

CANNIBALISM OF *LIOPHIS LINEATUS* (LINNAEUS) (SERPENTES: COLUBRIDAE) IN NATURAL CONDITIONS

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ABSTRACT: This note describes the observation of a specimen of the colubrid snake *Liophis lineatus* that swallowed a co-specific individual after trying to obtain the same frog prey (*Leptodactylus* sp.). The serpentes were seen among construction debris in a farm near the town of La Fría, in Táchira state, Venezuela, in august 2008. Although there is little information on the natural history of *Liophis lineatus*, the reported predator behavior of this species suggests this is a case of accidental cannibalism.

KEY WORDS: Ophiophagy, predation, diet, Amphibia, *Leptodactylus*, Lake Maracaibo Basin, Venezuela.

RESUMEN: M. Escalona. "Canibalismo de *Liophis lineatus* (Linnaeus)(Serpentes: Colubridae) en condiciones naturales". En esta nota reportamos la observación de un evento de canibalismo en el colúbrido *Liophis lineatus*, luego de que dos serpientes de esta especie intentaran alimentarse de la misma presa de rana (*Leptodactylus* sp.). Las serpientes fueron observadas entre escombros en una finca cerca del pueblo La Fría, en el estado Táchira, Venezuela, en agosto de 2008. Aunque se conoce poco sobre la historia natural de *Liophis lineatus*, el comportamiento depredador reportado para esta especie sugiere que este es un caso de canibalismo accidental.

PALABRAS CLAVE: Ofiofagia, depredación, dieta, Amphibia, *Leptodactylus*, Cuenca del Lago de Maracaibo, Venezuela.

INTRODUCTION

The cannibalism is a reported phenomenon for snakes of the families Colubridae, Elapidae and Viperidae (Polis and Myers 1985, Engeman *et al.* 1996, Krysko 2002, Martínez *et al.* 2006, Mociño-Deloya *et al.* 2008, Capellà *et al.* 2010). It is considered a relatively common trophic behavior among snakes, which is important in the ecology of many species (Polis and Myers 1985). In 2006, Bonfligio and Lema published the first record of ophiophagy in the genus *Liophis*, after these authors encountered a junior of *Helicops infrataeniatus* Jahn, 1865, inside the stomach of a female *Liophis miliaris* Linnaeus, 1758. In this same year, Pereira *et al.* (2006) reported cannibalism for the same species in captivity.

Several authors (Vitt 1983, La Marca and García 1987, Dixon (1989), La Marca and Soriano 2004, Outerl 2005, Esqueda *et al.* 2009, Figueiredo de Andrade 2009, Albarelli and Santos-Acosta, 2010), have reported the feeding habits of some *Liophis* snakes, which included earthworms, arthropods, fishes, lizards, little amphibians (Anura and Caudata, including in some cases anuran larvae) and rodents. Most *Liophis* snakes are known for their ingest preference for frogs; however, they are characterized among xenodontine colubrids for being generalist species (Vitt 1983). In this note, I report the first case of cannibalism in *Liophis lineatus*.

THE OBSERVATION

Two specimens of *Liophis lineatus* Linnaeus, 1758, were seen ingesting the same frog prey (*Leptodactylus* sp.) at mid-day, on 4 august 2008. These were among constructing debris near a house in the "Puerto Rico" farm, 75 Km NW of La Fría town in Táchira state, Venezuela (8°14'26"N, 72°16'19"W; 98 m.a.s.l.). After the simultaneous predation event was detected, both snakes along with the captured prey were placed on a flat surface for to be observed and to gather the photographic record. The bigger specimen was ingesting the amphibian's head first, while the smaller was swallowing at the same time one of frog's posterior extremities (Fig. 1a); since the beginning of this observation the prey was motionless, with ventral surfaces showing up. Both snakes were apart from each other, trying to obtain the prey, but only the largest specimen managed to ingest a large portion of the frog (Fig. 1b). The bigger snake finally ingested all of its prey, at the same time ingesting its competitor (Fig. 1c).

CONCLUSIONS

Because most of the natural history of *Liophis lineatus* is unknown (Dixon 1989), this report is important to tell us about one of its types of prey and give us an idea about some feeding behavior.

