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A new species of *Amerotyphlops* from Northeastern Brazil, with comments on distribution of related species

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Abstract

We describe a new species of *Amerotyphlops* from an upland forest enclave in the state of Paraíba, Northeastern Brazil. The new species is distinguished from the other seven South American species of *Amerotyphlops* by the combination of the following characters: nasal suture incomplete; rostral scale oval and yellowish cream with some dark brown spots; four supralabial scales; three infralabial scales; rows of scales around the body 18/18/18; middorsal scales from 204 to 225; dorsum with twelve to thirteen rows of scales dark brown and belly with four to five rows of scales immaculate yellowish cream; caudal spine dark brown; subcaudal scales 8–10 in female and 11–13 in males; maximum total length 233 mm. The new species is morphologically similar to *A. amoipira* and *A. paucisquamus*, sharing 18/18/18 rows of scales around the body and a small overlap of counts of middorsal scales.

Key words: Atlantic rainforest, Typhlopidae, taxonomy, *Amerotyphlops paucisquamus*, *Amerotyphlops amoipira*

Introduction

The genus *Amerotyphlops* was recently proposed by Hedges *et al.* (2014) for the clade of typhlopids that currently comprises 14 species found in the New World. Thirteen species are distributed on the mainland, from Mexico to northern Argentina, and one insular species occur in the West Indian (Hedges *et al.* 2014; Pyron & Wallach 2014). From the 13 mainland species, seven are restricted to South America: *Amerotyphlops reticulatus* (Linnaeus 1758); *A. lehneri* (Roux 1926), *A. brongersmianus* (Vanzolini 1972), *A. minuisquamus* (Dixon & Hendricks 1979), *A. paucisquamus* (Dixon & Hendricks 1979); *A. yonenagae* (Rodrigues, 1991), and *A. amoipira* (Rodrigues & Juncá 2002).

Amerotyphlops lehneri occurs exclusively in the state of Falcon, northern Venezuela (Roux 1926; Shreve 1947; Dixon & Hendricks 1979; Rivas *et al.* 2012; Wallach *et al.* 2014), while *A. yonenagae* and *A. amoipira* are endemic to the predominantly psammophilous environment of dunes along the São Francisco River, both occurring in the state of Bahia, Northeastern Brazil (Rodrigues 1991; Rodrigues & Juncá 2002; Wallach *et al.* 2014). *Amerotyphlops paucisquamus* is endemic in the Atlantic forest of Northeastern Brazil, from state of Pernambuco and Paraíba (Dixon & Hendricks 1979; Rodrigues 1991; Freire 2001; Rodrigues & Juncá 2001; França *et al.* 2012; Wallach *et al.* 2014). The three remaining species are widely distributed in South America: *A. minuisquamus* is distributed throughout the Amazon basin, in Peru, western Brazil, Venezuela, Colombia and the Guyana Shield (Roze 1956; Dixon & Hendricks 1979; Caicedo-Portilla 2011; Wallach *et al.* 2014); *A. reticulatus* occurs in both cis- and trans-Andean lowlands of Colombia (Caicedo-Portilla 2011), and throughout the Amazon basin and

