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# Distribution extension of *Chiasmocleis mantiqueira* Cruz, Feio and Cassini, 2007 (Amphibia, Anura, Microhylidae) in state of São Paulo

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The genus *Chiasmocleis* Méhelÿ, 1904 is composed of 29 described species (Frost, 2016), of which 10 species occur in the Atlantic Forest (Fonseca et al., 2013) and are divided into two distinct morphological clades (Cruz et al., 1997). The *C. leucosticta* clade includes species in which males have well-developed interdigital membranes, whilst species in the *C. shubarti* clade lack such developed interdigital membranes (Cruz et al., 1997). The frog *Chiasmocleis mantiqueira* belongs to the *C. leucosticta* group and is characterized by its average size as compared to other species of the genus (snout-vent length: 15.4–17.9 mm in males and 19.9–22.8 mm in females) (Cruz et al., 2007). Although there is great similarity between *C. mantiqueira* and *C. leuscosticta*, these species can be distinguished by the color pattern of the gular region: the gular region in *C. mantiqueira* is white with brown spots following the same coloration pattern of the belly, while the gular region in *C. leucosticta* has a black coloring (Cruz et al., 2007).

*Chiasmocleis mantiqueira* was described from the Parque Estadual da Serra do Brigadeiro, in the municipality of Ervália, state of Minas Gerais (Cruz et al., 2007), and had its geographical distribution extended to include the Parque Municipal da Lajinha, in the municipality of Juiz de Fora, also in state of Minas Gerais (Fonseca et al., 2013). There is also an additional record of the species from the Parque Nacional da Serra da Bocaina, municipality of São José do Barreiro, state of São Paulo (Garey et al., 2014). Besides these records, tadpoles and calls of *C. mantiqueira* had been described from type locality and some information about reproductive patterns were mentioned (Santana et al., 2012a), but no further data on its natural history is known.

According to the IUCN (Angulo, 2008) and the Brazilian red lists of threatened species (MMA, 2014), *C. mantiqueira* is classified as data deficient. The species has been listed on lists of species of the state of São Paulo, but proper locations were not mentioned (Araújo et al., 2009; Rossa-Feres et al., 2011). In fact, specific coordinates were given for only one record in the state of São Paulo (Garey et al., 2014). Given the few distribution records and the lack of knowledge about this species, as well as its unknown conservation status, here we present a new record of *C. mantiqueira* in the state of São Paulo.

We collected a male specimen of *C. mantiqueira* (permit SISBio number 48620-2) during a field expedition on January 13, 2016, carried out at the Parque Natural Municipal Augusto Ruschi (PNMAR), municipality of São José dos Campos, state of São Paulo, The voucher specimen is housed in the "Coleção Zoológica de Referência da Universidade Federal do Mato Grosso do Sul" (ZUFMS-AMP 03738; SVL 16.28 mm). The adult individual was found on the flooded leaf litter (Figure 1a) inside a temporary pond (Figure 1b) in a secondary forest area (-23.0714ºS, -45.9313ºW, WGS-84). In the same expedition, we observed several

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tadpoles of this species in the same pond, and we collected two tadpoles in stage 27 (Gosner, 1960) (lot ZUFMS-AMP 03739) as vouchers. The area where the adult specimen and tadpoles were collected comprises a small fragment of ombrophilous dense forest located inside the Atlantic Forest domain.

