



Morphological variation and affinities of the poorly known snake *Atractus caxiuana* (Serpentes: Dipsadidae)

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Abstract

Atractus caxiuana was recently described based on three specimens (two males and one female) from the Floresta Nacional de Caxiuana, municipality of Melgaço, state of Pará, in the eastern portion of the Brazilian Amazon. Apart from the type series, no additional samples are known for the species. In this study, we report new specimens of *A. caxiuana*, providing new morphological data (meristic, morphometric, pholidosis, colour pattern, and hemipenis) and localities. We relate the variability displayed by the characters analyzed to sexual dimorphism, geographic variation, and ontogeny. Additionally, we provide detailed comparisons with *A. collaris* and putative sister species, and propose a new species group to accommodate this distinct and possible monophyletic assemblage.

Key words: Hemipenial morphology; sexual, ontogenetic and geographic variation; *Atractus collaris* species group

Resumo

Atractus caxiuana foi descrita recentemente a partir de três exemplares (dois machos e uma fêmea) oriundos da Floresta Nacional de Caxiuana, município de Melgaço, estado do Pará, na porção oriental da Amazônia brasileira. Além da série-tipo, nenhuma amostra adicional é conhecida para a espécie. Neste estudo reportamos novos espécimes de *A. caxiuana*, fornecendo novos dados morfológicos (merísticos, morfométricos, foliose, padrão de coloração e hemipênis) e localidades. Nós relacionamos a variabilidade observada nestes caracteres analisados com fenômenos de variação sexual, ontogenética e geográfica. Adicionalmente, fornecemos comparações detalhadas deste táxon com *A. collaris* e possíveis espécies afins e propomos um novo grupo de espécies para acomodar esta assembleia distinta e possivelmente monofilética.

Palavras-chave: Morfologia hemipeniana; variação sexual, ontogenética e geográfica; grupo de espécies afins a *Atractus collaris*

Introduction

The dipsadid snake genus *Atractus* Wagler, 1828 comprises small to moderate-sized snakes, which have secretive lifestyles (semi-fossorial or cryptozoic) and feed on earthworms, arthropods and molluscs (Martins & Oliveira 1999; Cisneros-Heredia 2005a; Balestrin *et al.* 2007; Oliveira *et al.* 2008). The genus is widely distributed in the Neotropical region, occurring from Panama to Argentina, primarily on mainland portions from sea level to about 4,000 meters elevation, along most of South American biomes (Passos *et al.* 2010c). *Atractus* is a highly speciose genus closely related to *Geophis* Wagler, 1830 (Savage 1960; Downs 1967; Graziotin *et al.* 2012) that comprises about 140 valid species, most of them known only from their type specimens (Passos & Fernandes 2008; Prudente & Passos 2008; Passos *et al.* 2009a,b,c,d,e; Passos & Lynch 2011; Passos *et al.* 2013b).

Although the genus is often well represented in relevant New World herpetological collections, the taxonomic

have recently been transferred to their own new groups (Passos *et al.* 2009e, 2013a) or to previously described ones (Passos *et al.* 2012). Furthermore, other species allocated by Savage (1960) in the *A. trilineatus* group (*A. ecuadoriensis*, *A. lehmanni*, *A. occidentalis*, and *A. resplesdens*) are apparently more closely related to members of the *A. paucidens* group, although further taxonomic and phylogenetic studies are necessary to clarify this issue (Passos *et al.* 2012).

Given the inadequacy of the current definition of the *A. trilineatus* group and the lack of any comprehensive phylogenetic analysis of *Atractus*, and as a way to provide a taxonomically useful hypothesis to be tested in the future, we suggest a new putatively natural assemblage within the genus. This assemblage is called here the *Atractus collaris* species group, and includes *A. caxiuana*, *A. alphonsehogei*, *A. collaris*, *A. gaigeae*, *A. hoogmoedi*, *A. limitaneus*, *A. surucucu*, and *A. zidoki*. Species of the *Atractus collaris* species group share the following suite of uncommon characters: presence of two distinct apical pits on the posterior region of dorsal scales (Gasc & Rodrigues 1979: Fig. 3) and supra-anal tubercles in the dorsal scales above the cloacal region of adult males (Fig. 6); midbody diameter ≤ 5 mm; 17 dorsal scale rows; short and curved maxillary bone, with few maxillary teeth (usually five or six) and a well developed and posteriorly expanded lateral process; non-capitate and non-calyculate hemipenis (Fig. 4); dorsal colour pattern brown to dark brown with a light collar on the occipital region, paravertebral blotches (except in adults of *A. caxiuana* and *A. surucucu*), and dark longitudinal stripes intercalated by light paraventral lines; venter with the lateral region of ventral scales dark brown and remaining area of ventral scales cream in preservative (Figs. 1–3).

