

# Squamata, Serpentes, Viperidae, *Bothrocophias hyoprora* (Amaral, 1935): Distribution extension in the state of Acre, northern Brazil

Paulo Sérgio Bernarde\*, Everton de Souza do Amaral and Marcus Augusto Damasceno do Vale

Universidade Federal do Acre, Campus Floresta, Centro Multidisciplinar, Laboratório de Herpetologia. CEP 69980-000. Cruzeiro do Sul, AC, Brazil.  
\* Corresponding author. E-mail: [snakebernarde@hotmail.com](mailto:snakebernarde@hotmail.com)

**ABSTRACT:** The Amazonian toadheaded pitviper *Bothrocophias hyoprora* (Amaral, 1935) is known from Brazil (states of Amazonas and Rondônia), Colombia, eastern Equador, Peru, and Bolivia. We report the first record of this species from the state of Acre (Brazil) in the Serra do Divisor National Park. This record extends the species distribution in 540 km to the southwest of Tabatinga, state of Amazonas, which was the nearest record of this species in Brazilian Amazon.

The genus *Bothrocophias* (Gutberlet and Campbell 2001) comprises five species occurring in northwestern South America in mesic forests such as lowland rainforest and wet montane forests, including cloud forest (Campbell and Lamar 2004). Two species of this genus are recorded from Brazil: *B. hyoprora* and *B. microphthalmus* (Cope, 1876) (Campbell and Lamar 2004). *Bothrocophias hyoprora* can be distinguished from *B. microphthalmus* by the presence of a more upturned snout (vs. less upturned), having most of the subcaudals undivided (vs. most divided), and having a tendency towards fewer ventrals (118–143 vs. 137–168) (Campbell and Lamar 2004). The current geographic range of *Bothrocophias hyoprora* includes the low elevation equatorial forests of the Amazon Basin in Colombia, eastern Equador, Peru, Bolivia, and western Brazil in the Amazonas and Rondônia states (Campbell and Lamar 2004). This species is recognized to have a smaller body size (rarely exceeding 80 cm in total length), and



**FIGURE 2.** Female specimen of *Bothrocophias hyoprora* in lateral view (UFACF 4003) from Parque Nacional da Serra do Divisor, State of Acre, Brazil. Photograph by PSB.



**FIGURE 1.** Female specimen of *Bothrocophias hyoprora* in dorsal view (UFACF 4003; snout–vent length = 255 mm, tail length = 43 mm) from Parque Nacional da Serra do Divisor, State of Acre, Brazil. Photograph by PSB.

