

First record of *Atractus turikensis* (Squamata: Colubridae: Dipsadinae) from the Colombian Perijá highlands

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ABSTRACT - This paper gives details of the first record of the small and poorly known dipsadine snake *Atractus turikensis* in Colombia. This includes the first specimens that do not correspond to the type series and the first vouchers of the species outside of Venezuela. We describe its morphology and some aspects of its natural history.

INTRODUCTION

The genus *Atractus* Wagler 1828 is the most speciose among the neotropical snakes, which is distributed from Panamá to Argentina (Myers, 2003). It is composed by small non-venomous snakes with terrestrial or cryptozoic habits (Silva, 2004). In Colombia, 65 species are recognised (Ecavarría-Rentería et al., 2015; Uetz et al., 2016). However, this number may be underestimated, due to new species being described every year (Passos et al., 2009b; Passos & Lynch, 2010; Khöler & Kieckbusch, 2014). *Atractus* is mostly represented by endemic or restricted distribution species, sometimes only known from their type localities. (Passos and Fernandes 2008; Passos et al., 2009).

In the Serranía del Perijá three species are recognised, *Atractus turikensis* and *A. acheronius* from the eastern flank; and *A. vertebrolineatus* on the western flank (Moreno-Arias et al., 2009; Rivas et al., 2012). However, there are three

other records of the genus in the area: *A. ventrimaculatus* (Rojas-Runjaic et al., 2007), *A. eriki* (Passos et al., 2009a; see material examined), and *A. indistinctus* (Passos et al., 2009b). This species have been discussed by Nattera et al. (2015) because of the little information given about these records in their papers, and were considered by them as "dubious". Conflict generates uncertainty regarding the taxonomic status and specific determination of any *Atractus* specimen collected in the Serranía del Perijá.

Atractus turikensis is a small and poorly known species, listed as vulnerable according to the most recent red book of the Venezuelan fauna (Rodríguez et al., 2015). It is considered endemic to Venezuela, only known by three specimens originating from the Mesa de Turik, an isolated plateau at 1800m asl, on the eastern flank of the Serranía del Perijá, Estado Zulia, Venezuela (Barros, 2000). Given the inaccessibility of the type locality and lack of specimens and field observations, all aspects of the biology of this

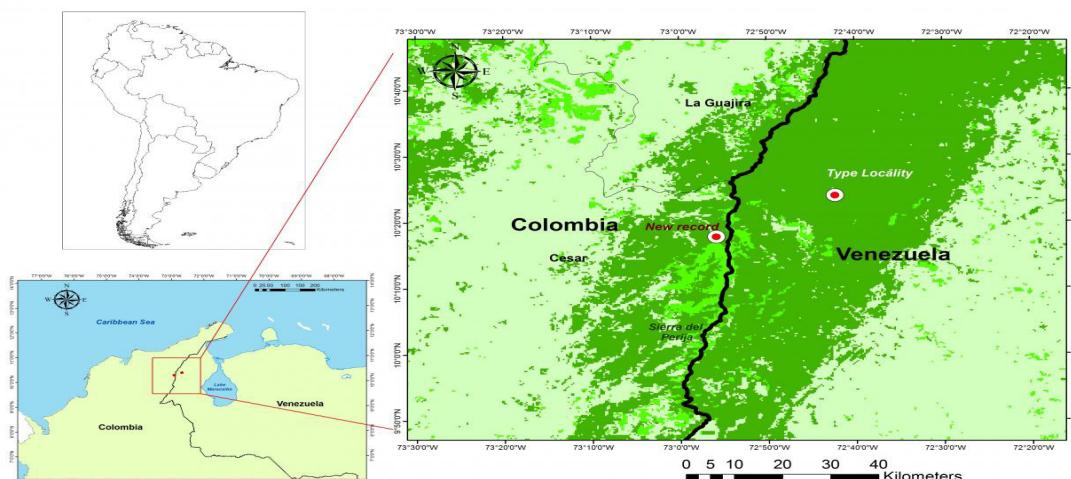


Figure 1. Known distribution of *A. turikensis* in the Serranía del Perijá. Map designed by Lorena Benítez-Cubillos.

snake are unknown (e.g. the colour definition of the original description is based on freshly preserved specimens, and not by live specimens. T.R. Barros, pers. com). Therefore, the objective of this contribution is to report the first record of *A. turikensis* for Colombia, as well as describing the colour in life and some aspects of its natural history.

