of acrocentric autosomes grade in size from large to small. This karyotype apparently is identical to those of other species in the subgenus *Aporodon* including *R. creper* and *R. gracilis* (Carleton and Myers, 1979), *R. tenuirostris* and a population of *R. mexicanus* from Chiapas, Mexico (Rogers et al., 1983). Other samples of *R. mexicanus* karyotyped from Guatemala and Ecuador possess a 2n and FN of 52 (Carleton and Myers, 1979).

REMARKS. *Reithrodontomys tenuirostris* is considered by Hooper (1952) to be most closely related to *R. microdon*. Members of the *tenuirostris* species group are the most morphologically and ecologically specialized group within the genus *Reithrodontomys*, and were arranged by Hooper (1952) in order of increasing specialization as follows: *microdon, tenuirostris, rodriguezi*, and *creper*. The subgenus *Aporodon* apparently evolved in the highlands of Central America, and the *tenuirostris* group originated in southern Central America, possibly in Costa Rica. *Reithrodontomys tenui-*

FIG. 4. Standard karyotype of a male *Reithrodontomys tenuirostris* from Cerro Mozotol, 23.5 km NW (by road) Motozintla de Mendoza, 2,800 m, Chiapas, México (Rogers et al., 1983).

rostris, together with *R. microdon*, represents a northern radiation, whereas *R. creper* and *R. rodriguezi* are derivatives of the ancestral Costa Rican populations (Hooper, 1952). *Reithrodontomys* combines three Greek terms to derive "groove-toothed mouse" (Webster and Jones, 1982). The specific epithet *tenuirostris* stems from the Latin words *tenuis* and *rostrum*, meaning thin and nose, respectively (Brown, 1956).

Michael D. Carleton provided suggestions which improved the manuscript substantially. The Museum of Vertebrate Zoology, U.C. Berkeley, loaned the skull used in Fig. 2.

LITERATURE CITED

BROWN, R. W. 1956. Composition of scientific words. Reese Press, Baltimore, Maryland, 882 pp.

CARLETON, M. D. 1980. Phylogenetic relationships in neotomine-peromyscine rodents (Muroidea) and a reappraisal of the dichotomy within New World Cricetinae. Miscellaneous Publications of the Museum of Zoology, University of Michigan, 157:1–146.

———. 1984. Introduction to rodents. Pp. 255–265, *in* Orders and families of Recent mammals of the world (S. Anderson and J. K. Jones, Jr., eds.). John Wiley & Sons, New York, 686 pp.

———. 1989. Systematics and evolution. Pp. 7–142, *in* Advances in the study of *Peromyscus* (Rodentia) (G. L. Kirkland, Jr., and J. N. Layne, eds.). Texas Tech University Press, Lubbock, 366 pp.

CARLETON, M. D., AND D. G. HUCKABY. 1975. A new species of *Peromyscus* from Guatemala. Journal of Mammalogy, 56: 444–451.

CARLETON, M. D., AND P. MYERS. 1979. Karyotypes of some harvest mice, genus *Reithrodontomys*. Journal of Mammalogy, 60:307–313.

HALL, E. R. 1981. The mammals of North America. Second ed. John Wiley & Sons, New York, 2:601–1181 + *90*.

HOOPER, E. T. 1952. A systematic review of the harvest mice (genus *Reithrodontomys*) of Latin America. Miscellaneous Publications of the Museum of Zoology, University of Michigan, 77:1–255.

HOWELL, A. H. 1914. Revision of the American harvest mice (genus Reithrodontomys). North American Fauna, 36:1–97.

MERRIAM, C. H. 1901. Description of 23 new harvest mice (genus Reithrodontomys). Proceedings of the Washington Academy of Sciences, 3:547–558.

MUSSER, G. G., AND M. D. CARLETON. 1993. Family Muridae. Pp. 501–575, *in* Mammal species of the world: a taxonomic and geographic reference. Second ed. (D. E. Wilson and D. M. Reeder, eds.). Smithsonian Institution Press, Washington, D.C., 1206 pp.

RIDGWAY, R. 1912. Color standards and color nomenclature. R. Ridgway, Washington, D.C., 340 pp.

RINKER, G. C., AND E. T. HOOPER. 1950. Notes on the cranial musculature in two subgenera of *Reithrodontomys* (harvest mice). Occasional Papers of the Museum of Zoology, University of Michigan, 528:1–11.

ROGERS, D. S., AND J. W. ROGERS. 1992. Heteromys nelsoni. Mammalian Species, 397:1–2.

ROGERS, D. S., E. J. HESKE, AND D. A. GOOD. 1983. Karyotype and a range extension of *Reithrodontomys tenuirostris*. The Southwestern Naturalist, 21:372–374.

WEBSTER, W. D., AND J. K. JONES, JR. 1982. *Reithrodontomys megalotis*. Mammalian Species, 167:1–5.

Editors of this account were J. ALDEN LACKEY and KARL F. KOOPMAN. Managing editor was JOSEPH F. MERRITT.

E. ARELLANO, DEPARTMENT OF ZOOLOGY, BRIGHAM YOUNG UNIVERSITY, PROVO, UTAH 84602; DUKE S. ROGERS, DEPARTMENT OF ZOOLOGY AND MONTE L. BEAN LIFE SCIENCE MUSEUM, BRIGHAM YOUNG UNIVERSITY, PROVO, UT 84602.