The presence of apical pits and supra-anal tubercles (= anal ridges of Blanchard 1931 or supracloacal keels of Savage 2002) in dorsal scales are likely to be plesiomorphic for Dipsadinae, being widespread in members of the tribe Imantodini (*sensu* Myers 2011). Nonetheless, within Dipsadinae (Grazziotin *et al.*, 2012), both features are, among the *Atractus* species, unique in the *A. collaris* group, widely distributed in *Geophis* (Tab. 2) and completely absent in the tribe Dipsadini. We consider apical pits and supra-anal tubercles in the *A. collaris* group as being non-homologous to the structures found in basal Dipsadinae. The functional role of apical pits and supra-anal tubercles in snakes remains elusive (Blanchard 1931; Gray 2011). However, Blanchard (1931) found apical pits in higher frequency in reproductively active males of the genera *Natrix* and *Diadophis*. The same condition is present in adult males of the *A. collaris* group (Prudente & Passos 2008, 2010), suggesting that these structures may play a similar role in reproductively active males of *Atractus*.

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References

- Almeida, P.C., Prudente, A.L.C., Feitosa, D.T. & Passos, P. (in press) Morphological variation and taxonomy of *Atractus latifrons* (Günther, 1868) (Serpentes: Dipsadidae). *Zootaxa*.
- Balestrin, R.L., Di-Bernardo, M. & Moreno, A.G. (2007) Feeding ecology of the neotropical worm snake *Atractus reticulatus* in southern Brazil. *Herpetological Journal*, 17, 62–64.
- Bernal-Carol, A. & Roze, J.A. (1997) Snakes genus *Atractus* (Colubridae) from Sierra Nevada de Santa Marta, Colombia, with description of new species. *Bulletin of the Maryland Herpetological Society*, 33, 165–175.

