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On the second specimen of *Atractus alytogrammus* (Serpentes: Dipsadidae), with description of its unusual hemipenial morphology

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The semi-fossorial snakes of the genus *Atractus* Wagler 1828 are widely distributed throughout South America, ranging from Panama to northeastern Argentina at elevations from sea level to 4500 m (Passos *et al*. 2013a). *Atractus* currently comprises 150 species that inhabiting several types of tropical habitats, being the most diverse genus of snakes in the world (Passos *et al*. 2018). Colombia harbours the most species richness of the genus with about 42 currently recognized species, representing about 1/3 of generic diversity (Uetz *et al*. 2018). Köhler & Kieckbusch (2014) recently has named *Atractus alytogrammus* based on an individual collected by Federico Meden more than fifty years ago near the municipality of San José de Guaviare (2°33'55''N, 72°38'19''W). The second known specimen of *A. alytogrammus* was found by A.F. Aponte (male, ICN-R-13018) hidden under a pile of palm leaves (3°00'05"N, 72°13'9.9"W; 209 m above sea level) at 7:58 am on February 02 2016 in the oil palm plantations of POLIGROW Colombia Ltda, municipality of Mapiripán, department of Meta, Colombia. This region is located in the Orinoquia-Amazonia ecotone 82 Km (airline) northeast from the type-locality (Fig. 1). I report herein the unknown color in life (Fig. 2), change of shades after preservation (Fig. 3B–D) and hemipenial morphology (Fig. 4), besides amplifying the meristic and morphometric variability of this poorly known species (Table 1).

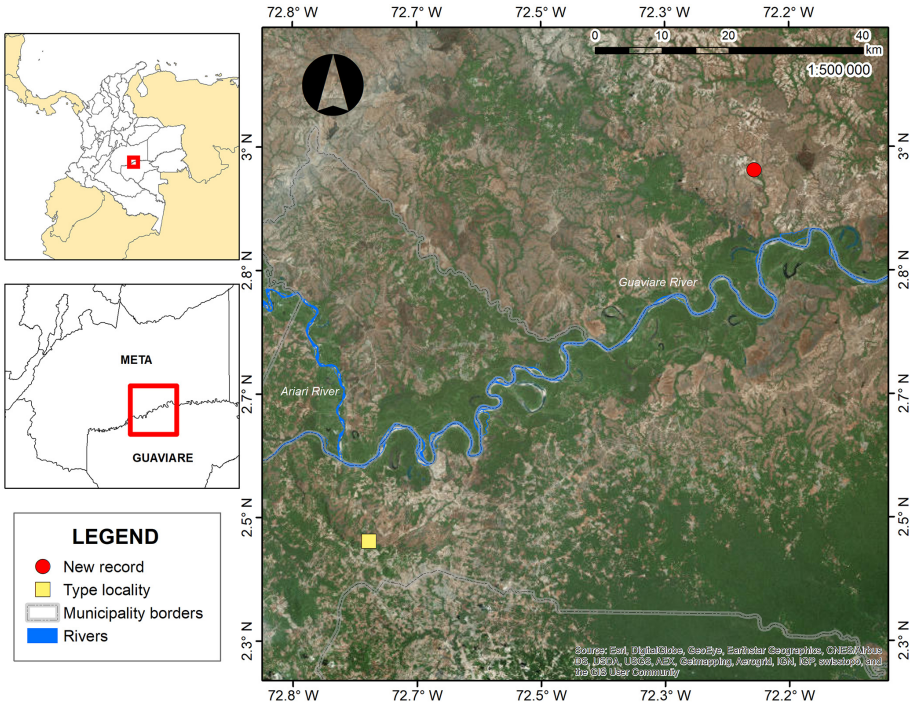

FIGURE 1. Map depicting the extension of distribution range of the poorly-known snake *Atractus alytogrammus* (ICN-R-13018). Symbols are as follow: yellow square = type-locality and red dot = new record of *A. alytogrammus*.

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FIGURE 2. Color in life of *Atractus alytogrammus* (ICN-R-13018). Photo by A.F. Aponte.

