

Range extension of *Bibimys labiosus* (Winge, 1887) (Mammalia: Rodentia: Cricetidae) to western Minas Gerais state, Southeastern Brazil

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ABSTRACT: In the present study, the geographic distribution of *Bibimys labiosus* is extended 297 km to the west of Lagoa Santa, Minas Gerais state, on the basis of two adult specimens, one male and one female, captured in areas of the Cerrado biome with pitfall traps. The new record represents the westernmost limit for this species, emphasizes the need of additional sampling in order to improve the knowledge on the distribution of this still poorly known sigmodontine species.

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The genus *Bibimys* comprises small-bodied and semi-fossorial sigmodontines, with head and body length (HBL) ranging from 76 to 90 mm and tail length (TL) shorter than HBL, varying from 69 to 85 mm and with a characteristic protruding and rosy snout and lips covered with short whitish hairs (Bonvicino *et al.* 2008). Little is known about this genus and its geographic distribution limits, since it is poorly represented in scientific collections (Gonçalves *et al.* 2005).

Three species are currently recognized in the genus: *B. chacoensis* (Shamel, 1931), *B. labiosus* (Winge, 1887) and *B. torresi* (Massoia, 1979). *B. labiosus* is the only species which occurs in Brazil and it is considered an endemic species to the Atlantic Forest biome (Paglia *et al.* 2012).

According to the literature, the known distribution of *B. labiosus* includes its type locality at Lagoa Santa, Minas Gerais, Brazil and additional records in the Atlantic Forest from localities in eastern Minas Gerais and Rio de Janeiro (D'Elía *et al.*, 2005; Gonçalves *et al.*, 2005; Bonvicino *et al.* 2008). Vivo *et al.* (2011:11) have recorded the species for São Paulo state, but did not provide the specific locality for the specimen cited. Indeed, Bonvicino *et al.* (2008) cite this species to occur in scattered localities from northern Rio Grande do Sul state to southeastern Minas Gerais state, but these authors did not provide any record or specific locality for this distributional data. In this report we provide new records for *B. labiosus* and extend its geographical distribution.

Two specimens were captured in June and July, 2011, respectively, in Cruzeiro da Fortaleza (18°59'39" S, 46°44'47" W) and Patrocínio (19°01'41" S, 46°47'11" W), Minas Gerais state. Both specimens were captured in pitfall traps. The first specimen is an adult male (MCN-M 2830) weight 38 g, head and body length 97 mm, tail length 79 mm, hind foot length 23 mm and ear length 17 mm,

collected in a fragment of semideciduous forest (Figures 1 and 2). The second specimen is an adult female (MCN-M 2829) weight 25 g, head and body length 91 mm, hind foot length 22 mm and ear length 17 mm, collected in gallery forest (Figure 3). We do not use the tail measurements of this specimen because it had been lost during capture. The specimens were captured under license number 138/2011 NUFAS/IBAMA/MG and are preserved as skins and skulls and deposited in the Coleção de Mastozoologia do Museu de Ciências Naturais da Pontifícia Universidade Católica, Belo Horizonte, Minas Gerais (MCN-M).

Both specimens identified herein conform to the diagnostic pelage characters described by Bonvicino *et al.* (2008): the dorsal color is brown with variable intensity, lighter towards venter, whitish hairs with gray bases and clearly delineated from laterals. The manus and hind feet are covered with grayish or completely white hairs, which

