ACTA BIOLÓGICA COLOMBIANA
http://www.revistas.unal.edu.co/index.php/actabiol

Facultad de Ciencias
Departamento de Biología
Sede Bogotá

UNIVERSIDAD NACIONAL DE COLOMBIA

NOTA CORTA / SHORT NOTE

NEW DISTRIBUTION RECORD OF *Boana caiapo* (ANURA, HYLIDAE) IN BRAZILIAN CERRADO

Nueva distribución del *Boana caiapo* (Anura, Hylidae) en el cerrado brasileño

Fernanda DIAS-SILVA[1*], Thais Teixeira de SOUZA[2], Renata Moleiro FADEL[3], Guilherme Bard ADAMS[4], Daniel BÜHLER[4], Elvis Almeida PEREIRA[3,5]

[1] Departamento de Vertebrados, Museu Nacional, Universidade Federal do Rio de Janeiro, Setor de Herpetologia, Quinta da Boa Vista, Rio de Janeiro, 20940-040, RJ, Brazil. fdsherpeto@gmail.com

[2] Laboratório de Herpetologia, Departamento de Zoologia, Universidade Federal de Juiz de Fora (UFJF), Campus Universitário, São Pedro, 36036-900, Juiz de Fora, MG, Brazil. thaistsjf@hotmail.com

[3] Mapinguari - Laboratório de Biogeografia e Sistemática de Anfíbios e Repteis, Universidade Federal de Mato Grosso do Sul, 79002-970, Campo Grande, MS, Brasil. fadel.renata@yahoo.com.br; elvisaps21@gmail.com

[4] Biota Soluções Ambientais Ltda, Rua Lindolfo Collor, 439, sala 301, Centro, CEP 93010-080, São Leopoldo, RS, Brazil. guilhermeadams@hotmail.com

[5] Programa de Pós-graduação em Biologia Animal, Departamento de Biologia Animal, Universidade Federal Rural do Rio de Janeiro, 23890-000, Seropédica, RJ, Brazil. danielbuhler@gmail.com

** For correspondence fdsherpeto@gmail.com*

Received: 21st July 2021. **Returned for revision**: 07th August 2021. **Accepted**: 11th January 2021
Associate Editor: Martha Ramírez Pinilla

Citation/ citar este artículo como: Dias-Silva, F., Souza, T.T., Fadel, R.M., Adams, G.B., Buhler, D., and Pereira, E.A. (2023). New distribution record of *Boana caiapo* (Anura, Hylidae) in Brazilian Cerrado. *Acta Biol Colomb.*, *28*(3): 540-543. https://doi.org/10.15446/abc.v28n3.96680

ABSTRACT

Boana caiapo is a hylid treefrog with occurrence in the states of Goiás, Mato Grosso, Pará, and Tocantins. We provide a new record of the occurrence of *B. caiapo* in the state of Mato Grosso, Brazilian Cerrado (Neotropical Savana). The record extends its known distribution approximately 330 km Northwest of the type locality (Aragarças municipality, Goiás) and 263 km Northwest of the nearest known locality (Cocalinho municipality, Mato Grosso state). All localities belong to the Tocantins-Araguaia River basin, reinforcing the restricted distribution of this species. Studies related to new records of species are important to direct conservation proposals.

Keywords: Amphibia, *B. albopunctata* group, geographic distribution, occurrence.

RESUMEN

Boana caiapo es un hílido arborícola con presencia en los estados de Goiás, Mato Grosso, Pará y Tocantins. Presentamos aquí un nuevo registro de *B. caiapo* para el municipio Ribeirão Cascalheira, estado de Mato Grosso, Cerrado brasileño (Sabana Neotropical) y una actualización de su distribución. El registro extiende su distribución conocida en aproximadamente 330 km al noroeste de la localidad tipo (municipio de Aragarças, estado de Goiás) y 263 km al noroeste de la localidad conocida más cercana (municipio de Cocalinho, estado de Mato Grosso). Todas las localidades pertenecen a la cuenca del río Tocantins-Araguaia, lo que refuerza la distribución restringida de esta especie. Estudios que relacionan nuevos registros de especies son importantes para dirigir propuestas de conservación.

Palabras clave: Amphibia, *B. albopunctata* grupo, distribución geográfica, ocurrencia.

