



Two new species of *Atractus* from Colombia (Reptilia, Squamata, Dipsadidae)

GUNTHER KÖHLER^{1,3} & MAX KIECKBUSCH^{1,2}

¹Senckenberg Forschungsinstitut und Naturmuseum, Senckenberganlage 25, 60325 Frankfurt a.M., Germany

²Department of Animal Evolution and Systematics, Faculty of Biology, Philipps University Marburg, Karl-von-Frisch-Straße 8, 35043 Marburg, Germany. E-mail: Kieckbusch@students.uni-marburg.de

³Corresponding author. E-mail: gkoehler@senckenberg.de

Abstract

We describe two new species of *Atractus* from Colombia: one from the Serrania de la Lindosa, south of San José de Guaviare in the province Guaviare, and another from Punta de Betin in the province Magdalena, close to the Caribbean coast. The first new species differs from all congeners by having a combination of 17 smooth dorsal scale rows; loreal present, approximately as long as high; temporals 1+2; seven supralabials; seven infralabials; five maxillary teeth; four gular scale rows; four pre-ventrals; 187 ventrals in single male; 29/31 subcaudals in single male; dorsum of body with longitudinal stripes; venter uniformly dark gray. The second new species differs from all congeners by having a combination of 17 smooth dorsal scale rows; loreal absent; temporals 1+2; seven supralabials; six or seven infralabials; eight maxillary teeth; three gular scale rows; three pre-ventrals; 146 ventrals in single male; 31/32 subcaudals in single male; dorsum of body and tail reddish brown with paired, occasionally slightly alternating lateral vertical cream blotches, approximately one dorsal scale broad, not contacting in vertebral region; venter cream with reddish brown blotches, forming two parallel series on anterior body and a checkered pattern on the rest of body.

Key words: Amazonia, Caribbean coast, external morphology, systematics, taxonomy

Introduction

The dipsadine genus *Atractus* Wagler 1828 constitutes the most diverse snake genus in the world with over 140 currently recognized species (Passos *et al.* 2013a). Although the genus is widely distributed, ranging from Panama to northeastern Argentina (Giraudo & Scrocchi 2000; Myers 2003), most of the species are endemic to small geographical ranges (Myers 2003; Passos *et al.* 2010; Prudente & Passos 2008; Passos *et al.* 2013c; Silva *et al.* 2005). The species of this genus inhabit different types of tropical forests, either primary or secondary, and there are even records of species in banana plantations or urban areas (Esqueda & La Marca 2005; Passos *et al.* 2007b). Snakes of the genus *Atractus* inhabit almost all South American biomes such as coastal lowland rain forest, premontane forest, gallery forest, cloud forest, cerrado savanna, riparian forest, and Amazonian lowland forest (Hoogmoed 1980; Martins & Oliveira 1998; Silva *et al.* 2005; Esqueda & La Marca 2005; Zaher *et al.* 2005; Passos *et al.* 2010). The altitudinal distribution of the species in this genus ranges from sea level up to 4,500 m above sea level (asl) (Passos *et al.* 2013a), while the highest diversity of *Atractus* species is found in the Colombian Andes (Passos *et al.* 2009b,d). The small to moderate-sized snakes of the genus show a rather secretive, semifossorial life style, being responsible for the relative scarcity of many *Atractus* species in collections (Schargel & García-Pérez 2002; Myers 2003; Myers & Donnelly 2008; Prudente & Passos 2010). Only a few species are known to exceed the length of one meter, with *Atractus gigas* Myers & Schargel 2006 and *A. touzeti* Schargel, Lamar, Passos, Valencia, Cisneros-Heredia, & Campbell 2013 being probably the largest species in the genus.

Several species of *Atractus* have been described based on a single specimen or small series. Recent field work and revisions of museum holdings has yielded additional specimens of some of these species. Examples are *A. dumni* Savage 1955 (Cisneros-Heredia 2005), *A. modestus* Boulenger 1894 (Passos *et al.* 2007a), *A. wagleri* Prado 1945 (Passos & Arredondo 2009), *A. bocki* (Passos *et al.* 2009a), *A. gigas* Myers & Schargel 2006 (Passos *et al.*

type locality (Passos *et al.* 2009c). Hopefully, future field work may produce additional samples of both species that will help to shed light on their phylogenetic relationships.