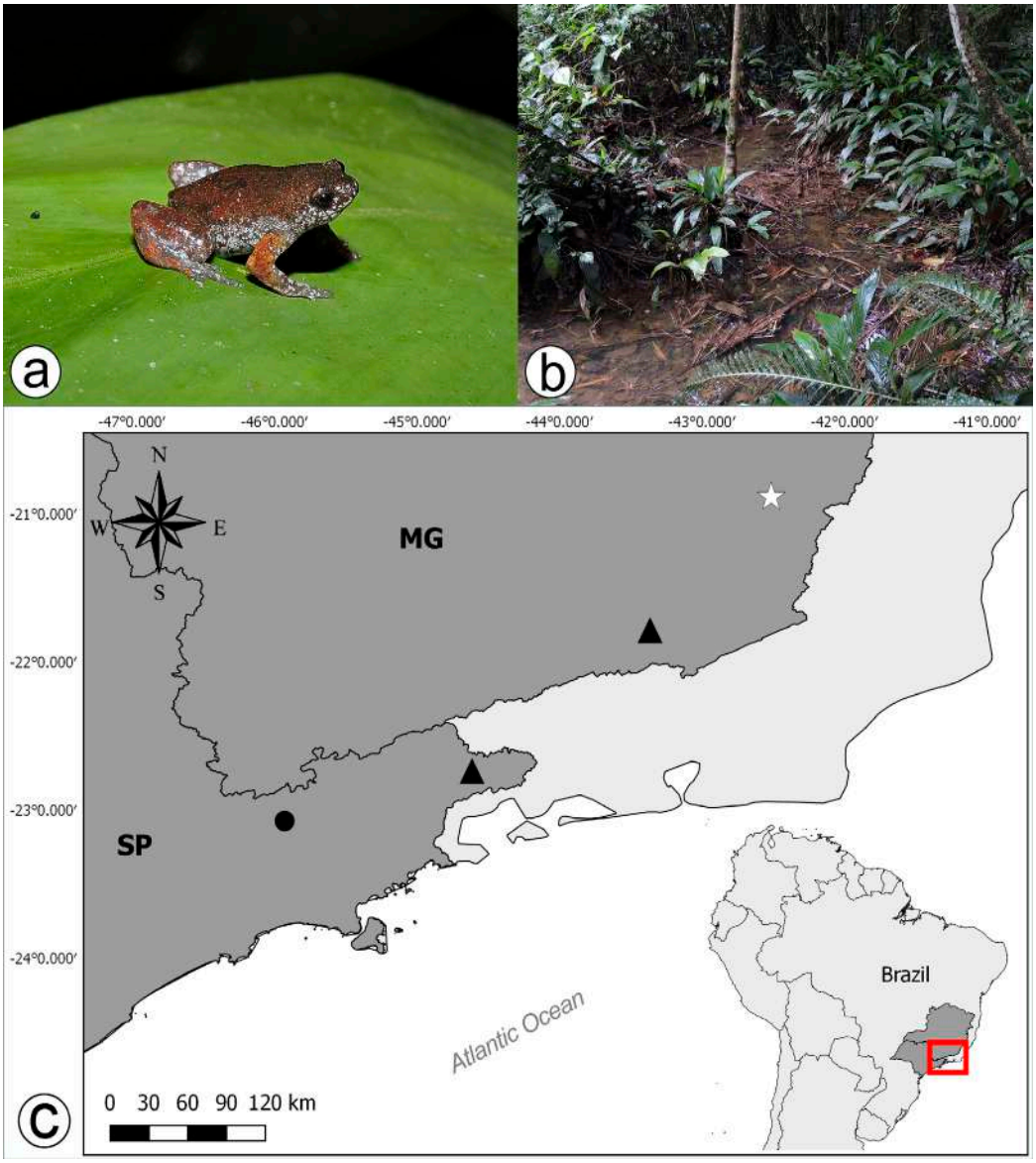


**Figure 1.** (a) Adult male of *Chiasmocleis mantiqueira* (ZUFMS-AMP 03738; SVL: 16.28 mm), (b) the temporary pond where this specimen and tadpoles were found in the municipality of São José dos Campos, state of São Paulo (SP), Brazil (-23.0714ºS, -45.9313ºW, WGS-84), and (c) the distribution map of the known localities for *Chiasmocleis mantiqueira* based on the present study and literature records. White star is the type locality in the state of Minas Gerais (MG) (Cruz et al., 2007) and black triangles are previous records from the states of Minas Gerais (Fonseca et al., 2013) and São Paulo (Garey et al., 2014). The black dot represents the new record at the Conservation Unit of Integral Protection Parque Natural Municipal Augusto Ruschi (PNMAR), São José dos Campos municipality, state of São Paulo, Brazil.

This new record contributes considerably to the knowledge of the geographical distribution of *C. mantiqueira* (Figure 1c), extending the species distribution 448 km southwest from the type locality (Cruz et al., 2007). In the state of Sao Paulo, the record extends the species distribution 150 km southwest from the nearest known record (Garey et al., 2014). The collected specimen and tadpoles belong to a population that is inserted into a conservation unit, similar to what occurs for previously known populations (Cruz et al., 2007; Fonseca et al., 2013; Garey et al., 2014). Considering that all known records of *C. mantiqueira* are within protected areas, and that its geographic range has increased considerably since its description (approximately 12.000 km²), we expect that its conservation status can be reassessed. Further surveys are likely to find additional populations inserted in the region of Serra da Mantiqueira and in the occurrence area of *C. mantiqueira*.

The new record of this data deficient frog species in the PNMAR, along with other records of species endemic to the Atlantic Forest in the same area (Moroti et al., 2016), shows the importance of this forest fragment for amphibian conservation in the Atlantic Forest hotspot. Other areas that share similar characteristics, such as fragment size and proximity to urban areas, have also revealed new species of anurans and the distribution expansion of some species (Moroti et al., 2016; Santana et al., 2008; Santana et al., 2012b). This statement highlights that even small fragments have an important role for maintaining and supporting poorly known endemic species of the Atlantic Forest.

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