



## ***Erythrolamprus miliaris* (LINNAEUS, 1758) (SQUAMATA: DIPSADIDAE): A NEW PREY ITEM OF *Tropidurus torquatus* (WIED-NEUWIED, 1820) (SQUAMATA: TROPIDURIDAE) IN SOUTHEASTERN BRAZIL**

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**Abstract:** Although ophiophagy is not a well-known event among neotropical lizards, occasional snake predation events have been reported for some species. For *Tropidurus torquatus* only one record of predation on *Phalotris matogrossensis* is currently known. Here we report the second record of ophiophagy in *Tropidurus torquatus*, adding a new prey item to its known diet, and we provide a review of vertebrate prey consumed by this enigmatic lizard species. Although when compared to other lizard species, *T. torquatus* has a substantial number of records documenting the predation of small vertebrates, these records are occasional and are likely the result of opportunistic events.

**Keywords:** Atlantic Forest; diet; lizard; ophiophagy; predation; snake.

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Lizards commonly comprise part of the diet of several snake species (e.g. Maia-Carneiro *et al.* 2016, Dubeux *et al.* 2020, Santana & Teixeira 2020, Sousa *et al.* 2020), however, in some cases, the inverse of this trophic relationship can be observed (Santos *et al.* 2017). Although ophiophagy is not a well-known event among neotropical lizards, occasional snake predation events have been reported for some species (see below). In most cases, these lizard species (predators) are

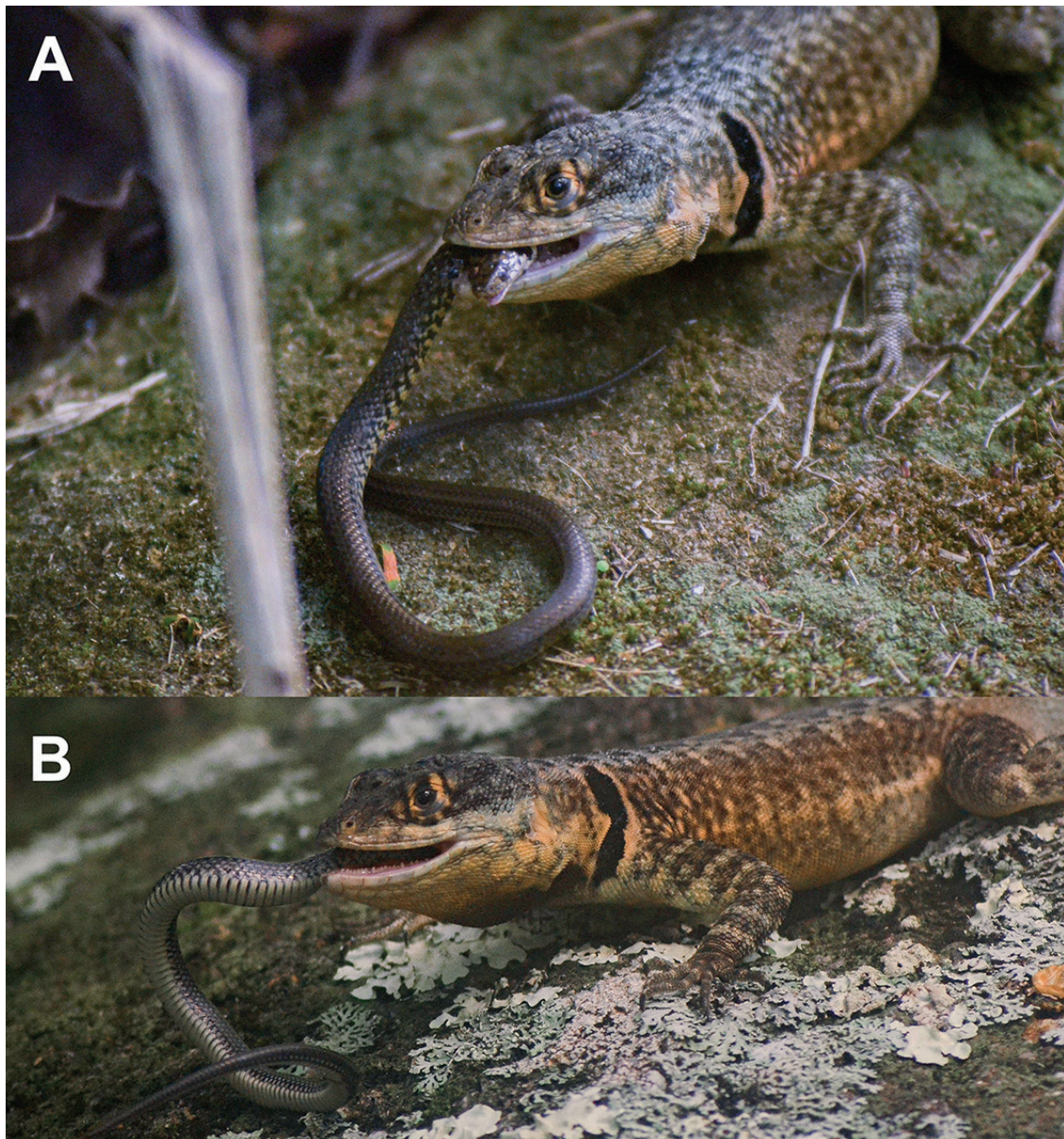
considered to be generalists in terms of their diet (Santos *et al.* 2017) and are known to prey on other small vertebrates such as amphibians, lizards, and even small birds (Ribeiro & Freire 2009, Guedes *et al.* 2017).

