

ECOLOGICALLY SIGNIFICANT RANGE EXTENSION FOR THE CHILEAN TREE MOUSE, *Irenomys tarsalis*

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ABSTRACT: We document a capture of the Chilean tree mouse (*Irenomys tarsalis*) from ecologically anomalous habitat near Pto. Ibáñez, Chile, near the xeric end of the transition from temperate rainforest to steppe. Typical of *Nothofagus* forest, a single reproductively active male specimen was captured in a shrubby riparian corridor ca. 40 km S and 900 m lower in elevation than the nearest forested region. This record underscores our limited understanding of this fauna, and calls for further surveys and monitoring in key habitats in this region.

RESUMEN: Significativa extensión ecológica de la laucha arbórea chilena (*Irenomys tarsalis*). Documentamos la captura de un ejemplar de laucha arbórea (*Irenomys tarsalis*) en un hábitat ecológico anómalo para la especie en los alrededores de Puerto Ibáñez, Chile, cerca del extremo árido de la transición de bosque lluvioso templado a estepa. A pesar de ser típico del bosque de *Nothofagus*, se capturó un espécimen, macho reproductivamente activo, en una ribera arbustiva ubicada a unos 40 kilómetros al S y unos 900 m mas bajo, en altitud, que la región boscosa más cercana. Esta observación resalta nuestro limitado conocimiento de esta fauna, y constituye una llamada de atención para otros censos y monitoreos de uno de los hábitats clave de esta región.

Key words. Chilean tree mouse. Patagonian Chile. Range extension.

Palabras clave. Extensión de distribución. Laucha arborea chilena. Patagonia chilena.

The Chilean tree mouse (*Irenomys tarsalis*) is a relatively rare element in the fauna of southern Chile and adjacent parts of Argentina (Osgood, 1943; Mann, 1978; Meserve et al., 1988, 1991; Patterson et al., 1989, 1990; Kelt et al., 1999). As typifies rare species, the edges of its geographic and ecologic range remain poorly documented; Saavedra and Simonetti (2000) recently documented an apparently isolated population ca. 200 km north of the known range for this species (**Fig. 1**). Osgood (1943) reported this species from Malleco Province south through the Lake District (*I. t. tarsalis*)

and then south of here on Chiloé Island and the Guaitecas Islands (*I. t. longicaudatus*). Kelt (1993) summarized knowledge of this species, and reported it occurring in continental southern Chile (the “Chile Chico” region) south to the region of Aisén. Muñoz-Pedrerros (2000) indicated this species occurring further south, but the range map provided by this author appears suspect, as it includes areas south of Lago General Carrera which are characterized as Patagonian Steppe (Estepa Patagónica de Aisén; Gajardo, 1993). This is thought to be unsuitable for this species (Kelt, 1994, 1996),

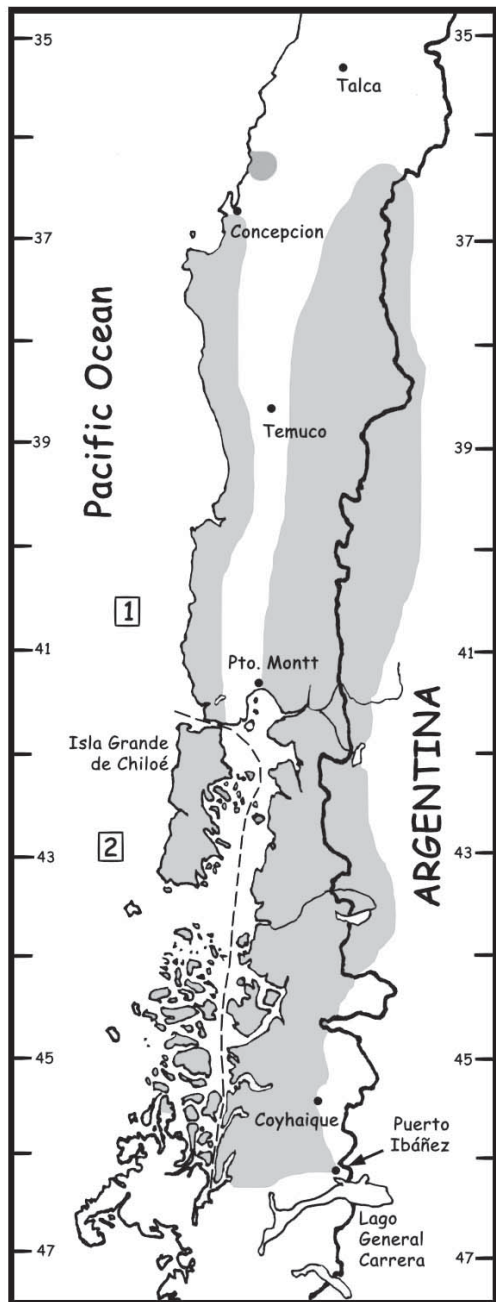


Fig. 1. Known distribution of *Irenomys tarsalis* in southern Chile and adjacent parts of Argentina; subspecies are separated by a dashed line (1, *I. t. tarsalis*; 2, *I. t. longicaudatus*). Key cities are indicated, and the location reported here is highlighted with an arrow.

which generally is found in forested areas. Most recently, Figueroa Rojas et al. (2001:39) stated that this species was “associated strictly with densely forested and humid habitats. In Aysén, distributed especially in boreal and humid ecoregions” (translated by DAK).