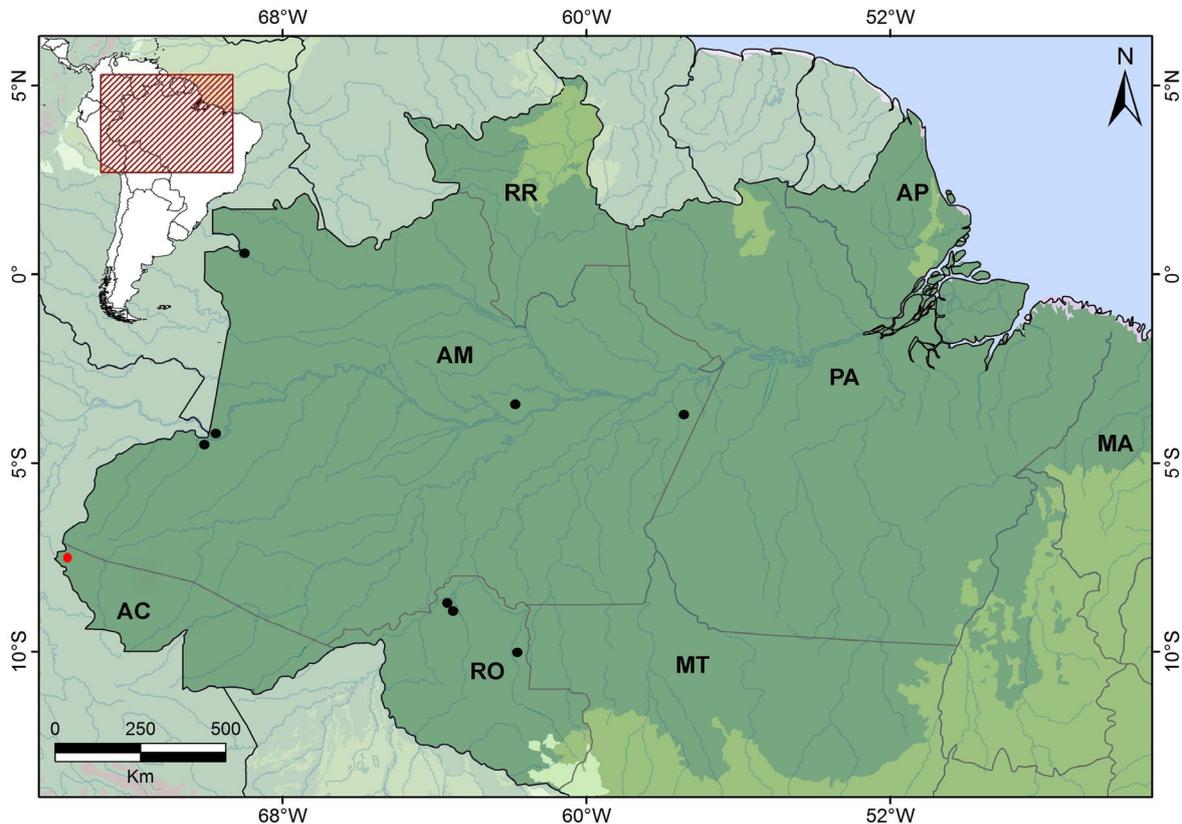
is terrestrial and nocturnal (Campbell and Lamar 2004; Cisneros-Heredia *et al.* 2006). The diet of *B. hyoprora* consists of centipedes, frogs, lizards and rodents (Martins *et al.* 2002). In this study, we present a new record for *B. hyoprora*, extending its geographic distribution to include the state of Acre, Brazil.

On 14 February 2011, one individual (subadult female) of *Bothrocophias hyoprora* (Figures 1, 2) was collected in the Serra do Divisor National Park (07°26'17" S, 73°39'34" W, WGS-84, 230 m elevation; Figure 3), located at the northwest of state of Acre, in Upper Juruá region, Amazonia, Brazil. The specimen (total length = 298 mm; female) was found coiled on leaf litter at night (23:00 h) in primary forest (Figure 1). The individual agrees with the diagnostic features of *B. hyoprora* presented in Amaral (1935) and Campbell and Lamar (2004), including: supralabials 8/8 (left/right side), infralabials 10/9, dorsal scale rows 21/23/19 (near the head/midbody/near the cloaca), ventrals 138, anal plate single, subcaudals 48 (most

of which are undivided). This record extends the species distribution by 540 km to the southwest of Municipality of Tabatinga, state of Amazonas, which is the nearest record of this species in the Brazilian Amazon (Neill 1966). The specimen was deposited in the herpetological collection of the Federal University of Acre - Campus Floresta (Voucher specimen = UFACF 4003).

This species may be rare in some regions (Iquitos, Peru; Samuel Hydroelectric Power Plant, Rondônia, Brazil;

Silva-JR 1993; Campbell and Lamar 2004), and is thought to be more common in eastern Ecuador (Campbell and Lamar 2004). Studies conducted on snakes in the Upper Juruá (state of Acre) recorded other species of viperids (*Bothriopsis bilineata*, *Bothrops atrox* and *Lachesis muta*) (Avila-Pires et al. 2009; Turci et al. 2009; Silva et al. 2010; Bernarde et al. 2011); however, *B. hyoprora* was not recorded, and appears to be rare in this region.



**FIGURE 3.** Known records of *Bothrocophias hyoprora* in Brazilian Amazonia. Red circle = Serra do Divisor National Park, state of Acre (this study). Black circle = Literature data (Prado 1938/39; Hoge 1949; Neill 1966; Silva-JR 1993; Bernarde et al. 2008). AC = Acre, AM = Amazonas, RO = Rondônia. Map by Mário R. Moura.

