Chaetodipus lineatus. By Troy L. Best

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Chaetodipus Merriam, 1889

Chaetodipus Merriam, 1889:5. Type species Perognathus spinatus
Merriam, 1889, by original designation. Subgenus elevated to
generic level (Hafner and Hafner, 1983:24).

CONTEXT AND CONTENT. Order Rodentia, Suborder Sci- urognathia, Superfamily Geomyoidea, Family Heteromysidae, Subfam-
ily Perognathinae, Genus Chaetodipus. The genus Chaetodipus is
distinguished as follows: sole of hind foot naked; pelage relatively
coarse, often with stiff, spine-like bristles on rump; stiff, coarse
hairs usually project across anterior margin of ear pinna; antitragus
of ear pinna lobed; mastoid bulla usually not projecting posteriorly
beyond plane of occiput; posterior medial border of mastoid bulla
usually projecting as a distinct indentation into the supraoccipital;
interparietal width equal to or greater than interorbital breadth
(Williams et al., 1993). There are 14 species of Chaetodipus rep-
resented by two subgenera. A key to the species and subgenera
follows (modified from Williams et al., 1993):

1. Tail without distal crest and tuft of long hairs at tip; length
   of tail usually less than length of head and body ... C. (Bartognathus) hispidus

2. Tail with distal crest and long tuft of hairs at tip; length of
tail averaging greater than length of head and body
   Chaetodipus (Chaetodipus) ...

3. Rump with mix of long, stiff, bristly hairs or spines and
   normal hairs ...

4. Posterior end of mastoid bullae projecting slightly beyond
   the posterior plane of the occipital ...

5. Size moderate, length of head and body generally < 90 mm;
   length of hind foot usually < 26 mm; width of interpariet-
etals averaging ≤ 5.9 mm, rarely ranging to 6.3 mm
   C. formosus

6. Size large, length of head and body generally ≥ 90 mm;
   length of hind foot usually ≥ 26 mm; width of interpariet-
etals averaging ≥ 6.1 mm ... C. baileyi

5. Ear pinna large and rounded, length from notch usually
   ≥ 10 mm C. artus

6. Ear pinna short to moderate size, length from notch usually
   < 10 mm ...

7. Tail thinly haired and with small crest; occurring along the
   coastal lowlands of western Mexico, from southern Sonora
to northern Yavir; in southern part of range, broad
   lateral stripe of Buffy or yellowish contrasting with brown-
   ish-appearing dorsal parts; in northern Sinaloa and south-
   ern Sonora, lateral stripe narrow or faint ... C. pernix

8. Tail with moderate to large crest; not occurring south of
   southern Sonora along the Pacific coast of mainland Mex-
   ico; lateral stripe on sides between fore and hind limbs
   faint or absent ...

7. Dorsal color dull gray with buffy wash (no blackish over-
   wash); buffy lateral stripe narrow, but distinct; occurring
   only on the Mexican Plateau in San Luis Potosi and
   eastern Zacatecas
   C. lineatus

Dorsal color some shade of brownish or yellowish-gray with
faint to strong overwash or admixture of blackish ...

8. Occurring only on the Baja California peninsula from San
   Felipe southward; tail faintly annulated in fresh specimens
   and slightly longer than length of head and body; inter-
   orbital breadth averaging > 25.8% of occipital nasal length,
   except for some insular populations ...
   C. arenarius

In Baja California, only occurring on the plains of the Gulf
of California in the northeastern corner, from San Felipe
northward; elsewhere ranging widely in the creosotobush
(Larrea) deserts of the United States and Mexico; tail
annulated, and considerably longer than length of head
and body; interorbital breadth averaging < 25% of oc-
cipital nasal length in most populations, including those in
Baja California ...

C. penicillatus

9. Ear pinna long, usually measuring > 9 mm ...

10. Ear pinna short, usually measuring < 9 mm ...

11. Occurring only west of the Colorado River in southern
    Nevada, California, or the Baja California peninsula ...
    Not occurring west of the Colorado River in southern Ne-
    vada, California, or the Baja California peninsula ...

12. Broad lateral stripe of Buffy (yellowish with strong orange
tone) contrasting with brownish-appearing upperparts.

FIG. 1. Dorsal, ventral, and lateral views of cranium and lateral
view of mandible of Chaetodipus lineatus from near Tapeyes, 1,020 m,
San Luis Potosi (male, University of Kansas Museum of Natural
History 39932). Greatest length of cranium is 25.0 mm. Photo-
graphs by T. H. Henry.
**Fig. 2.** Distribution of Chaetodipus lineatus in Mexico (Hall, 1981).

which shade to more blackish on the rump; skull relatively arched dorsally

C. fallax

Narrow lateral stripe that is pale yellowish-gray, or obsolete; upperparts brownish to pale buffy yellow, not shading to more blackish on rump; skull relatively flattened dorsally

C. spinatus

Length of head and body averages ca. 77–80 mm; tail heavily crested and pelage of uppersparts relatively coarse or harsh; spines on rump often sparse and difficult to detect; in western Texas and Chihuahua, dorsal wing of premaxilla extending distinctly beyond posterior tip of nasal

C. nelsoni

Length of head and body averaging ca. 70–73 mm; tail moderately crested and pelage of uppersparts not markedly coarse; spines on rump often sparse and difficult to detect; in western Texas and Chihuahua, dorsal wing of premaxilla terminating only slightly beyond posterior tip of nasal

C. intermedius

Occurring only west of the Colorado River in California and Baja California

Occurring only on the Pacific slopes and plains of the coastal mainland of Mexico

C. arenatus

A few, weakly developed bristles on rump; length of ear usually <10 mm; occurs in Baja California from San Felipe southward

C. californicus

Dorsal wing of premaxilla extending distinctly beyond posterior tip of nasal; length of mastoid bullae averaging <6.0 mm

C. artus

Dorsal wing of premaxilla terminating at about even with posterior end of nasal; length of mastoid bullae averaging >6.5 mm

C. goldmani

**Chaetodipus lineatus** (Dalquest, 1951)

**Lined Pocket Mouse**

Perognathus lineatus Dalquest, 1951:362. Type locality “1 km south of Arriaga, San Luis Potosí, Mexico.”

