

Distribution extension of *Ceratophrys joazeirensis* Mercadal, 1986 (Anura: Ceratophryidae): second record from the state of Minas Gerais, southeastern Brazil

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Locality – Brazil. State of Minas Gerais, municipality of São João da Ponte, Santa Mônica farm (16°01'26.40"S; 43°42'00"W, 505 m.a.s.l.; Fig. 1). Date: November 15th, 2016. Collected by Maria Clara do Nascimento and Fred Victor de Oliveira, under collection permit IEF 034.012/2016/MG. Voucher: UFMG 19076, deposited in the Amphibian Collection of Centro de Coleções Taxonômicas da Universidade Federal de Minas Gerais, Belo Horizonte, MG (UFMG).

Comments – The horned-frog genus *Ceratophrys* Wied, 1824 currently comprises eight species from tropical South America, five of which occur in Brazil: *Ceratophrys aurita* (Raddi, 1823), *C. cornuta* (Linnaeus, 1758), *C. cranwelli* Barrio, 1980, *C. ornata* (Bell, 1843), and *C. joazeirensis* Mercadal, 1986 (Segalla *et al.*, 2019; Frost, 2020).

Ceratophrys joazeirensis is the only species of the genus occurring in the semiarid Caatinga ecoregion of northeastern Brazil from where it is considered endemic (Faivovich *et al.*, 2014), although marginally reaching the Cerrado ecoregion (Maciel *et al.*, 2013). The species is known from few localities from Rio Grande do Norte (Vieira *et al.*, 2006; Jorge *et al.*, 2012) southwards to northern Bahia (Mercadal, 1986; Borges-Nojosa & Arzabe, 2005; Vieira *et al.*, 2006; Caramaschi, 2008; Santos *et al.*, 2009; Zaidan & Leite, 2012; Jorge *et al.*, 2012; Valdujo *et al.*, 2012; Roberto *et al.*, 2013; Faivovich *et al.*, 2014; Santana *et al.*, 2014; Almeida *et al.*, 2016), plus a single record in Minas Gerais (Maciel *et al.*, 2013) (Fig. 1). Our record from São João da Ponte is the second from Minas Gerais, filling a gap of 860 km in a straight line between the two southernmost localities where the species was previously recorded: Buritizeiro (Minas Gerais, ca. 190 km from the new record) and Feira de Santana (Bahia, ca. 680 km from

