

## Predation by a Cope's False Coralsnake, Pliocercus euryzonus (Cope 1862) (Dipsadidae), on a Catfish (Trichomycteridae: Trichomycterus) in the Northern Andes of Colombia

Juan-P. Durango<sup>1</sup>, Esteban Garzón-Franco<sup>1</sup>, María C. Castellanos-Mejía<sup>1,2</sup>, and Juan C. Arredondo<sup>3</sup>

<sup>1</sup>Semillero de Investigación en Biodiversidad, Departamento de Ciencias Biológicas, Universidad EAFIT, Medellín, Colombia (jdurangocardona@gmail.com [corresponding author], esteban-garzon@hotmail.com, mcastel7nbk@gmail.com)

<sup>2</sup>Laboratorio de Ictiología, Instituto de Biología, Universidad de Antioquia, Medellín, Colombia

<sup>3</sup>Colecciones Biológicas (CBUCES), Facultad de Ciencias y Biotecnología, Universidad CES, Medellín, Colombia (jcas36@gmail.com)

Ope's False Coralsnake (*Pliocercus euryzonus*), a medium-sized, non-venomous dipsadid that reaches a maximum total length of 795 mm, with the tail comprising 38–43% of total length (Savage 2002), is distributed in tropical forests at elevations of 0–2,750 m asl from northeastern Honduras, eastern Nicaragua, Costa Rica, Panama, western Colombia, and northwestern Ecuador (Wallach et al. 2014). *Pliocercus euryzonus* is an uncommon species that forages in leaf litter on the forest floor (Savage 2002). Savage (2002) reported that the closely related Variegated False Coralsnake (*P. elapoides*) appears to feed mainly on small amphibians (e.g., *Bolitoglossa* spp.). To the best of our knowledge, the only known data on the diet of *P. euryzonus* is a single record of an individual feed-

ing on the eggs of Red-eyed Treefrogs (*Agalychnis callidryas*) in Panama (Vriesendorp and Robertson 2007).

Species in the genus *Trichomycterus* (Valenciennes 1832) are small Neotropical catfishes (Siluriformes) that are widely distributed on both sides of the Andes at elevations from sea level to nearly 4,500 m from Costa Rica to Argentina (Fernández and Vari 2004; Férnandez and Osinaga 2006; Castellanos-Morales 2010; Ochoa et al. 2020). In Colombia, the genus is represented by 56 species that are distributed in trans-Andean piedmont and montane river systems, mostly small streams characterized by clear water, rapids, and shorelines with little vegetation (Román-Valencia 2001; DoNascimiento and Prada Pedreros 2020). These fish are



Fig. 1. An adult male Cope's False Coralsnake (*Pliocercus euryzonus*) (EAFIT-R 0036; SVL 49 cm; tail partially lost) (left); dorsal (top) and ventral (bottom) views of a slightly digested catfish (*Trichomycterus* sp.) (EAFIT-P 001; total length 8.5 cm) extracted from EAFIT-R 0036 (right). Photographs by Esteban Garzón-Franco.

benthophagous mesopredators that feed mainly on insects, mollusks, annelids, and crustaceans (Román-Valencia 2001). Little is known about natural predators; the only previous report of predation on a *Trichomycterus rosablanca* is by a freshwater crab, *Neostrengeria charalensis* (Longo et al. 2019). Herein, we document predation on a catfish in the genus *Trichomycterus* by a Cope's False Coralsnake and additional information on microhabitat use by this snake at localities in the northern Andes of Colombia.

