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New record and distribution extension of *Zachaenus carvalhoi* Izecksohn 1983 (Anura, Cycloramphidae) in south-eastern Brazil

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Abstract. Herein we report a new record of the Carvalho's Bug-eyed Frog *Zachaenus carvalhoi*, a species considered as "Data Deficient" by IUCN, from Parque Estadual da Serra do Brigadeiro, state of Minas Gerais, south-eastern Brazil.

Keywords. Geographic distribution, Carvalho's Bug-eyed Frog, Conservation, *Zachaenus carvalhoi*.

The genus *Zachaenus* Cope, 1866 currently comprises two species of leaf-litter frogs distributed throughout the Atlantic Rainforest domains in the southeast of Brazil: *Zachaenus carvalhoi* Izecksohn 1983 and *Z. parvulus* (Girard, 1853) (Frost, 2009). Although the biology and geographic distribution of *Z. parvulus* is reasonably well known (Lutz, 1944; Van Sluys et al., 2001; Verdade, Cassimiro and Rodrigues, 2009), *Z. carvalhoi* is listed as "Data Deficient" species by IUCN (2009), due to the lack of information on its occurrence and biology. This species was described from the municipality of Santa Tereza, state of Espírito Santo (Izecksohn, 1983), with subsequent records from the Reserva Biológica Duas Bocas, municipality of Cariacica and Parque Nacional do Caparaó, district of Santa Maria, municipality of Ibitirama, both situated in the state of Espírito Santo (Verdade, Cassimiro and Rodrigues, 2009). Additional record is known from the Fazenda Floresta, municipality of Pedra Dourada, state of Minas Gerais, wherein this last record represent the most inland location (Dayrell et al., 2006). Herein we report a new record for *Z. carvalhoi* from the state of Minas Gerais, improving the knowledge on its geographic distribution.

On 21 October 2009, during an anuran survey at the southern region of Parque Estadual da Serra do Brigadeiro, situated between the boundaries of the municipalities of Ervália and Muriaé (20° 53' 15.59'' S and 42° 31' 22.71'' W, 1236 m a.s.l.; Fig. 1), one specimen of *Z. carvalhoi* was found calling hidden

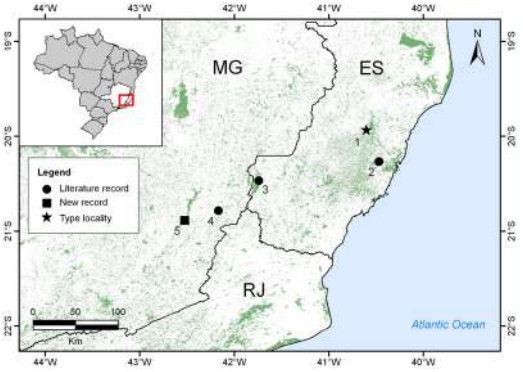

Figure 1. Geographic distribution of *Zachaenus carvalhoi.* Atlantic Forest Remains (green). ES, State of Espírito Santo; MG, State of Minas Gerais; RJ, State of Rio de Janeiro. Municipalities: 1, Santa Tereza (19º 55' 59'' S and 40º 36' 00'' W) ; 2, Cariacica (Reserva Biológica Duas Bocas, 20º 16' 00'' S and 40º 28' 00'' W); 3, Ibitirama (Parque Nacional do Caparaó, 20º 28' 01'' S and 41º 44' 20'' W); 4, Pedra Dourada (Fazenda Floresta, 20º 46' 59'' S and 42º 10' 00'' W); 5, Muriaé (Parque Estadual da Serra do Brigadeiro, 20º 52' 59'' S and 42º 31' 00'' W).

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Figure 2. A. Adult male of *Zachaenus carvalhoi* (MZUFV 10042; SVL 24.20 mm), dorsal view. B. The same specimen of *Z. carvalhoi* in ventral view. Photo by E. T. da Silva.

in the leaf-litter of the forest floor during light rain, at around 20:00 hrs (MZUFV 10042; Fig. 2). Despite the point where the specimen was found belongs to the municipality of Muriaé, other specimens (not quantified) were heard calling along the part of the trail belonging to Ervália municipality. Izecksohn (1983) reported this species calling in October, and Verdade, Cassimiro and Rodrigues (2009) also recorded this species calling during rain in October and November, so that our record is congruent with their information.

Zachaenus carvalhoi is characterized by a more robust body and is a little longer than *Z. parvulus*, lacks axillary patagyum and dorsal folds, and a dark belly with white spots (Izecksohn, 1983). The last two traits are evident in the specimen shown in Fig. 2 A, B. Comparisons of the specimen with those recorded by Dayrell et al. (2006) (MZUFV 6730-6731) suggest that they are conspecific. Our record is the most inland according to the data previously available (Verdade, Cassimiro and Rodrigues, 2009), extending the distribution of the species about 45 km SW airline from the locality of Pedra Dourada (Fig. 1), and increases the upper altitudinal range for this species from 1135 m a.s.l. (Verdade, Cassimiro and Rodrigues, 2009) to 1236 m a.s.l. The Parque Estadual da Serra do Brigadeiro is a conservation unit that covers about 15,000 ha of the Atlantic Rainforest biome. Most parts of this area consist of rainforest remains (Feio et al., 2008; Lacerda et al., 2009) providing suitable habitat for *Z. carvalhoi*. This may suggest that this species might be widespread within the Park.

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