



First confirmed record of *Atractus maculatus* (Serpentes, Dipsadidae) from the state of Pernambuco, northeastern Brazil

Arthur Diesel Abegg^{1,4}, Marco Antonio de Freitas² & Geraldo Jorge Barbosa de Moura³

¹Universidade Federal de Santa Maria, Laboratório de Biologia Evolutiva, Avenida Roraima, 1.000, Camobi, CEP 97105-900, Santa Maria, RS, Brazil

²Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio), PARNA do Catimbau, Vila Catimbau, CEP 56537-000, Buíque, PE, Brazil

³Universidade Federal Rural de Pernambuco, Departamento de Biologia, Laboratório de Estudos Herpetológicos e Paleoherpetológicos, Rua Dom Manoel de Medeiros, s/n, Dois Irmãos, CEP 52171-900, Recife, PE, Brazil

⁴Corresponding author. E-mail: arthur_abegg@hotmail.com

Abstract: *Atractus maculatus*, classified as Data Deficient by the Brazil's Ministério do Meio Ambiente, is recorded from a sixth known locality. The specimen was collected in the municipality of Paudalho, state of Pernambuco, Brazil. This is the first confirmed record of *A. maculatus* from this state and extends this species' distribution by 153 km northeast of previously known occurrences. A map shows the occurrences throughout the whole range of this species.

Key words: Paudalho; geographical distribution; Atlantic Forest

The genus *Atractus* Wagler, 1828 comprises cryptozoic snakes that are widely distributed in the Neotropical Region, occurring from Panama to northeastern Argentina (GIRAUDO & SCROCCHI 2000; MYERS 2003). It is the world's most species rich genus of snakes and currently includes more than 140 valid species (SALAZAR-VALENZUELA et al. 2014). Despite the growing number of studies in recent years on this genus, with frequent descriptions of new species, synonyms, and rediscovery (PASSOS et al. 2016), a large number of the species remain known only from the holotype or other type material and often known from only one locality (PASSOS et al. 2010). The Wallacean deficit is therefore still quite pronounced in the genus *Atractus*.

For more than a century, the name *Atractus maculatus* (Günther, 1858) was used to allocate specimens from the northeastern to the southern regions of Brazil (e.g., MOURA-LEITE et al. 1996; CÁCERES 2004). This panorama was modified by FERNANDES et al. (2000), who revalidated the name *Rabdosoma zebrinum* Jan, 1862 (as *Atractus zebrinus*) for the populations distributed from the south areas of Bahia state to Santa Catarina state. Thus, *A. maculatus* was restricted to populations in Alagoas state. As currently recognized, *A. maculatus* is known only from five localities in remnants of the Atlantic Forest of the Alagoas at altitudes of 0–500 m (PASSOS et al. 2010). In this study, we present a new record for *A. maculatus*, the first confirmed in the state of Pernambuco (northeastern Brazil).

The new record was made based on a specimen collected at the Campo de Instrução Marechal Newton Cavalcanti (−7.8686, −35.0852; datum WGS84), in the municipality of Paudalho (Figure 1), Pernambuco, approximately 120 m