This is the case of *Tropidurus torquatus* (Wied-Neuwied 1820) (Tropiduridae), a medium-sized (average snout-vent length SVL of 101 mm in males and 87 mm in females; Pinto *et al.* 2005) lizard, widely distributed in south-eastern

Brazil, occupying open areas in the Cerrado and Restingas habitats along the eastern Brazilian coast (Rocha *et al.* 2000, Siqueira *et al.* 2013). This species is an opportunistic forager (*e.g.* Bergallo & Rocha 1994, Rocha *et al.* 2000) and its diet is mainly composed of invertebrates (Teixeira & Giovanelli 1999, Fialho *et al.* 2000), plant parts (fruits and flowers; Fialho *et al.* 2000, Carvalho *et al.* 2007, Siqueira *et al.* 2013), and occasionally small vertebrates (Pergentino *et al.* 2017, Koski *et al.* 2018), including some records of cannibalism (Dutra 1996, Kiefer *et al.* 2006). There is only one known record of ophiophagy in *T. torquatus*, on the small snake *Phalotris matogrossensis* Lema, D'Agostini & Cappelari, 2005 (Santos *et al.* 2017).

Here we report the second record of ophiophagy in *Tropidurus torquatus*, adding a new prey item to its known diet, and we provide a review of the vertebrate prey of this enigmatic lizard species.

On 26 March 2019 at 10:20, during a visit to the Parque Estadual (State Park) do Desengano, municipality of Santa Maria Madalena, state of Rio de Janeiro, in southeastern Brazil (21°57'06.9"S 42°00'52.4"W; Datum WGS84; approximately 600 m above sea level), an adult *T. torquatus* male was observed on the rocks near the visitors' parking lot. The lizard had in its mouth a juvenile *Erythrolamprus miliaris* (Linnaeus, 1758) individual (Figure 1A), a medium-sized Dipsadidae snake (average SVL of 101.5 cm;



**Figure 1.** Record of *Erythrolamprus miliaris* predation by *Tropidurus torquatus* at the Parque Estadual do Desengano, municipality of Santa Maria Madalena, state of Rio de Janeiro, Brazil.



Pizzato & Marques 2006) with nocturnal and diurnal habits (Sazima & Haddad 1992, Giraudo 2001, Marques *et al.* 2004) widely distributed in South America (Wallach *et al.* 2014, Nogueira *et al.* 2020). The snake was still alive and was writhing trying to escape. The lizard was observed for a few minutes, little movement on the surface of the rock was observed and it manipulated the prey to swallow it. After approximately 15 minutes, when about 30 % of the prey had already been ingested (Figure 1B), the lizard left our field of view.