The genus *Boana* Gray, 1825 comprises 98 species distributed in eight species groups: *Boana albopunctata*, *B. benitezi*, *B. claresignata*, *B. faber*, *B. pellucens*, *B. pulchella*, *B. punctata*, and *B. semilineata* (Lyra et al. 2020; Frost, 2021). These gladiator frogs have a large geographical distribution from Tropical, Central, and South America from Nicaragua to Argentina; Trinidad, and Tobago (Frost, 2021). Recently, Pinheiro et al. (2018) described a new species belonging to the *B. albopunctata* species group that occurs in Brazilian Cerrado, in the Tocantins-Araguaia River basin.

Boana caiapo is a nocturnal robust medium-sized treefrog (snout-vent length - SVL = 47.6 mm), found in open areas along with aquatic habitats and disturbed areas. In wildlife, this treefrog presents a dorsal color that varies from pale to caramel brown and some individuals have dorsal longitudinal stripes (Pinheiro et al., 2018). These species occur across the Tocantins River basin, in the states of Goiás, Mato Grosso, Pará, and Tocantins (Pinheiro et al., 2018; Silva et al., 2020). Herein, we provide a new record of *Boana caiapo* in Brazilian Cerrado (Neotropical Savana), updating its distribution (Fig. 1).

In August 2013, we found *Boana caiapo* males in vocalization activity, near a wetland, at Barra do Dia farm, Ribeirão Cascalheira municipality, Mato Grosso state (12°55'33" N, and 51°49'48" W; Fig. 2). The locality has the typical Cerrado vegetation comprising open areas and conserved fragments. We collected two individuals that are housed in the Laboratório de Herpetologia, da Universidade Federal do Rio Grande do Sul (acronym UFRGS 7086, 7124).

The specimens found occur sympatrically with *Boana raniceps* and *B. geographica* and are distinguished from these species by the presence of dark brown spots on the hind limbs (dark brown vertical bars in *B. raniceps*; Pinheiro et al., 2018) and the absence of a reticulated pattern on the palpebral membrane (present in *B. geographica*; Faivovich et al., 2005; Faivovich et al., 2006).

Boana caiapo is known to occur across the Tocantins River basin, in the states of Goiás, Mato Grosso, Pará, and

