



10-28-2002

Extirpation of Bailey's pocket mouse, *Chaetodipus baileyi fornicatus* (Heteromyidae: Mammalia), from Isla Montserrat, Baja California Sur, Mexico

Sergio Ticul Alvarez-Castañeda

Centro de Investigaciones Biológicas del Noroeste, La Paz, Baja California Sur, Mexico

Patricia Cortés-Calva

Centro de Investigaciones Biológicas del Noroeste, La Paz, Baja California Sur, Mexico

Follow this and additional works at: <https://scholarsarchive.byu.edu/wnan>

Recommended Citation

Alvarez-Castañeda, Sergio Ticul and Cortés-Calva, Patricia (2002) "Extirpation of Bailey's pocket mouse, *Chaetodipus baileyi fornicatus* (Heteromyidae: Mammalia), from Isla Montserrat, Baja California Sur, Mexico," *Western North American Naturalist*. Vol. 62 : No. 4 , Article 14.

Available at: <https://scholarsarchive.byu.edu/wnan/vol62/iss4/14>

This Note is brought to you for free and open access by the Western North American Naturalist Publications at BYU ScholarsArchive. It has been accepted for inclusion in Western North American Naturalist by an authorized editor of BYU ScholarsArchive. For more information, please contact scholarsarchive@byu.edu, ellen_amatangelo@byu.edu.

EXTIRPATION OF BAILEY'S POCKET MOUSE,
CHAETODIPUS BAILEYI FORNICATUS (HETEROMYIDAE: MAMMALIA),
FROM ISLA MONTSERRAT, BAJA CALIFORNIA SUR, MEXICO

Sergio Ticul Alvarez-Castañeda¹ and Patricia Cortés-Calva¹

Key words: Rodentia, *Chaetodipus baileyi*, islands, extinction, Mexico.

Seven taxa of rodents endemic to north-western Mexico recently have been reported as extirpated: *Peromyscus maniculatus cineritius*, *P. pembertoni*, *Dipodomys gravipes*, *Oryzomys couesi peninsularis*, *Neotoma anthonyi*, *N. bunkeri*, and *N. martinensis* (Lawlor 1983, Mellink 1992, Smith et al. 1993, Alvarez-Castañeda 1994, Alvarez-Castañeda and Cortés-Calva 1996). Extirpation of these rodents may be a consequence of human activity and the introduction of nonnative species, primarily cats (*Felis silvestris*) that prey on the endemic rodents and *Mus musculus* and *Rattus rattus* that may compete with native species for resources (Alvarez-Castañeda 1997). We report the possible extirpation of an endemic rodent, Bailey's pocket mouse (*Chaetodipus baileyi fornicatus*), from Isla Montserrat.

Isla Montserrat, located 13 km east of the Baja California peninsula, has an area of 19.4 km² (Nieto-Garibay 1999). The island has many small mountains and canyons; the soil is poor and in some areas very stony. Dominant plants on Isla Montserrat include golondrina (*Euphorbia magdalenae*), pitaya agría (*Stenocereus gummosus*), matorca (*Jatropha cuneata*), cholla (*Opuntia cholla*), dipúa o medesá (*Cercidium microphyllum*), and palo fierro (*Olneya tesota*; León De La Luz and Pérez Navarro 1997).

Chaetodipus baileyi has 7 subspecies, 2 of which inhabit islands in the Sea of Cortez: *C. b. fornicatus* on Isla Montserrat and *C. b. insularis* on Isla Tiburon. Three other subspecies occur on the Baja peninsula and 2 in the state of Sonora (Patton and Alvarez-Castañeda 1999). The Bailey's pocket mouse of Montserrat island (*C. b. fornicatus*) was described by Burt (1932) on the basis of 12 specimens. Ecological data

were not provided in the original description. This taxon is considered rare by Mexico (NOM-059-Ecol 1994) but is not listed by CITES (1989).

The last 2 specimens of *C. b. fornicatus* from Montserrat island (10, collected 21 May 1975) are housed in the mammal collection of the Instituto de Biología of the Universidad Nacional Autónoma de México. Subsequent surveys of the islands did not yield additional specimens, but specimens of Burt's deer mouse, *Peromyscus caniceps*, were collected on 20 May 1975 (31), 10 August 1986 (2), 16 January 1987 (5), 11 May 1987 (3), 24 October 1995 (3), 18 May 1997 (3), and 27 April 1998 (1).

Four surveys of rodents in various areas of Montserrat island were conducted over a period of 5 years by the Centro de Investigaciones Biológicas del Noroeste S. C. and the Universidad Autónoma de México. The surveys attempted to avoid seasonal and annual variations in capture success by trapping in different years and months: August 1993 (600 trap-nights on the southwestern part of the island); November 1995 (950 trap-nights, western; 700 trap-nights, northwestern); May 1997 (479 trap-nights, northeastern; 300 trap-nights, eastern); and April 1998 (120 trap-nights, northern end of the island), for a total of 3149 trap-nights. Sherman and Museum Special traps were used in all surveys. Transects of 40 traps, with 10-m spacing between traps, were set in a variety of habitats, avoiding cliffs and favoring scrub areas likely preferred by the mice.

The proportion of *P. caniceps* collected in every survey was about 0.2% (Alvarez-Castañeda et al. 1998), but no *C. baileyi fornicatus* were trapped. No *Mus* or *Rattus* were collected.

¹Centro de Investigaciones Biológicas del Noroeste, Mar Bermejo, 195 Playa Palo Santa Rita, La Paz, Baja California Sur, 23090 México.

