

Heteromys oresterus. By Duke S. Rogers and Judith E. Rogers

Published 5 June 1992 by The American Society of Mammalogists

***Heteromys oresterus* Harris, 1932**
Mountain Spiny Pocket Mouse

Heteromys oresterus Harris, 1932:4. Type locality "El Copey de Dota in the Cordillera de Talamanca, Costa Rica, at an altitude of 6,000 feet."

CONTEXT AND CONTENT. Order Rodentia, Suborder Scuirognathi (Carleton, 1984), Infraorder Myomorpha, Superfamily Geomyoidea, Family Heteromyidae, Subfamily Heteromyinae, genus *Heteromys*. The genus *Heteromys* included 10 species according to Honacki et al. (1982), but Rogers and Schmidly (1982) and Rogers (1990) recognize only seven. For a generic account and key to species of *Heteromys*, see Schmidt et al. (1989). According to Rogers (1990), *H. oresterus* should be removed from the subgenus *Xylomys* and placed in the subgenus *Heteromys*, where its affinities lie with the *H. desmarestianus* species group. *H. oresterus* is monotypic (Hall, 1981).

DIAGNOSIS. *Heteromys oresterus* can be distinguished from other *Heteromys* by a combination of features. Like *H. nelsoni*, the adult pelage of *H. oresterus* is harsh, but the bristles are soft, whereas all other species of *Heteromys* possess adult pelage consisting of stiff bristles or spines. *H. oresterus* can be distinguished from *H. nelsoni* by the presence of a white edge around the ears and by posterior ends of premaxillae that extend beyond the posterior margins of the nasals (Schmidt et al., 1989). *H. oresterus* does not occur sympatrically with any other species of *Heteromys* (Harris, 1932; Rogers, 1986).

GENERAL CHARACTERS. *Heteromys oresterus* is a large, dusky-colored spiny pocket mouse. Harris (1932:4) characterized *H. oresterus* as follows: "Upper parts blackish gray grizzled with Ochraceous-Buff hairs. Sides more buffy than the median area of the back and head. Ears blackish with white edgings. Underparts and feet white. Fore legs above like color of sides. Hind legs above and ankles dark gray. Tail black above and white below except at the base, where it is black all around. Tail with white tip." According to Harris (1932:4) the skull (Fig. 1) is "similar to *repens* [now considered to be a subspecies of *H. desmarestianus* by Hall, 1981] but with longer rostrum more inflated anteriorly; premaxillae reaching posteriorly beyond the nasals; palate narrower; bullae less inflated."

Individuals undergo a molt from subadult (Genoways, 1973) into adult pelage during age class III (defined by Rogers and Schmidly, 1982, as individuals exhibiting little wear on permanent premolars and the presence of a median valley between anterior and posterior molar lophs). Adult males (according to Rogers and Schmidly, 1982, are those individuals whose anterior and posterior molar lophs are fused, at least lingually) average larger than females in most external and cranial measurements, although small samples from individual localities preclude meaningful statistical analysis. Means and ranges (in parentheses) of external and cranial measurements (in mm) of 17 adult males and females (Rogers, 1986) are: total length, 327.0 (304-353); length of body, 144.2 (136-182); length of tail, 172.8 (162-194); length of hind foot, 40.2 (39-41); length of ear, 18.4 (14-22); greatest length of skull, 39.3 (37.2-40.9); zygomatic breadth, 17.3 (16.8-18.0); length of rostrum, 18.2 (17.1-19.3); length of nasals, 16.0 (14.9-17.7); least interorbital constriction, 9.1 (8.7-9.9); mastoid breadth, 15.8 (15.1-16.5); length of maxillary toothrow, 5.4 (5.1-5.6); interorbital width, 9.7 (8.4-10.2); interorbital length, 5.0 (4.5-5.8), depth of braincase, 11.7 (11.3-12.4). Weight (in g) of two adult (Rogers and Schmidly, 1982) males and a non-pregnant female from near La Trinidad de Dota and Ojo de Agua in San José Province, Costa Rica, averaged 79.0 (range, 64.0 to 98.0).

