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NOTAS SOBRE
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New locality for the rare sigmodontine *Abrawayaomys ruschii* (Rodentia, Cricetidae) in Argentina, with comments about its regional conservation status

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ABSTRACT
We document a new locality for the rare sylvan sigmodontine *Abrawayaomys ruschii* from Misiones, Argentina. The individual, recognized by its distinctive spiny hairs, was recovered from a scat of an ocelot, *Leopardus pardalis* (Mammalia, Felidae). This record contributes to fill the gap between previous localities.

RESUMEN
Documentamos una nueva localidad para el raro ratón selvático *Abrawayaomys ruschii*, en la provincia de Misiones, Argentina. El individuo, reconocido por sus pelos espinosos distintivos, fue recuperado del excremento de un ocelote, *Leopardus pardalis* (Mammalia, Felidae). Este registro contribuye a llenar el vacío entre localidades previas.

Abrawayaomys ruschii Cunha and Cruz, 1979 is a spiny, forest dwelling sigmodontine, endemic to the Atlantic Forest (Pardiñas et al. 2009). Its presence in Argentina is only known from five localities from a relatively small geographic area in the Province of Misiones. In the red book of Argentine Mammals (Ojeda et al. 2012), Gil et al. (2012) referred this genus as Endangered [EN B1a,b(i,iii)], based mostly on its restricted and fragmentary distribution. At that time, populations from Argentina were included in a separate, supposedly endemic species, *A. chebezi* Pardiñas, Teta and D'Elía, 2009, which is now considered a synonym of *A. ruschii*. In this note we present a new locality for *A. ruschii* in Misiones, and reevaluate the information presented by Gil et al. (2012) to address its conservation status.

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Several of the distinctive hairs (see the diagnosis below) of this rare rodent were recovered from a scat of *Leopardus pardalis* (Mammalia, Felidae), collected at National Route 101 and arroyo Central (25° 42' 25.40" S, 54° 21' 33.51" W; 229 m; Parque Nacional Iguazú, Misiones, Argentina). These and other prey remains from the same scat are housed at the Instituto de Biología Subtropical under the catalog number IBSI Mam F152. A part of the scat was sent to the American Museum of Natural History to identify the predator via molecular analysis, and the rest was dried at 35 °C and disaggregated with dissecting forceps (see Reynolds & Aebischer 1991). Diagnostic remains (i.e., hair, bones, nails, teeth, feathers, and scales) were identified to species level using keys and reference collections (i.e, Museo Argentino de Ciencias Naturales "Bernardino Rivadavia").

Abrawayaomys ruschii is the only sigmodontine rodent in northeastern Argentina with hairs modified into spines. Spiny hairs are rigid, flat (dorsoventrally compressed), broadest at its midpoint (~0.22 mm), and with a dorsal longitudinal groove. Spine cuticular scales vary from imbricate and elongate at the base and middle portion, to imbricated with a wavy crenated-flattened pattern towards the tip. Spiny hairs are slightly transparent or whitish at the base and middle portions, becoming brownish toward the tip (Pardiñas et al. 2009).

In Misiones province, *Abrawayaomys ruschii* is only known from five localities placed within the Upper Paraná Atlantic Forest, an inland portion of the complex tropical and subtropical rainforests known as Atlantic Forest (Pardiñas et al. 2009, 2016a). The record we document herein adds a new locality for the species, filling the spatial gap between two previous localities (Fig. 1). All specimens from Misiones come from the western half of the Province, that drains toward the Paraná River (Pardiñas et al. 2009, 2016a; Lanzone et al. 2018). The new specimen reported here was probably captured by the ocelot in a well-preserved forest, since the scat was collected in the central portion of Parque Nacional Iguazú, a relatively large conservation area (much larger than the average home range of an ocelot; Cruz 2017).

Specimens of the genus *Abrawayaomys* are rare in biological collections. As indicated by previous authors, its rarity is perhaps partially an artifact of the difficulties in their capture through traditional trapping methods (e.g., Sherman traps), especially since the species is more frequently caught by pitfalls traps (Maestri et al. 2015). However, it was not captured in surveys with pitfall traps (N = 48 traps; 640 traps-night in summer and winter 2010, and summer 2011) conducted in northern Misiones province, where 70 individuals of seven species of small mammals were recorded (García 2018). Even though three of the five previous records for Argentina correspond to individuals found in owl pellet samples (Massoia 1996; Pardiñas et al. 2009), they represented a small fraction (< 1%) of the individuals in those samples. Similarly, the individual reported here was the only specimen of *Abrawayaomys* found in a large collection of scats (222 scats containing 173 sigmodontine rodents)

belonging to the small wild felids of Misiones (*L. pardalis*, *L. guttulus*, *L. wiedii*, and *Herpailurus yagouaroundi*) (Cruz 2017; L. Palacio unpublished results).