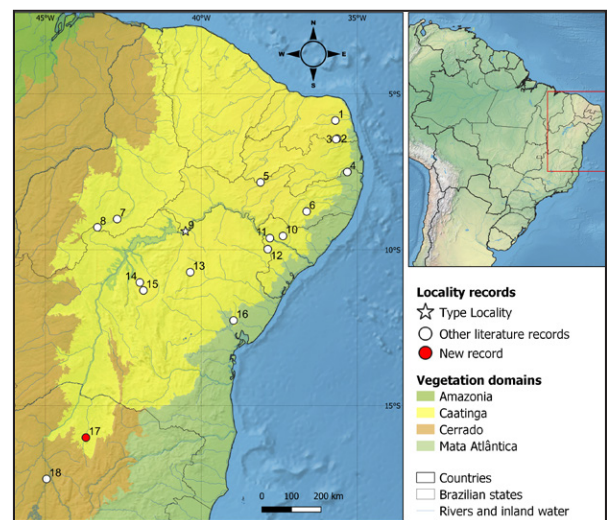


Figure 1. Map showing the known localities of *Ceratophrys joazeirensis* based on the literature and the new record. 1) RIO GRANDE DO NORTE, Santa Maria, Fazenda Tanques [05°51'14.4"S; 35°42'03.6"W] (Jorge *et al.*, 2012); 2) RIO GRANDE DO NORTE, Passa e Fica [06°26'16.8"S; 35°38'38.4"W] (Vieira *et al.*, 2006). 3) PARAÍBA, Araruna, Parque Estadual da Pedra da Boca [06°27'14.4"S; 35°40'48"W] (Borges-Nojosa & Arzabe, 2005; Vieira *et al.*, 2006; Faivovich *et al.*, 2014). 4) PERNAMBUCO, Timbaúba [07°30'18"S; 35°19'04.8"W] (Caramaschi, 2008); 4) PERNAMBUCO, Triunfo, Café do Brejo [07°50'16.8"S; 38°06'07.2"W] (Santos *et al.*, 2009); 6) PERNAMBUCO, Caetés, Vale do Rio São José [08°46'19.2"S; 36°37'19.2"W] (Oliveira *et al.*, 2017). 7) PIAUÍ, São Raimundo Nonato [09°00'57.6"S; 42°41'56.40"W] (Roberto *et al.*, 2013); 8) PIAUÍ, Caracol, Lagoa do Carlinho [09°16'44.4"S; 43°19'48"W] (CRIA, 2020; Mângia com. pess.). 9) BAHIA, Juazeiro [09°24'39.6"S; 40°30'25.2"W] (Mercadal, 1986 – type locality). 10) ALAGOAS, São José da Tapera [09°33'28.8"S; 37°22'51.6"W] (Almeida *et al.*, 2016). 11) SERGIPE, Canindé do São Francisco, Xingó PowerPlant [09°37'37.2"S; 37°48'07.2"W] (Santana *et al.*, 2014); 12) SERGIPE, Poço Redondo, Serra da Guia [09°58'51.6"S; 37°52'04.8"W] (Santana *et al.*, 2014). 13) BAHIA, Pindobaçu, Poço Pelado [10°43'12"S; 40°21'18"W] (Zaidan & Leite, 2012); 14) BAHIA, Jussara [11°02'52.8"S; 41°58'15.6"W] (Gama *et al.*, 2020); 15) BAHIA, Irecê, Estrada Lapão da Pedreira [11°18'14.4"S; 41°51'21.6"W] (CRIA, 2020); 16) BAHIA, Feira de Santana [12°16'01.2"S; 38°58'01.2"W] (Faivovich *et al.*, 2014). 17) MINAS GERAIS, São João da Ponte, Fazenda Santa Mônica [16°01'26.4"S; 43°42'00"W] (present study); 18) MINAS GERAIS, Buritizeiro, Fazenda Jatobá [17°21'03.6"S; 44°57'43.2"W] (Maciel *et al.*, 2013; Valdujo *et al.*, 2012).

the new record) (Fig. 1). It is also the southernmost record of *C. joazeirensis* within the Caatinga (*sensu* IBGE, 2019).

The voucher specimen (UFMG 19076) was collected at 8:00 p.m., after a rainstorm that lasted from afternoon to early evening. The specimen was on an unpaved road between pastures and a riparian forest fragment at the margins of the Verde Grande river (Fig. 2). On the occasion, other specimens of *Ceratophrys joazeirensis* were calling from the riparian forest fragment, which had many temporary ponds, but none could be sighted/located. Specimens of *C. joazeirensis* usually can be recorded calling from the edges of ephemeral ponds in open areas (Zaidan & Leite, 2012; Maciel *et al.*, 2013; Jorge *et al.*, 2015). Although we heard specimens calling from inside a riparian forest, the site was largely impacted by human activities. This riparian forest is about 20 m wide from the riverbanks to the road, and is composed mostly of small trees, less than 10 m high (Fig. 2).

The collected specimen is a juvenile whose external morphology fits well in the diagnosis of *Ceratophrys joazeirensis*, such as a triangular, medium developed eyelid appendix and the dorsal color pattern with three dorsolateral blotches on each side, resembling a trident (Mercadal, 1986) (Fig. 3). Two weeks after the collection, HCC visited the site but the weather was dry. The ponds have dried up and no horned-frog was heard or spotted, reinforcing the explosive breeding behavior of this elusive species.



Figure 2. Narrow forest fragment between the margins of Verde Grande river (to the left) and an unpaved road (to the right), where the specimen of *Ceratophrys joazeirensis* (UFMG 19076) was captured.

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Figure 3. Juvenile specimen of *Ceratophrys joazeirensis* (UFMG 19076) in life, showing color pattern characteristic of this species and the odontoids on either side of the mandibular symphysis, characteristic of the genus.

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