At 2039 h on 12 June 2019, during a survey for amphibians and reptiles at El Águila farm in Montebello Village, Municipality of Santo Domingo, Antioquia, Colombia (6.49775°N, 75.18575°W; WGS 84; elev. 1,949 m asl), we found an adult male Pliocercus euryzonus (EAFIT-R 0021) submerged in a puddle barely surrounded by vegetation in the middle of a small streamlet that feeds into Santiago Creek. In response to our presence, it tried to escape downstream by swimming underwater. Once collected and euthanized, we noticed a stomach bulge, which we dissected and from which we extracted a single catfish (*Trichomycterus* sp.) (EAFIT-P 001) that had been ingested head-first (Fig. 1). The slightly digested snout indicated that predation probably had occurred recently. To the best of our knowledge, this is the very first documented report of predation by a snake in the genus Pliocercus on a fish and more specifically on a catfish of the genus Trichomycterus.

We have previously recorded similar behavior and microhabitat use by other individual *P. euryzonus* in different localities in the northern Andes (Fig. 2). From 26–28 July 2018, we collected two individuals in mid-elevation pristine forest in Anorí Municipality (7.34714°N, 75.11954°W; elev. 882 m asl). The first (EAFIT-R 0021), a small juvenile, was found at night (ca. 2000 h) foraging on the surface of a small stream; the second (EAFIT-R 0022), a large adult female, also was found at night (ca. 2100 h) foraging underwater in a pool

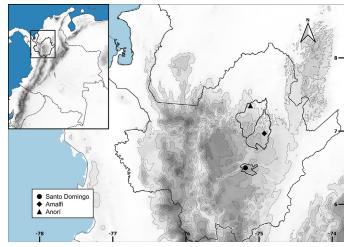


Fig. 2. Localities of the observations of Cope's False Coralsnakes (*Pliocercus euryzonus*) in the northern Andes of Antioquia Department, Colombia.

next to a small waterfall. Two additional records on 3 and 8 February 2021 were in mid-elevation fragmented forest in Amalfi Municipality (6.96701°N, 74.92848°W; elev. 1,200–1,300 m asl). Both were juveniles, one swimming on the surface of a small stream and the second stationary in a pool in the middle of another small stream. Neither was collected.

The anecdotal observations reported herein suggest that *P. euryzonus* is nocturnally active and spends a considerable amount of time foraging in water, similar to what has been observed in other South American dipsadids, including species in the genera *Erythrolamprus*, *Tretanorhinus*, *Thamnodynastes*, and *Helicops* (de Carvalho Teixeira et al. 2017; Bortolanza-Filho et al. 2019; López-Hurtado et al. 2020; Eisfeld and Vrcibradic 2019).

## Acknowledgements

We thank Ana Rueda and Manuel Durango, owners of the El Águila farm. O. Alzate, E. Higuita, L. Doria, S. Gomez, F. Diaz, D. Gómez, and F. Fernandez assisted with fieldwork. L. Gómez-Mesa provided valuable input to the first version of the manuscript. Permits for the collection of specimens of wild species of biological diversity for non-commercial scientific research purposes were issued to the EAFIT University by the National Authority of Environmental Licenses (ANLA), Resolution 1566 of 2014. The snake and fish specimens are stored in the Reptile (EAFIT-R) and Fish (EAFIT-P) Collections in the Universidad EAFIT, Medellín, Colombia, under the Unique National Registry of Biological Collections (RNC) 277.

## Literature Cited

Bortolanza-Filho, D., R. Lourenço-de-Moraes, M. Otani, G.F. Lemos, and C.H. Zawadzki. 2019. New records of the dipsadid snake *Thamnodynastes strigatus* (Günther, 1858) preying on the characid fish *Astyanax bockmanni* Vari & Castro, 2007 in the Atlantic Forest of Southern Brazil. *Herpetology Notes* 12: 613–615.

Castellanos-Morales, C.A. 2010. Trichomycterus sketi: a new species of subterranean catfish (Siluriformes: Trichomycteridae) from the Andean Cordillera of Colombia. Biota Colombiana 11: 33–41.

de Carvalho Teixeira, C., L.F. de Assis Montag, and M.C. dos Santos-Costa. 2017. Diet composition and foraging habitat use by three species of water snakes, *Helicops* Wagler, 1830, (Serpentes: Dipsadidae) in eastern Brazilian Amazonia. *Journal of Herpetology* 51: 215–222. https://doi.org/10.1670/15-161.