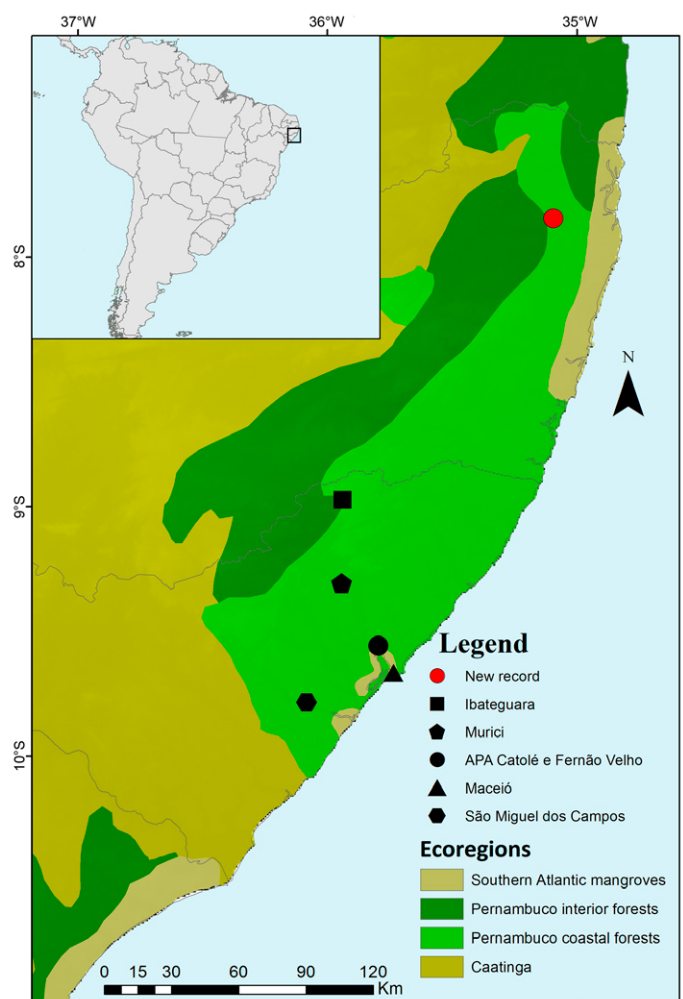


Figure 1. Distribution map for *Atractus maculatus*, with the new record in Paudalho (red circle), state of Pernambuco, Brazil. Other symbols represent literature records.



Figure 2. Specimen of *Atractus maculatus* (CHP-UFRPE 0720) observed in the municipality of Paudalho (−7.8686, −35.0852), state of Pernambuco, Brazil.

above sea level. The individual was captured in a pit-fall trap (collecting permit SISBio 53914-1), euthanized, and deposited in the herpetological and paleontological collection of Universidade Federal Rural de Pernambuco (CHP-UFRPE 0720) (Figure 2). Our record increases the distribution of the species by about 153 km northeast from the municipality of Iateguara, Alagoas, and constitutes the sixth known locality for *A. maculatus*.

The specimen was identified based on morphological analysis using data in the literature (PASSOS et al. 2010). *Atractus maculatus* occurs in probable sympatry with two other species of the same genus (*A. caete* PASSOS, FERNANDES, BERNILS & MOURA-LEITE, 2010 and *A. potschi* FERNANDES, 1995) (see PASSOS et al. 2010). *Atractus maculatus* is easily differentiated from *A. caete* by the dorsal color pattern (reddish with dark transverse bands in *A. maculatus* vs. uniformly black back in *A. caete*) (PASSOS et al. 2010). It differs from *A. potschi* by the number of dorsal scales (17/17/17 in *A. maculatus* vs. 15/15/15 in *A. potschi*). For other diagnostic details between these three species, see PASSOS et al. (2010). In addition, the our specimen is in

agreement with the diagnosis of the species, according to PASSOS et al. (2010).

PASSOS et al. (2010) presented a map with the geographical distribution of *A. maculatus*, and a descriptive paragraph with more specific information about some of the records. However, the map and the textual information differ. In the text, the occurrence of *A. maculatus* is presented as follows: “Atlantic Forest remnants in the states of Alagoas and Pernambuco, from Serra Talhada (07°59’S, 38°18’W) southeastward to São Miguel dos Campos (09°47’S, 36°05’W)” (PASSOS et al. 2010: 21). On the map, however, there is no record for Pernambuco. This discrepancy occurred due to uncertainties regarding the origin of the material studied by PASSOS et al. (2010), from the Campus Serra Talhada, Federal University of Pernambuco, and it was not possible to confirm if the specimen came from the municipality of Serra Talhada, and therefore, this record was not included in the distribution map (Paulo Passos, pers. comm.). Given that the municipality of Serra Talhada is located in the Caatinga area and not in the Atlantic Forest, as the remaining known occurrences of *A.*

maculatus, this origin is even more doubtful. Thus, we also choose not to include it on our map (Figure 1).

GUEDES et al. (2014) reported on a possible new species, *Atractus* aff. *maculatus*, recorded from the municipalities of Lagarto and Simão Dias, Sergipe, in the Caatinga biome. In fact, these specimens come from a phyto-physiognomy formation that is distinct from that of where records of *A. maculatus* originate; this species shows a very different dorsal pattern (GUEDES et al. 2014). This material has not yet been analyzed in detail, and the taxonomic status of these specimens remains unclear, although the possibility of this new record constituting a variant of *A. maculatus* is not ruled out (Paulo Passos, pers. comm.).

The record of *A. maculatus* from coastal forests of Pernambuco, although unpublished, is not surprising. BARBO (2012) worked with centers of endemism of snakes along the Atlantic Forest. This author identified four centers, one of which was named “Alagoas”. This center has two forest formations, the Pernambuco Coastal Forests and the Pernambuco Interior Forests (OLSON et al. 2001) and is located between the states of Alagoas and Pernambuco, being bordered by the Ipojuca River to the north, the Ipanema River to the west, and the São Francisco River to the south (BARBO 2012). Five species of snakes were considered endemic to this center, with *A. maculatus* being one of them. Thus, this species was likely to be found in other areas as is indeed corroborated by our record.

