Short Note

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Notes on the distribution of the genus *Andalgalomys* (Rodentia, Cricetidae), with the first record of *A. pearsoni* (Myers 1978) from Argentina

DOI 10.1515/mammalia-2015-0118
Received July 8, 2015; accepted November 19, 2015; previously published online January 22, 2016

Abstract: We documented the first record of *Andalgalomys pearsoni* (Myers 1978) in Argentina, based on one individual caught at Cerro Colorado (Metán department, Salta province, Argentina). This new record enlarges the distribution of this species, to date only known from Bolivia and Paraguay, ca. 530 km SW and fills a gap without records for *Andalgalomys* of approximately 850 km between Paraguay and NW Argentina. The finding of this mouse, caught more than 50 years ago, highlights the importance that biological collections have in our understanding of biological diversity.

Keywords: Chaco; distribution; Phyllotini; Salta; Sigmodontinae.

The Chaco is a complex environmental ecoregion dominated by subtropical and tropical dry woodlands that spans over 1,300,000 km^2 in central South America. This area harbors an exceptional biodiversity including about 3400 plant, ~500 bird, ~150 mammal, ~120 reptiles and ~100 amphibian species (The Nature Conservancy et al. 2005). Despite this impressive biological richness, several basic aspects of its biodiversity are not yet known. Rodents of the subfamily Sigmodontinae illustrate this assertion.

One of the least known taxa of this ecoregion are the Chaco mice of the genus *Andalgalomys* Williams and Mares, 1978. According to Braun (2015), this genus includes three species, *Andalgalomys olrogi* Williams and Mares, 1978, *Andalgalomys pearsoni* (Myers 1977), and *A. roigi* Mares and Braun 1996. However, karyological and molecular evidences strongly suggest that *roigi* should be included in the synonymy of *olrogi*, reducing the species in this genus to only two (see García 2003, Díaz et al. 2006). *Andalgalomys olrogi* was recently considered restricted to a few adjacent localities at an elevation of about 1000 m in the Bolsón de Pipanaco, a valley in the Monte Desert of central Catamarca province, northwestern Argentina; while *A. roigi* was mentioned for the Chaco and Chaco-Monte ecotone of west-central Argentina, from the provinces of Catamarca to Mendoza, between ~300 and 1000 m elevation (Braun 2015). Notwithstanding, some authors mentioned *A. olrogi* in Chaco environments (e.g. Jayat et al. 2011), and both taxa were registered in localities along the border of Catamarca and La Rioja provinces (e.g. Braun and Mares 1995, Sandoval 2012). In turn, *A. pearsoni* has been recorded at few localities in the Chaco of southeastern Bolivia and western Paraguay, below 500 m altitude (Myers 1977, Olds et al. 1987, Anderson and Yates 2000, Yahnke 2006, Braun 2015) (Figure 1; Supplemental Table 1).

We here document the first Argentinian record of *Andalgalomys pearsoni*, enlarging its known distribution ca. 530 km SW and filling a gap in the generic range of approximately 850 km, between central Paraguay and northwestern Argentina. In addition, we provide a detailed list of the recording localities for *Andalgalomys* in Argentina, Bolivia and Paraguay (Supplemental Table 1 and Figure 1).

During a recent revision of the material identified as *Graomys* housed at Colección Nacional de Mastozoología

