

SHORT NOTE

New records of *Bokermannohyla ibitipoca* (Anura, Hylidae)

Nuevos registros de *Bokermannohyla ibitipoca* (Anura, Hylidae)

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- Received: 5/sep/2019
- Accepted: 14/apr/2020
- Published online: 22/apr/2020

Citation: Pereira EA, Neves MO, Rocha LCL, Heitor RC, Santana DJ. 2020. New records of *Bokermannohyla ibitipoca* (Anura, Hylidae). *Caldasia* 42(2):339-342. doi: <https://dx.doi.org/10.15446/caldasia.v42n2.81357>.

ABSTRACT

Bokermannohyla ibitipoca is a small-sized frog restricted to the Mantiqueira Mountain Complex, Brazil, and is currently categorized as Data Deficient in the Red List of Threatened Species of the IUCN. Here we report new records of *B. ibitipoca* throughout Minas Gerais state, Brazil and provide a distribution map of the species.

Keywords. Atlantic Forest, geographical distribution, Minas Gerais state.

RESUMEN

Bokermannohyla ibitipoca es una rana pequeña restringida al Complejo Mantiqueira Brasil y se clasifica actualmente como Datos deficientes en la Lista Roja de Especies Amenazadas de la IUCN. Presentamos nuevos registros de *B. ibitipoca* en el estado de Minas Gerais, Brasil, y proporcionamos un mapa de distribución de la especie.

Palabras clave. Bosque Atlántico, distribución geográfica, estado de Minas Gerais

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Bokermannohyla ibitipoca (Caramaschi & Feio, 1990) (Fig. 1) is a member of *B. circumdata* group (Faivovich et al. 2005) described from Ibitipoca State Park, Minas Gerais state, Brazil. The species is diagnosed by presenting of transverse dark brown cross bars of blotches on dorsum, small tympanum, single and subgular vocal sac and presence of transverse dark bars on thighs and vertical bars on flanks (Caramaschi and Feio 1990). It is a small-sized hylid frog (males reaching 43 mm in snout-vent length) restricted to the Mantiqueira Mountain Complex, over 1200 m, found mainly on creeks in small primary and secondary gallery forests (Caramaschi and Feio 1990). Moreover, this species is currently categorized as Data Deficient in the Red List of Threatened Species (IUCN c2019) due to uncertainties about its extent of occurrence, conservation status, and ecological requirements (Rodrigues et al. c2004). Herein, we provide new records for *B. ibitipoca* and a map of the currently known geographical distribution of the species.

We collected individuals of *B. ibitipoca* between November 2011 to December 2016 (license 54493-12) in two different localities in Minas Gerais state: a dense ombrophylous for-

est located at the municipality of Bom Jardim de Minas (21°59'57.84" South, 44°10'36.12" West, ca. 1230 m), and in the arboreal vegetation of a marsh formed by several springs below a rocky slope inside an ombrophylous forest at Environmental Protection Area Alto Taboão (acronym EPA) (20°31'21.00" South, -42° 3'24.84" West; ca. 1500 m), at the municipality of Espera Feliz (Fig. 2). We housed the voucher specimens in the collections of the Museu de Zoologia João Moojen of the Universidade Federal de Viçosa (MZUFV 11570-71 and 11576), in the Universidade Estadual de Minas Gerais (UEMG 037), and in the Coleção Zoológica de Referência da Universidade Federal de Mato Grosso do Sul (ZUFMS).

Even with the new records the current distribution reinforces the status of Data Deficient provided by IUCN to this species. Also, it is possible to see a large gap in the distribution of the species. This occurs due to the two disconnected portions of the Mantiqueira Mountain Complex with a lower region between them; this gap occurs in many other species of the area (Silva et al. 2018). Thomé et al. (2014) explored this phenomenon and proposed that anuran diversity of Atlantic Rainforest is distributed accord-



Figure 1. Adult male of *Bokermannohyla ibitipoca* from the municipality of Bom Jardim de Minas, Minas Gerais state, Brazil.

ing geographic barriers and proposed three hypotheses to explain this disjointed distribution: (i) These occurrences are of two different species, and a systematic study is necessary in order to investigate it; (ii) there was not enough collection efforts in the region, and (iii) these two separated groups are a result of very recent geological

and/or climatic events occurred in this region. Nevertheless, these new records show the importance of inventories in poorly studied regions in order to expand the distribution, fill gaps in the knowledge of Brazilian anurans and diminish the Wallace Shortfall of the species.