DISTRIBUTION. In addition to the type locality, *H. oresterus* has been taken from the following "cloud forest" localities (Fig. 2) in San José Province, Costa Rica (Rogers, 1986): 2.2 km E (by road) La Trinidad de Dota, 2,600 m; El Muñeco (Rio Navarro), 16.5 km S Cartago; Fila de Maquina, ca. 7.5 km E Canaan, ca. 2,650 m; and 4 km S, 2 km E Ojo de Agua, 9°34'45"N, 83°48'06"W, 2,535 m. There is no fossil record of *H. oresterus*.

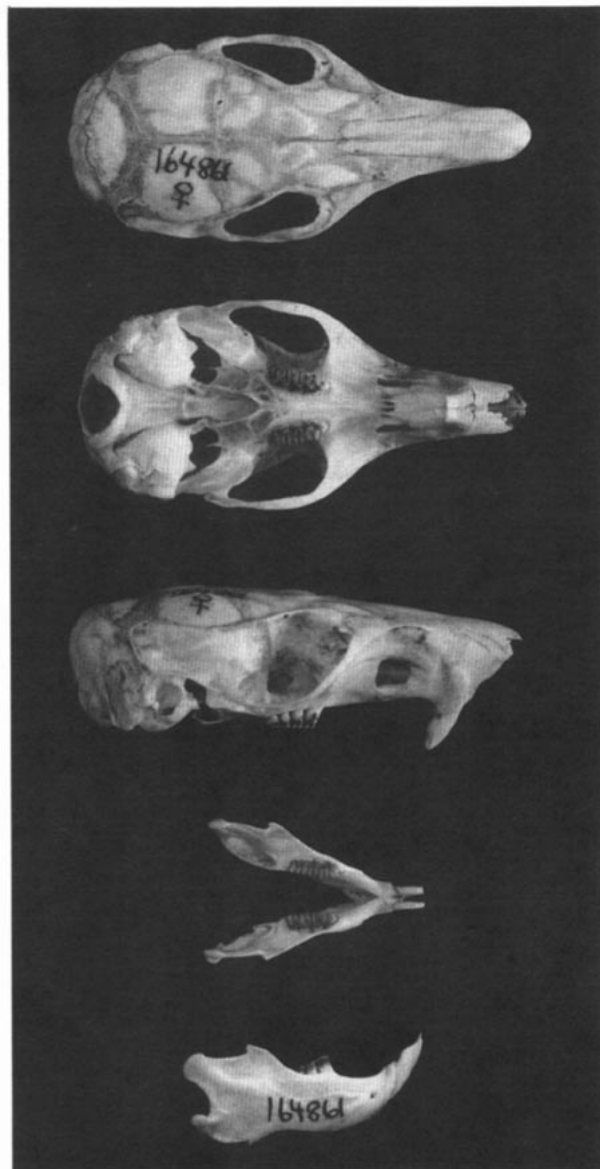


FIG. 1. Dorsal, ventral, and lateral views of the cranium, and lateral view of the mandible of an adult female *Heteromys oresterus* (Museum of Vertebrate Zoology 164861) from 2.2 km E (by road) La Trinidad de Dota, San José Province, Costa Rica. Greatest length of skull is 38.4 mm.

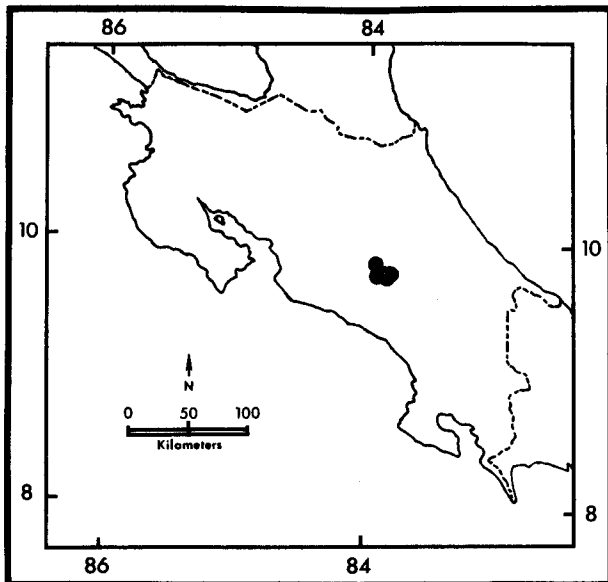


FIG. 2. Map of Central America illustrating the distribution of *Heteromys oresterus* in Costa Rica.