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References

- Amaral, A. (1933) Estudos sobre ophidios neotropicos XXIX. Novas notas sobre especies da Colombia. *Memorias do Instituto Butantan*, 7, 105–123.
- Boulenger, G.A. (1894) *Catalogue of the Snakes in the British Museum (Natural History). Vol. II. Colubridae Aglyphae*. Taylor and Francis. London, U.K., 382 pp.
- Boulenger, G.A. (1903) On some batrachians and reptiles from Venezuela. *Annals and Magazine of Natural History*, 7 (11), 481–484.
<http://dx.doi.org/10.1080/00222930308678805>
- Cisneros-Heredia, D.F. (2005) Rediscovery of the Ecuadorian snake *Atractus dunni* Savage, 1955 (Serpentes: Colubridae). *Journal of the National Museum (Prague), Natural History Series*, 174 (1–4), 87–94.
- Cope, E.D. (1868) An examination of the Reptilia and Batrachia obtained by the Orton Expedition to Ecuador and the Upper Amazon, with notes on other species. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 20, 96–140
- Cunha, O.R., Nascimento, F.P. (1983) Ofidios da Amazonia XX – As especies de *Atractus* Wagler, 1828, na Amazonia oriental e Maranhão (Ophidia, Colubridae). *Boletim do Museu Paraense Emilio Goeldi, Nova Serie Zoologia*, 123, 1–38.
<http://dx.doi.org/10.1590/s0031-10492005000300001>
- Dowling, H.G. (1951) A proposed standard system of counting ventrals in snakes. *British Journal of Herpetology*, 1, 97–99.
- Dunn, E.R. (1946) *Atractus sanctaemartae*, A new species of snake from the Sierra Nevada de Santa Marta, Colombia. *Occasional Papers of the Museum of Zoology, University of Michigan*, 493, 1–6.
- Esqueda, L.F. & La Marca, E. (2005) Revisión taxanómica y biogeográfica (con descripción de cinco nuevas especies) del género *Atractus* (Colubridae: Dipsadinae) en los Andes de Venezuela. *Herpetotropicos*, 2 (1), 1–32.
- Giraud, A.R. & Scrocchi, G.J. (2000) The genus *Atractus* (Serpentes: Colubridae) in north-eastern Argentina. *Herpetological Journal*, 10, 81–90.
- GoogleEarth (2014) Available from: www.https://earth.google.de (accessed 22 September 2014)
- Hoogmoed, M.S. (1980) Revision of the genus *Atractus* in Surinam, with the resurrection of two species (Colubridae, Reptilia). Notes on the herpetofauna of Surinam VII. *Zoologische Verhandelingen*, 175, 1–51.
- Hoogmoed, M.S. & Prudente, A.L.C. (2003) A new species of *Atractus* (Reptilia: Ophidia: Colubridae: Dipsadinae) from the Amazon forest region in Brazil. *Zoologische Mededelingen*, 77 (15/36), 425–440.
- Jan, G. (1862) Enumerazione sistematico delle specie d'ofidi del gruppo Calamaridae. *Archivio per la Zoologia l'Anatomia e la Fisiologia*, 2, 1–76.
- Köhler, G. (2012) *Color Catalogue for Field Biologists*. Herpeton, Offenbach.
- Kok, P.J.R. (2006) A new snake of the genus *Atractus* Wagler, 1828 (Reptilia: Squamata: Colubridae) from Kaieteur National Park, Guyana, northeastern South America. *Zootaxa*, 1378, 19–35.
- Loebmann, D., Cardozo Ribeiro, S., Lima Sales, D. & de Oliveira Almeida, W. (2009) New records of *Atractus ronnie* (Serpentes, Colubridae) in relictual forests from the state of Ceará, Brazil, and comments on meristic and morphometric data. *Biotemas*, 22 (1), 169–173.
- Martins, M. & Oliveira, M.E. (1993) The snakes of the genus *Atractus* Wagler (Reptilia: Squamata: Colubridae) from the Manaus region, central Amazonia, Brazil. *Zoologische Mededelingen*, 67, 1–20.
- Martins, M. & Oliveira, M.E. (1998) Natural history of snakes in forests of the Manaus region, central Amazonia, Brazil. *Herpetological Natural History*, 6 (2), 78–150.
- Myers, C.W. (2003) Rare snakes—five new species from eastern Panama: reviews of northern *Atractus* and southern *Geophis* (Colubridae: Dipsadinae). *American Museum Novitates*, 3391, 1–47.
[http://dx.doi.org/10.1206/0003-0082\(2003\)391<0001:rsfnsf>2.0.co;2](http://dx.doi.org/10.1206/0003-0082(2003)391<0001:rsfnsf>2.0.co;2)
- Myers, C.W. & Donnelly, M.A. (2008) The summit herpetofauna of Auyantepui, Venezuela: report from the Robert G. Golet American Museum–TerraMar Expedition. *Bulletin of the American Museum of Natural History*, 308, 114–121.
<http://dx.doi.org/10.1206/308.1>
- Myers, C.W. & Schargel, W.E. (2006) Morphological extremes – two new snakes of the genus *Atractus* from northwestern