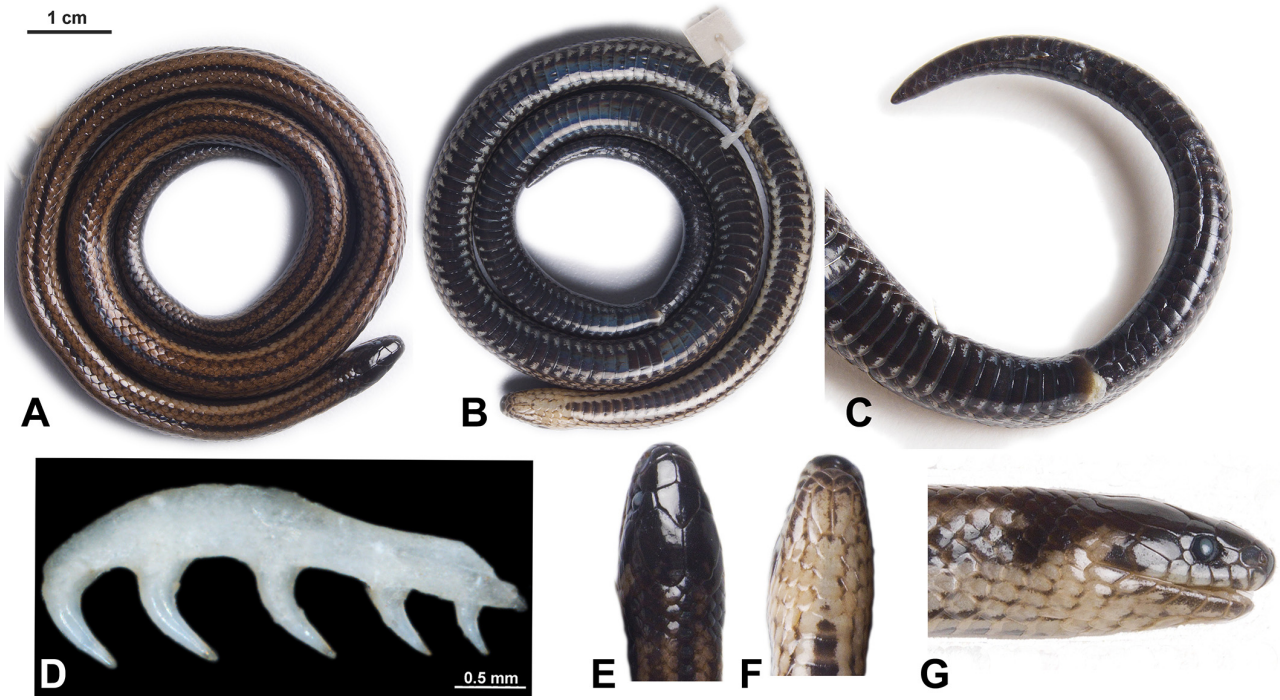

FIGURE 3. Color after preservation: dorsal (A) and ventral (B) views of the body; ventral view of the tail (C); labial view of the maxilla (D); and dorsal (E), ventral (F), and lateral (G) views of the head. Photos by J. Crespo.

Changes of the color in life after preservation: dorsal ground color brown-reddish (vs. color sepia after preservation, Fig. 3A); ventral ground color dark-brown with yellow-cream speckles on the edges of ventrals (vs. dusty-brown ground

color with pale buff speckles, Fig 3B–C); dorsal surface of head dark-brown (vs. hair-brown after preservation, Fig. 3E); gular surface yellow-cream (vs. fawn color after preservation, Fig 3F); all supralabial scales with yellow-cream speckles (vs. most supralabials scales with smoke-gray speckles after preservation, Fig 3G); a smoke-yellow longitudinal continuous line on the fifth dorsal scales, from a point four scales behind posterior tip of parietals to tip of tail (vs. beige color after preservation); a dark-brown vertebral stripe present from posterior tip of parietals to tip of tail (vs. dusty brown after preservation).

The hemipenis in situ (retracted) extends to the level of the 6–7th subcaudal; fully everted hemipenis unilobed, subcylindrical with a hemipenial tip slightly pronounced without being capitate; sulcus spermaticus unforked, centrolineal and deeply grooved, running up to tip of organ and ending on a flat area lacking an intrasulcar crest; basal region of hemipenial body scattered with small spines and nude areas; sulcate side of hemipenis ornamented with small hook-shaped spines that decrease gradually in length from base to the apex, arranged in oblique rows (Fig. 4A); laterally, the hemipenial body is covered with hook-shaped spines that decrease gradually in length from base to the apex, organized in longitudinal rows (Fig. 4B); asulcate side of hemipenis scattered with spines that decrease gradually in length from base to the apex (Fig. 4C).