**ACKNOWLEDGMENTS:** We are grateful to Cameron Siler and an anonymous reviewer for valuable comments and suggestions on the manuscript. Paulo Sérgio Bernarde and Everton Amaral de Souza are grateful to Conselho Nacional de Pesquisa e Desenvolvimento (CNPq) for the Research Productivity Fellowship (process 501927/2009-3) and PIBIC scholarship, respectively. Mário R. Moura for kindly making the map. Collecting permits granted by IBAMA/SISBIO (12178-2).

#### LITERATURE CITED

Amaral, A. 1935. Estudos sobre ophidios Neotropicos. XXXIII. Novas espécies de ophidios da Colombia. *Memórias do Instituto Butantan* 9: 219-223.

Avila-Pires, T.C.S., L.J. Vitt, S.S. Sartorius and P.A. Zani. 2009. Squamata (Reptilia) from four sites in southern Amazonia, with a biogeographic analysis of Amazonian lizards. *Boletim do Museu Paraense Emílio Goeldi, Série Ciências Naturais* 4(2): 99-118.

Bernarde, P.S., L.S.F. Martins and J.R. Oliveira. 2008. *Bothrocophias hyoprora* (Amazonian hog-nosed pit viper). Diet. *Herpetological Review* 39(3): 353.

Bernarde, P.S., R.A. Machado and L.C.B. Turci. 2011. Herpetofauna da área do Igarapé Esperança na Reserva Extrativista Riozinho da Liberdade, Acre - Brasil. *Biota Neotropica* 11(3): in press

Campbell, J.A. and W.W. Lamar. 2004. *The Venomous Reptiles of the Western Hemisphere*. 2 Volumes. Ithaca: Cornell University Press. 898 p.

Gutberlet Jr., R.L. and J.A. Campbell. 2001. Generic recognition for a neglected lineage of South American pitvipers (Squamata: Viperidae: Crotalinae), with the description of a new species from the Colombia Chocó. *American Museum Novitates* 3316: 1-15.

Hoge, A.R. 1949. Notas erpetológicas 7. Sobre a ocorrência de *Trimeresurus hyoprora* (Amaral) no Brasil. *Boletim do Museu Paraense Emílio Goeldi* 10: 325-329.

Martins, M., O.A.V. Marques and I. Sazima. 2002. Ecological and phylogenetic correlates of feeding habits in Neotropical pitvipers (Genus *Bothrops*); p. 307-328 In G.W. Schuett, M. Höggren, M.E. Douglas and H.W. Greene (ed.). *Biology of the vipers*. Eagle Mountain: Eagle Mountain Publishing.

Neill, W.T. 1966. Notes on *Bothrops hyoprora* (Serpentes, Crotalidae). *Herpetologica* 22(3): 235-239.

Prado, A. 1938/39. Notas ofiologicas 1. Sobre as serpentes do grupo *Bothrops lansbergii*, com a descrição de uma nova espécie. *Memórias do Instituto Butantan* Tomo XII: 1-4.

Silva, M.V., M.B. Souza and P.S. Bernarde. 2010. Riqueza e dieta de serpentes do estado do Acre, Brasil. *Revista Brasileira de Zoociências* 12(2): 55-66.

Silva-JR, N. 1993. The snakes from Samuel hydroelectric power plant and vicinity, Rondônia, Brasil. *Herpetological Natural History* 1: 37-86.

Turci, L.C.B., S. Albuquerque, P.S. Bernarde and D.B. Miranda. 2009. Uso do hábitat, atividade e comportamento de *Bothriopsis bilineatus* e de *Bothrops atrox* (Serpentes: Viperidae) na floresta do Rio Moa, Acre, Brasil. *Biota Neotropica* 9(3): 197-206.

RECEIVED: July 2011

LAST REVISED: November 2011

ACCEPTED: November 2011

PUBLISHED ONLINE: December 2011

EDITORIAL RESPONSIBILITY: Cameron Siler