- Blanchard, F.N. (1931) Secondary sex characters of certain snakes. *Bulletin of the Antivenin Institute of America*, 4, 95–104.
- Cisneros-Heredia, D.F. (2005a) Report of molluscivory in *Atractus carrioni* Parker, 1930. *Herpetozoa*, 18 (3/4), 185–186.
- Cisneros-Heredia, D.F. (2005b). Rediscovery of the Ecuadorian snake *Atractus dummi* Savage, 1955 (Serpentes: Colubridae). *Journal of the National Museum (Prague), Natural History Series*, 174, 87–94.
- Colwell, R.K. (2000) A barrier runs through it or maybe just a river. *Proceedings of the National Academy of Science of the United States of America*, 97, 13470–13472.
<http://dx.doi.org/10.1073/pnas.250497697>
- Cunha, O.R. & Nascimento, F.P. (1983) Ofídios da Amazônia XX – As espécies de *Atractus* Wagler, 1828 na Amazônia oriental e Maranhão. (Ophidia, Colubridae). *Boletim do Museu Paraense Emílio Goeldi, Nova Série*, 123, 1–37.
- Cunha, O.R. & Nascimento, F.P. (1984) Ofídios da Amazônia XXI – *Atractus zidoki* no leste do Par e notas sobre *A. alphonsehogei* e *A. schach*. (Ophidia, Colubridae). *Boletim do Museu Paraense Emílio Goeldi, Zoologia*, 1, 219–228.
- Dowling, H.G. (1951) A proposed standard system of counting ventrals in snakes. *British Journal of Herpetology*, 1, 97–99.
- Dowling, H.G. & Savage, J.M. (1960) A guide to the snake hemipenis: a survey of basic structure and systematic characters. *Zoologica*, 45, 17–28.
- Downs, F.L. (1967) Intrageneric relationships among colubrid snakes of the genus *Geophis* Wagler. *Miscellaneous Publications, Museum of Zoology, University of Michigan*, 131, 1–193.
- Esqueda, L.F. & La Marca, E. (2005) Revisión taxonómica y biogeográfica (con descripción de cinco nuevas especies) del género *Atractus* (Colubridae: Dipsadinae) en los Andes de Venezuela. *Herpetotropicos*, 2, 1–32.
- Esqueda, L.F., La Marca, E. & Baz, S. (2007) 2005 Un nuevo colúbrido semifosorial del género *Atractus* (Dipsadinae) de la vertiente lacustre de los Andes. *Herpetotropicos*, 2, 87–93.
- Gasc, J.P. & Rodrigues, M.T. (1979) Une nouvelle espèce du genre *Atractus* (Colubridae, Serpentes) de la Guyane française. *Bulletin du Muséum national d'Histoire naturelle*, 4 (1), Section A, 545–557.
- Gray, B.S. (2011) A study of apical pits using shed snakeskins revisited. *Bulletin of the Chicago Herpetological Society*, 46, 125–128.
- Grazziotin, F.G., Zaher, H., Murphy, R.W., Scrocchi, G., Benavides, M.A., Zhang, I. & Bonatto, S.L. (2012) Molecular phylogeny of the new world Dipsadidae (Serpentes: Colubroidea): a reappraisal. *Cladistics*, 1, 1–23.
<http://dx.doi.org/10.1111/j.1096-0031.2012.00393.x>
- 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, 425–439.
- IBGE (Instituto Brasileiro de Geografia e Estatística) (2011) *Índice de nomes geográficos, volume 1, escala 1:100.000, base geográfica contínua do Brasil ao Milionésimo – BCIM*. Ministério do Planejamento, Orçamento e Gestão, Brazil.
- 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, 21–40.
- Martins, M. & Oliveira, M.E. (1999) Natural history of snakes in forests of the Manaus region, central Amazonia, Brazil. *Herpetological Natural History*, 6, 78–150.
- Myers, C.W. (2011) A new genus and new tribe for *Enicognathus melanauchen* Jan, 1863, a neglected South American snake. *American Museum Novitates*, 3715, 1–33.
<http://dx.doi.org/10.1206/3715.2>
- Oliveira, L., Jared, C., Prudente, A.L.C., Zaher, H. & Antoniazzi, M.M. (2008) Oral glands in dipsadini “goo eaters: morphology and histochemistry of the infralabial glands in *Atractus reticulatus*, *Dipsas indica*, and *Sibynomorphus mikanii*. *Toxicon*, 51, 898–913.
<http://dx.doi.org/10.1016/j.toxicon.2007.12.021>
- Passos, P. (2008) *Revisão taxonômica do gênero Atractus Wagler, 1828 (Serpentes: Colubridae: Dipsadinae)*. Ph.D. Dissertation, Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil, 671 pp.
- 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. & Fernandes, R. (2008) A new species of the colubrid snake genus *Atractus* (Reptilia: Serpentes) from the central Amazon of Brazil. *Zootaxa*, 1849, 59–66.
- Passos, P. & Lynch, J.D. (2011) 2010 Revision of *Atractus* from upper and middle Magdalena drainage of Colombia. *Herpetological Monographs*, 24, 149–173.
<http://dx.doi.org/10.1655/09-041.1>
- Passos, P. & Prudente, A.L.C. (2012) Morphological variation, polymorphism and taxonomy of the *Atractus torquatus* complex (Serpentes: Dipsadidae). *Zootaxa*, 3407, 1–21.
- Passos, P., Aguayo, R. & Scrocchi, G. (2009a) Rediscovery of the rare *Atractus bocki*, with assessment of the taxonomic status of *A. canedii* (Serpentes: Colubridae: Dipsadidae). *Journal of Herpetology*, 43, 710–715.
<http://dx.doi.org/10.1670/08-209.1>
- Passos, P., Arredondo, J.C., Fernandes, R. & Lynch, J.D. (2009b) Three new *Atractus* (Serpentes: Dipsadidae) from Andes of Colombia. *Copeia*, 2009, 425–438.
<http://dx.doi.org/10.1643/ch-08-063>
- Passos, P., Chiesse, A., Torres-Carvajal, O. & Savage, J.M. (2010a) 2009 Testing species boundaries within *Atractus occipitoalbus* complex (Serpentes: Dipsadidae). *Herpetologica*, 65, 284–403.
<http://dx.doi.org/10.1655/08-024.1>