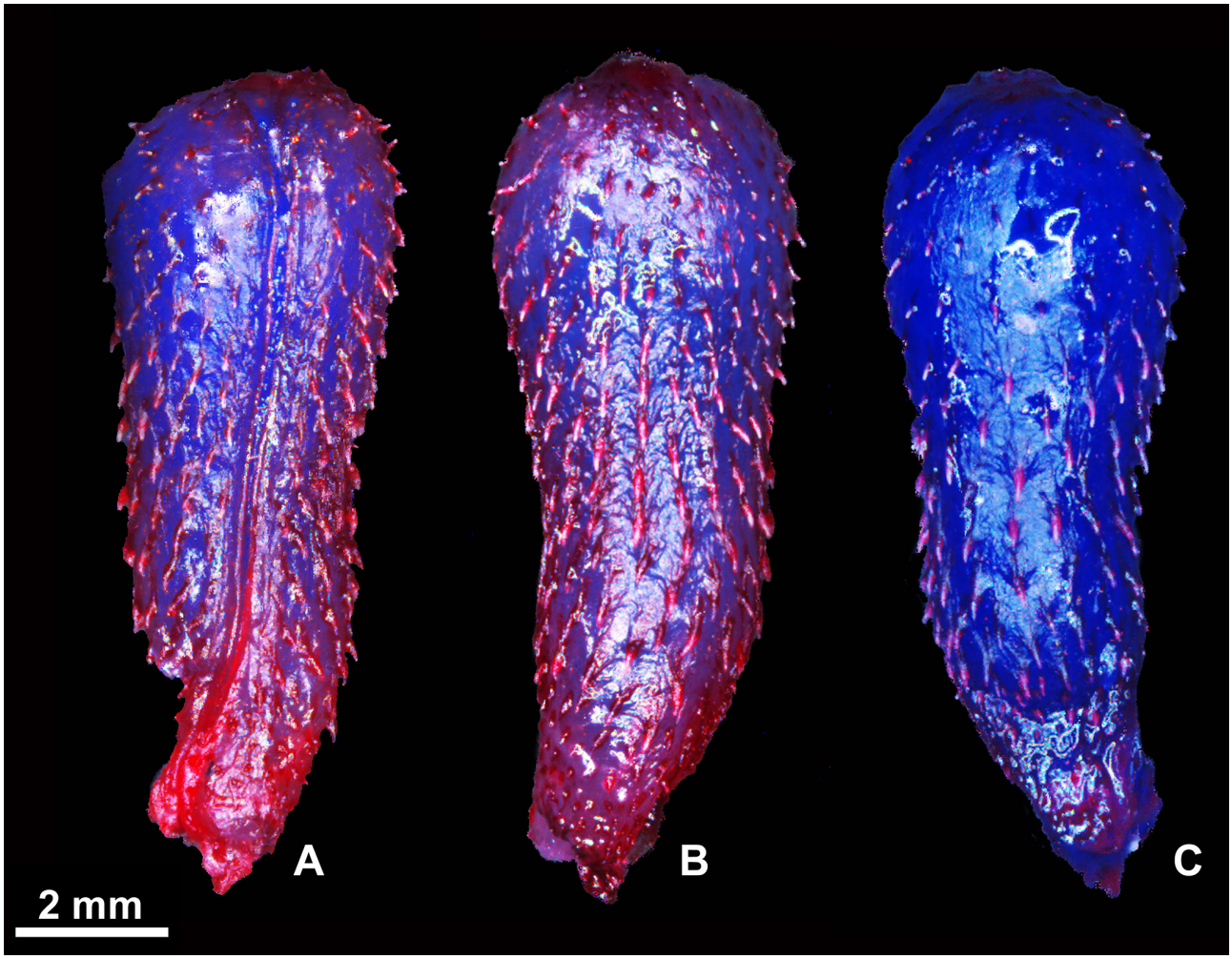

FIGURE 4. Sulcate (A), lateral (B), and asulcate (C) views of the hemipenis of *Atractus alytogrammus* (ICN-R-13018).