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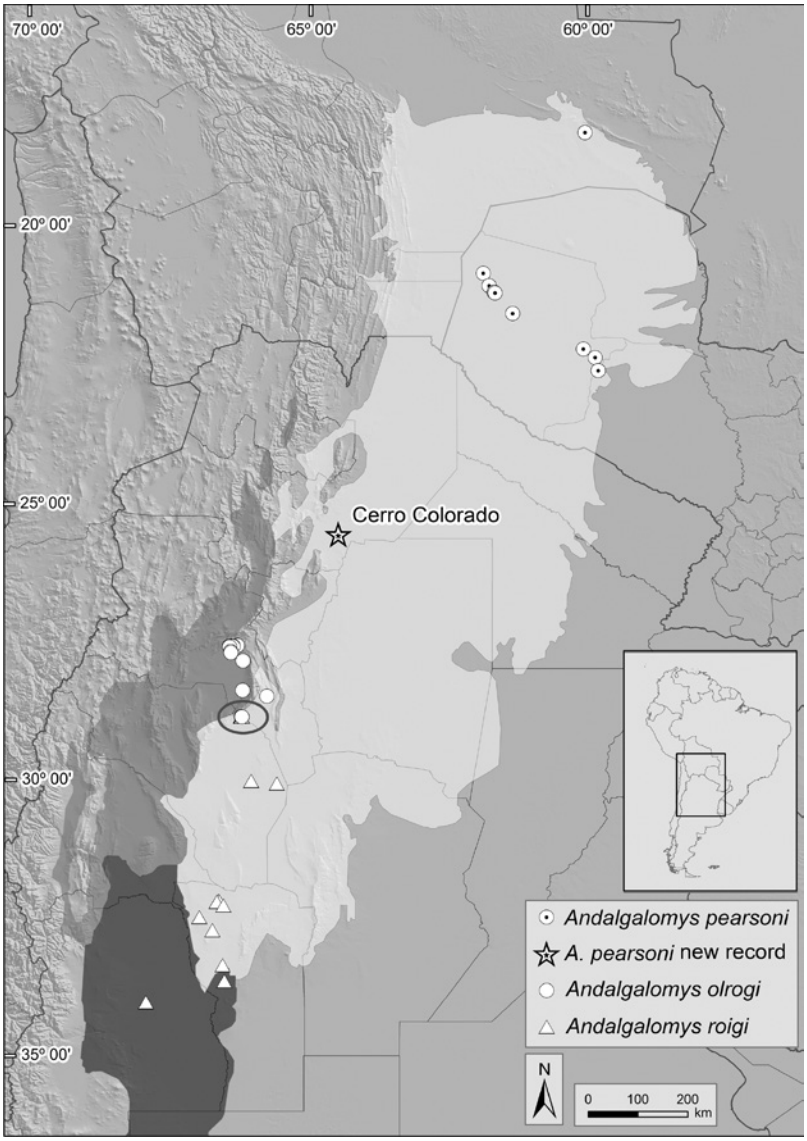

Figure 1: Map of north and central Argentina, southern Bolivia and western Paraguay showing locality records of *Andalgalomys*. Ecoregions (following Burkart et al. 1999) are shown with different tones of gray: dark, Monte de Llanuras y Mesetas; light, Chaco Seco; intermediate, Monte de Sierras y Bolsones. The ellipse indicates the area where both *A. olrogi* and *A. roigi* were cited in the literature. The new record for *Andalgalomys pearsoni* is depicted with a star.

of the Museo Argentino de Ciencias Naturales "Bernardino Rivadavia" (MACN-Ma), we found a specimen that does not correspond to this genus. A detailed inspection of this animal allowed us to identify it as belonging to *Andalgalomys*. As is typical of members of this genus, this specimen has the tail longer than the combined length of head and body; white ventral pelage, sharply demarcated from dorsal pelage; ears with subauricular white spots (Figure 2); skull with a long, slender rostrum; relatively deep, open zygomatic notches; posteriorly divergent supraorbital margins; zygomatic plates with a slightly concave anterior margin and a moderately developed anterodorsal spinous process; palatines with large, slit-like foramina; inflated auditory bullae (Figure 3); molars tetralophodont and brachydont, with tuberculate crowns; cusps arranged in opposite pairs; procingulum of the M1 with a conspicuous anteromedian flexus; in the m3 the hypoflexid contacts the entoflexid at the midline, separating the entoconid-hypoconid from the protoconid-metaconid by a double enamel wall (cf. Williams and Mares 1978, Braun 2015) (Figure 4).