- Passos, P., Cisneros-Heredia, D.F. & Salazar-V.D. (2007a) Rediscovery and redescription of the rare Andean snake *Atractus modestus*. *Herpetological Journal*, 17, 1–6.
- Passos, P., Doherty, M. & Venegas, P.J. (2010b) Variation and natural history notes on giant groundsnake, *Atractus gigas* (Serpentes: Dipsadidae). *South American Journal of Herpetology*, 5, 73–82.
<http://dx.doi.org/10.2994/057.005.0201>
- Passos, P., Echevarria, L.Y. & Venegas, P.J. (2013a) Morphological variation of *Atractus carrioni* (Serpentes: Dipsadidae). *South American Journal of Herpetology*, 8, 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*, 2007, 788–797.
<http://www.jstor.org/stable/25140697>
- Passos, P., Fernandes, R. & Zanella, N. (2005) A new species of *Atractus* (Serpentes: Colubridae) from Southern Brazil. *Herpetologica*, 61, 209–218.
<http://dx.doi.org/10.1655/03-91>
- Passos, P., Fuenmayor, G.R. & Barrio-Amorós, C. (2009c) Description of two new species from Venezuela in the highly diverse dipsadine genus *Atractus* (Serpentes: Colubridae). *Amphibia-Reptilia*, 30, 233–243.
<http://dx.doi.org/10.1163/156853809788201199>
- Passos, P., Lynch, J.D. & Fernandes, R. (2009d) 2008 Taxonomic status of *Atractus sanctaemartae* and *A. nebularis*, and description of a new species of *Atractus* from Atlantic coast of Colombia. *Herpetological Journal*, 18, 175–186.
- Passos, P., Fernandes, R., Bérnils, R.S. & Moura-Leite, J.C. (2010c) Revision of the Atlantic Forest *Atractus* (Reptilia: Serpentes: Dipsadidae). *Zootaxa*, 2364, 1–63.
- Passos, P., Kok, P.R.J., Albuquerque, N.R. & Rivas, G.F. (2013) Groundsnakes of the Lost World: a review of *Atractus* (Serpentes: Dipsadidae) from the Pantepui region, northern South America. *Herpetological Monographs*, in press.
- Passos, P., Mueses-Cisneros, J.J., Lynch, J.D. & Fernandes, R. (2009e) Pacific lowland snakes of the genus *Atractus* (Reptilia: Serpentes: Dipsadidae), with descriptions of three new species. *Zootaxa*, 2293, 1–34.
- Passos, P., Cisneros-Heredia, D.F., 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, 375–392.
<http://dx.doi.org/10.1655/herpetologica-d-11-00078.1>
- Passos, P., Teixeira Jr., M., Recoder, R.S., Sena, M.A., Dal Vechio, F., Pinto, H.B.A., Mendonça, H.S.T., Cassimiro, J. & Rodrigues, M.T. (2013b) A new species of *Atractus* (Serpentes: Dipsadidae) from Serra do Cip, Espinhaço range, Southeastern Brazil, with proposition of a new species group to the genus. *Papéis Avulsos de Zoologia*, 53, 75–85.
<http://dx.doi.org/10.1590/S0031-10492013000600001>
- Paynter, R.A. Jr. (1993) *Ornithological gazetteer of Ecuador*. Second Edition, Bird Department, Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, U.S.A., 247 pp.
- Paynter, R.A. Jr. (1997) *Ornithological gazetteer of Colombia*. Second Edition, Bird Department, Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, U.S.A., 537 pp.
- Paynter, R.A. Jr. & Traylor, M.A. Jr. (1991) *Ornithological gazetteer of Brazil*. 2 Volumes, Bird Department, Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, U.S.A., 352 pp.
- Pesantes, O. (1994) A method for preparing hemipenis of preserved snakes. *Journal of Herpetology*, 28, 93–95.
<http://dx.doi.org/10.2307/1564686>
- 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, 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*, 2010, 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.
- Savage, J.M. (1960) A revision of the Ecuadorian snakes of the genus *Atractus*. *Miscellaneous Publications of the Museum of Zoology, University of Michigan*, 112, 1–86.
- Savage, J.M. (2002) *The amphibian and reptiles of Costa Rica: a herpetofauna between two continents, between two seas*. The University of Chicago Press, Chicago and London, 934 pp.
- Schargel, W.E. & Castoe, T.A. (2003) The hemipenes of some snakes of the semifossorial Genus *Atractus*, with comments on variation in the genus. *Journal of Herpetology*, 37, 718–721.
<http://dx.doi.org/10.1670/7-02n>
- Silva, J.J.H. (2004) Las serpientes del género *Atractus* Wagler, 1828 (Colubridae: Xenedontinae) en la Amazonia colombiana. *Revista de Academia Colombiana de Ciencias Exactas, Físicas y Naturales*, 184, 409–446.
- Stephens, L. & Traylor, M.A. Jr. (1983) *Ornithological gazetteer of Peru*. Bird Department, Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, U.S.A., 271 pp.
- Stephens, L. & Traylor, M.A. Jr. (1985) *Ornithological gazetteer of the Guianas*. Bird Department, Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, U.S.A., 121 pp.