In a recent national assessment of the risk of extinction of Brazilian fauna, *A. maculatus* was classified as Data Deficient (MMA 2014). Its occurrence, limited to remnants of Atlantic Forest in Alagoas and Pernambuco, states strongly impacted by anthropic activities, suggests that populations may be exposed to strong ecological pressures, especially resulting from changes in natural environments, forest fragmentation, and habitat loss. This new record reinforces the need for further studies in the vicinity of the “Alagoas” endemism center, as well as providing new data to estimate the conservation status of *A. maculatus*.

ACKNOWLEDGEMENTS

We thank Anne Taffin d’Heursel Baldisseri and the anonymous reviewers for corrections to the manuscript and Paulo Passos for the information about the geographical distribution of this species.

LITERATURE CITED

- BARBO, F.E. 2012. Biogeografia Histórica e Conservação das Serpentes da Floresta Pluvial Atlântica Costeira do Brasil [Doctoral thesis]. São Paulo: Universidade Estadual Paulista Júlio de Mesquita Filho.
- CÁCERES, N.C. 2004. Occurrence of *Conepatus chinga* (Molina) (Mammalia, Carnivora, Mustelidae) and other terrestrial mammals in the Serra do Mar, Paraná, Brazil. *Revista Brasileira de Zoologia* 1902(3): 577–579.
- FERNANDES, R., E.M.X. FREIRE & G. PUERTO. 2000. Geographic variation of the Brazilian Atlantic Rain Forest snake *Atractus maculatus* (Günther, 1858), with the revalidation of *Rhabdosoma zebrinum* Jan, 1862 (Serpentes: Colubridae). *Boletim do Museu Nacional, Nova Série, Zoologia* 419: 1–8.
- GIRAUDO, A.R. & G.J. SCROCCHI. 2000. The genus *Atractus* (Serpentes: Colubridae) in north-eastern Argentina. *Herpetological Journal* 10: 81–90.
- GUEDES, T.B., C. NOGUEIRA & O.A.V. MARQUES. 2014. Diversity, natural history, and geographic distribution of snakes in the Caatinga, northeastern Brazil. *Zootaxa* 3863(1): 1–93. doi: [10.11646/zootaxa.3863.1.1](https://doi.org/10.11646/zootaxa.3863.1.1)
- MMA (MINISTÉRIO DO MEIO AMBIENTE). 2014. Fauna brasileira ameaçada de extinção. portaria nº 444, de 17 de dezembro de 2014. Accessed at <http://www.icmbio.gov.br/portal/>, 6 November 2016.
- MOURA-LEITE, J.C., S.A.A. MORATO & R.S. BERNILS. 1996. New records of reptiles from the State of Paraná, Brazil. *Herpetological Review* 27(4): 216–217.
- 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.
- OLSON, D.M., E. DINERSTEIN, E.D. WIKRAMANAYAKE, N.D. BURGESS, G.V.N. POWELL, E.C. UNDERWOOD, J. D’AMICO, I. ITOUA, H.E. STRAND, J.C. MORRISON, C.J. LOUCKS, T.F. ALLNUTT, T.H. RICKETTS, Y. KURA, J.F. LAMOREUX, W.W. WETTENGEL, P. HEDAO & K.R. KASSEM. 2001. Terrestrial ecoregions of the world: a new map of life on Earth. *BioScience* 51(11): 933.
- PASSOS, P., R. FERNANDES, R.S. BERNILS & J.C. MOURA-LEITE. 2010. Taxonomic revision of the Brazilian Atlantic Forest *Atractus* (Reptilia: Serpentes: Dipsadidae). *Zootaxa* 2364: 1–63.
- PASSOS, P., A.L.C. PRUDENTE & J.D. LYNCH. 2016. Redescription of *Atractus punctiventris* and description of two new *Atractus* (Serpentes: Dipsadidae) from Brazilian Amazonia. *Herpetological Monographs* 30(1): 1–20. doi: [http://doi.org/10.1002/hbm2.10001](https://doi.org/10.1002/hbm2.10001)
- Salazar-Valenzuela, A.D., O. Torres-Carvajal and P. Passos. 2014. A new species of *Atractus* (Serpentes: Dipsadidae) from the Andes of Ecuador. *Herpetologica* 70(3): 350–363.

Authors’ contributions: GJBM collected the specimen in the field; ADA, MAF and GJBM idealized and wrote the manuscript.

Received: 3 December 2016

Accepted: 22 March 2017

Academic editor: Raúl Maneyro