

# Mammalia, Rodentia, Cricetidae, *Calomys laucha* (Fischer, 1814): Distribution extension in southern Brazil

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**ABSTRACT:** The geographic distribution of *Calomys laucha* in Brazil, known only from the southern portion of Rio Grande do Sul state, up to the state's Central Depression region, is extended approximately 350 km to the north with a new record at Faxinalzinho municipality, post Depression region in Rio Grande do Sul state. The species seems to be associated with dense shrubby vegetation in this area.

*Calomys laucha* is a small rodent of the subfamily Sigmodontinae (family Cricetidae) that is found only in South America, more specifically in southern Bolivia, western Paraguay, north and eastern Argentina, Uruguay and southeastern Brazil (Musser and Carleton 2005; Bonvicino *et al.* 2008). In Brazil, this species is found in the Pampas biome in the state of Rio Grande do Sul (Mattevi *et al.* 2005). The species has terrestrial habits and is considered to be mainly granivorous (Vieira and Baumgarten, 1995).

The conservation status of *Calomys laucha* has been current classified as Least Concern (LC), according to the IUCN Red List of Threatened Species (2011). The species presents a wide distribution and a presumed large population size (Christoff *et al.* 2008). This rodent is found in dry biotopes (González *et al.* 1995), agricultural areas, open vegetation, meadows, mountain ranges, coastal sandbanks and specimens have been typically recorded in flat open areas (González 2001; Christoff *et al.* 2008). In Argentina, it generally constitutes the dominant species in cultivated field areas (Polop *et al.* 1993).

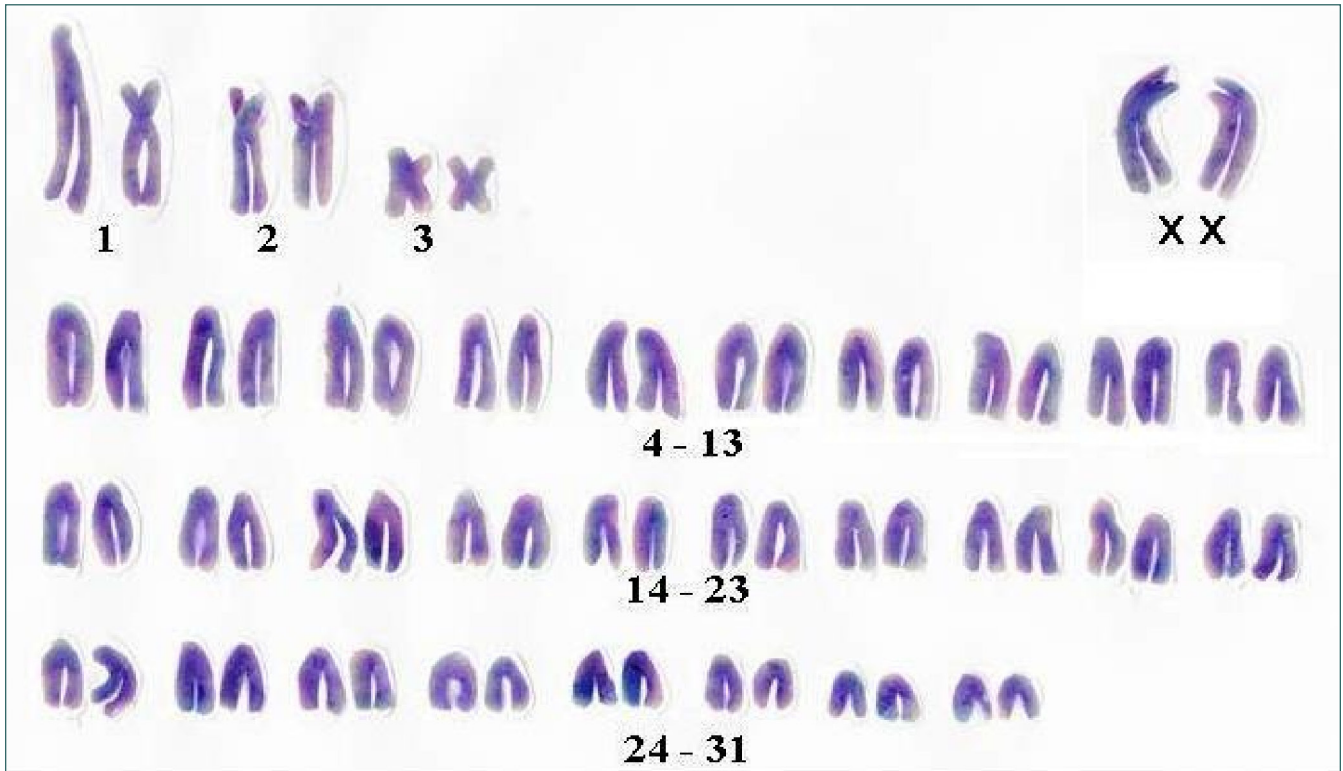
In this paper, we expand the known distribution of *C. laucha* to about 350 km north of its range. The new location is in the city of Faxinalzinho, Rio Grande do Sul, Brazil (27°20'11.9" S, 52°40'10.9" W), altitude of 685 meters. This new distributional locality is characterized by a transitional forest between Ombrophilous Mixed and Seasonal Forests (Leyser *et al.* 2009). The climate has marked seasons and is the Cfb type (Köppen, 1948): subtropical, with a dominant influence of the territorial pattern, humid, with rainfall uniformly distributed throughout the year, and mild summers. The area has some disturbance caused by cattle that graze in both open and forested habitats and agricultural activity (soybeans) which is the predominant activity of the region and occurs all along the area, which is surrounded by small farming properties.