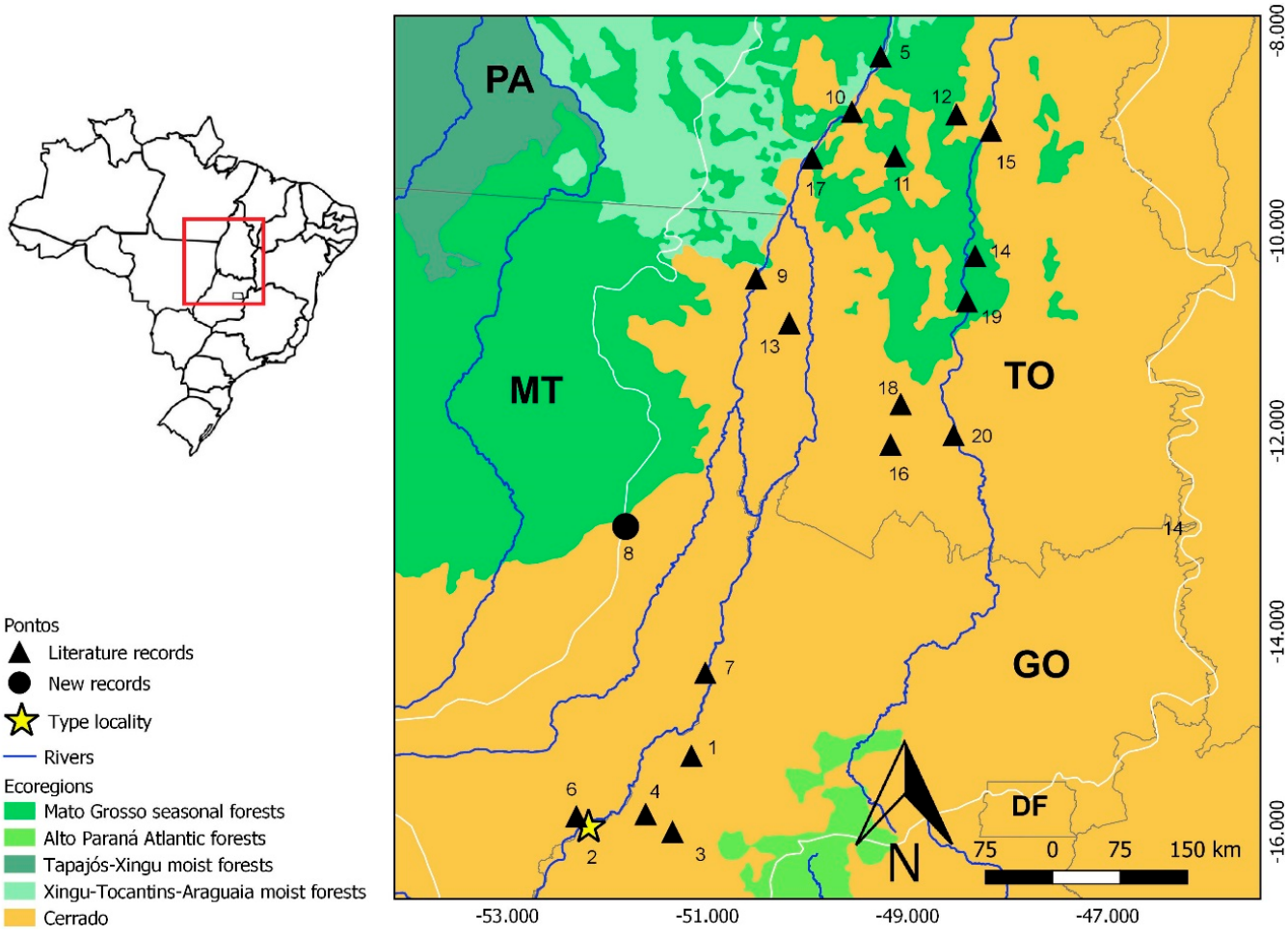

Figure 1. Geographic distribution of *Boana caiapo* throughout the Tocantins-Araguaia River Basin (delimited by a white line on the map). PA: Pará state; MT: Mato Grosso state; TO: Tocantins state; GO: Goiás state and DF: Federal District.

Table 1. Recorded localities for *Boana caiapo*. *Datum* of the coordinates: WGS 84.

Points of the map	City	State	Coordinates	Distance (Km) from type-locality	Reference
1	Britania	GO	15°14'29" N, and 51°9'41" W		Pinheiro et al. (2018)
2	Aragarças	GO	15°53'39" N, and 51°49'23" W		Pinheiro et al. (2018)
3	Montes Claros de Goias (Mina de níquel Votorantim)	GO	16°01'53" N, and 51°21'11" W		Pinheiro et al. (2018)
4	Montes Claros de Goias (Fazenda Carolina)	GO	15°49'17" N, and 51°37'16"W		Pinheiro et al. (2018)
5	Conceição do Araguaia	PA	08°15'29" N, and 49°16'11" W		Pinheiro et al. (2018)
6	Barra do Garças	MT	15°53'24" N, and 52°15'24" W		Pinheiro et al. (2018)
7	Cocalinho	MT	14°23'50" N, and 50°59'45" W		Pinheiro et al., (2018)
8	Ribeirão Cascalheira	MT	12°55'33" N, and 51°49'48" W	330 Km	**This study**
9	Santa Terezinha	MT	10°27'39" N, and 50°30'46" W		Pinheiro et al. (2018)
10	Araguacema	TO	08°48'31" N, and 49°33'28" W		Pinheiro et al. (2018)
11	Dois Irmãos	TO	09°15'30" N, and 49°03'52" W		Pinheiro et al. (2018)
12	Guaraí	TO	08°50'03" N, and 48°30'37" W		Pinheiro et al. (2018)
13	Lagoa da Confusão	TO	10°47'37" N, and 49°37'25" W		Pinheiro et al. (2018)
14	Palmas	TO	10°12'46" N, and 48°21'37" W		Pinheiro et al. (2018)
15	Pedro Afonso	TO	08°58'03" N, and 48°10'29" W		Pinheiro et al. (2018)
16	Figueirópolis	TO	12°07'51" N, and 49°10'27" W		Silva et al. (2020)
17	Caseara	TO	09°16'42" N, and 49°57'20" W		Silva et al. (2020)
18	Gurupi	TO	11°28'11" N, and 48°47'19"W		Silva et al. (2020)

Figure 2. Individual of *Boana caiapo* at Municipality of Ribeirão Cascalheira, Mato Grosso state, Brazil. a) Dorsal color; b) Dark brown spots on the posterior surface of thighs.

