

Reithrodontomys brevirostris and

Reithrodontomys paradoxus.

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Reithrodontomys brevirostris Goodwin, 1943

Short-nosed Harvest Mouse

Reithrodontomys brevirostris Goodwin, 1943:1. Type locality Laja Villa Quesada, 5,000 ft, Alajuela, Costa Rica.

CONTEXT AND CONTENT. Order Rodentia, Family Cricetidae (considered by some to be only a subfamily of Muridae), Subfamily Cricetinae. The genus *Reithrodontomys*, which occurs in the New World from southern Canada (in the west), the western Great Lakes states, and the Mid-Atlantic region southward to northwestern South America, contains two subgenera, *Reithrodontomys* and *Aporodon*. *R. brevirostris* is included in the latter and therein in the *R. mexicanus* group. Two subspecies are recognized:

R. b. brevirostris Goodwin, 1943:1, see above.

R. b. nicaraguae, Jones and Genoways, 1970:10. Type locality Santa Maria de Ostuma, 1,250 m, Matagalpa, Nicaragua.

DIAGNOSIS. A small to medium-sized member of the subgenus *Aporodon* with the dense, long, and lax pelage characteristic of some other species of the subgenus; upper parts dark to tawny ochraceous; a broad, wedge-shaped dusky area on upper surface of hindfoot, extending to base of toes; tail long relative to body length. Skull small, rostrum short and narrow (see Fig. 1). See also Goodwin (1943, 1946), Hooper (1952), Jones and Genoways (1970), and Spencer and Cameron (1982).

GENERAL CHARACTERS. Of the two known subspecies, *nicaraguae* differs from *brevirostris* principally as follows (Jones and Genoways, 1970): "dorsum and especially sides and cheeks noticeably more ochraceous in color; auditory bullae large; palate, as measured across upper molars, broader; cheekteeth somewhat more robust and averaging larger; well-developed ectolophid present on first two lower molars . . . ectostylid of those teeth averaging larger than in typical *brevirostris*."

From subspecies of *R. mexicanus*, with which it is sympatric, *R. brevirostris* differs in being smaller, both externally and cranially (see Fig. 1), in having a relatively longer tail that is less pilose, generally darker dorsal and ventral coloration, a noticeably shorter and narrower rostrum, and in Nicaraguan populations, a well-developed ectolophid on the first two lower molars (see also Hooper, 1952). Comparisons with *R. paradoxus* are given in the account below.

Average and extreme external measurements (mm) of eight adults, three males and five females, from the type locality of *R. b. nicaraguae* (Jones and Genoways, 1970) are: total length, 175.4 (159 to 183); length of tail, 102.9 (97 to 114); length of hindfoot, 18.1 (16 to 19); length of ear, 14.9 (14 to 16); length of tail expressed as a percentage of length of head and body, 143.0 (125 to 173). Weight in grams of specimens in the same series averaged 12.9 (11.3 to 15.6, the last and one other weight of pregnant females).

Cranial measurements (mean, extremes in parentheses, sample size) of a series from Nicaragua (Jones and Genoways, 1970) are as follows: greatest length of skull, 22.0 (21.0 to 23.2) 16; zygomatic breadth, 11.1 (10.7 to 11.6) 12; interorbital constriction, 3.5 (3.3 to 3.7) 17; breadth of braincase, 10.6 (10.1 to 11.1) 16; depth of cranium, 8.5 (7.0 to 8.9) 16; length of rostrum, 7.7 (7.3 to 8.1) 17; length of palate, 3.5 (3.1 to 3.8) 17; length of maxillary toothrow, 3.1 (2.9 to 3.3) 17; length of incisive foramen, 4.0 (3.7 to 4.2), 17; breadth of rostrum, 3.6 (3.4 to 3.9) 16; breadth of zygomatic plate, 1.4 (1.3 to 1.5) 17.