MATERIALS AND METHODS

During an expedition to the highlands in western flank of the Serranía del Perijá, in September 2015, we collected two specimens of *A. turikensis* (information, see Table 1). These were deposited in the Reptile Collection of the Centro de Colecciones de la Universidad del Magdalena (CBUMAG:REP), Santa Marta, Magdalena, Colombia; under the numbers CBUMAG:REP: 00299, 00300. This locality corresponds to the quebrada El Jordán, El Contento Village, San José de Oriente, Municipio La Paz, Departamento del Cesar, Colombia. ($10^{\circ}17'47.3''$ N, $72^{\circ}55'55.8''$ W; 2540m asl) (Fig. 1). The landscape is covered by disturbed high Andean forest with stepped successional processes, where undergrowth species are virtually nonexistent.

For species determination, we examined lepidosis and morphometric features. In addition, the head scalation patterns of our specimens were compared with photographs of paratype specimen of *A. turikensis* MBLUZ R-302.

RESULTS AND DISCUSSION

Species determination

Although the counts of ventral scales of our specimens are greater than those of the type series, it presents other characters that resemble *A. turikensis* (Table 1, Fig. 2). Our specimens can be distinguished immediately from *A. acheronius* (characters in parentheses) by having a narrow body, < 10 mm (thick body, > 10 mm, Table 2), and seven infralabials (versus six) and three preventrals (one prevetral) (see Passos et al., 2009b); likewise, they are distinguishable from *A. vertebrolineatus* and *A. indistinctus* by the absence of dorsolateral lines present in those species, having 27-28 subcaudal scales (45 subcaudal scales), and the cephalic colouration is uniform with the body (darkened in head than body) (Prado, 1940, 1941).

They can be distinguished from species with unconfirmed distribution on the Serranía del Perijá, for example *A. ventrimaculatus*, by having 17-17 dorsal scales (15-15 dorsal formula), having seven supralabials, third and fourth in contact with eye, (eight, fourth and fifth in contact with eye) (Esqueda & La Marca, 2005); while it differs from *A. eriki* by having 172-179 ventral count (162 ventrals scales), the presence of a partial line over the vertebral region (absence, pattern uniform), and by the ventral surface being golden on the sides and dark blue in the center (ventral surface cream, lightly dark brown spotted) (Esqueda et al., 2007). Finally, a species not mentioned for this region is *A. pamplonensis* (although there are specimens in museums that occur north of its type locality “Pamplona, Colombia”, L.F. Esqueda pers. comm.), whose morphological attributes are very similar to our specimens. For example, same range of ventral and subcaudal scales, similar count of supralabial