- South America (Colubridae: Dipsadinae). *American Museum Novitates*, 3532, 1–13.
[http://dx.doi.org/10.1206/0003-0082\(2006\)3532\[1:menso\]2.0.co;2](http://dx.doi.org/10.1206/0003-0082(2006)3532[1:menso]2.0.co;2)
- Passos, P., Aguayo, R. & Scocchi, G. (2009a) Rediscovery of the rare *Atractus bocki*, with assessment of the taxonomic status of *Atractus canedii* (Serpentes: Colubridae: Dipsadinae). *Journal of Herpetology* 43 (4), 710–715.
<http://dx.doi.org/10.1670/08-209.1>
- Passos, P. & Arredondo, J.C. (2009) Rediscovery and redescription of the Andean earth-snake *Atractus wagleri* (Reptilia: Serpentes: Colubridae). *Zootaxa*, 1969, 59–68.
- Passos, P., Arredondo, J.C., Fernandes, R. & Lynch, J.D. (2009b) Three new *Atractus* (Serpentes: Dipsadidae) from the Andes of Colombia. *Copeia*, 3, 425–436.
<http://dx.doi.org/10.1643/ch-08-063>
- Passos, P., Cisneros-Heredia, D.F., Enrique Rivera, D., Aguilar, C. & Schargel, W.E. (2012) Rediscovery of *Atractus microrhynchus* and reappraisal of the taxonomic status of *A. emersoni* and *A. natans* (Serpentes: Dipsadidae). *Herpetologica*, 68 (3), 375–392.
<http://dx.doi.org/10.1655/herpetologica-d-11-00078.1>
- Passos, P., Cisneros-Heredia, D.F. & Salazar-V., D. (2007a) Rediscovery and redescription of the rare Andean snake, *Atractus modestus*. *Herpetological Journal*, 17 (1), 1–6.
- Passos, P., Echevarria, L.Y. & Venegas, P.J. (2013a) Morphological variation of *Atractus carrioni* (Serpentes: Dipsadidae). *South American Journal of Herpetology*, 8 (2), 109–120.
<http://dx.doi.org/10.2994/sajh-d-12-00025.1>
- Passos, P., Fernandes, D.S. & Borges-Nojosa, D.M. (2007b) A new species of *Atractus* (Serpentes: Dipsadinae) from a relictual forest in northeastern Brazil. *Copeia*, 4, 788–797.
[http://dx.doi.org/10.1643/0045-8511\(2007\)7\[788:ansoas\]2.0.co;2](http://dx.doi.org/10.1643/0045-8511(2007)7[788:ansoas]2.0.co;2)
- Passos, P., Fernandes, R., Bérnils, R.S. & De Moura-Leite, J.C. (2010) Taxonomic revision of the Brazilian Atlantic forest *Atractus* (Reptilia: Serpentes: Dipsadidae). *Zootaxa* 2364, 1–63.
- Passos, P., Kok, P.J.R., Albuquerque, N.R. & Rivas, G.A. (2013b) Groundsnakes of the Lost World: a review of *Atractus* (Serpentes: Dipsadidae) from the Pantepui region, northern South America. *Herpetological Monographs*, 27, 52–86.
<http://dx.doi.org/10.1655/herpmonographs-d-12-00001r2.1>
- Passos, P., Lynch, J.D. & Fernandes, R. (2009c) "2008" Taxonomic status of *Atractus sanctaemartae* and *Atractus nebularis*, and description of a new *Atractus* from the Atlantic coast of Colombia. *Herpetological Journal*, 18, 175–186.