DISTRIBUTION. *Reithrodontomys brevirostris* is known only from two disjunct populations, one on the Cordillera Dar-

iense in Nicaragua and the other on the Cordillera Central in Costa Rica (Fig. 2). The two recorded localities in Nicaragua are at elevations of 1,100 and 1,250 m (Jones and Genoways, 1970) in the Caribbean drainage. Those in Costa Rica are from the Caribbean watershed of the Cordillera between approximately 1,700 and 2,290 m (Hooper, 1952). No fossils are known.

FORM AND FUNCTION. No data are available on this subject for *R. brevirostris*. However, Rinker and Hooper (1950) compared aspects of the cranial musculature of the subgenera *Reithrodontomys* and *Aporodon* (using *R. mexicanus* as representative of the latter).

ECOLOGY. Relatively little information is available on the ecology of this species. On the Cordillera Dariense in Nicaragua, *R. brevirostris* was taken in an area of cloud forest cleared for cultivation of coffee. Specimens were collected "on a hillside where coffee was planted under large, broad-leafed trees. Traps in which these harvest mice were caught were set along fallen logs and at the bases of the large trees" (Jones and Genoways, 1970).

In Costa Rica, Hooper (1952) described the habitat as follows: "Apparently cloud forest. The specimens from Estrella de Cartago were collected in humid subtropical situations. Those from the vicinity of Villa Quesada were taken in deep rocky canyons . . ."

In Nicaragua, two adult females obtained in late June carried three and four fetuses that measured 4 and 15 mm in crown-rump length, respectively (Jones and Genoways, 1970). Three adult males from there, taken in late June and early July, had testes measuring 10, 12, and 11 mm.

At Santa Maria de Ostuma, Nicaragua, two other species of

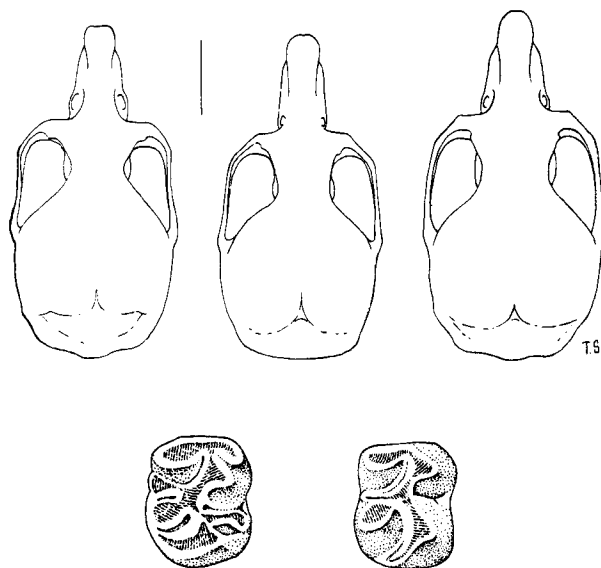


FIGURE 1. Dorsal views (top, left to right) of skulls of *Reithrodontomys paradoxus*, *Reithrodontomys brevirostris nicaraguae*, and *Reithrodontomys mexicanus lucifrons*. The vertical line represents 5 mm. At bottom, semi-diagrammatic illustrations of the second lower molars of *R. b. nicaraguae* and *R. m. lucifrons*. Note the well-developed ectolophid on the tooth at the left. After Jones and Genoways (1970).