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References

- Arruda, M.P., Almeida, C.H.L.N., Rolim, D.C. & Maffei, F. (2011) First record in midwestern region of São Paulo, Brazil of *Typhlops brongersmianus* Vanzolini, 1976 (Squamata: Typhlopidae). *Check List*, 7 (4), 571–573.
- Ávila, R.W., Ferreira, W.L. & Souza, V.B. (2006) Biology of the blindsnake *Typhlops brongersmianus* (TYPHLOPIDAE) in a semideciduous forest from central Brazil. *Herpetological Journal*, 16, 403–405.
- Ávila, R.W. & Kawashita-Ribeiro, R.A. (2011) Herpetofauna of São João da Barra hydroelectric plant state of Mato Grosso, Brazil. *Check List*, 7 (6), 750–755.
- Barbosa, M.R.V., Agra, M.F., Sampaio, E.V.S., Da Cunha, J.P. & Andrade, L.A. (2004) Diversidade florística na Mata do Pau-Ferro, Areia, Paraíba. In: Porto, K.C., Cabral, J.J.P. & Tabarelli, M. (Eds.), *Brejos de Altitude em Pernambuco e Paraíba: História Natural, Ecologia e Conservação. Série Biodiversidade 9*. Ministério do Meio Ambiente, Brasília, pp. 111–121.
- Brito, P.S. & Freire, E.M.X. (2012) New records and geographic distribution map of *Typhlops amoipira* Rodrigues and Juncá, 2002 (Typhlopidae) in the Brazilian Rainforest. *Check List*, 8 (6), 1347–1349.
- Caicedo-Portilla, J.R. (2011) Sexual dimorphism and geographic variation of the blind snake *Typhlops reticulatus* (Scoleophidia: Typhlopidae) and distribution of species of genus in Colombia. *Caldasia*, 33 (1), 221–234.
- Dixon, J.R. & Hendricks, F.S. (1979) The wormsnakes (Family Typhlopidae) of the Neotropics, exclusive of the Antilles. *Zoologische Verhandlungen*, 173, 1–39.
- Esri (1999) ArcGIS (version 10.2.2) Environmental Systems Research Institute. Inc, New York.
- Fernandes, V.D., Ribeiro, M.M., Santos Dayrell, J.S., Santana, D.J. & Rocha Lima, L.H. (2010) Reptilia, Squamata, Serpentes, Typhlopidae, *Typhlops amoipira* Rodrigues and Juncá: range extension and new state record. *Check List*, 6 (2), 268–269.
- França, F.G.R. & Venâncio, N.M. (2010) Reptiles and amphibians of poorly known region in southwest Amazonia. *Biotemas*, 23 (3), 71–84.
<http://dx.doi.org/10.5007/2175-7925.2010v23n3p71>
- França, F.G.R., Mesquita, D.O. & Colli, G. (2006) A checklist of snakes from Amazonian savannas in Brazil, housed in the coleção herpetológica da Universidade de Brasília, with new distribution records. *Sam Noble Oklahoma Occasional Papers*, 17, 1–13.
- França, R.C., Germano, C.E.S. & França, F.G.R. (2012) Composition of a snake assemblage inhabiting an urbanized area in the Atlantic forest of Paraíba State, Northeast Brazil. *Biota Neotropica*, 12 (3), 183–195.
<http://dx.doi.org/10.1590/S1676-06032012000300019>
- Freire, E.M.X. (2001) *Composição, Taxonomia, Diversidade e Considerações Zoogeográficas sobre a Fauna de Lagartos e Serpentes de Remanescentes da Mata Atlântica do Estado de Alagoas, Brazil*. PhD Thesis, Universidade Federal do Rio de Janeiro, Rio de Janeiro, 144 pp.
- Google Inc. (2013) Software Google Earth. Available from: <http://www.google.com/earth/index.html> (accessed 04 November 2013)
- Hedges, S.B., Marion, A.B., Lipp, K.M., Marin, J. & Vidal, N. (2014) A taxonomic framework for typhlopoid snakes from the Caribbean and other regions (Reptilia, Squamata). *Caribbean Herpetology*, 49, 1–61.
- Loebmann, D. (2008) Geographic distribution. *Typhlops brongersmianus*. *Herpetological Review*, 32, 244.
- Martins, A.R., Silveira, A.L. & Bruno, S.F. (2010) New records of *Typhlops brongersmianus* (Serpentes, Typhlopidae) in southeastern Brazil. *Herpetology Notes*, 3, 247–248.
- Mayo, S.J. & Feveireiro V.P.B. (1982) *Mata do Pau-Ferro, a Pilot Study of the Brejo Forest*. Royal Botanic Gardens (Betham-Moxon Trust) in association with Churchill Memorial Trust, Great Britain, 29 pp.
- Pyron, R.A. & Wallach, V. (2014) Systematic of the blindsnakes (Serpentes: Scoleophidia: Typhlopoidea) based on molecular and morphological evidence. *Zootaxa*, 3829 (1), 1–81.
<http://dx.doi.org/10.11646/zootaxa.3829.1.1>
- Rivas, G., Molina, C.R., Ugueto, G.N., Barros, T.R., Barrio-Amorós, C.L. & Kok, P.J.R. (2012) Reptiles of Venezuela: an updated and commented checklist. *Zootaxa*, 3211, 1–64.
- Rodrigues, M.T. (1991) Herpetofauna das dunas interiores do Rio São Francisco, Bahia, Brasil. IV. Uma nova espécie de *Typhlops* (Ophidia, Typhlopidae). *Papéis Avulsos de Zoologia*, 37 (22), 343–346.
<http://dx.doi.org/10.1590/s0031-10492002001300001>
- Rodrigues, M.T. & Juncá, F.A. (2002) Herpetofauna of the quaternary sand dunes of the middle Rio São Francisco: Bahia:

- Brazil. VII. *Typhlops amoipira* sp. nov., a possible relative of *Typhlops yonenagae* (Serpents, Typhlopidae). *Papéis Avulsos de Zoologia*, 42 (13), 325–333.
<http://dx.doi.org/10.1590/S0031-10492002001300001>
- Roux, J. (1926) Notes d'erpétologie Sud-Américaine. *Revue Suisse de Zoologie*, 33, 291–299.
- Roze, J.A. (1956) Ofidios coleccionados por la expedición Franco Venezolana al alto Orinoco 1951-1952. *Boletín del Museo de Ciencias Naturales*, 1, 179–195.
- Santana, G.G., Vieira, W.L.S., Pereira-Filho, G.A., Delfim, F.R., Lima, Y.C.C. & Vieira, K.S. (2008) Herpetofauna em um fragmento de Floresta Atlântica no estado da Paraíba, região Nordeste do Brasil. *Biotemas*, 21 (1), 75–84.
<http://dx.doi.org/10.5007/2175-7925.2008v21n1p75>
- Shreve, B. (1947) On Venezuelan reptiles and amphibians collected by Dr. H.G. Kugler. *Bulletin of Museum of Comparative Zoology*, 99, 519–537.
- SpeciesLink (2013) *Rede SpeciesLink*. Centro de Referência em Informação Ambiental (CRIA), Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP). Available from: <http://www.splink.org.br/> (accessed 5 November 2013)
- Thomas, R. & Hedges, S.B. (2007) Eleven new species of the genus *Typhlops* (Serpentes: Typhlopidae) from Hispaniola and Cuba. *Zootaxa*, 1400, 1–26.
- Uetz, P. & Hošek, J. (2013) The Reptile Database, Available from: <http://www.reptile-database.org> (accessed 17 November 2013)
- Vanzolini, P.E. (1972) *Typhlops brongersmai* spec. nov. from the coast of Bahia, Brasil (Serpentes, Typhlopidae). *Zoologische Mededelingen*, 47 (3), 27–29.
- Wallach, V. (2003) Scolecophidia Miscellaneous. *Hamadryad*, 27 (2), 227–245.
- Wallach, V., Williams, K.L. & Boundy, J. (2014) *Snakes of the World: a Catalogue of Living and Extinct Species*. CRC Press, Boca Raton, 1209 pp.

APPENDIX 1. Specimens examined.