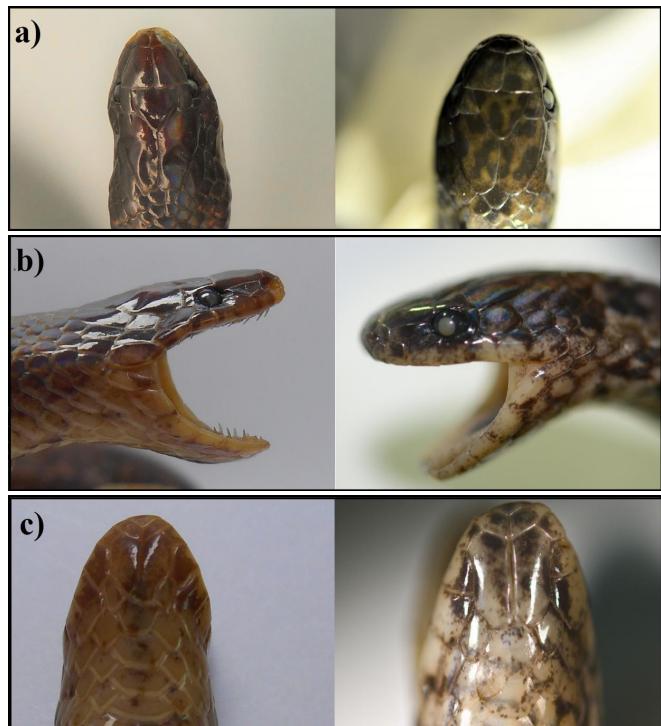


Figure 2. Comparison of the cephalic lepidosis of *A. turikensis* paratype (MBLUZ R-302) (left) and Colombian specimen (CBUMAG:REP:00300) (right) in dorsal (a), lateral (b), and ventral view. Photograph by Luis Sibira (MBLUZ R-302) and Juan David Jiménez-Bolaño (CBUMAG:REP:00300).

and infralabial scales and dorsal pattern colouration, in both cases with small separated spots arranged longitudinally, giving the impression of a broken line. Contrary to the few differences between the two species is four gular scales in *A. turikensis* (one to two gular scales), four infralabial scales in contact with geneials (three infralabials in contact with geneials), the ventral region mostly darkblue and golden in margins (ventral region mostly yellowish with discontinuous spots at the edges, forming a discontinuous lateroventral stripe), and the head arched in lateral profile (not arched in the lateral profile) (Pérez-Santos & Moreno 1988; Schargel & García-Pérez, 2002; Natera et al., 2015).

Colour in life description

Atractus turikensis is a colourful species because of its iridescent scales. The dorsal surface is gold to dark gold. Likewise, some groups of dorsal scales are dark gray coloured and surrounded by golden scales. Dark gray spots are spread unevenly throughout the body, though they give the impression of forming two dorsolateral interrupted stripes. Ventral scales are dark blue in the center, turning gold around the edges. The head dorsum is dark gray with dark gold irregularly distributed scales that spread to half of supralabial scales. The other half of supralabials and infralabials are golden. The head ventral surface is golden, except for the geneial scales, which are dark gray (Fig. 3). Surely, the “light brown” and “dark brown” surfaces on the dorsal region described by Barros (2000), are golden in live specimens. Therefore, we consider the pattern of colouration of our specimens and the illustrations provided by Barros (2000) are very similar, especially in the dorsal design and

Table 1. Lepidosis of potential *Atractus* species from the Serranía del Perijá. Data provided by Prado (1940, 1941), Pérez-Santos and Moreno (1988), Barros (2002), Schargel and García-Pérez (2002), Esqueda and La Marca (2005), Esqueda et al., (2007), Passos et al., (2009b), and Natera et al., (2015). *Data of preventral scales obtained only from paratype MBLUZ R-302. Not including data from other type specimen

Species	Dorsals	Preventrals	Ventrals	Subcaudals	Supralabials (in contact with eye)	Infralabials (in contact with genials)	Gulars
<i>A. turikensis</i> Barros, 2000 (CBUMAG)	17-17	3	172-179	27-28	7 (3/4)	7 (1/2/3/4)	4
<i>A. turikensis</i> (type series)	17-17	4*	158-166	20-27	7 (3/4)	7 (1/2/3)	4
<i>A. acheronius</i> Passo, Rivas & Barrio-Amorós, 2009b	17-17	1	166	23	7 (3/4)	6	4
<i>A. pamplonensis</i> Amaral, 1937	17-17	2-3	172-189	23-30	7 (3/4)	6-7 (1/2/3)	1-2
<i>A. indistinctus</i> Prado, 1940	17-17	NA	170	35	7 (3/4)	6 (1/2/3)	NA
<i>A. vetebrolineatus</i> Prado, 1941	17-17	NA	159	46	6 (3/4)	7 (1/2/3)	NA
<i>A. eriki</i> Esqueda, La Marca & Bazó, 2007	17-17	3	152-160	30-40	7 (3/4)	6 (1/2/3)	3
<i>A. ventrimaculatus</i> Boulenger, 1905	15-15	NA	143-156	16-23	8 (4/5)	7 (1/2/3/4)	4-5

Table 2. Comparisons of the morphometry of *A. turikensis* and *A. acheronius* specimens- Data provided by Barros (2000) and Passos et al., (2009b). *In Table 1 of Barros (2000), he presents the SL of female paratype as higher than HL, therefore, SL/HL ratio was erroneously calculated. **The TaL measurement was calculated as 9.7% of the SVL of the *A. acheronius* holotype.