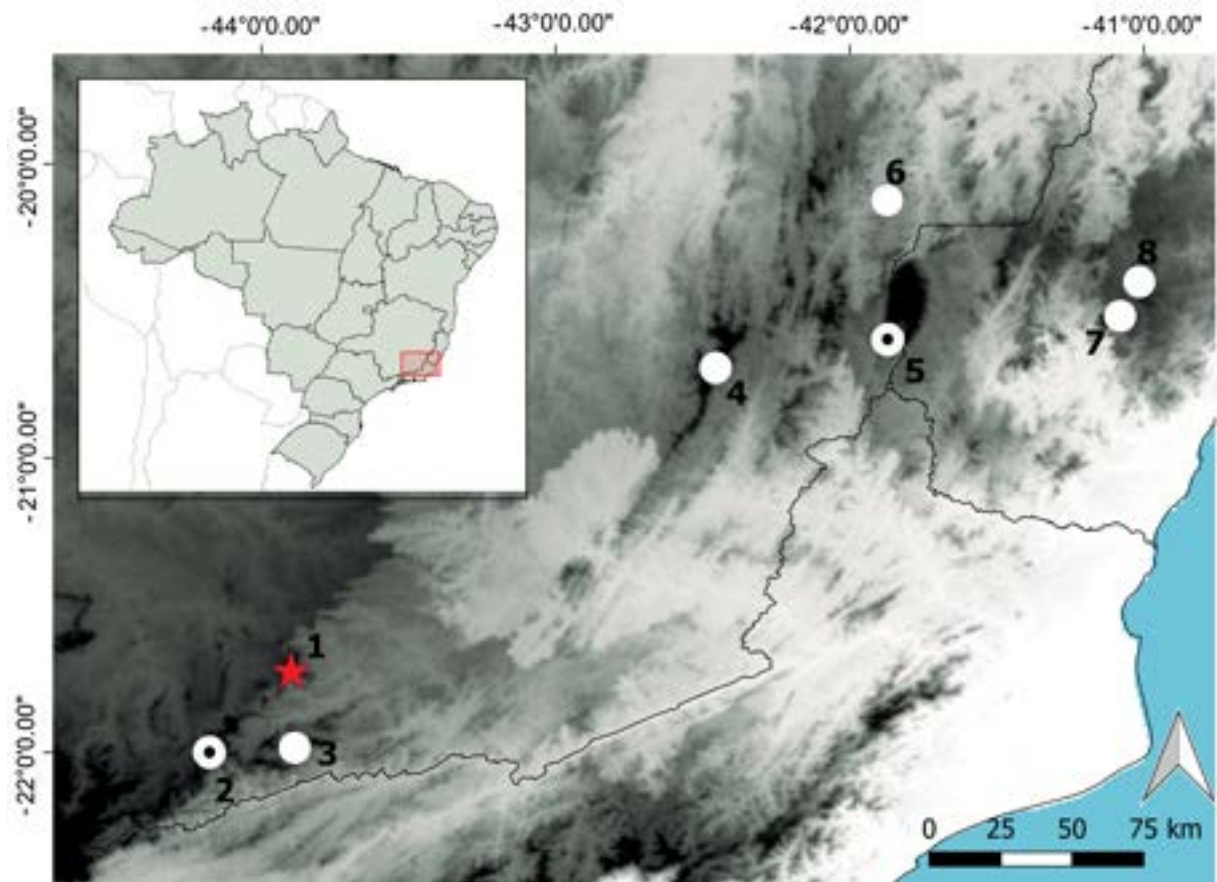


Figure 2. Distribution map of *Bokermannohyla ibitipoca* with type locality (red star), literature records (white circles) and new records (white dotted circles) indicated. Minas Gerais (MG) state: (1) Ibitipoca State Park (Caramaschi and Feio 1990); (2) Bom Jardim de Minas (this study); (3) Serra Negra da Mantiqueira State Park (Neves et al. 2017); (4) Serra do Brigadeiro State Park (Feio et al. 2003, 2008); (5) Espera Feliz, EPA Alto Taboão (this study); and (6) RPPN Mata do Sossego and Reserva Sossego do Muriqui (Santos et al. 2012). Espírito Santo (ES) state: (7) Forno Grande State Park (Montesinos et al. 2012); and (8) Pedra Azul State Park, Serra Boa Vista (Moura et al. 2008).