The apparent regional endemism of *Atractus alytogrammus* fall into the general misunderstood pattern of range distribution of the *Atractus* species, due to the examination of restricted samples, insufficient comparative efforts with the relevant type material, and the incomplete knowledge of the variability of certain morphological characters (Passos *et al.* 2013b). Among the 150 species of *Atractus* the unilobed hemipenis is known to occur only in *A. steyermarki, A. hoogmoedi* and *A. zidoki* (see Passos *et al*. 2013a; Passos *et al*. 2018). However, the hemipenis of *A. alytogrammus* differs from *A. steyermarki* and *A. zidoki* in having an unforked sulcus spermaticus (Passos et al, 2018), but, it shares similar hemipenial architecture from *A. hoogmoedi* (see fig. 1 from Prudente and Passos, 2010). Nonetheless, *A. alytogrammus* can be distinguish from *A. hoogmoedi* by having > 172 ventral scales in males (vs. < 172 ventral scales in

males), absence of apical pits and supra-cloacal tubercles (vs. presence of apical pits and supra-cloacal tubercles), and presence of a dark-brown vertebral stripe (vs. absence of vertebral stripe). Hence, I propose to place *A. alytogrammus* tentatively as part of *A. collaris* species group sensu Passos *et al*. (2018) as a taxonomic arrangement to be tested in the next future. According these authors, hemipenial morphology is crucial for the recognition and/or corroboration of many *Atractus* species. Particularly, the hemipenial architecture inside *A. collaris* species complex, results to be decisive in corroborating the validity of species. Therefore, the unusual hemipenial morphology of *A. alytogrammus* described here provided new evidence that will help future studies to elucidate the relationship between linages geographically isolated.

TABLE 1. Meristic and morphometric (mm) variation for the know specimens of *Atractus alytogrammus.* Abbreviations are as follow: snout-vent length (SVL), tail length (TL), and total length (TTL).

Character	ICN-R-13018	Holotype (SMF 88371)
SVL (mm)	245	297
LT (mm)	40	35
TTL (mm)	285	297
LT/SVL	16.3%	11.8%
Midbody diameter	4.90	5.20
Ventral scales	186	187
Subcaudal scales	38/39	29/31
Head length	7.20	9.41
Head width	4.85	4.90
Parietal scale length	3.30	3.70
Parietal scale width	1.65	2.00
Frontal scale length	1.60	2.10
Frontal scale width	2.00	2.00
Prefrontal scale length	1.00	1.50
Prefrontal scale width	1.20	1.60
Internasal scale high	0.45	0.70
Inter nasal scale high	0.70	1.04
Eye diameter	0.75	1.03
First temporal scale length	1.15	1.70
Pirst temporal scale high	0.56	0.90
Interorbital length	2.50	3.20
Rostro-orbital length	2.00	2.90
Naso-orbital length	1.15	1.4

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References

Köhler, G. & Kieckbusch, M. (2014) Two new species of *Atractus* from Colombia (Reptilia, Squamata, Dipsadidae). *Zootaxa*, 3872 (3), 291–300.
https://doi.org/10.11646/zootaxa.3872.3.5

Passos, P., Kok, O.J., Albuquerque, N.R. & Rivas, G.A. (2013a) Groundsnakes of the Lost World: a review of *Atractus* (Serpentes:

Dipsadidae) from the Pantepui region, northern South America. *Herpetological Monographs*, 27, 52–86. https://doi.org/10.1655/herpmonographs-d-12-00001r2.1

Passos, P., Ramos, L.O., Pinna, P.H. & Prudente, A.L. (2013b) Morphological variation and affinities of the poorly known snake *Atractus caxiuana* (Serpentes: Dipsadidae). *Zootaxa*, 3745 (1), 35–48. http://dx.doi.org/10.11646/zootaxa.3745.1.3

Passos, P., Prudente, A.L.C., Ramos, L.O., Caicedo-Portilla, J.R. & Lynch, J.D. (2018) Species delimitations in the *Atractus collaris* complex (Serpentes: Dipsadidae). *Zootaxa*, 4392 (3), 491–520. https://doi.org/10.11646/zootaxa.4392.3.4

Prudente, A.L.C. & Passos, P. (2010) New cryptic species of *Atractus* (Serpentes: Dipsadidae) from Brazilian Amazonia. *Copeia*, 2010, 397–404. https://doi.org/10.1643/ch-08-193

Uetz, P., Freed, P. & Hošek, J. (2018) *The Reptile Database: reptile checklist 2018*. Available from: http://www.reptile-database.org/data/Reptile_checklist_2018_02.xlsx (accessed 19 August 2017)