An adult female specimen of *Calomys laucha* (Figure 1)

was sampled on 5 May 2010, in a shrubby area associated with forest borders in the city of Faxinalzinho. The specimen has a body length of 90 mm, tail length of 66 mm, ear length of 10 mm, foot length with nails of 16 mm, foot length without nails of 14 mm and weights 16 g. The individual was captured during a field study developed with the rodent community of that region, which consisted of three sampling periods between September 2009 and May 2010. In each trapping period, traps were placed randomly on the ground and the total trapping effort amounted to 2400 trap-nights (800 trap-nights per sampling). Standard Tomahawk® traps of one size (12cm x 12cm x 25cm) were used. Other rodents were concomitantly captured: *Akodon montensis* (36 specimens), *Oligoryzomys flavescens* (11), *Oligoryzomys nigripes* (4), *Mus musculus* (4) and *Akodon reigi* (2). The collection was held under the IBAMA (Brazilian Institute for the Environment and for Renewable Natural Resources) permit number: 15224-2.



**FIGURE 1.** Adult female of *Calomys laucha* sampled in Faxinalzinho municipality, state of Rio Grande do Sul, southern Brazil. Dorsal (A) and ventral (B) views of a stuffed skin (Specimen: N<sup>o</sup> Zoo 300).

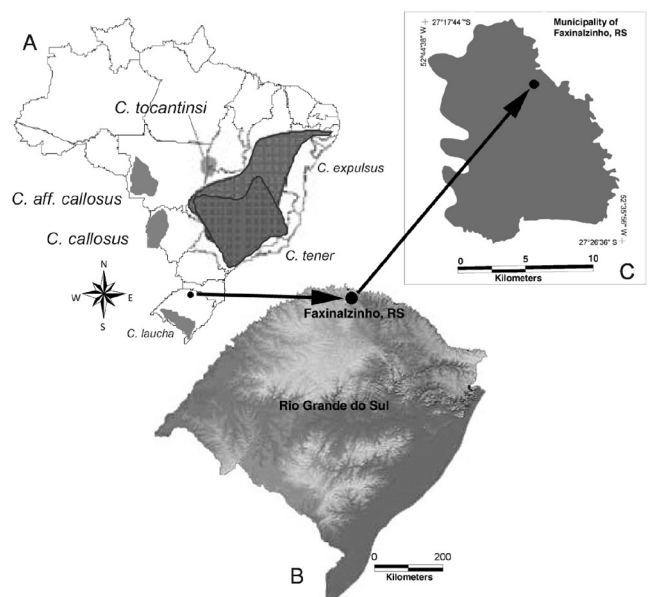


**FIGURE 2.** Conventional karyotype colored with Giemsa obtained from the sampled female of *Calomys laucha* ( $2n=64$ ;  $FNa=68$ ) in the city of Faxinalzinho, Rio Grande do Sul, southern Brazil.

The specimen identification was done based on external morphological traits (dorsal and lateral pelage coloration, visual identification of a white tufted hair on the back of the ear, at the basal part, which is characteristic of the genus, and darker color on the upper surface of the foot) and confirmed by karyological examination obtained through the method described by Ford and Hamerton (1956) and Guerra and Souza (2002). The individual presented a diploid karyotype number of  $2n = 64$  and a fundamental number of  $NFa = 68$  (Figure 2), and was deposited in the Zoological Collection of the Museu Regional do Alto Uruguai (MuRAU) at Universidade Regional Integrada do Alto Uruguai e das Missões - URI, Campus of Erechim (collection number N°Zoo 300). The same karyotype was found by Mattevi *et al.* (2005) in the extreme south of Brazil (near the border with Uruguay,  $32^{\circ}$  S), which apparently presented the same karyotype described by Brum-Zorrilla *et al.* (1990) for individuals of the surroundings of Laguna Negra, in Uruguay.

Little is known about *C. laucha* in Brazil and this new record represents an increase in the geographical distribution of the species, being the first specimen captured in the north region of Rio Grande do Sul state, which until now has presented records only for the southern portion of this state, in the region of the southern fields (Mattevi *et al.* 2005; Bonvicino *et al.* 2008). This register has expanded the distributional area of this species in approximately 350 km, officially confirming the presence of the species above the Central Depression region of the state (Figure 3). According to Christoff *et al.* (2008), there are no major threats affecting this species due to its wide distribution and occurrence in several protected areas. However, it may present taxonomic problems since a good series of specimens (including males and females of different age classes) has never been collected from a single location.

Since only one individual was captured, we can't confirm that there is a population established in the area or if it is an accidental record. This point is crucial since this species is very abundant in the Argentinean agroecosystems and this record could represent an invasive species case instead of a natural range extension. Due to the fact that there are no major roads nearby which could facilitate an accidental record (truck driven), we believe that this new record is a natural range extension, which provides a significant contribution for the species expansion range. Further studies and surveys in the area may bring some answers to this open question.



**FIGURE 3.** (A) Geographic distribution of *Calomys laucha* in Brazil (Modified From: Bonvicino *et al.* 2008). (B) Location of the Faxinalzinho municipality in the state of Rio Grande do Sul. (C) Location of the sampled area in Faxinalzinho municipality, southern Brazil.

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