The Argentinian specimen, an adult male with the number MACN-Ma 14318 was previously identified as *Graomys griseoflavus* (Sandoval 2012) but can be

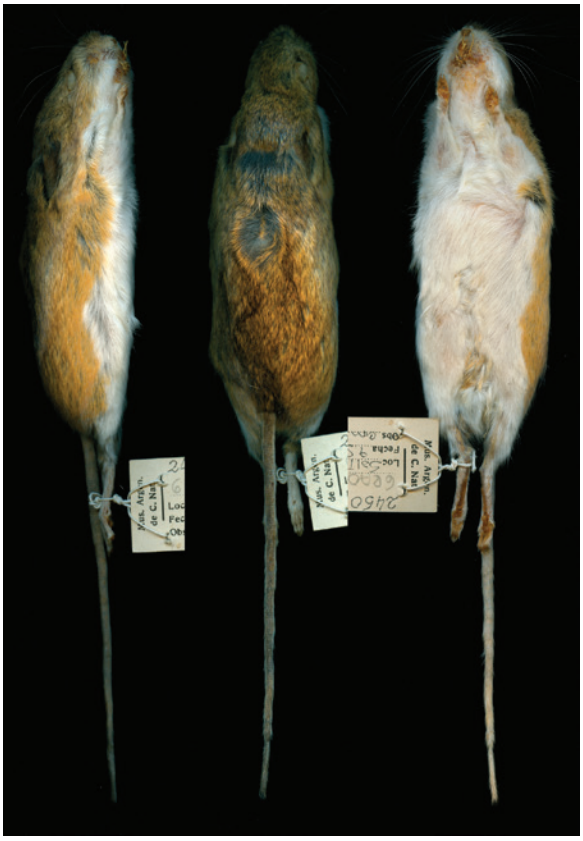

Figure 2: Lateral, dorsal and ventral views of the skin of *Andalgalomys pearsoni* from Cerro Colorado, Metán department, Salta province, Argentina (MACN-Ma 14318). Total length=210 mm.

Figure 3: Lateral, dorsal and ventral views of the skull and mandible in labial view of *Andalgalomys pearsoni* from Cerro Colorado, Metán department, Salta province, Argentina (MACN-Ma 14318). Scale=5 mm.

referred to *Andalgalomys pearsoni* based on the following combination of characters (cf. Myers 1978, Mares and Braun 1996, Braun 2015): dorsal coloration reddish brown; length of skull=29.6 mm (generally >29.0 mm in *pearsoni*); rostrum generally longer and broader than *A. olrogi*; palatilar length=12.9; width of zygomatic plate=3.23 (>2.7 mm); length of mandible=15.64 (generally >15.0 mm) (Figures 2 and 3). Other measurements fall within the range of *A. pearsoni* (see Supplemental Table 2). Two subspecies have been recognized, based on morphometrics and different diploid complements (Olds et al. 1987), within *A. pearsoni*, *A. pearsoni dorbignyi* Olds, Anderson et Yates, 1987 and *A. p. pearsoni*. Judging by the measurements provided in Supplemental Table 2, the specimen MACN-Ma 14318 is closest to *A. p. pearsoni*. The studied specimen was caught at Cerro Colorado (Figure 1; ca. -25,57721° S, -64,49058° W), Metán department, Salta province, on 9th September 1962 by Ince Apostol. The only other sigmodontine collected in sympatry at that time was *Graomys* cf. *chacoensis* (MACN-Ma 14315). The environment in this area is a dry thorny woodland, with some trees reaching 8 m in height, intermingled with dense