- Wagler, J. (1828) Auszüge aus seinem Systema Amphibiorum. *Isis von Oken*, 21, 740–744.
- Wagler, J. (1830) *Natürliches System der Amphibien mit vorangehender Classification der Säugthiere und Vogel: Ein Beitrag zur vergleichenden Zoologie*. In der J.G. Cotta'schen Buchhandlung, München, 354 pp.
- Zaher, H. (1999) Hemipenial morphology of the South American Xenodontine snakes, with a proposal for a monophyletic Xenodontinae and a reappraisal of Colubroid hemipenes. *Bulletin of the American Museum of Natural History*, 240, 1–168.
- Zaher, H. & Prudente, A.L.C. (2003) Hemipenis of *Siphlophis* (Serpentes, Xenodontinae) and techniques of hemipenial preparation in snakes: a response to Dowling. *Herpetological Review*, 34, 302–307.
- 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, 19–32.
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Appendix

Material examined

Countries are given in bold capitals, states in plain capitals, municipalities in italics, and localities in plain text.

- Atractus caxiuana* ($n = 7$).—**BRAZIL**: PARÁ: *Melgaço*: Floresta Nacional de Caxiuana: (MPEG 19964 holotype, MPEG 19657, 20128 paratypes); RONDÔNIA: *Porto Velho*: right bank of the Rio Madeira: (MZUSP 18892), Vila Cachoeira do Samuel: (MNRJ 3026). **COLOMBIA**: VAUPÉS: *Taraira*: (ICN 10114–15).
- Atractus alphonsehogei* ($n = 9$).—**BRAZIL**: MARANHÃO: *Santa Inês*: (MPEG 10874); PAR: *Augusto Correia*: Fazenda Cacoal: (MPEG 9949 paratype), *Bragança*: Parada Bom Jesus: (MPEG 2221, 8573, 8667 paratypes), Km 224 from BR 316 highway: (MPEG 10093 paratype), *Colônia Nova*: (MZUSP 8778), *Santa Rosa*: Estrada de Vigia: (MPEG 12593 paratype), *Viseu*: Bela Vista: Km 75 *Bragança/Viseu* road: (MPEG 14928 holotype).
- Atractus collaris* ($n = 10$).—**COLOMBIA**: CAQUETÁ: *Florencia*: (MLS 1324, 2782), Caparú: (ICN 8144). **ECUADOR**: NAPO: oil well Zabalo: (EPN 5216); ORELLANA: *Yasuni*: (QCAZ 5980); SUCUMBÍOS: *Cayabeno*: (QCAZ 983, 986, 1042). **PERU**: LORETO: *Iquitos*: Maynas: (MHNSM 2310); UCAYALI: *Coronel Portillo*: Pucallpa: (MHNSM 3083).
- Atractus gaigeae* ($n = 10$).—**ECUADOR**: NAPO: Sacha Biological Station: (EPN without a number), *Loreto*: (USNM 217621), upper Río Napo: (USNM 217622), mouth of the Río Coca: (USNM 217623); PASTAZA: Río Bobonaza: (EPN 5217), Río Conambo: mouth of the Río Romarizo: (USNM 217624), mouth of the Río Shione: (USNM 217625), Cotopaza: (EPN 8693, paratype), Misión: (EPN 752), Río Rutuno: tributary of the Río Bobonaza, *Montalvo*: (USNM 217627).
- Atractus hoogmoedi* ($n = 3$).—**BRAZIL**: PARÁ: *Capitão Poço*: (MPEG 13265–66 paratypes, 13268, holotype).
- Atractus limitaneus* ($n = 1$).—**COLOMBIA**: AMAZONAS: *La Pedrera*: (IBSP 9196, holotype).
- Atractus zidoki* ($n = 6$).—**BRAZIL**: AMAPÁ: *Serra do Navio*: (IBSP 24772, 77393, MPEG 16437, MPEG without a number, MZUSP 2840). **FRENCH GUIANA**: without locality: (MZUSP without a number).