

# Amphibia, Anura, Microhylidae, *Chiasmocleis avilapiresae* Peloso and Sturaro, 2008 and *Chiasmocleis bassleri* Dunn, 1949: New Distribution records

Domingos de Jesus Rodrigues<sup>1,2,3\*</sup>, Janaina da Costa de Noronha<sup>2</sup>, Marcelo de Moraes Lima<sup>4</sup> and Angélica Coelho Rosa<sup>1</sup>

- 1 Universidade Federal de Mato Grosso, Instituto de Ciências Naturais Humanas e Sociais, Núcleo de Estudo da Biodiversidade da Amazônia Matogrossense. Avenida Alexandre Ferronato, 1200, Setor Industrial. CEP 78557-267. Sinop, MT, Brazil.
  - 2 Universidade Federal de Mato Grosso, Instituto de Biociências, Mestrado em Ecologia e Conservação da Biodiversidade. Avenida Fernando Corrêa da Costa, s/n, Coxipó. CEP 78060-900. Cuiabá, MT, Brazil.
  - 3 Instituto Nacional de Ciências e Tecnologia de Estudos Integrados da Biodiversidade Amazônica - INCT-CENBAM/CNPq/MCT. Avenida André Araújo, 2936. CEP 69011-970. Manaus, AM, Brazil.
  - 4 Instituto Nacional de Pesquisas da Amazônia (INPA). CPEc. Avenida André Araújo 2936. CEP 69011-970. Manaus AM, Brazil.
- \* Corresponding author. E-mail: [djmingo23@gmail.com](mailto:djmingo23@gmail.com)

**ABSTRACT:** This note reports the presence of *Chiasmocleis bassleri* and *C. avilapiresae* in the north of Mato Grosso state. It extends the distribution of *C. avilapiresae* and *C. bassleri* 140 km from the nearest known locality (Aripuanã, MT, Brazil) and 1170 and 1350 km from the type-locality (Floresta Nacional de Caxiuanã, state of Pará, Brazil and Río Utoquinia to Río Tapiche, Perú, respectively).

Currently, the genus *Chiasmocleis* is composed of 25 species distributed in Panama and tropical South America, north and east of the Andes (Frost 2011). Twenty species (80%) occur in Brazil (SBH 2011) but, for many of the known species, data on geographic distribution and biology are scarce (Sampaio *et al.* 2010). *Chiasmocleis avilapiresae* (Figure 1A) and *C. bassleri* (Figure 1B) are small-sized frogs that inhabit the Amazon Basin, south of the Amazon River (Peloso and Sturaro 2008; Santana *et al.* 2009; Barro *et al.* 2010; Sampaio *et al.* 2010; Frost 2011).

On December 2009/2010 and February and March 2011 several individuals of *C. bassleri* and *C. avilapiresae* were found vocalizing in a gallery forest on the margins of Juruena River (9°51'17.3" S, 58°13'14.0" W) or on the edge of a temporary pond inside a tropical "Terra Firme" forest. On 14 December 2009 several individuals were found vocalizing on the soil inside a primary rainforest near the margins of Juruena River. In this same date and in December/2010 and March and May/2011 several individuals were found collected in a pitfall trap located in the left margins of the Juruena River. These records are similar to those of Barros *et al.* (2010), where both species were found in primary forest or in clearings/pastures (Peloso and Sturaro 2008). These frogs usually occur near isolated pools, under leaves or pieces of bark (Barros *et al.* 2010). According to Peloso and Sturaro (2008) and Sampaio *et al.* (2010), both species are sympatric in Espigão do Oeste, state of Rondônia; Itaituba, state of Pará; Aripuanã and Cotriguaçu (in this study), state of Mato Grosso, Brazil.