Gil and Lobo (2012) calculated a potential distribution for this species in Argentina of 2,896 km^2, but based on land use these authors estimated that the actual potential distribution would be of 2,230 km^2. The scant number of records of *A. ruschii* in Misiones using different surveying techniques suggests that its population densities are low. In addition, and assuming that this species is mostly restricted to primary forests, a continuing decline in its extent of occurrence could be hypothesized based on the reduction of its main habitat, and/or its quality, by deforestation, substitution of native by exotic trees, etc. Under this scenario, its consideration as an endangered species appears to be the most reasonable option. However, this rodent is globally considered as Least Concern by the UICN (Pardiñas et al. 2016b), due to its supposedly continuous distribution; in this context, the potential "rescue effect" between Argentine and Brazilian populations (e.g., Cerboncini et al. 2014; Maestri et al. 2015) gives support to consider it as Vulnerable [VU B1a,b(i,iii)] in Argentina. In fact, there are no reasons to suppose that *A. ruschii* is severely affected by land conversion; the only two Argentine specimens caught by traps were collected in landscapes composed by gallery forests intermixed with large agricultural land areas, suggesting some resilience to human disturbance (Pardiñas et al. 2009). Further studies are needed to improve our knowledge on the natural history of this rare species -e.g., in topics such as demography, reproduction, microhabitat selection- in order to evaluate with more accuracy its conservation status.

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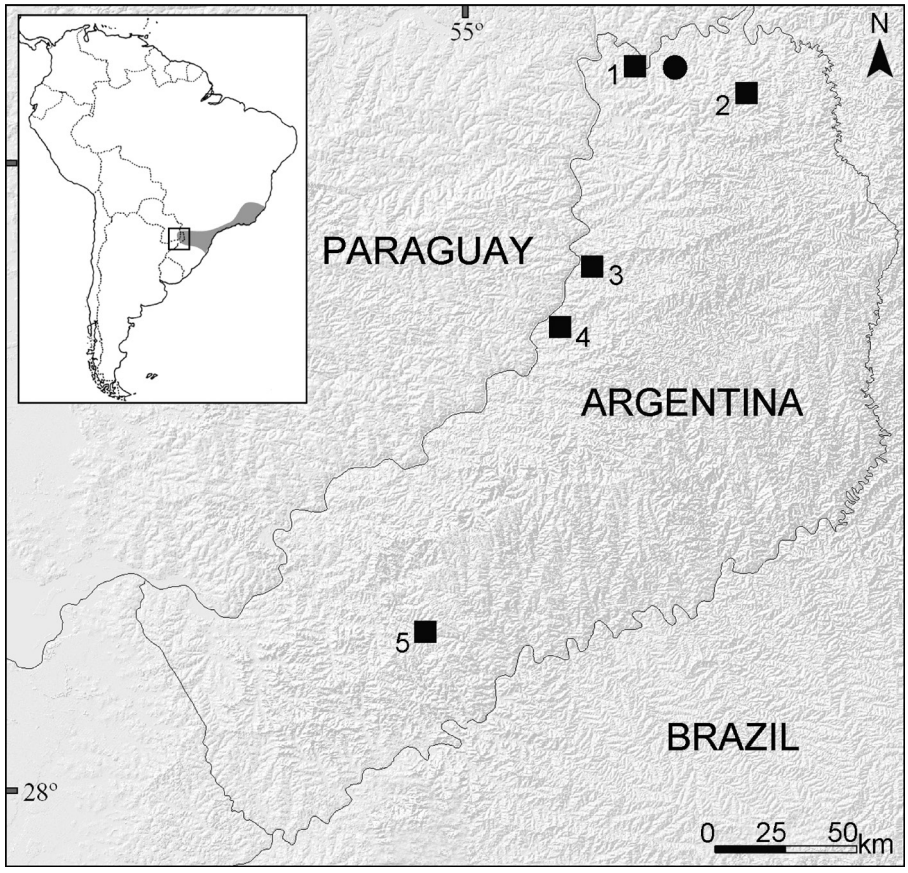

Figure 1. Distribution of *Abrawayaomys ruschii* in the province of Misiones, Argentina. A black circle shows the new record in Parque Nacional Iguazú (see the text for more detail), previous records (1, Conjunction arroyo Mbocai and route 12; 2, Parque Provincial Urugua-í; 3, Eldorado; 4, Montecarlo; 5, Campo Ramón; see Pardiñas et al. 2009; 2016a) are indicated by black squares. The inset map depicts the distribution of *Abrawayaomys* in South America.

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