- Passos, P., Mueses-Cisneros, J.J., Lynch, J.D. & Fernandes, R. (2009d) Pacific lowland snakes of the genus *Atractus* (Serpentes: Dipsadidae), with description of three new species. *Zootaxa*, 2293, 1–34.
- Passos, P. & Prudente, A.L.C. (2012) Morphological variation, polymorphism, and taxonomy of the *Atractus torquatus* complex (Serpentes: Dipsadidae). *Zootaxa*, 3407 (1), 2–21.
<http://dx.doi.org/10.11646/zootaxa.3745.1.3>
- Passos, P., Teixeira Jr. M., Recoder, R.S., Sena, M.A., Dal Vechio, F., Pinto, H.B.A., Mendonca, S.H.S.T., Cassimiro, J. & Rodrigues, M.T. (2013c) A new species of *Atractus* (Serpentes: Dipsadidae) from Serra do Cipó, Espinhaço Range, Southeastern Brazil, with proposition of a new species group to the genus. *Papéis Avulsos de Zoologia*, 53 (6), 75–85.
- Prado, A. (1945) Um novo *Atractus* de Colombia. *Revista Hispano-Americana de Ciencias Puras y Aplicadas*, 6, 61.
- Prudente, A.L.C. & Passos, P. (2008) New species of *Atractus* Wagler, 1828 (Serpentes: Dipsadinae) from Guyana Plateau in northern Brazil. *Journal of Herpetology*, 42 (4), 723–732.
<http://dx.doi.org/10.1670/07-115r3.1>
- Prudente, A.L.C. & Passos, P. (2010) New cryptic species of *Atractus* (Serpentes: Dipsadidae) from Brazilian Amazonia. *Copeia*, 3, 397–404.
<http://dx.doi.org/10.1643/ch-08-193>
- Prudente, A.L.C. & Santos-Costa, M.C. (2006) A new species of *Atractus* Wagler, 1828 (Serpentes: Colubridae) from eastern Amazonia, Brazil. *Zootaxa*, 1285, 21–29.
<http://dx.doi.org/10.1670/07-115r3.1>
- Roze, J.A. (1958) Los reptiles del Chimantá Tepui (Estado Bolívar, Venezuela) colectados por la expedición botánica del Chicago Natural History Museum. *Acta Biologica Venezuelica*, 2 (25), 299–314.
- Roze, J.A. (1961) El género *Atractus* (Serpentes: Colubridae) en Venezuela. *Acta Biologica Venezuelica*, 3, 103–119.
- Sabaj Pérez, M.H. (Ed.) (2013) Standard symbolic codes for institutional resource collections in herpetology and ichthyology: an online reference. Version 4.0. American Society of Ichthyologists and Herpetologists, Washington, DC. Available from: <http://www.asih.org/> (accessed 18 July 2014)
- Savage, J.M. (1955) Descriptions of new colubrid snakes, genus *Atractus*, from Ecuador. *Proceedings of the Biological Society of Washington*, 68, 11–20.
- Savage, J.M. (1960) A Revision of the Ecuadorian snakes of the colubrid genus *Atractus*. *Miscellaneous Publications Museum of Zoology, University of Michigan*, 112, 1–92.
- Schargel, W.E. & García-Pérez, J.E. (2002) A new species and a new record of *Atractus* (Serpentes: Colubridae) from the Andes of Venezuela. *Journal of Herpetology*, 36 (3), 398–402.
<http://dx.doi.org/10.2307/1566183>
- Schargel, W.E., Lamar, W.W., Passos, P., Valencia, J.H., Cisneros-Heredia, D.F. & Campbell, J.A. (2013) A new giant *Atractus*