The males call from under wet leaf litter near the pond's edge. The calling activity began at sunset, extending until the middle of the night. Adult males of *C. avilapiresae* measured  $19.17 \pm 1.7$  (mean  $\pm$  standard deviation) mm snout-vent length (18.21–20.14; n = 2), and females

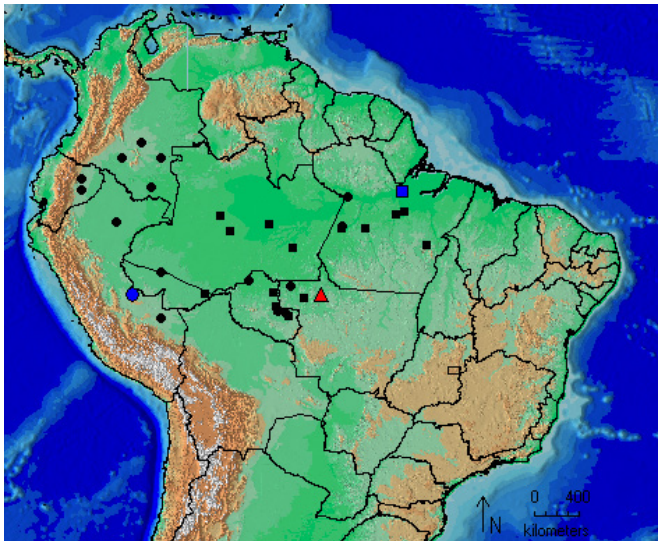


**FIGURE 1.** *Chiasmocleis avilapiresae* (A) and *C. bassleri* (B) from São Nicolau farm, municipality of Cotriguaçu in the state of Mato Grosso, Brazil. The lateral region of *C. bassleri* is well defined and demarcated (B) while in *C. avilapiresae* it is irregular (A). Photos by D.J. Rodrigues (A) and R.A. Kawashita Ribeiro (B).

measured  $27.35 \pm 4.0\text{mm}$  (21.72–33.57;  $n = 10$ ). Adult males of *Chiasmocleis bassleri* measured  $17.93 \pm 2.17\text{mm}$  (14.84–20.11;  $n = 7$ ) and females measured  $23.50 \pm 1.35\text{mm}$  (21.25–25.54;  $n = 8$ ).

Voucher specimens reported in this note are housed in the herpetological section of the Biologic Collection of Meridional Amazon (ABAM – H), of the Federal University of Mato Grosso (UFMT), campus Sinop-MT, Brazil (*C. avilapiresae* ABAM – H 139, 140, 245, 246, 250, 263, 340, 353, 491 – 493; *C. bassleri* ABAM – H 127, 222, 223, 232, 244, 247, 262, 268-271, 276, 420, 494, 524, 538; collection permits #10174-1, Sistema de Autorização e Informação em Biodiversidade, SISBIO; Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis, IBAMA). They were euthanized with barbiturates according to Guidelines for use of live amphibians and reptiles in field and laboratory research normalized by American Society of Ichthyologist and Herpetologist. Tissue samples of these voucher specimens are deposited in the ABAM.

