

Predation on *Iguana iguana* (Squamata: Iguanidae) by *Boa constrictor* (Squamata: Boidae) in a fluvial island in the Amazonas river, Brazil, including a list of saurophagy events with *Boa constrictor* as predator

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ABSTRACT

Predation events known as saurophagy occurs when lizards are involved as prey. Whether by cannibalism or saurophagy such events has been well documented in the last years. This paper report a predation event on *Iguana iguana* by *Boa constrictor* recorded in a fluvial island in the Amazonas River, Brazil. Also, provides a list of saurophagy events involving *B. constrictor* as predator. During a field trip we found an individual of *B. constrictor* in the process of ingesting a common green iguana (*I. iguana*), swallowing the headfirst on an upland forest. We found a total of eight lizards as prey of *B. constrictor*, belonging to three families: Iguanidae, Teiidae and Tropiduridae.

Key Words: Saurophagy; Predator/prey size; Diet.

Predation events involving lizards as prey are known as saurophagy (Vitt *et al.*, 1996; Passos *et al.*, 2016; Pergentino *et al.*, 2017). In the last years the incidence of such predation events has been well documented (Kokubum and Lemos 2004; Sales *et al.*, 2010; Costa-Campos and Souza, 2013; Robbins *et al.*, 2013; Passos *et al.*, 2016; Pergentino *et al.*, 2017). In this note we report a predation event on *Iguana iguana* by *B. constrictor* recorded in a fluvial island in the Amazonas river, Brazil. Also, we present a list of saurophagy events in which *Boa constrictor* are involved as predator.

Boa constrictor are sit-and-wait strategists, occupying semi-arboreal habitats and feeding both in terrestrial and arboreal environments (Pizzatto *et al.*, 2009). This snake is distributed in the Neotropics from northern Mexico to Argentina, and the West Indies, exploring various vegetation types, such as rainforests, savannas and wetlands (Henderson *et al.*, 1995). It is considered generalist and opportunistic in terms of diet and many authors reported predation events with *B. constrictor* as predator for amphibians (Pizzatto *et al.*, 2009), reptiles (Quick *et al.*, 2005), birds (Rocha-Santos *et al.*, 2014) and mammals (Sorrell *et al.*, 2011).

On 19 October 2012, at 1347 h, during a field trip to Reserva Biológica do Parazinho (0.875° N, 49.987° W; WGS84), a fluvial island and part of the Islands of Bailique in the municipality of Macapá, and the Amazon River Basin, Brazil, we found an individual of *B. constrictor* in the process of ingesting a common green iguana (*I. iguana*), swallowing the headfirst (Fig. 1) on an upland forest. We photographed the event and continued to observe the ingestion process for about 30 minutes.

The ingest prey headfirst is cited by Queiroz and Queiroz (1987) and Maia-Carneiro *et al.* (2016) as a common tactic used by the snakes to reduce the time and energy spent to swallow the prey, avoiding the resistance offered by appendages and body scales. Cases of predation by *B. constrictor* initiated by the head of prey have also been reported in events of saurophagy, including one involving preying upon *I. iguana* and other two involving *Ameiva ameiva* and *Cnemosaura melanosterna* as prey (Reed *et al.*, 2006; Oliveira *et al.*, 2015; Silva *et al.*, 2016).

Events of saurophagy in which *B. constrictor* are involved as predator are given in Table 1. We found a total of eight species of lizards as prey, represented by five genera. The most frequent prey



Figure 1. An adult *Boa constrictor* starting to consume a *Iguana iguana* in the Reserva Biológica do Parazinho, municipality of Macapá, Amapá state.

found was *I. iguana*, with two previously reports in scientific literature and the further record described above (Table 1). Predator/prey size relationship has been documented among several snakes, including species of the family Boidae (Slip and Shine, 1988; Pizzatto *et al.*, 2009).

Shine (1991) discussed that larger snakes con-

sumes larger preys due to limitations on the predator's abilities to capture small prey (for example, small prey tend to be found in small crevice and larger predators have physical limitation to ingress in such crevices). Also, according to Schoener (1972) the cost of ingest small prey items are high for larger predators, once that when the snake uses the am-

Table 1. List of prey of *Boa constrictor* in saurophagy events.

Family	Prey	Source
Iguanidae (4)	<i>Ctenosaura oaxacana</i> Köhler & Hasbún, 2001	Kartje <i>et al.</i> , 2016
	<i>Ctenosaura melanosterna</i> Buckley & Axtell, 1997	Reed <i>et al.</i> , 2006; Montgomery <i>et al.</i> , 2014
	<i>Iguana delicatissima</i> Laurenti, 1768	Knapp <i>et al.</i> , 2009
	<i>Iguana iguana</i> (Linnaeus, 1758)	Quick <i>et al.</i> , 2005; Freitas <i>et al.</i> , 2009; Oliveira <i>et al.</i> , 2015; This Work
Teiidae (3)	<i>Ameiva ameiva</i> (Linnaeus, 1758)	Martins and Oliveira (1999); Pizzatto <i>et al.</i> , 2009; Bernarde and Abe (2010); Silva <i>et al.</i> , 2016
	<i>Ameiva bifrontata</i> Cope, 1862	Quick <i>et al.</i> , 2005
	<i>Cnemidophorus</i> sp.	Martins and Oliveira (1999)
	<i>Cnemidophorus arubensis</i> Lidth de Jeude, 1887	Quick <i>et al.</i> , 2005
	<i>Tupinambis</i> sp.	Martins and Oliveira (1999)
	<i>Tupinambis teguixin</i> (Linnaeus, 1758)	Rocha and Bernarde (2012)
Tropiduridae (1)	<i>Tropidurus hygomi</i> Reinhardt & Lütken, 1861	Vieira <i>et al.</i> , 2013

bush to capture their prey, it exposes its location to other potential prey items. Therefore, larger snakes may ignore small prey items, according to optimal foraging theories to snakes (see Mushinsky, 1987).

Also, some authors suggest that in island populations lizards represent a highly important component on the diet of Boidae snakes (Quick *et al.*, 2005; Pizzatto *et al.*, 2009). However, data on feeding habits and trophic interactions were not sampled in this study.

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