DoNascimiento, C. and S. Prada Pedreros. 2020. A new troglomorphic species of *Trichomycterus* (Siluriformes: Trichomycteridae) from northeastern Colombia, with proposal of a new *Trichomycterus* subclade and remarks on some nominal species from Colombia. *Journal of Fish Biology* 96: 968–985. http://dx.doi.org/10.1111/jfb.14286.

Eisfeld, A. and D. Vrcibradic. 2019. Reproductive aspects of the semi-aquatic snake *Erythrolamprus miliaris* (Dipsadidae: Xenodontini) in the state of Rio de Janeiro, southeastern Brazil. *Anais da Academia Brasileira de Ciências* 91: e20170657. https://doi.org/10.1590/0001-3765201920170657.

Fernández, L. and K. Osinaga. 2006. A new *Trichomycterus* (Siluriformes: Trichomycteridae) from Aguarague National Park of the Bolivian preandean region, with comments on relationships within of the genus. *Environmental Biology of Fishes* 75: 385–393. http://dx.doi.org/10.1007/s10641-005-5065-4.

Fernández, L. and R.P. Vari. 2004. New species of *Trichomycterus* from midelevation localities of northwestern Argentina (Siluriformes: Trichomycteridae). *Copeia* 2004: 876–882. http://dx.doi.org/10.1643/CI-04-094R1.

Longo, M., L. Castañeda, J.A. Deosa, J.A. Arias-Mañosca, J. Fernández-Auderset, and C.A. Lasso. 2019. Hábitos alimenticios de los peces y cangrejos cavernícolas de

- El Peñón (Andes), Santander, Colombia, pp. 213–225. In: C.A. Lasso, J.C. Barriga, and J. Fernández-Auderset (eds.), *Biodiversidad Subterránea y Epigea de los Sistemas Cársticos de El Peñón (Andes), Santander, Colombia*. Volume 7. Serie Editorial Fauna Silvestre Neotropical. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, Bogotá, Colombia.
- López-Hurtado, Y., L.Y. García-Padrón, A. González, L.M. Díaz, and T.M. Rodríguez-Cabrera. 2020. Notes on the feeding habits of the Caribbean Watersnake, *Tretanorhinus variabilis* (Dipsadidae). *Reptiles & Amphibians* 27: 147–153. https://doi.org/10.17161/randa.v27i2.14105.
- Ochoa, L.E., A. Datovo, C. DoNascimiento, F.F. Roxo, M.H. Sabaj, J. Chang, B.F. Melo, G.S.C. Silva, F. Foresti, M. Alfaro, and C. Oliveira. 2020. Phylogenomic analysis of trichomycterid catfishes (Teleostei: Siluriformes)

- inferred from ultraconserved elements. Scientific Reports 10: 1–15. https://doi.org/10.1038/s41598-020-59519-w.
- Román-Valencia, C. 2001. Ecología trófica y reproductiva de *Trichomycterus caliense* y *Astroblepus cyclopus* (Pisces: Siluriformes) en el río Quindio, Alto Cauca, Colombia. *Revista de Biología Tropical* 49: 657–666.
- Savage, J.M. 2002. The Amphibians and Reptiles of Costa Rica: A Herpetofauna Between Two Continents, Between Two Seas. The University of Chicago Press, Chicago, Illinois, USA.
- Vriesendorp, C.F. and J.M. Robertson. 2007. *Urotheca (Pliocercus) euryzonus* (Halloween Snake). Diet. *Herpetological Review* 38: 470–471.
- Wallach, V., K.L. Williams, and J. Boundy. 2014. Snakes of the World: A Catalogue of Living and Extinct Species. CRC Press, Boca Raton, Florida, USA.