AUTHOR'S CONTRIBUTION

EAP and RCH collected data; EAP and MON wrote the paper; LCLR and DJS reviewed the paper.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

ACKNOWLEDGMENTS

EAP and MON thank their current scholarship supported by Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) and by Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), respectively. We would like to thank the Instituto Chico Mendes de Conservação de Biodiversidade (ICMBio) for issuing collecting permits.

LITERATURE CITED

- Caramaschi U, Feio RN. 1990. A new species of *Hyla* (Anura, Hylidae) from Southern Minas Gerais, Brazil. *Copeia*. (2):524–546. doi: <https://doi.org/10.2307/1446357>
- Faivovich J, Haddad CFB, Garcia PCA, Frost DR, Campbell JA, Wheeler WC. 2005. Systematic review of the frog family Hylidae, with special reference to Hylinae: phylogenetic analysis and taxonomic revision. *Bull. Am. Mus. Nat. His.* 294:1–240. doi: [https://doi.org/10.1206/0003-0090\(2005\)294\[0001:SR0TFF\]2.0.CO;2](https://doi.org/10.1206/0003-0090(2005)294[0001:SR0TFF]2.0.CO;2)
- Feio RN, Ferreira PL, Pantoja DL. 2003. *Bokermannohyla ibitipoca*. *Herpetol. Rev.* 34:258.
- Feio RN, Santos PS, Cassini CS, Dayrell JS, Oliveira EF. 2008. Anfíbios da Serra do Brigadeiro-MG. *Biota*. 1:4–32.
- [IUCN] International Union for Conservation of Nature and Natural Resources. 2019. The IUCN Red List of Threatened Species. Version 2019–1. [Last accessed: 15 Jul 2019]. <http://www.iucnredlist.org>.
- Montesinos R, Peloso PLV, Koski DA, Valadares AP, Gasparini JL. 2012. Frogs and toads of the Pedra Azul–Forno Grande Biodiversity Corridor, southeastern Brazil. *Check List*. 8(1):102–111. doi: <https://doi.org/10.15560/8.1.102>
- Moura MR, Gasparini JL, Neves Feio R. 2008. Amphibia, Anura, Hylidae, *Bokermannohyla ibitipoca*: distribution extension, new state record and Geographic distribution map. *Check List*. 4(4):389–391. doi: <https://doi.org/10.15560/4.4.389>
- Neves MO, Pereira EA, Lima LMC, Folly H, Oliveira EF, Santana DJ, Feio RN. 2017. Anurans of Serra Negra da Mantiqueira, Zona da Mata of Minas Gerais, Brazil: a priority area for biodiversity conservation. *Herpetol. Notes*. 10:297–311.
- Rodrigues MT, Van Sluys M, Nascimento LB. 2004. *Bokermannohyla ibitipoca*. The IUCN Red List of Threatened Species 2004. [Last accessed: 05 Jul 2019]. <https://www.iucnredlist.org/species/55510/11321342>.
- Santos PS, Silva ET, Fehlbeg BHB, Santos MTT, Zaidan BF, Garcia PCA. 2012. Amphibia, Anura, *Hylodes babax* Heyer, 1982 (Hylodidae), *Dendropsophus ruschii* (Weygoldt and Peixoto, 1987) and *Bokermannohyla ibitipoca* (Caramaschi and Feio, 1990) (Hylidae): distribution extension and geographic distribution map. *Check List*. 8(2):313–316. doi: <https://doi.org/10.15560/8.2.313>
- Silva ET, Peixoto MAA, Leite FSF, Feio RN, Garcia PCA. 2018. Anuran Distribution in a Highly Diverse Region of the Atlantic Forest: The Mantiqueira Mountain Range in Southeastern Brazil. *Herpetologica*. 74(4):294–305. doi: <http://doi.org/10.1655/Herpetologica-D-17-00025.1>
- Thomé MT, Zamudio KR, Haddad CFB, Alexandrino J. 2014. Barriers, rather than refugia, underlie the origin of diversity in toads endemic to the Brazilian Atlantic Forest. *Mol. Ecol.* 23(24):6152–6164. doi: <https://doi.org/10.1111/mec.12986>