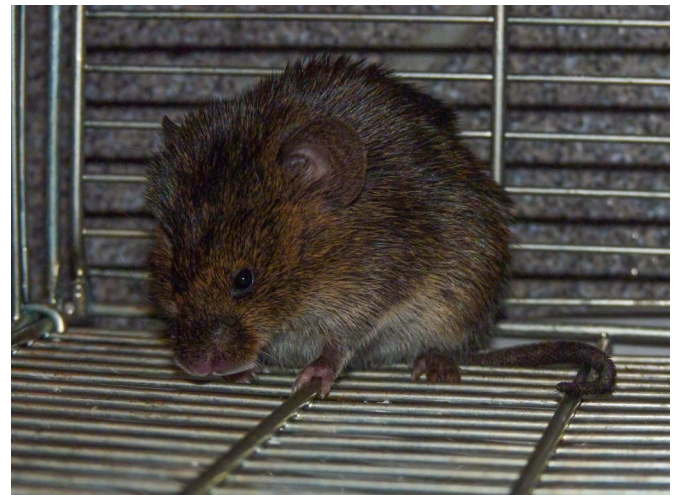


FIGURE 1. *Bibimys labiosus* (adult male, MCN - M 2830) from Cruzeiro da Fortaleza, Minas Gerais, Brazil. Photo by Érica Daniele Cunha Carmo.



FIGURE 2. Dorsal and lateral views of the skin and ventral, dorsal and lateral views of the skull and lateral view of mandible of *Bibimys labiosus* (adult male, MCN - M 2830) from Cruzeiro da Fortaleza, Minas Gerais, Brazil. Photos by Érica Daniele Cunha Carmo.

do not obstruct the rosy skin color of the skin in this region. The tail is moderately hairy with epidermal scales visible. The hair of the upper surface of the tail is entirely dark brown and the hair at the distal half ventral surface of the tail is whitish, giving the appearance of a faintly bicolor tail.

Cytogenetic analyses of these specimens were performed on chromosome preparations obtained from bone marrow according to Ford and Hamerton (1956). The chromosomes were stained with Giemsa and classified following Gonçalves *et al.* (2005). The specimens of *B. labiosus* presented $2n=70$ and a fundamental number $FN=80$, similar to the karyotype described by Gonçalves *et al.* (2005). The metacentric and submetacentric chromosomes were considered biarmed, and the subtelocentric and acrocentric chromosomes as uniarmed. The karyotype comprises six pairs of metacentric/submetacentric chromosomes decreasing in size from medium to small (pairs 1-6) and 28 large to small acrocentric autosome pairs (pairs 7-34). The X chromosome is a large acrocentric corresponding in size

to autosome pair 8, and the Y is an acrocentric with size similar to that of autosome pair 22 (Figure 4).

This is the first record of *Bibimys labiosus* in the Triângulo Mineiro /Alto Paranaíba region, which has been considered a priority area for conservation, in need for biological inventory and classified as 'very high' to priority action (PROBIO/MMA, 2003). Our specimens represent the westernmost record of *Bibimys labiosus* in Minas Gerais state, extending the known geographical distribution of the species 297 km from the nearest known record (Lagoa Santa, Minas Gerais) (Figure 5). More studies and accurate geographical distribution of *B. labiosus* may be an important tool to understand the ecological patterns and population dynamics of the species, it's the first step to propose conservation action regarding this rodent. Additionally, *B. labiosus* is considered an endemic specie of Atlantic Forest (Paglia *et al.* 2012). However, our record is located in a Cerrado area. This important record indicates the need for further inventories in Minas Gerais state in order to access the current distribution limits of this poorly known species (see D'Elfa *et al.* 2005).



FIGURE 3. Dorsal and lateral views of the skin and ventral, dorsal and lateral views of the skull and lateral view of mandible of *Bibimys labiosus* (adult female, MCN - M 2829) from Patrocínio, Minas Gerais, Brazil. Photos by Érica Daniele Cunha Carmo.