Tocantins (Pinheiro et al., 2018; Silva et al., 2020), and here we extend its distribution in approximately 330 km Northwest from its type locality (Aragarças municipality, Goiás state) and 263 km Northwest from the nearest known locality (Cocalinho municipality, Mato Grosso state; Table 1). All localities belong to the Tocantins-Araguaia River basin, corroborating the endemism of the species to it. Studies related to the expansion of new records of species are important to reinforce conservation proposals, especially in fragments whose data on richness, abundance, and distribution are scarce (Diniz-Filho et al., 2007; Dantas et al., 2019). Our new record of *B. caiapo* at Municipality of Ribeirão Cascalheira, Mato Grosso state, can help better understand the geographical distribution of this species, updating the knowledge about its distribution, so as helping, and sustaining the conservation of these populations in Brazilian Cerrado (Neotropical Savana).

AUTHOR'S PARTICIPATION

The authors RMF, GBA, DB and EAP carried out field collections while FDS, RMF, TTS, EAP carried out material preparation, compilation, figures, and maps. The first draft of the manuscript was written by FDS, TTS, and RMF. All authors contributed to writing and reviewing each step of this manuscript. All the authors read and approved the final manuscript.

ACKNOWLEDGMENTS

We thank current scholarship supported by Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (Capes) and the scholarship supported by Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq). We would like to thank the Instituto Chico Mendes de Conservação à Biodiversidade (ICMBio) for issuing collecting permits (N° 54493-13).

CONFLICT OF INTEREST

We declare that there are no conflicts of interest in this research.

REFERENCES

Dantas, S. P., Tavares, H. D., Pascoal, W., Saviato, M. J., Ávila, R. W., Vasconcelos, T. S., and Oda, F. H. (2019). New distribution records from the Brazilian Cerrado and species distribution modelling of *Boana crepitans*, *Lithobates palmipes*, *Pipa pipa*, and *Micrurus h. hemprichii*. *Biodiversity*, *20*(4), 1-12. https://doi.org/10.1080/14888386.2019.1664931

Diniz-Filho, J. A. F., Bini, L. M., Pinto, M. P., Rangel, T. F. L. V. B., Carvalho, P., Vieira, S. L., and Bastos, R. P. (2007). Conservation biogeography of anurans in Brazilian Cerrado. In Hawksworth D.L., Bull A.T. (eds) *Vertebrate Conservation and Biodiversity. Topics in Biodiversity and Conservation* (pp. 997–1008). Springer, Dordrecht. https://doi.org/10.1007/978-1-4020-6320-6_11

Faivovich, J., Haddad, C. F. B., Garcia, P. C. A., Frost, D. R., Campbell, J. A., and Wheeler, W. C. (2005). Systematic review of the frog family Hylidae, with special reference to Hylinae: phylogenetic analysis and taxonomic revision. *Bulletin American Museum Natural History*, *294*(1), 1-240. https://doi.org/10.1206/0003-0090(2005)294[0001:SROTFF]2.0.CO;2

Faivovich, J., Moravec, J., Cisneros-Heredia, D. F., and Köler, J. (2006). A new species of the *Hypsiboas benitezi* group from the western Amazon Brazil (Amphibia: Anura: Hylidae). *Herpetologica, 62*(1), 96–108. http://dx.doi.org/10.1655/05-12.1

Frost, D. (March 22nd 2021). *Amphibian Species of the World 6.0: an online reference*. Amphibia Species of the World. Retrieved on March 22nd 2021. from https://amphibiansoftheworld.amnh.org/

Lyra, M. L., Lourenço, A. C. C., Pinheiro, P. D. P., Pezzuti, T. L., Baêta, D., Barlow, A., Hofreiter, M., Pombar Jr., J. P., Haddad, C. F. B., Faivovich, J. (2020). High-throughput DNA sequencing of museum specimens sheds light on the long-missing species of the Bokermannohyla claresignata group (Anura: Hylidae: Cophomantini). Zoological Journal of the Linnean Society, 190, 1235-1255.

Pinheiro, P. D. P., Cintra, C. E. D., Valdujo, P. H., Silva, H .L. R., Martins, I. A., Silva, N. J., and Garcia, P. C. A. (2018). A new species of the *Boana albopunctata* group (Anura: Hylidae) from the Cerrado of Brazil. *South American Journal of Herpetology*, *13*(2), 170–182. https://doi.org/10.2994/SAJH-D-17-00040.1

Silva, L. A., Carvalho, P. S., Pereira, E. A., Fadel, R. M., Dantas, S. P., Brandão, R. A., and Santana, D.J. (2020). Richness, diversity patterns, and taxonomic notes of amphibians from the Tocantins state. *Biota Neotropica, 20*(1), 1–22. https://doi.org/10.1590/1676-0611-bn-2019-0838