- Amerotyphlops amoipira* (N = 10).** BRAZIL: SERGIPE: Aracajú: Barra dos Coqueiros: MZUSP 17464, MZUSP 17645, MZUSP 17466–68; BAHIA: Ibiraba: MZUSP 12299–301 (paratypes), MZUSP 12303 (paratype), MZUSP 12298 (holotype).
- Amerotyphlops brongersmianus* (N = 185):** BRAZIL: ALAGOAS: Campo Alegre: MZUSP 17271–72, Passo do Camaragibe: MZUSP 17729–31; BAHIA: Ilhéus: MZUSP 5218 (holotype), MZUSP 14666, MZUSP 14674, MZUSP 14678, MZUSP 14685, MZUSP 14687, MZUSP 14696, MZUSP 14702, Laje: IBSP 74025, Sapiranga: IBSP 55110, Uruçuca: MZUSP16737; CEÁRA: Ubajara: IBSP 76845–47; ESPÍRITO SANTO: Aracruz: MBML 158, Linhares: IBSP 76577, Presidente Kennedy: MNRJ 18743–45, MNRJ 18747, São Mateus: MZUSP 11597, Vitória: UFV 389; GOIÁS: Pequena Central Hidrelétrica Mosquitão: MZUSP 17675–77, Pequena Central Hidrelétrica Santa Edwirges: MZUSP 17776–80, Petrolina de Goiás: MZUSP 12491–93, Rio Verde: MZUSP 3850, Serra da Mesa: MZUSP 11037–38; MARANHÃO: Alcântara: MZUSP 17221; MATO GROSSO DO SUL: Anaurilândia: IBSP 63025–26, Bataguacú: MZUSP 11689–98, Brasilândia: IBSP 62644, Campo Grande: MZUSP 10100, Corumbá: MZUSP 4440, MZUSP 4442–43, Ribas do Rio Pardo: IBSP 74589–90, Rio Pardo: Hidrelétrica Sérgio Motta: MZUSP 13986, Santa Rita do Pardo: IBSP 64080–81, MZUSP 11675, Três Lagoas: IBSP 75138, MZUSP 4401; MATO GROSSO: Alto Taquari: UFMT 6090, UFMT 6235; Araputanga: UFMT 5920–21, UFMT 4179, Aripuanã: UFMT 4241, UFMT 4245, UFV 1429–30, UFV 1440–41, UFV 1689–91, Cáceres: MZUSP 11460, MZUSP 11458; Chapada dos Guimarães (Usina Hidrelétrica Manso): MZUSP 14767, MZUSP 14772, MZUSP 14778, MZUSP 14781, MZUSP 14785–86, MZUSP 14795, MZUSP 14797, MZUSP 14812–14, MZUSP 14972, Nova Lacerda: UFMT 6236, UFMT 6239–41, Poconé: UFMT 5946, UFMT 5948–49, ZUEC 893, ZUEC 1159, São José do Rio Claro: UFMT 5876, Sapezal: UFMT 5896–97, Vale de São Domingos: UFMT 6237–38, UFMT 6242–43; MINAS GERAIS: Frutal: MZUSP 2720, Resplendor: UFV 1782, Volta Grande: UFV 1291; PARÁ: Alter do Chão: Lago Caapiranda: INPA H10677–79, INPA H10681–83; Bragança: MPEG 6344, MPEG 8459, MPEG 9972, Curuçá: MPEG 21483, Ourém: MPEG 1266, Tucuruí: MPEG 16804, Vitória do Xingu: Usina Hidrelétrica Belo Monte: MPEG 19819, PARAÍBA: João Pessoa: MZUSP 10672, Mata do Buraquinho: UFPB 4470–71, Rio Tinto: Reserva Biológica Guaribas: CHUFPB 11088–90, CHUFPB 11092, CHUFPB 11094, CHUFPB 11095; RIO GRANDE DO SUL: Arroio Teixeira: MCP 6723, Capão da Canoa: MCP 12079, Terra de Areia: MCP 12495, Tramandaí: MCP 0974, SANTA CATARINA: Florianópolis: MCP 7722, SÃO PAULO: Araçatuba: IBSP 8964, Barretos: IBSP 4753, Cachoeira de Emas: MZUSP 2455, Ilha Solteira: IBSP 33860–61, IBSP 36487, IBSP 36754, IBSP 38324–25, Indaiaporá: IBSP 41837, IBSP 41842, IBSP 41847, IBSP 41851, Pereira Barreto: IBSP 54106–07, Primavera: IB 63061, Teodoro Sampaio: MZUSP 14557, MZUSP 15325; TOCANTINS: Aguiarnópolis: IBSP 75304–05, Babaçulândia: MPEG 23641, MPEG 23643, Guará: MZUSP 12682–84, MZUSP 13867, Mateiros: MZUSP 14978–80, Palmas: MZUSP 11508–10, MZUSP 11512; Usina Hidrelétrica Luiz Eduardo Magalhães: MZUSP 14758, MZUSP 14898–901, MZUSP 14903–04. PARAGUAY: ASSUNCIÓN: Baía de Assunción: IBSP 10117–19.
- Amerotyphlops minuisquamus* (N = 18).** BRAZIL: AMAZONAS: Manaus: MZUSP 5233 (paratype): São Raimundo: MZUSP 7638; Campus do Instituto Nacional de Pesquisas da Amazônia: MZUSP 8038, Presidente Figueiredo: IBSP 51726. GUYANA: POTARO-SIPARUNI: Vicinity of Kuribrong River: MZUSP 21446–51, MZUSP 21453–60.