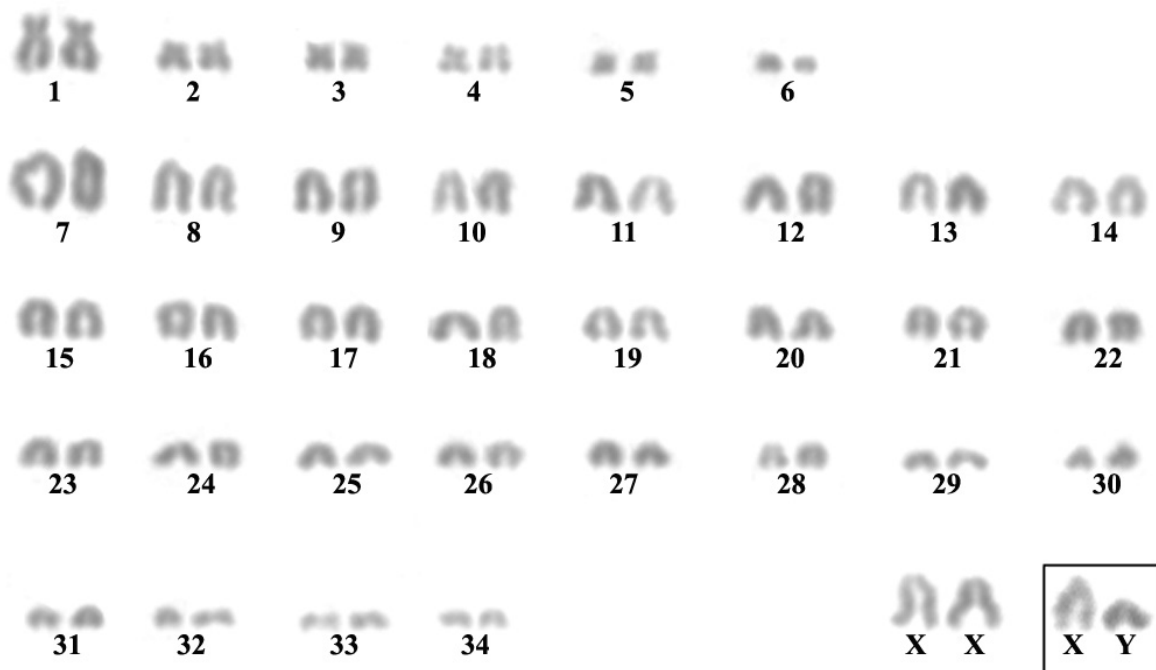


FIGURE 4. Karyotype of the adult female (MCN - M 2829) *Bibimys labiosus* ($2n=70$, $FN=80$) after Giemsa staining. In the inset, the sex chromosomes of the adult male (MCN - M 2830).