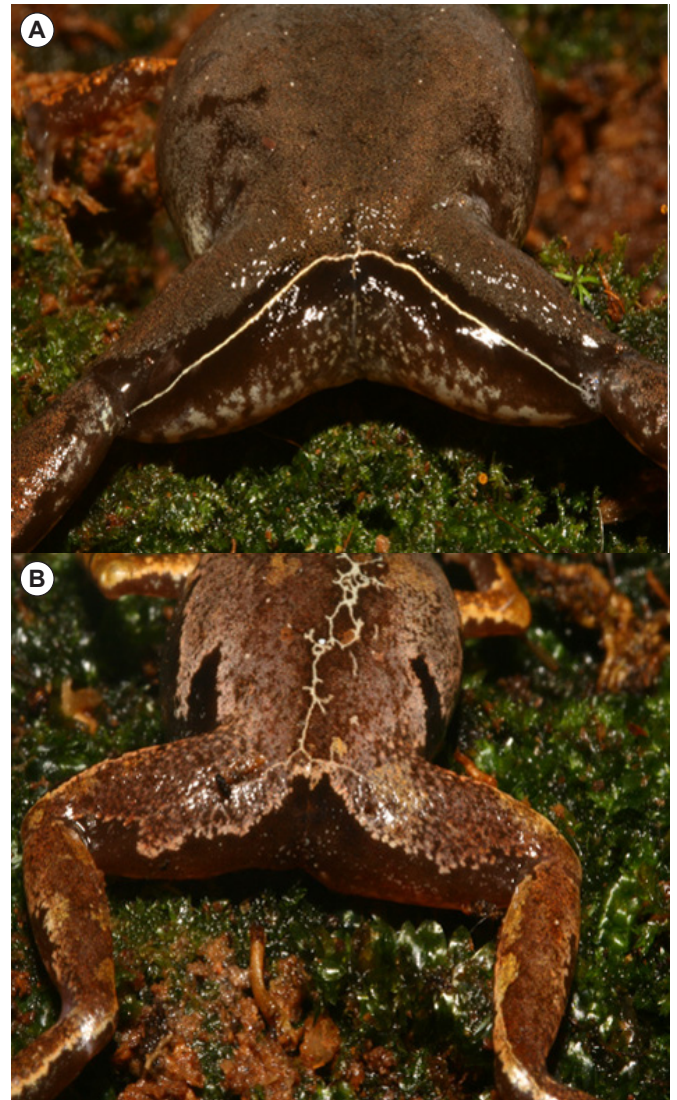
This new record extends the distribution of *C. avilapiresae* to the south of the Brazilian Amazon, approximately 1170 km (Figure 2) from the type-locality (Floresta Nacional de Caxiuanã, municipality of Portel, state of Pará, Brazil  $01^{\circ}59' \text{ S}$ ,  $51^{\circ}39' \text{ W}$ ) and 140 km from the nearest known locality (Aripuanã, MT, Brazil;  $09^{\circ}10'45'' \text{ S}$ ,  $60^{\circ}37'50'' \text{ W}$ ). It extends the distribution of the *C. bassleri* to 140 km from the nearest known locality (Aripuanã, MT, Brazil;  $10^{\circ}10' \text{ S}$ ,  $59^{\circ}28' \text{ W}$ ; Figure 2) and more than 1350 km from the type-locality (Río Utoquinia to Río Tapiche, Peru, approximate locality due to the absence of geographic data in the species description).



**FIGURE 2.** Known distribution of *Chiasmocleis avilapiresae* (black square) and *C. bassleri* (black circle) in Amazonia and in the São Nicolau Farm, Municipality of Cotriguaçu ( $09^{\circ}51'17.3'' \text{ S}$ ;  $58^{\circ}13'14.0'' \text{ W}$ ), Mato Grosso, Brazil (Red triangle for both species found in Cotriguaçu). Type-locality of *C. avilapiresae* (blue square) Floresta Nacional de Caxiuanã, municipality of Portel, Pará, Brazil ( $01^{\circ}59' \text{ S}$ ,  $51^{\circ}39' \text{ W}$ ) and *C. bassleri* (blue circle) Rio Utoquinia to Rio Tapiche, Peru, near Brazil ( $10^{\circ}04' \text{ S}$ ;  $70^{\circ}58' \text{ W}$ ).

*Chiasmocleis avilapiresae* can be confused with *C. bassleri*, but differs from it by its larger size and extensive foot webbing in males. Dunn (1949), in the description of *C. bassleri*, mentioned free toes and the abdomen with five large dark spots (for more information see Peloso and

Sturaro 2008 and Sampaio et al. 2010). The lateral region of *C. bassleri* is well defined and demarcated (Figure 1B), but it is irregular in *C. avilapiresae* (Figure 1A). A dark inguinal spot absent in *C. avilapiresae* (Figure 3A) is present in *C. bassleri* (Figure 3B). The cloacal region and posterior surface of the thigh is dark brown with a transverse white line on each side in *C. avilapiresae* (Figure 3A) and absent in *C. bassleri* (Figure 3B).



**FIGURE 3.** External morphological differences between *Chiasmocleis avilapiresae* and *C. bassleri*. A dark inguinal spot absent in *C. avilapiresae* (Figure 3A) and present in *C. bassleri* (Figure 3B). Cloacal region and posterior surface of thigh dark brown with a transverse white line on each side in *C. avilapiresae* (Figure 3A) and absent in *C. bassleri* (Figure 3B). Photos by R.A. Kawashita Ribeiro.