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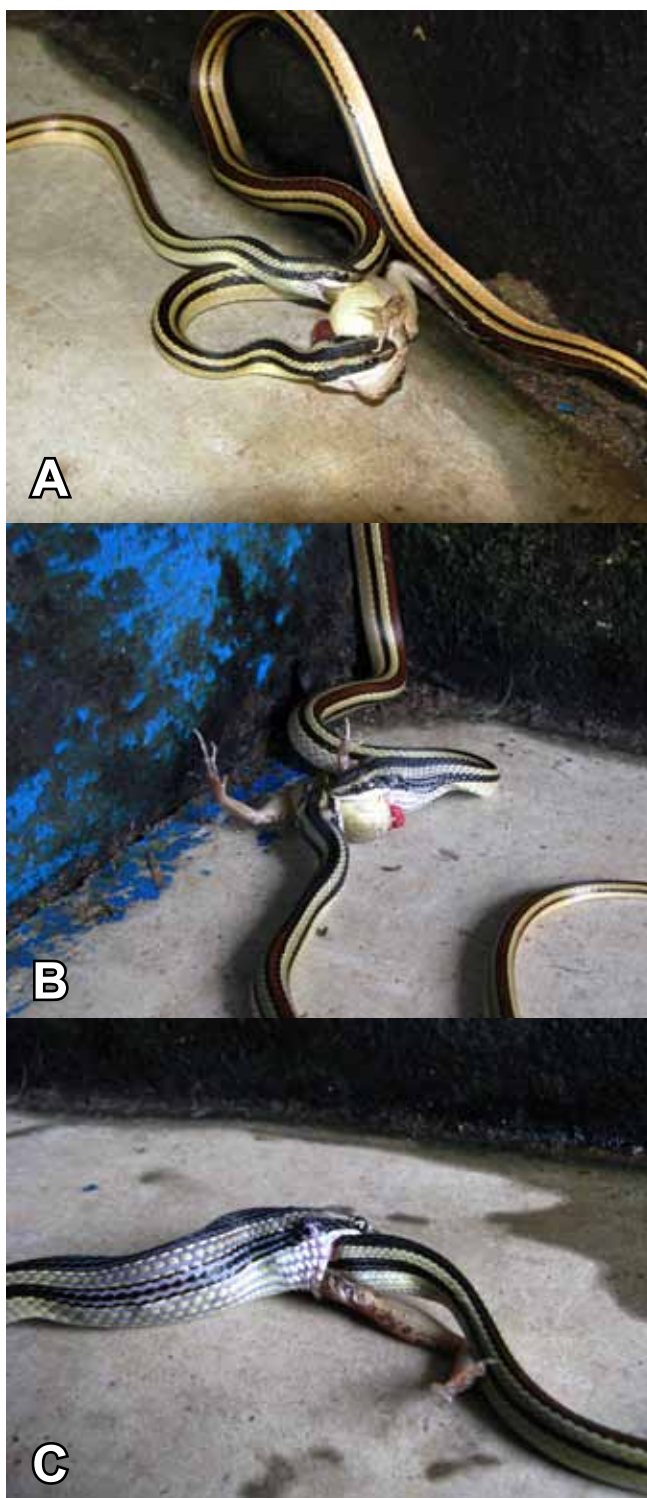


FIG. 1. Two *Liophis lineatus* preying upon a *Leptodactylus* frog. (A) Continued predation, after removal from the wild and placing of specimens on a concrete's floor. (B) Bigger *Liophis lineatus* swallowing a larger portion of its prey. (C) Bigger snake almost totally ingesting the frog and the anterior part of the smaller snake.

Dos Liophis lineatus depredando sobre una rana Leptodactylus. (A) Depredación continuada después de remoción desde el campo hasta una placa de concreto. (B) Liophis lineatus más grande ingiriendo una porción mayor de su presa. (C) Culebra de mayor tamaño ingiriendo totalmente la rana y la parte anterior de la serpiente más pequeña.

Although several xenodontine species ingest frogs, there is certain specificity in the kind of prey species among these snake species. The later has been attributed to be a consequence of its adaptive morphology, expressed in the wide and large of head, for example (Vitt 1983), which suggest that several of these species are not adapted to ophiophagy. Due to the fact that one of the reported ingested specimens was a co-specific to the snake swallowing all the prey items (Fig. 1) and considering the above reasoning, it is reasonable to think that it was an accidental cannibalism event consequence of the competition involving a prey item in common. However, the apparent facility with which the specimen swallowed its co-specific open questions like: are other snakes usually prey item of this species? Is this a non-accidental behavior? These questions reflect our current status of knowledge on the natural history of *Liophis lineatus*.

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