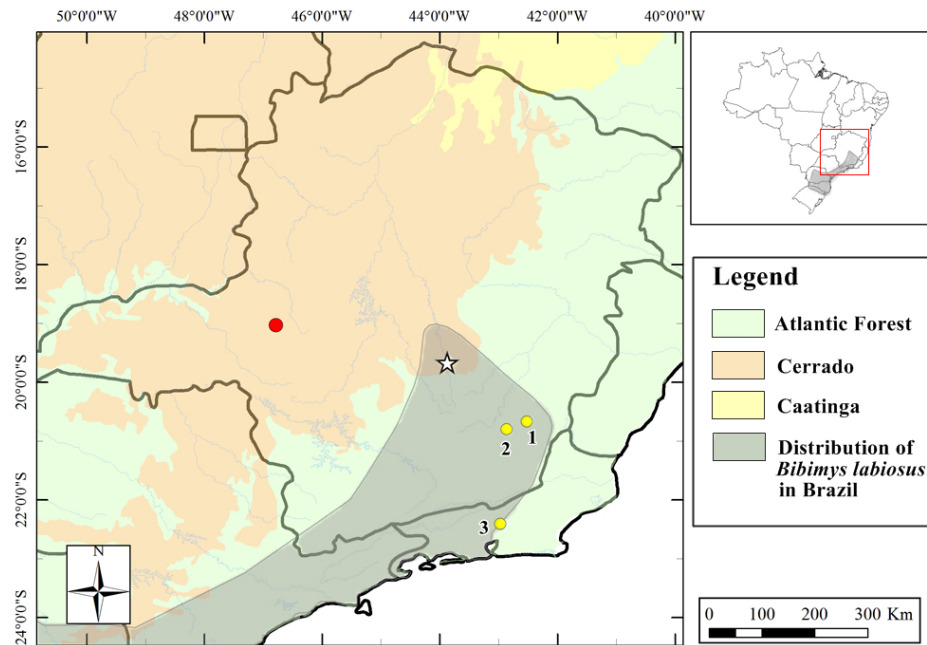


FIGURE 5. Distribution of *Bibimys labiosus* in Brazil adapted from Bonvicino et al. (2008). The yellow dots represent the sites where *B. labiosus* has been recorded according to the literature and examined material. The red symbols represent the records of the present study. The white star represents the type locality of the species. Localities shown in the map are numbered as follows: 1 - Araponga/MG (examined by Pablo Rodrigues Gonçalves); 2 - Viçosa/MG (Gonçalves et al. 2005; Bonvicino et al. 2008); 3 - Teresópolis/RJ (Gonçalves et al., 2005; Bonvicino et al. 2008).

TABLE 1. *Bibimys labiosus* specimens recorded in Brazil.

INSTITUTIONS	REGISTRATION NUMBER	MUNICIPALITY/ STATE	REFERENCE	GEOGRAPHIC COORDINATES	LOCALITY ON MAP
Coleção de Mastozoologia do Museu de Ciências Naturais da PUC, Belo Horizonte, Minas Gerais	MCN - M 2830	Cruzeiro da Fortaleza/MG	Present study	18°59'39" S, 46°44'47" W	Red symbol
	MCN - M 2829	Patrocínio/MG		19°01'41" S, 46°47'11" W	Red symbol
Museu Nacional, Rio de Janeiro, Rio de Janeiro	MN 62061	Viçosa/MG	Gonçalves et al., 2005; Bonvicino et al., 2008	20°48'08" S, 42°51'31" W	2
	MN 62062	Viçosa/MG		20°48'08" S, 42°51'31" W	2
	MN 62063	Viçosa/MG		20°48'08" S, 42°51'31" W	2
	MN 62395	Teresópolis/RJ		22°24'43" S, 42°57'58" W	3
Museu de Zoologia João Moojen, Viçosa, Minas Gerais	MZUFV 1348	Viçosa/MG	Examined by P. R. Gonçalves	20°48'08" S, 42°51'31" W	2
	MZUFV 1369	Viçosa/MG		20°48'08" S, 42°51'31" W	2
	MZUFV 1370	Viçosa/MG		20°48'08" S, 42°51'31" W	2
	MZUFV 1375	Viçosa/MG		20°48'08" S, 42°51'31" W	2
	MZUFV 1827	Viçosa/MG		20°48'08" S, 42°51'31" W	2
	MZUFV 2316	Viçosa/MG		20°48'08" S, 42°51'31" W	2
	MZUFV 2329	Viçosa/MG		20°48'08" S, 42°51'31" W	2
	MZUFV 2338	Viçosa/MG		20°48'08" S, 42°51'31" W	2
	MZUFV 2789	Viçosa/MG		20°48'08" S, 42°51'31" W	2
	MZUFV 2929	Viçosa/MG		20°48'08" S, 42°51'31" W	2
	MZUFV 2931	Viçosa/MG		20°48'08" S, 42°51'31" W	2
	MZUFV 3378	Viçosa/MG		20°48'08" S, 42°51'31" W	2
	MZUFV 3380	Viçosa/MG		20°48'08" S, 42°51'31" W	2
	MZUFV 3408	Viçosa/MG		20°48'08" S, 42°51'31" W	2
	MZUFV 3495	Viçosa/MG		20°48'08" S, 42°51'31" W	2
	MZUFV 3527	Viçosa/MG		20°48'08" S, 42°51'31" W	2
MZUFV 3681	Viçosa/MG	20°48'08" S, 42°51'31" W	2		
MZUFV 3698	Viçosa/MG	20°48'08" S, 42°51'31" W	2		
MZUFV 3721	Viçosa/MG	20°48'08" S, 42°51'31" W	2		
MZUFV 3642	Araponga/MG	20°40'15" S, 42°30'51" W	1		

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