

# Defensive behaviour events of *Ophiodes striatus* (Reptilia: Squamata) during an environmental study in state of São Paulo, Brazil

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A species' ability to defend itself against predators is directly correlated to its survival. In prey-predator interactions these mechanisms are important elements of a species' evolutionary history (Tozetti et al., 2009). However, little is known about the defensive repertoires of many species, especially those considered rare or difficult to observe (Menezes et al., 2015; Menezes et al., 2017). Since the Cambrian Period, reptiles have developed mechanisms that allowed them to survive throughout their evolutionary history, especially when confronted with disadvantageous interactions, such as predation (Borges et al., 2015).

Lizards of the genus *Ophiodes* (Squamata: Anguinae) (Wagler, 1828) are characterized by their fossorial habits (Vitt and Caldwell, 2013), cylindrical and elongated body, with absence of anterior limbs and vestigial posterior limbs (Cunha, 1961). Currently, this genus comprises six species distributed from the

eastern Andes to Brazil, and through Bolivia, Paraguay, Argentina and Uruguay (Peters and Donoso-Barros 1970; Borges-Martins, 1998; Pizzatto, 2005; Cacciali and Scott, 2015; Entiauspe-Neto et al., 2017; Uetz, Freed and Hošek, 2019).

Many aspects of the biology and ecology of the species belonging to the genus *Ophiodes* are poorly known (Cacciali and Scott 2015). However, it is known that individuals of this genus have ovoviviparous reproduction and sexual dimorphism evidenced by size, with females larger than males (Pizzatto, 2005; Barros and Teixeira 2007). On December 8<sup>th</sup>, 2017, at 23:32 PM, an individual of *Ophiodes striatus* (Spix, 1824) was found during the wild fauna monitoring of PCH Palmeiras, a small hydropower plant in the municipality of Guará, state of São Paulo, Brazil (20°33'52.18"S, 47°46'41.06"O; 583 m a.s.l.). The observed individual was crossing a road between a sugar cane plantation and a remnant forest patch. After approximately five minutes of observation, the lizard suddenly moved, elevating its anterior body region until its head reached about 15 cm above the ground (Fig. 1). After losing its balance, the animal returned to its original posture with its entire ventral surface in contact with the substrate. This behaviour was observed at least eight times during a maximum time-frame of 30 minutes. Based on data available in the literature, this is the first documented record of the defence behaviour "head-up" for the genus *Ophiodes*, from the species *Ophiodes striatus*. This defensive behaviour has been reported in other serpentine reptiles, such as *Anilius scytale*, for which Bates (1964) observed both of the "head-up" and "tail lift" behaviours. Silva (2016) observed this same behaviour in captivity for the species *Crotalus durissus*, where some individuals assumed either a coiled or stretched posture and raised their head or the anterior portion of the body after undergoing stimuli (such as

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**Figure 1.** *Ophiodes striatus* defensive behaviour observed during wildlife monitoring of PCH Palmeiras, in the municipality of Guarã, state of São Paulo, Brazil. Photos: Pimenta, M.A.

approach, apprehension and handling), allowing for better observation of the environment and the proximity of other species.

The mechanisms of interaction between prey and predator are complex and very diverse, constituting important elements for a deeper knowledge of a species' natural history (Greene, 1988; Martins, 1996; Martins *et al.*, 2008; Maia-Carneiro *et al.*, 2012). In this way, the behaviour observed in *Ophiodes striatus* complements the available information on the ethology of species of this genus.

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