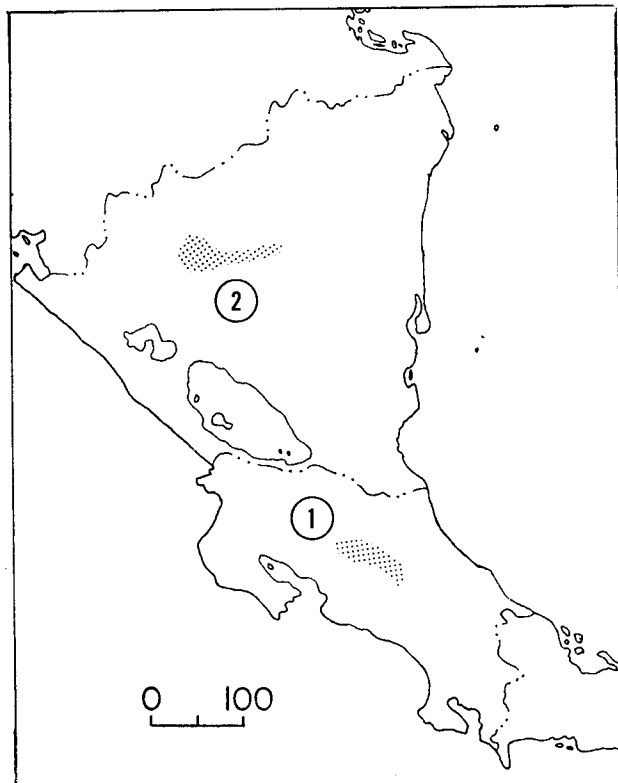


FIGURE 2. Probable distribution in Costa Rica and Nicaragua of *Reithrodontomys brevirostris*: 1, *R. b. brevirostris*; 2, *R. b. nicaraguae*. The scale is 100 km.

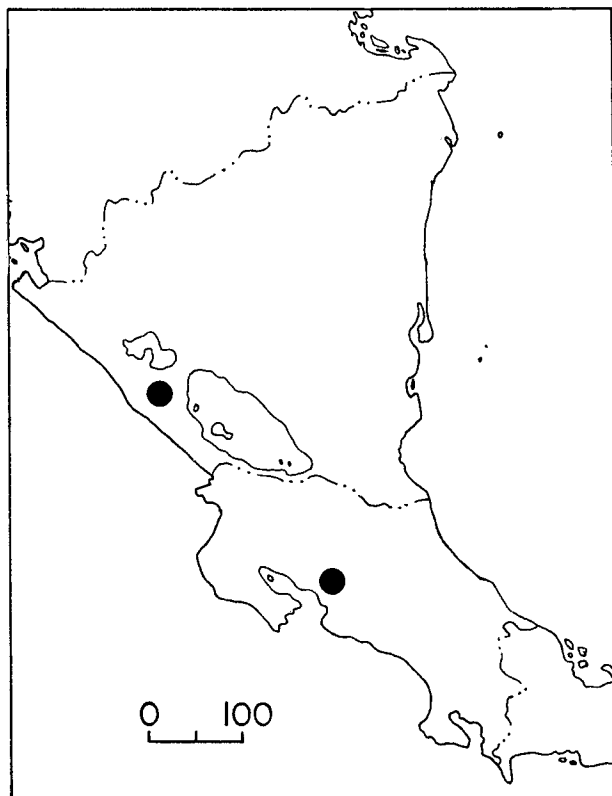


FIGURE 4. Known localities of record in Costa Rica and Nicaragua for *Reithrodontomys paradoxus*. The scale is 100 km.

harvest mice, *R. mexicanus* and *R. sumichrasti*, were collected near places where *R. brevirostris* was trapped. However, both were taken at somewhat lower elevations and in more open habitats than the latter. *Peromyscus mexicanus* was a common co-inhabitant with the short-nosed harvest mouse.

REMARKS. *Reithrodontomys brevirostris nicaraguae* differs from *R. b. brevirostris* to a somewhat greater degree than is the case between or among other races of species of *Aporodon*,

particularly in tooth morphology, and the two are evidently geographically isolated. Nevertheless, the describers felt assignment of the two populations to a single species best reflected their relationship.

Reithrodontomys paradoxus Jones and Genoways, 1970

Nicaraguan Harvest Mouse

Reithrodontomys paradoxus Jones and Genoways, 1970:12. Type locality 3 mi NNW Diriamba, ca. 600 m, Carazo, Nicaragua.

CONTEXT AND CONTENT. Same as for *R. brevirostris* above. *R. paradoxus* is a monotypic species.

DIAGNOSIS. A small harvest mouse of the subgenus *Aporodon* that was diagnosed as follows in the original description: overall dorsal coloration generally near buffy brown, lightly suffused with ochraceous (not reddish as in other Nicaraguan members of the *mexicanus* group), grading to ochraceous-buff on sides; underparts white; tarsus dusky, wedge-shaped dusky strip extending to base of toes; skull resembling that of *R. brevirostris*, but braincase longer, less inflated, and flatter dorsally (Figs. 1, 3); interorbital region lacking marked dorsal depression; incisive foramina terminating well anterior to first molars and bony palate thus longer; nasolacrimal capsules larger; lower molars lacking ectolophid (Jones and Genoways, 1970).