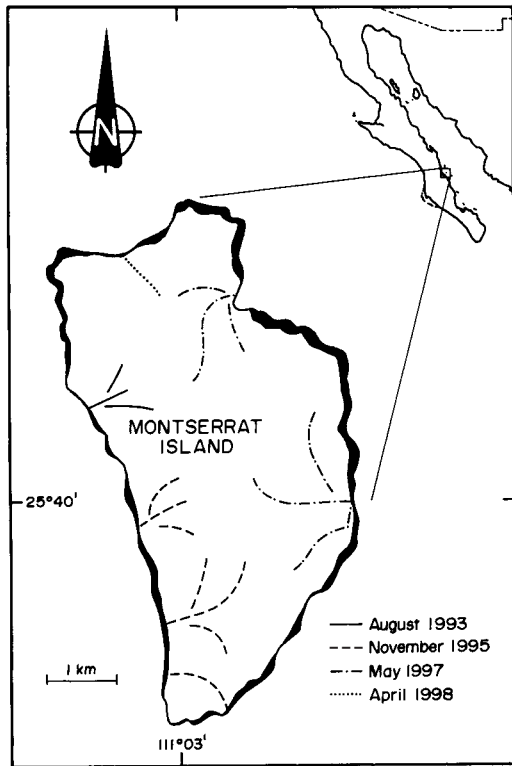


Fig. 1. Location of Montserrat island, off the eastern coast of Baja California peninsula. Heavy black borders around the island represent cliffs.

Feces of feral cats were found on the island in all years, but these did not contain *Chaetodipus* hairs or bones. Cat feces were observed in all parts of the island visited during a botanical survey of the island in 1998 (Leon De la Luz personal communication). It is not known when cats were introduced to the island. Isla Montserrat currently has a fishermen's camp, but human activity otherwise is very low.

It is now more than 25 years since the last *C. b. fornicatus* were trapped, and there is no subsequent evidence of this rodent occurring on the island. The most plausible explanation for the apparent extirpation of *Chaetodipus baileyi fornicatus* is predation by domestic cats.

We thank the Mexican Navy for transport to Montserrat island; D. Hafner, M. Hafner, B. Riddle, and Cheryl Patten for reviewing the manuscript draft; and FA. Cervantes for use of the Colección Nacional de Mamíferos. Finan-

cial support to STA-C was provided by the Consejo Nacional de Ciencia y Tecnología (CONACyT J28319N).

LITERATURE CITED

- ALVAREZ-CASTAÑEDA, S.T. 1994. Current status of the rice rat *Oryzomys couesi peninsularis*. *Southwestern Naturalist* 39:99–100.
- _____. 1997. Diversidad y conservación de mamíferos terrestres en el estado de Baja California Sur, México. Ph.D. thesis, Universidad Nacional Autónoma de México. 221 pp.
- ALVAREZ-CASTAÑEDA, S.T., AND P. CORTÉS-CALVA. 1996. Anthropogenic extinction of the endemic deer mouse, *Peromyscus maniculatus cineritius*, on San Roque island, Baja California Sur, Mexico. *Southwestern Naturalist* 41:99–100.
- ALVAREZ-CASTAÑEDA, S.T., P. CORTÉS-CALVA, AND C. GÓMEZ-MACHORRO. 1998. *Peromyscus caniceps*. *Mammalian Species* 602:1–3.
- BURT, W.H. 1932. Description of heretofore unknown mammals from islands in the Gulf of California, México. *Transactions of the San Diego Society of Natural History* 7:161–182.
- CITES. 1989. Appendices I, II, and III to the Convention on International Trade in Endangered Species of Wild Fauna and Flora.
- LAWLOR, T.E. 1983. The mammals. Pages 265–287 in T.J. Case and M.L. Cody, editors, *Island biogeography of the Sea of Cortez*. University California Press, Berkeley. 508 pp.
- LEÓN DE LA LUZ, J.L., AND J.J. PÉREZ NAVARRO. 1997. Advances in the botany of the Gulf of California islands, Baja California, México. *Baja California Botanical Symposium*, San Diego Natural History Museum.
- MELLINK, B.E. 1992. Status de los Heterómidos y Cricétidos endémicos del Estado de Baja California. *Contribuciones Académicas, Serie Ecológica*, Centro Investigaciones Científicas y Educativas Superiores de Ensenada, 1–10.
- NIETO-GARIBAY, A. 1999. Características generales del Noroeste de México. Pages 10–25 in S.T. Alvarez-Castañeda and J.L. Patton, editors, *Mamíferos del Noroeste de México*. Centro de Investigaciones Biológicas del Noroeste, S. C., La Paz, México.
- NOM-059-ECOL. 1994. Norma Oficial Mexicana, que determina las especies y subespecies de flora y fauna silvestre terrestre y acuática en peligro de extinción, amenazadas, raras y sujetas a protección especial, y establece especificaciones para su protección. 16 mayo.
- PATTON, J.L., AND S.T. ALVAREZ-CASTAÑEDA. 1999. Family Heteromyidae. Pages 351–444 in S.T. Alvarez-Castañeda and J.L. Patton, editors, *Mamíferos del Noroeste de México*. Centro de Investigaciones Biológicas del Noroeste, S. C., La Paz, México.
- SMITH, FA., B.T. BESTELMEYER, J. BIARDI, AND M. STRONG. 1993. Anthropogenic extinction of the endemic woodrat, *Neotoma bunkeri* Burt. *Biodiversity Letters* 1: 149–155.

Received 7 August 2000

Accepted 26 September 2001