Although when compared to other lizard species, *T. torquatus* has a substantial number of predation records on small vertebrates (N = 23; see Table 1), these records are occasional and are likely the result of opportunistic events. Studies that aimed to characterize the diet of different populations of *T. torquatus* in a systematic way and with significant samples, identified a prevalence of invertebrates in their diet, with a marked predominance of ants (41 – 58%; Bergallo & Rocha 1994, Teixeira & Giovanelli 1999, Fialho *et al.* 2000). In relation to vertebrate

prey, lizards were the most prevalent (83 %; N = 19), with representatives of eight species belonging to the families Gekkonidae (21.73 %; N = 5; 1 spp.), Mabuyidae (21.73 %; N = 5; 2 spp.), Phyllodactylidae (13.4 %; N = 3; 1 spp.), Teiidae (17.37 %; N = 4; 3 spp.) and Tropiduridae (8.69 %; N = 2; 1 spp.; See Table 1 for a list of references). The only record of a snake in the *T. torquatus* diet is related to an unsuccessful predation event of *Phalotris matogrossensis* (Dipsadidae; 4.34 %; N = 1) in the municipality of Poconé, state of Mato Grosso, Brazil. After killing the snake, the lizard did not ingest it and abandoned it, probably due to the large size of the prey (Santos *et al.* 2017). In addition, there are also records of predation on amphibians (Anura: Hylidae; 4.34 %; N = 1; 1 spp.) and mammals (Rodentia: Muridae; 4.34%; N = 1; 1 spp.; see Table 1 for list of references).

Although we do not have visual confirmation of the complete ingestion of the *E. miliaris* individual, this record presents a new potential prey item for *T. torquatus* and reinforces the opportunistic habit of this predator by increasing

**Table 1.** Vertebrate prey recorded in the *Tropidurus torquatus* diet. N = number of registered individuals.

Prey	Reference	N
<b>AMPHIBIANS</b>		
<b>Hylidae</b>		
<i>Scinax cuspidatus</i> (Lutz, 1925)	Kiefer <i>et al.</i> (2006)	1
<b>LIZARDS</b>		
<b>Gekkonidae</b>		
<i>Hemidactylus mabouia</i> (Moreau de Jonnés, 1818)	Araújo (1991), Teixeira & Giovanelli (1999), Galdino & Van Sluys (2004)	5
<b>Mabuyidae</b>		
<i>Brasiliscincus agilis</i> (Raddi, 1823)	Teixeira & Giovanelli (1999)	3
<i>Psychosaura macrorhyncha</i> (Hoge, 1946)	Kiefer <i>et al.</i> (2006)	2
<b>Phyllodactylidae</b>		
<i>Gymnodactylus darwini</i> (Gray, 1845)	Teixeira & Giovanelli (1999)	3
<b>Teiidae</b>		
<i>Ameivula nativo</i> (Rocha, Bergallo & Peccinini-Seale, 1997)	Peloso & Pavan (2007), Guimarães & Araújo (2018)	2
<i>Ameivula ocellifera</i> (Spix, 1825)	Kokubum & Lemos (2004)	1
<i>Glaucomastix littoralis</i> (Rocha, Araújo, Vrcibradic & Costa, 2000)	Kiefer <i>et al.</i> (2006)	1
<b>Tropiduridae</b>		
<i>Tropidurus torquatus</i> (Wied, 1820)	Dutra (1996), Kiefer <i>et al.</i> (2006)	2

**Tabela 1.** Continua na próxima página...  
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Prey	Reference	N
<b>SNAKES</b>		
<b>Dipsadidae</b>		
<i>Erythrolamprus miliaris</i> (Linnaeus, 1758)	Present study	1
<i>Phalotris matogrossensis</i> (Lema, D'Agostini & Cappelari, 2005)	Santos <i>et al.</i> (2017)	1
<b>MAMMALS</b>		
<b>Muridae</b>		
<i>Rattus rattus</i> (Linnaeus, 1758)	Gasparini & Peloso (2007)	1

their known prey items in Atlantic Forest environments in southeastern Brazil.

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