

Amphibia, Anura, Leptodactylidae, *Leptodactylus mystaceus* (Spix, 1824): Distribution extension

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ABSTRACT: This study presents the first record of *Leptodactylus mystaceus* at the Municipality of Maringá, Paraná state, and its first occurrence at the South Region of Brazil, indicating the expansion of its geographic distribution.

The northern state of Paraná presents a historic of huge changes on the natural environment. Since the early 60's, due to agriculture and livestock, the native vegetation of the northwest Paraná state, characterized as Stationary Semi-deciduous Forest, lost almost completely its original formation (Maack 1981).

Leptodactylus mystaceus (Figure 1) is a medium-sized frog belonging to the *Leptodactylus fuscus* group. The *L. fuscus* group comprises 26 species, being the greatest among the *Leptodactylus* genus Fitzinger, 1826 (Frost 2010). The identification of *Leptodactylus mystaceus* and *L. dydimus* are morphologically difficult since they share similar features. These two species could be easily identified by the advertisement call (Heyer *et al.* 1996).

Leptodactylus mystaceus was recorded in several municipalities of São Paulo state, including Rio Claro, Corumbataí, José Bonifácio, Piracicaba, Campinas and Araçoiaba da Serra (Tolelo *et al.* 2005). The last record represents until now the southernmost geographic distribution limit of the species.

Fieldwork was carried out between August 2006 and July 2007 at Cesumar Farm (23°23'40" S, 51°52'22" W). Samplings were conducted monthly from October to March (wet season) and bimonthly from April to September (dry season), resulting in nine samples, in a year period. The samplings were accomplished from 17:00 h to 00:00 h by persecution of the calling males, and active hand-capture method. Four males of *L. mystaceus* were deposited as vouchers in the Museu de Herpetologia Célio Fernando Batista Haddad (CFBH), at Universidade Estadual Paulista, Rio Claro (CFBH 17170, 17241, 17242, 17262).

This is the first record of *L. mystaceus* (Figure 2) in the state of Paraná. Heyer *et al.* (1996) concluded that Chapada dos Guimarães (15°30' S, 56°00' W), state of Mato Grosso, was the southern more limit distribution for *L. mystaceus*. Toledo *et al.* (2005) have checked the occurrence of the same species at the nearness of the

municipality of Araçoiaba da Serra (23°30' S, 47°36' W), São Paulo state, which is about 1,300 km away from Chapada dos Guimarães. The latitude of Araçoiaba da Serra is almost the same as Maringá, but the longitude differs by approximately 550 km.

In this study, *L. mystaceus* was found in a small stretch of forest edge significantly impacted, with muddy ground, shrubs and trees, located approximately 10 m away from a stream. The calling males were observed from October to December and the calling activity began with the sunset, extending until the middle of the night. Adult males measured between 47 and 50 mm snout-vent length (n = 4; average = 49 cm; standard deviation = 1.26), and were found under piles of litter or dead wood.

We recorded the longitudinal expansion of the geographic distribution of *L. mystaceus* in approximately 550 km to the west, and its occurrence in the state of Paraná and the south region of Brazil, information that increases the ecological database for the herpetofauna of Paraná.



FIGURE 1. Adult male of *Leptodactylus mystaceus* in life, collected at Cesumar Farm, municipality of Maringá, state of Paraná, Brazil.

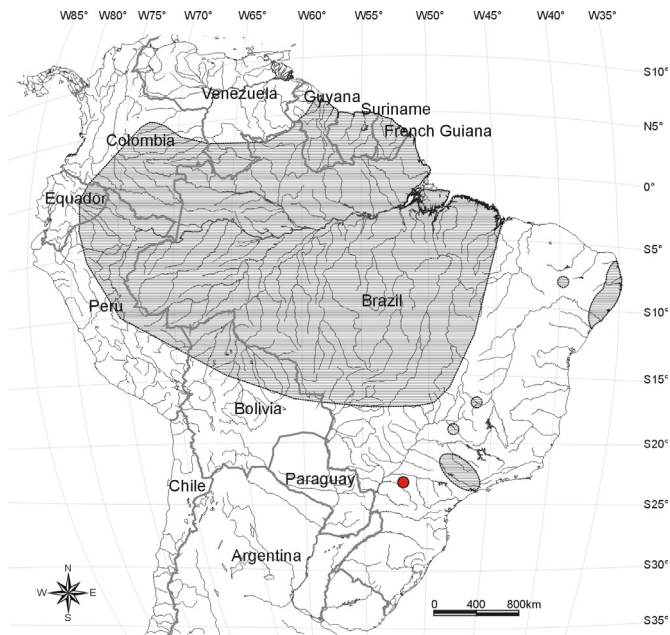


FIGURE 2. Map showing the previous occurrence of *Leptodactylus mystaceus* (horizontal lines) and the new occurrence (checked), at municipality of Maringá, state of Paraná, Brazil.

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LITERATURE CITED

Frost, D.R. 2010. *Amphibian Species of the World: an Online Reference. Version 5.4 (8 April, 2010)*. Electronic Database accessible at <http://research.amnh.org/vz/herpetology/amphibia/>American Museum of Natural History, New York, USA. Captured on 30 April 2010.

Heyer, R.W., J.M. García-Lopez and A.J. Cardoso. 1996. Advertisement call variation in the *Leptodactylus mystaceus* species complex (Amphibia: Leptodactylidae) with a description of a new sibling species. *Amphibia-Reptilia* 17: 7-31.

Maack, R. 1981. *Geografia Física do Estado do Paraná*. Rio de Janeiro: Ed. José Olympio. 450 p.

Toledo, L.F., L.M. Castanho and C.F.B. Haddad. 2005. Recognition and distribution of *Leptodactylus mystaceus* (Anura, Leptodactylidae) in the state of São Paulo, Southeastern Brazil. *Biota Neotropica* 5 (1): 1-6.

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