ONTOGENY AND REPRODUCTION. Two male *H. oresterus* with scrotal testes (one adult and one subadult) were collected in July and August. Sizes of testes for the adult and subadult were 24 by 15 and 7 by 4 mm, respectively. Of four females collected during the same months, two were nulliparous subadults. One of the adult females had swollen uteri with no scars and the other was pregnant. The pregnant female had three small (non-measurable) embryos; two in the right uterine horn and another in the left. Another adult female collected in May had an enlarged uterus. According to Goodwin (1946), litter sizes range from three to five at birth, with four being the usual number.

ECOLOGY. Little is known regarding the natural history of the mountain spiny pocket mouse. Goodwin (1946:373) states that its food "consists largely of seeds of a great variety." Other species of mammals taken in association with *H. oresterus* include *Mustela frenata*, *Oryzomys albigularis*, *Peromyscus nudipes*, *Reithrodontomys creper*, *R. sumachrasti*, *Scotinomys teguina*, and *S. xerampelinus*.

GENETICS. The diploid karyotype consists of 60 chromosomes (Fig. 3) with a fundamental number of 78. Ten pairs of autosomes are biarmed (two pairs are metacentric and the remainder are either submetacentric or subtelocentric). The X chromosome is a large submetacentric, and the Y is subtelocentric or acrocentric (Patton and Rogers, in press a; Rogers, 1989). The C-banded karyotype of *H. oresterus* consists primarily of autosomes lacking heterochromatin. Several pairs stain darkly only at the telomeres, whereas a few autosomal pairs appear to possess narrow interstitial bands of heterochromatin. The Y chromosome is C-band positive over most of its length, with only a small terminal euchromatic segment (Rogers, 1989).

Based on outgroup analysis using *Chaetodipus*, the G-banded chromosomes of *H. oresterus* are most similar to *H. desmarestianus* in two of three alternate cladograms figured by Mascarello and Rogers (1988). A third cladogram arranged *H. desmarestianus*, *H. oresterus*, and an undescribed species of *Heteromys* as an unresolved trichotomy relative to *Liomys salvini* (Mascarello and Rogers, 1988).

Of the 30 presumptive genetic loci examined by Rogers (1990), only 6-phosphogluconate dehydrogenase was variable (two alleles detected) within one population of *H. oresterus* examined. No individuals were heterozygous at the 6-phosphogluconate dehydrogenase locus (Rogers, 1986; Patton and Rogers, in press b).

REMARKS. Hall (1981) assigned *H. oresterus* to the subgenus *Xylomys* (Merriam, 1902) on the basis of similarities in dentition, cranium, and comparatively soft pelage. In a review of morphological characters used to delineate groups within heteromyine rodents, Rogers (1986) found that the only consistent char-

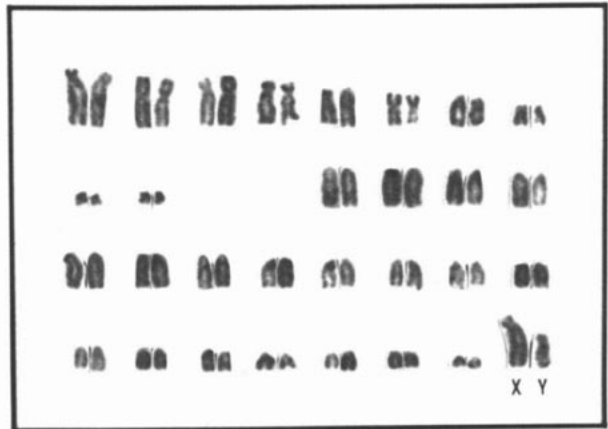


FIG. 3. Standard karyotype of a male *Heteromys oresterus* from 2.2 km E (by road) La Trinidad de Dota, San José Province, Costa Rica (Rogers, 1989).

acter uniting *H. nelsoni* and *H. oresterus* was the possession of soft pelage. *H. oresterus* was most similar to *H. desmarestianus* in dental, cranial, chromosomal, and genic features, leading Rogers (1990) to suggest that the reduction in coarseness of the pelage may have evolved as a parallel response to occupation of cooler habitats by these mice.

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