Specimen	CBUMAG:REP: 00299	CBUMAG:REP: 00300	<i>A. turikensis</i>			<i>A. acheronius</i> MHNLS 398 (Holotype)
			MBLUZ R-301 (Holotype)	MBLUZ R-302 (Paratype)	MCN UNEILLEZ Nº 1914 (Paratype)	
Total length (TL)	199.12	270.85	439	420	364.03	587.992
Snout vent length (SVL)	181	244	402.61	398.06	329.97	536
Head length (HL)	9.3	10.28	10.1	9.55*	8.45	18.7
Head Width (HW)	4.23	5.58	7.62	6.68	5.84	9.6
Snout length (SL)	2.74	3.06	8.1	9.9*	5.91	5.7
Interorbital distance (IOD)	3.55	3.86	4.57	4.34	3.91	6.9
Eye diameter (ED)	1	1.13	1.44	1.34	1.27	1.9
Tail length (TaL)	18.12	26.85	36.39	21.94	34.06	51.99**
Maximum body width (MBW)	3.52	5.74	10.49	10.06	6.85	12.3
Tail base width (TBW)	1.69	3.31	5.08	5.38	4.39	NA
HW/HL (%)	45.48	54.28	75.45	69.95	69.11	51.34
SL/HL (%)	64.78	54.84	80.20	148.20*	69.94	59.38
IOD/HW (%)	83.92	69.18	59.97	64.97	66.95	71.88
TaL/LT (%)	9.10	9.91	8.29	5.22	9.36	8.84
TBW/MBW (%)	48.01	57.67	48.43	53.48	64.09	NA

chin colouration.

Nevertheless, we detected some differences between our specimens and those described by Barros (2000). The paratype specimen used in the original description of *A. turikensis* has a single interrupted vertebral stripe, while the two specimens collected by us have two interrupted paravertebral “stripes”. We consider that *A. turikensis* does not present true longitudinal stripes, since the area occupied by the stripes on the scales are proportional in all their extension, even when interrupted (see photograph of *A. emigdioi* in the Reptile Database link for a graphic description <http://reptile-database.reptarium.cz/species?genus=Atractus&species=emigdioi>). On the other hand, *A. turikensis* presents spots in an irregular proportion, neither completely aligned, nor consistently arranged, which may vary on each specimen.

Distribution and natural history



Figure 3. Specimen CBUMAG:REP:00300 in life. Lateral (a), ventral (b), and dorsal (c) views. Photos by Efrain Rada-Vargas.

The two specimens (both females) were captured in the morning. The specimen CBUMAG:REP: 00299 was found under a boulder, while the specimen CBUMAG:REP:00300 was under a fallen decaying trunk. Prints left by snake crawling activities on the substrate, suggest that *A. turikensis* has cryptozoic or mining habits. Another uncollected specimen was observed active during the night, suggesting nocturnal activity.

The new record extends the distribution of *A. turikensis* 27 km to south-west of its type locality and demonstrates that the species is present in both western and eastern versant of Perijá. Its altitudinal range is also extended from 1800 to 2540m asl, with the highest altitudinal record corresponding to the Colombian locality reported herein. Also, this new record increases the number of *Atractus* species known for Colombia to 66. A comprehensive search for additional specimens in the Perijá highlands (both Colombia and Venezuela), is required to determine the real distribution of this species. Although in Venezuela the species occupies an uninhabited area where no major threats are known to exist, which is the reason it is considered under least concern by the IUCN (Rivas, 2016). *Atractus turikensis* does not seem to be very abundant, and faces accelerated deforestation of the high Andean forests of Colombian Perijá, therefore, an assessment of population and conservation status of this snake is needed.

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