(Serpentes: Dipsadidae) from Ecuador, with notes on some other large Amazonian congeners. *Zootaxa*, 3721 (5), 455–474.
<http://dx.doi.org/10.11646/zootaxa.3721.5.2>

Silva Haad, J.J. (2004) Las Serpientes del género *Atractus* Wagler, 1828 (Colubridae, Xenodontinae) en la Amazonia Colombiana. *Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales*, 28 (108), 409–446.

Silva Jr., N.J., Silva, H.L.R., Ribeiro, R.S., Souza, I. & Souza, C.D.A. (2005) Uma nova espécie do género *Atractus* Wagler, 1928 (Colubridae: Dipsadinae) do Cerrado do Brasil Central. *Papéis Avulsos de Zoologia*, 45 (3), 33–39.

Wagler, J.G. (1828) Auszüge aus seinem Systema Amphibiorum. *Isis von Oken*, 21, 740–744.

Zaher, H., Souza, I., Gower, D.J., Hingst-Zaher, E. & Silva Jr., N.J. (2005) Redescription of *Atractus albuquerquei* (Serpentes: Colubridae: Dipsadinae), with comments on geographical distribution and intraspecific variation. *Papéis Avulsos de Zoologia*, 45 (2), 19–32.

<http://dx.doi.org/10.1590/s0031-10492005000200001>

APPENDIX. Specimens examined.

Atractus badius.—**Surinam**: Paramaribo: SMF 19353; **Bolivia**: Sorata: SMF 19350; **Peru**: Upper Ucayali: SMF 19352.

Atractus boucourti.—**Peru**: Huanuco: Huancapallac: SMF 80019–22, SMF 80024–25.

Atractus clarki.—**Panama**: Darien: from a mine at Santa Cruz de Cana: MCZ 28800 (holotype).

Atractus crassicaudatus.—**Colombia**: Bogota: RMNH 105.

Atractus duboisi.—**Ecuador**: SMF 19361–62.

Atractus ecuadorensis.—**Ecuador**: Tungurahua: Llanganates Range: FMNH 23529 (holotype).

Atractus emmeli.—**Bolivia**: Mapiri, tributary of the upper Beni river: SMF 19364 (holotype), SMF 19366; Sorata: SMF 19365.

Atractus erythromelas. **Venezuela**: Merida: SMF 32274–75.

Atractus imperfectus.—**Panama**: Panamá: Piedras– Pacora Ridge: MCZ 50213 (holotype).

Atractus latifrons.—**Colombia**: Rio Pacoa: SMF 68127; **Peru**: Iquitos: upper Amazonas: SMF 19348.

Atractus lehmanni.—**Ecuador**: Cuenca: MCZ 33513 (paralectotype); Cuenca: Azanay: SMF 19355 (lectotype), 19356–58 (paralectotypes).

Atractus loveridgei.—**Colombia**: Antioquia: Jericó: MCZ 29059 (holotype).

Atractus major.—**Ecuador**: Pastaza: Arutam field station: SMF 90987.

Atractus matthewi.—**Venezuela**: Sucre: FMNH 17832 (paratype).

Atractus nicefori.—**Colombia**: Antioquia: Jericó: MCZ 29058 (holotype).

Atractus nigricaudus.—**Peru**: Junin: Huachon, east of Cerro de Pasco: MCZ 45909.

Atractus obesus.—**Colombia**: FMNH 69661 (holotype).

Atractus obtusirostris.—**Colombia**: Tolima: "Canon del Tolima" (original locality in error; Combeima River; west Ibagué): MCZ 22347 (holotype).

Atractus pauciscutatus.—**Peru**: Junin: Carpapata, in the upper Chanchamayo valley, northeast of Tarma: FMNH 36725 (holotype).

Atractus reticulatus.—**Brazil**: SMF 19363, SMF 32277–32283; Nova Teutonia: St. Catarina: SMF 32276; **Argentina**: Misiones: Colonia Liebig: SMF 91230.

Atractus sanctaemartae.—**Colombia**: FMNH 109862; San Sebastian de Rábago: MCZ 6525, MCZ 6531–33 (paratypes).

Atractus snethlageae.—**Brazil**: Amazonas: Presidente Figueiredo, Río Pitinga: RMNH 26020–21.

Atractus steyermarki.—**Venezuela**: FMNH 69920 (holotype).

Atractus torquatus.—**Surinam**: RMNH 114–15; SMF 19354.

Atractus trilineatus.—**Trinidad**: SMF 19367, SMF 19369–71; **Surinam**: SMF 19368.

Atractus ventrimaculatus.—**Venezuela**: SMF 33284.