GENERAL CHARACTERS. External and cranial measurements (mm) of the holotype, an adult male, and a young adult female from the type locality are as follows (Jones and Genoways, 1970): total length, 173, 167; length of tail, 101, 96; length of hindfoot, 18, 18; length of ear, 13, 13; length of tail expressed as a percentage of length of head and body, 140.2, 135.0; greatest length of skull, 22.0, 21.8; zygomatic breadth, 11.0, —; interorbital constriction, 3.4, 3.4; breadth of braincase, 10.4, 10.7; depth of cranium, 8.0, 8.2; length of rostrum, 8.1, 7.6; length of palate, 3.9, 3.9; length of maxillary tooththrow, 3.2, 3.1; length of incisive foramen, 3.8, 3.9; breadth of rostrum, 3.6, 3.3; breadth of zygomatic plate, 1.4, 1.5.

R. paradoxus is a distinctive species that differs from all

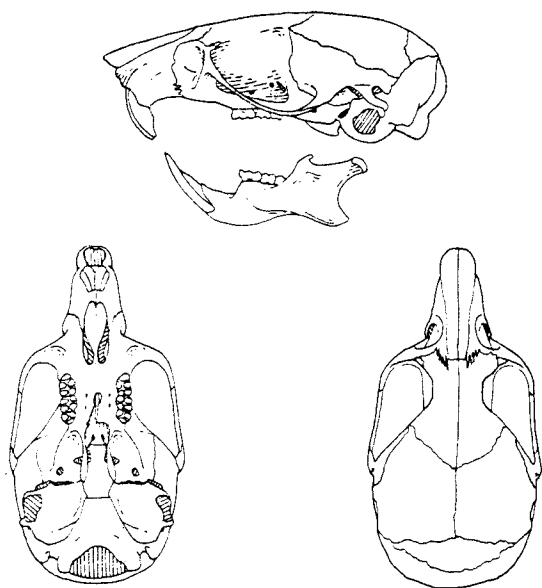


FIGURE 3. Dorsal, ventral, and lateral views of skull and lateral view of lower jaw of holotype of *Reithrodontomys paradoxus* (after Hall, 1981). Greatest length of skull is 22.0 mm.

other members of the subgenus *Aporodon* in both external and cranial features. It most closely resembles *R. brevirostris*, from which it may be distinguished as described in the diagnosis above. From *R. gracilis*, which it also resembles, *R. paradoxus* differs principally as follows: much darker dorsally and with distinct, dark, wedge-shaped markings on the hindfeet; rostrum proportionately longer and zygomatic plate narrower. (Jones and Genoways, 1970).

DISTRIBUTION. Known certainly only from two specimens from the type locality in Nicaragua, but probably occurring elsewhere in the hills (Meseta de los Pueblos) of the west-central Nicaraguan departments of Carazo, Grenada, Managua, and Masaya; however, a specimen from near San Ramón, Alajuela, Costa Rica, probably represents this species (Jones and Genoways, 1970). See Fig. 4. No fossils are known.

REMARKS. Little is known of the biology of this harvest mouse. Other small mammals taken at the type locality in Nicaragua included *Liomys salvini*, *Oryzomys couesi*, *O. fulvescens*, *Nyctomys sumichrasti*, *Peromyscus gymnotis*, and *Sigmodon hispidus*. A June-taken subadult female still had a patch of grayish juvenile pelage on the nape of the neck although areas around the mammae are naked in the museum skin, suggesting the animal may have been lactating at the time of capture (or a short time previously).

All three known specimens of *R. paradoxus* first were referred to *R. brevirostris* by Anderson and Jones (1960) "because they can be convincingly identified as that species using Hooper's (1952:30-31) key to Central and South American harvest mice. Only after undoubted *brevirostris* were available from Nicaragua did the original misidentification become obvious" (Jones and Genoways, 1970).

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