In November 2005 we captured a male specimen of *Irenomys tarsalis* in a matorral habitat just north of Puerto Ibáñez and Lago General Carrera. To our knowledge this represents the first documentation of this species in this environment. Consequently, we believe that this observation deserves recognition in the literature.

Locality. Chile, XI Región, 2 km N, 0.25 km W, Puerto Ingeniero Ibáñez. 46.271° S, 71.968° W, 212 m (Fig. 1). The site is a shrub-dominated corridor of riparian habitat where the town of Puerto Ibáñez obtains its water. This locality is a minimum of ca. 5 km from forested habitat (i.e., the slopes of Cerro Farellon), where Reise and Venegas (1974) captured a single male *Irenomys* (see below). Our trapping effort comprised 50 Museum Specials traps, which we placed in the afternoon of 30 November 2005 and checked twice daily until the morning of 2 December 2005.

Specimen. Standard skin, skull, partial skeleton (pes and manus with skin) deposited in the Museum of Wildlife and Fish Biology (WFB), Department of Wildlife, Fish, and Conservation Biology, University of California, Davis. Catalog number WFB-5089 (Orig. number DAK-5734). Reproductively active male with descended testes (11x7 mm) and vascularized caudal epididymides. External measurements (mm): total length, 277; tail, 152; hind foot (nail), 29(2); ear, 22; weight, 54 g.

Habitat. The riparian corridor bordered a small creek, generally < 1 m across. Riparian vegetation was restricted to 2-3 m on either side of the creek, although ca. 25 m upstream from the point where we retrieved the *Irenomys*, moisture seeped to the surface to create a boggy zone perhaps 10x15 m in area, itself surrounded by dense vegetation. Dominant plants include *Bacharis* sp. (“vautro”) and *Colliguaya integerrima*, with lesser numbers

of various species, including *Fuchsia magellanica*. Riparian vegetation generally was ca. 3 m tall. Habitat immediately adjacent to the riparian zone was low shrub-steppe (Vegetation type 8.A.1.6 – Duraznillo-Neneo – of Gajardo, 1993), dominated by *C. integerrima* and *Mulinum spinosum*.

Associated species. Other species captured in this riparian zone include *Loxodontomys micropus*, *Abrothrix longipilis*, *A. olivaceus* (includes *A. o. xanthorhinus* following Pearson and Smith, 1999, and Smith et al., 2001). Species captured in adjacent (Duraznillo-Neneo) habitats included *A. olivaceus*, *Phyllotis xanthopygus*, and *Eligmodontia morgani*. In rocky outcrops not far from this site we captured *P. xanthopygus*, *A. olivaceus*, *E. morgani*, *Euneomys petersoni* (*E. chinchilloides* in Kelt, 1996), and *Reithrodon auritus*. Thus, this region is notably rich in mammal species, reflecting in part the diverse and heterogeneous plant communities of the region. However, with the exception of *Irenomys*, most species recorded in the vicinity of Puerto Ibáñez (Kelt, 1994, 1996) correspond to the more xeric Patagonian mammal fauna; exceptions to this include *A. longipilis suffusus* and animals intermediate between *A. olivaceus brachiotis* and *A. o. xanthorhinus*, which characterize the ecotonal region between rainforest and steppe (Osgood, 1943; Kelt et al., 1995).

Synthesis and biogeographic implications. Kelt (1994) reported the capture of *Irenomys* in ñire forest (*Nothofagus antarctica*) just north of Coyhaique, and Reise and Venegas (1974) captured a single male specimen adjacent to lenga forest (*N. pumilio*) at Cuesta del Diablo, approximately 40 km N Puerto Ibáñez. It is notable that Reise and Venegas captured their single *Irenomys* on a steep slope with grass (*Festuca*) and ericaceous shrubs; they speculated that it may have “left its typical habitat because of sexual activity” (p. 80). Our specimen, however, was captured about 900 m lower in elevation, and in a much dryer region. Although the discovery of a single *Irenomys tarsalis* near the xeric end of this ecotone is of natural history interest, in and of

itself it does not provide “deep” insights into the ecology of the region’s fauna. It does underscore the remarkable dispersal abilities of this species, with implications for understanding the ecological biogeography of the region. Most notably, this begs the question of how many species of this region have had at least transient access to ecological communities throughout this ecotone, and how this might affect local habitat assembly (cf. Kelt et al., 1995).

In spite of being perhaps the best-known mammal fauna in South America, Chile continues to yield surprises, including new species (e.g., Hutterer, 1994; Kelt and Gallardo, 1994; Spotorno et al., 1998) and genera (Patterson, 1992). The region of transition between Valdivian and Fuegian rainforest and the less structurally complex habitats of Patagonia have attracted a number of workers in recent decades (Vuilleumier, 1968, 1972; Pearson and Pearson, 1982; Pearson, 1983, 1984; Ralph, 1985; Kelt, 1994, 1996; Kelt et al., 1995, 1999; Pearson and Smith, 1999; Smith et al., 2001) and merits continued investigation.

ACKNOWLEDGEMENTS

This work was supported in part by the National Science Foundation (DEB-0319966) to P. L. Meserve and D. A. Kelt), the UCD Selma Herr Fund for research in ornithology (to DAK and AE), and the Department of Wildlife, Fish, and Conservation Biology. The manuscript benefited from two anonymous reviews. We thank the Servicio Agrícola y Ganadero (SAG) for authorization to collect mammals in Chile, and Dr. Eduardo Palma for his assistance in procuring this authorization.

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