**CONTEXT AND CONTENT.** Context noted in generic summary above. C. lineatus is monotypic (Hall, 1981).

**DIAGNOSIS.** Chaetodipus lineatus differs from *C. nelsoni* in lacking long, stiff spines in the pelage of the rump area. It resembles *C. nelsoni* in size, proportions, and cranial characters (Fig. 1). Among the species of pocket mice that lack spines in the rump area, *C. lineatus* most closely resembles *C. penicillatus*, but differs from at least the geographically adjacent races of that species in its distinctive coloration, larger size, and larger, broader skull (Dalquest, 1951; Matson and Baker, 1986).

**GENERAL CHARACTERS.** Chaetodipus lineatus is small-sized for the genus (Best, 1993). It is a slim pocket mouse, with a crested tail that is longer than its head and body, and it lacks the long, stiff spines in the pelage of the rump area. The color of the upperparts is dull gray, finely but distinctly lined with buffy, especially on the head. The general appearance of the upperparts is near pale drab to drab gray. The sides are gray, and the underparts are white, separated from the gray of the sides by a faint indistinct line of pale buffy. The tail is dusky above and white beneath (Dalquest, 1951).

Average measurements (in mm) of 16 adult males and 10 adult females, respectively are: total length, 168.9, 163.2; length of body, 74.4, 73.6; length of tail, 94.5, 90.2; length of hind foot, 25.3, 25.8; length of ear, 7.4, 7.5; basal length of cranium, 15.3, 14.8; greatest length of cranium, 25.0, 24.3; maxillary arch spread, 11.7, 11.2; interorbital width, 6.2, 6.2; nasal length, 9.7, 9.3; intermaxillary width, 4.6, 4.6; alveolar length, 3.7, 3.7; incisural length, 1.7, 1.7; maxillary arch width, 1.3, 1.3; basioccipital length, 3.8, 3.7; greatest depth of cranium, 8.3, 8.2; greatest width of cranium, 13.4, 12.7; zygomatic width, 12.9, 12.4; and nasal width, 2.7, 2.6. Males are significantly larger than females in basal length of cranium, maxillary arch spread, nasal length, and zygomatic width (Best, 1993).

**DISTRIBUTION.** The lined pocket mouse occurs on the desert plains of San Luis Potosí and Zacatecas, and possibly in adjacent parts of Guanajuato and Jalisco (Fig. 2; Dalquest, 1951; Matson and Baker, 1986).

**FOSSILS.** The fossil history of Perognathinae extends back to the Miocene (Kurtén and Anderson, 1980). No fossils of *C. lineatus* are known. In addition, nothing is known regarding its physiology, ontogeny, reproduction, and genetic variation.

**ECOLOGY.** In San Luis Potosí, lined pocket mice occurred along rocky curbstones and along stone walls (Dalquest, 1953). *C. lineatus* is sympatric with *C. penicillatus* and *C. nelsoni* (Dalquest, 1951, 1953). However, *C. lineatus* is less restricted to areas of soft soil than is *C. penicillatus* (Dalquest, 1953). No parasites have been reported from *C. lineatus* (Whitaker et al., 1993).

**BEHAVIOR.** The habits of *C. lineatus* are much like those of *C. nelsoni*. It is nocturnal, emerging from burrows at the bases of desert plants or crevices in rock cliffs or rock walls ca. 1 h after dark, and rarely straying far from cover. Usually, it travels slowly, but when it crosses an open place, such as a road, it moves swiftly. Food consists of the seeds of desert plants. Near Arriaga, San Luis Potosí, it feeds on seeds of prickly pear cactus (*Opuntia*). The fruits may be opened and partially eaten, presumably by birds, and seeds falling to the ground are gathered by lined pocket mice. However, *C. lineatus* apparently does not feed on the red pulp of the cactus fruit (Dalquest, 1953).

**REMARKS.** Phenetic analyses of morphologic characters have placed *C. lineatus* closest to *C. spinatus* (Caire, 1976) or to *C. intermedius* and *C. nelsoni* (Best, 1993). The taxonomic status of *C. lineatus* has been questioned because of its great similarity to *C. nelsoni*, except for its color and lack of rump spines. However, variability in presence or absence of rump spines has been noted for a number of species of *Chaetodipus*, including those typically having spines, and normally spineless species. Further, there is no definite distinction between the normal, coarse, tubed-overhairs, weak bristles, and stiffer spines among species of *Chaetodipus*. Possibly, *C. lineatus* represents individuals of *C. nelsoni* without spines; that they are dull gray rather than dark brownish suggests that a simple mutation or age is responsible for the differences (Williams et al., 1993).

*Chaetodipus* is from the Greek *chaeto* referring to bristle-like hairs, *idi* meaning two, and *podos* alluding to feet. The specific epithet *lineatus* is derived from the Latin *lineatus* meaning streaked or marked with lines (Jaeger, 1955).
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LITERATURE CITED


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