*Chiasmocleis avilapiresae* and *C. bassleri* are currently classified as Least Concern by the 2010 IUCN Red List of Threatened Species (Peloso 2009; Icochea et al. 2004, respectively). Unfortunately, some localities where the species were recorded (e.g. municipality of Aripuanã and Cotriguaçu) have been suffered significant habitat changes and fragmentation. Monitoring the population of these two species and conducting inventories in other parts of the Amazon is necessary due to constant environmental changes occurring in the region, as deforestation (Rodrigues et al., 2011a, b).

**ACKNOWLEDGMENTS:** We are grateful to Roberto Stofel and Alexandre do Nascimento Farias for field assistance; to Anne D'Hersel-Baldisseri for English review; to an anonymous reviewer for valuable comments and suggestions on the manuscript; to São Nicolau farm for logistic support, and to the Ofício Nacional das Florestas – ONF-Brazil for financial support and permission to access the study area. Domingos de Jesus Rodrigues thanks CNPq for the Bolsa de produtividade em Pesquisa (Process n. 501408/2009-6) and financial support (Process N. 558225/2009-8) and Janaina da Costa de Noronha thanks CAPES (fellowship). Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (IBAMA) provided collection permits. This is publication 13 in the NEBAM technical series.

#### LITERATURE CITED

- Barro, F.B., P.L.V. Peloso, L. Vicente, H.M. Pereira and M.J. Sturaro. 2010. The advertisement call of the Narrow-mouthed frog *Chiasmocleis avilapiresae* Peloso & Sturaro, 2008 (Amphibia, Anura, Microhylidae). *Zootaxa* 2657: 66-68.
- Dunn, E.R. 1949. Notes on South American frogs of the family Microhylidae. *American Museum Novitates* 1419: 1-21.
- Frost, D.R. 2011. *Amphibian Species of the World: An online reference. Version 5.3*. Electronic Database accessible at <http://research.amnh.org/herpetology/amphibia/index.html>. Captured on 20 June 2011.
- Icochea, J., C. Azevedo-Ramos, L.A. Coloma and, R. Santiago. 2004. *Chiasmocleis bassleri*. In IUCN 2010. *IUCN Red List of Threatened Species. Version 2010.4*. Electronic Database accessible at [www.iucnredlist.org](http://www.iucnredlist.org). Captured on 16 May 2011.
- Peloso, P. 2009. *Chiasmocleis avilapiresae*. In IUCN 2010. *IUCN Red List of Threatened Species. Version 2010.4*. Electronic Database accessible at [www.iucnredlist.org](http://www.iucnredlist.org). Captured on 16 May 2011.
- Peloso, P.L.V. and M. J. Sturaro. 2008. a new species of narrow-mouthed frog of the genus *Chiasmocleis méhelyi*, 1904 (anura, microhylidae) from the amazonian rainforest of Brazil. *Zootaxa*, 1947:39-52.
- Rodrigues, D.J., Lima, M.C. and A. Kawashita-Ribeiro. 2011a. Amphibia, Anura, Hylidae, *Cruziohyala craspedopus* (Funkhouser, 1957): Distribution extension, new state record and distribution map in Brazil. *Check List* 7(2): 149-150.
- Rodrigues, D.J., J.C. Noronha, M.C. Lima and A.C. Rosa. 2011b. Amphibia, Anura, Hylidae, *Phyllomedusa boliviana* Boulenger 1902 and *Phyllomedusa camba* De la Riva 2000: Distribution extension in Central Brazil. *Check List* 7(4): 397-399.
- Santana, D.J., A.C. Sant'Anna, V.A. São-Pedro and R.N. Feio. 2009. The advertisement call of *Chiasmocleis bassleri* (Anura, Microhylidae) from Southern Amazon, Mato Grosso, Brazil. *South American Journal of Herpetology*, 4:225-228.

RECEIVED: October 2011

REVISED: November 2011

ACCEPTED: November 2011

PUBLISHED ONLINE: December 2011

EDITORIAL RESPONSIBILITY: Fernanda P. Werneck