

First record of a canid (*Atelocynus microtis*) predating on a caecilian amphibian

Diego F. Cisneros-Heredia¹, Diego Mosquera²

¹Universidad San Francisco de Quito, Colegio de Ciencias Biológicas y Ambientales.
Diego de Robles y Vía Interoceánica, Quito, Ecuador.

²Estación de Biodiversidad Tiputini, Universidad San Francisco de Quito.
Diego de Robles y Vía Interoceánica, Quito, Ecuador.

*Autor principal/Corresponding author, e-mail: dcisneros@usfq.edu.ec

Editado por/Edited by: C. Zambrano, Ph.D.

Recibido/Received: 04/29/2010. Aceptado/Accepted: 09/19/2010.

Publicado en línea/Published on Web: 12/08/2010. Impreso/Printed: 12/08/2010.

Abstract

The natural history and ecology of Neotropical forest-canids and caecilian amphibians are little documented, both for their natural rarity and secretive habitats. Herein we report the Short-eared Dog *Atelocynus microtis* predating on the caecilian amphibian *Caecilia tentaculata*. To the best of our knowledge, this is the first predation event of a canid on a caecilian.

Keywords. Canidae, Caeciliidae, predation, Amazonia, Ecuador.

Resumen

La historia natural y ecología de los cánidos de bosques Neotropicales y de los anfibios apodos han sido poco documentados, en ambos casos debido a su rareza natural y hábitos reservados. Aquí reportamos un evento de predación por parte del Perro de Orejas Cortas *Atelocynus microtis* sobre una Cecilia o Ilulo *Caecilia tentaculata*. Basados en una amplia revisión bibliográfica, este parece ser el primer evento de predación reportado de un cánido sobre una cecilia.

Palabras Clave. Canidae, Caeciliidae, predación, Amazonia, Ecuador.



Figure 1: *Atelocynus microtis* carrying a *Caecilia tentaculata*. Tiputini Biodiversity Station, 23 April 2007.

The Short-eared Dog *Atelocynus microtis* (Sclater, 1883) is a medium-sized canid found in undisturbed habitats of western and central Amazonia of Colombia, Ecuador, Brazil, and Bolivia [1, 2]. Despite its wide distribution,

Atelocynus microtis is one of the rarest carnivores in the world and has been classified under the IUCN Red List category of Near Threatened; very little is known about its natural history [2, 3]. Data on its diet are scant and most existing information derives from a long-term study in Cocha-Cashu, Peru [2]. Available data suggest that *Atelocynus microtis* is a generalist carnivore, with an important dietary contribution coming from fishes, and including insects, small mammals, fruits, amphibians, crabs, birds and reptiles [2, 3, 4]. Caecilians are a poorly understood group of tropical, limbless worm-like fossorial amphibians of the order Gymnophiona. Their predator-prey relationships are inadequately known, with few reports of predators. Here, we contribute information on the diet of *Atelocynus* and predators of caecilians by reporting *Atelocynus microtis* feeding on a caecilian in Ecuadorian Amazonia.

A photograph of an adult *Atelocynus microtis* carrying a caecilian in the mouth was obtained on 23 April 2007 at 06:47 at the Tiputini Biodiversity Station (Fig. 1). Tiputini Biodiversity Station—TBS is located ca. 280 km

ISSN 1390-5384



ESE from Quito, in Amazonian Ecuador (0°38'17"S, 76°09'01"W; 190–270 m elevational range). This research station is managed by Universidad San Francisco de Quito (USFQ) and preserves a tract of 6.5 km² of old-growth tropical forest. Primary Lowland Evergreen Non-flooded forests cover most of TBS, with narrow areas along the river and streams covered by flooded forests. A photographic monitoring programme using camera traps triggered by heat and motion was established at TBS in December 2004. The photograph of *Atelocynus* with the caecilian was taken by a camera set along a trail located in a hilly area covered by non-flooded forest. Identification of the caecilian was based on its body size and colouration, a combination of features that is diagnostic for *Caecilia tentaculata* (Linnaeus, 1758) among all Gymnophiona from Amazonia, where it is the stouter, longer, and heavier caecilian.

As far as we are aware, this is the first report of *Atelocynus* or any other canid preying on caecilians, and in fact the first report of *Atelocynus* feeding on a fossorial, elongate vertebrate. Previously the only amphibians reported as part of its diet have been frogs [2]. Reported predators of caecilians mainly include a variety of snakes ([5, 6]; and citations therein), with occasional records of spiders, ants, turtles, domestic chickens, hawks, free-ranging pigs, and tenrecs preying on caecilian [7, 8]. Caecilians have granular glands in their skin that produce toxins, which may help dissuade predators [9], yet *Atelocynus microtis* did not seem to be deterred by toxins that *Caecilia tentaculata* might produce. *Caecilia tentaculata* inhabits most wet-forested areas of South America east of the Andes, including the Amazonian lowlands. The geographic range of *Atelocynus microtis* completely overlaps that of *Caecilia tentaculata*, and predation events may not be rare. However, due to the secretive habits of both species, little information is available on their ecological interactions.

Acknowledgements

Support for the camera-trapping project was provided by a National Geographic Society Grant (7602-04), with ongoing support provided by University of Missouri–St. Louis, Universidad San Francisco de Quito, and Carol Walton Expeditions, Inc. Research permits were provided by Ministerio del Ambiente del Ecuador. We express our gratitude to C. Barriga de Romo, D. Romo, Ma. E. Heredia, L. Heredia, and the entire staff of TBS for their continuous support.

References

- [1] Berta, A. 1986. "*Atelocynus microtis*". *Mammalian Species*. 256, 1–3.
- [2] Leite, M. and Williams, R. 2004. "Short-eared dog *Atelocynus microtis*". *Canids: Foxes, Wolves, Jackals, and Dogs - Species Status and Conservation Action Plan*. Cambridge: IUCN/SSC Canids Specialist Group. 1, 26–31.
- [3] Peres, C. 1992. "Observations on hunting by small-eared (*Atelocynus microtis*) and bush dogs (*Speothos venaticus*) in central-western Amazonia". *Mammalia*. 55, 635–639.
- [4] Defler, T. and Santacruz, A. 1994. "A capture of and some notes on *Atelocynus microtis* (sclater, 1883) (Carnivora: Canidae) in the Colombian Amazon". *Trianea*. 5, 417–419.
- [5] Kupfer, A., Gower, D., and Himstedt, W. 2003. "Field observations on the predation of the caecilian amphibian, genus *Ichthyophis* (fitzinger, 1826), by the red-tailed pipe snake *Cylindrophis ruffus* (Laurenti, 1768)". *Amphibia-Reptilia*. 24, 212–215.
- [6] Gower, D., Rasmussen, J., Loader, S., and Wilkinson, M. 2004. "The caecilian amphibian *Scolecophorus kirkii* as prey of the burrowing asp *Atractaspis aterrima* gunther: Trophic relationship of fossorial vertebrates." *African Journal of Ecology*. 42, 83–87.
- [7] Stoddart, D. 1984. "Biogeography and ecology of the seychelles islands". *Monographiae Biologicae (Netherlands)*. 55, 1–691.
- [8] Greeney, H., Gelis, R., and Funk, W. 2008. "Predation on caecilians (*Caecilia orientalis*) by barred hawks (*Leucopterni sprinceps*) depends on rainfall". *Herpetological Review*. 39, 162–164.
- [9] Duellman, W. and Trueb, L. 1994. "Biology of amphibians". *Baltimore: JohnsHopkins University Press*.