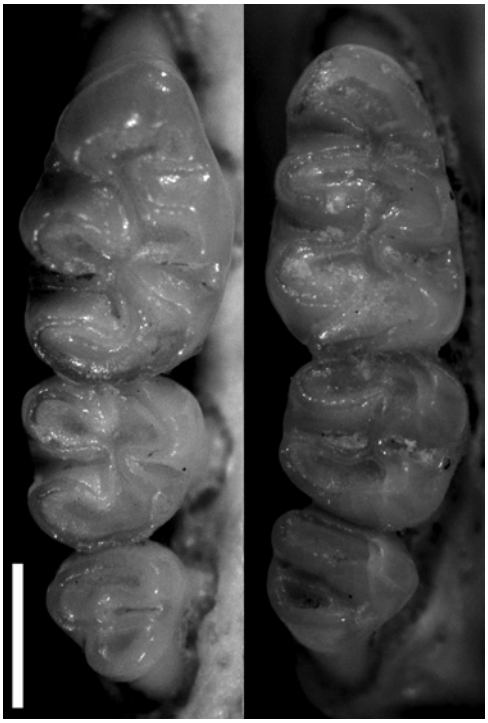

Figure 4: Maxillary (left) and mandibular (right) toothrows in occlusal view of *Andalgalomys pearsoni* from Cerro Colorado, Metán department, Salta province, Argentina (MACN-Ma 14318). Scale=1 mm.

scrubs. Large areas modified by agricultural and livestock activities are also found nearby.

To date, most of the records for sigmodontine rodents in the Chaco are restricted to Humid Chaco ecoregion, in the central Paraguay and the eastern portion of the Argentinian provinces of Chaco and Formosa (e.g. Shamel 1931, Gyldenstolpe 1932, Massoia 1971, 1973, 1976, Contreras 1982, Heinonen Fortabat 2001, D'Elía and Pardiñas 2004, Pardiñas et al. 2004, Pardiñas and Ramírez-Llorens 2005, Pardiñas and Teta 2005, D'Elía et al. 2008). Some contributions have summarized the few records from the western Arid Chaco areas in Argentina, including the provinces of Catamarca (Mares et al. 1997), Salta (Díaz et al. 2000, Gómez et al. 2012), Jujuy (Díaz and Barquez 2007), Tucumán (Gómez et al. 2012) and Santiago del Estero (Gómez et al. 2012, Nanni et al. 2012). However, for extensive Chacoan areas, distributional information about sigmodontine rodents is virtually absent (Hershkovitz 1962, Massoia 1987, Olds 1988, Jayat et al. 2006, 2011). Thus, many taxonomical and distributional questions remain unsolved.

Museum collections are the primary source of information about taxonomy, distribution, and natural history for past and present biodiversity (Suárez and Tustsui 2004). Examples of how museum collections contribute with the descriptions of new taxa and/or with the addition of already known species to new geographical areas are abundant in the literature, especially in the largely unexplored areas of the northwestern Argentina (e.g. Braun et al. 2000, Ojeda et al. 2001, Flores and Díaz 2002, Díaz et al. 2002). In times when the collecting of biological specimens is questioned by some scientists, our finding of *Andalgalomys pearsoni* for the first time in northwestern Argentina represents a clear example of the significance that museum collections, and by implication, field collecting, have in our understanding of biological diversity.

Acknowledgments: Ana Ochoa helped us with the review of specimens of *Graomys* at the Museo Argentino de Ciencias Naturales "Bernardino Rivadavia". We are grateful to G. D'Elía and two anonymous referees for revising previous versions of this manuscript. Support was provided by the Instituto de Ambiente de Montaña y Regiones Áridas, Universidad Nacional de Chilecito (UNdeC), the Instituto Superior de Correlación Geológica (CONICET), the Cátedra de Paleontología de la Universidad Nacional de Tucumán, and the Instituto de Ecología Regional, Laboratorio de Investigaciones Ecológicas de Las Yungas (Universidad Nacional de Tucumán).

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Supplemental Material: The online version of this article (DOI: 10.1515/mammalia-2015-0118) offers supplementary material, available to authorized users.