May the force be with us: predation of the gecko *Hemidactylus mabouia* by the ant *Pheidole oxyops*

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For ectothermic species, external factors such as prey availability and social interaction might be determinant to explore different food sources (Vitt & Caldwell, 2014). Conversely, intrinsic factors such as activity period also influence the diet and predation potential (Torello-Viera & Marques, 2017). Lizards, snakes and birds are the main vertebrate predators of reptiles in nature (Schalk & Cove, 2018). Among invertebrates, spiders are the main predators of reptiles (Oliveira et al., 2017) and ants are rarely recorded (Sazima, 2015).

Knowing the predator-prey interactions, whether natural or opportunistic, helps in understanding the population processes of species control (Schalk & Cove, 2018; Suraci et al., 2022). For example, describing predatory events on exotic and invasive species are important for understanding population dynamics, which is crucial for their effective control (Silva & Ribeiro-Filho, 2009; Andrade et al., 2015; Cabrera-Guzmán et al., 2015).

The Gecko *Hemidactylus mabouia* (Moreau de Jonnès, 1818) is native to Africa (Carranza & Arnold, 2006) and was

accidentally introduced into the Americas during European colonization (Meshaka, 2000; Howard et al., 2001; Rocha et al., 2011). In Brazil, there are published records of this species since the 17th century (Agarwal et al., 2021) and the species has expanded its distribution in open habitats (Rocha et al., 2011) and anthropized areas (Vanzolini et al., 1980), which offer suitable phytophysiognomic conditions for colonization.

This species is known as prey for many taxa, mostly snakes and lizards (Borroto-Páez & Reyes Pérez, 2020). However, there are few predation reports of *H. mabouia* by invertebrates, especially Hymenoptera (Sazima, 2015; Borroto-Páez & Reyes Pérez, 2020). We extend this information with the first predation record of *H. mabouia* by the ant *Pheidole oxyops* Forel, 1908 (Fig. 1).

The event occurred on 25 July 2017 at 09:38 am in Campo Grande, Mato Grosso do Sul, Brazil, during fieldwork in a Cerrado fragment of the Reserva Particular do Patrimônio Natural of Universidade Federal de Mato Grosso do Sul (20°30′31″ S, 54°36′55″ W). We found the lizard alive on a fallen trunk, 3–5 above the ground, being subdued and preyed upon by fifteen worker ants, while new workers joined the predation. The predation incident was observed for 90 seconds. During this period some ants walked under the lizard while others bit the gecko in various locations. The lizard showed no escape reaction and was being carried to the ant colony by workers and soldiers when we collected it.

The *Hemidactylus mabouia* specimen (Fig. 1A; 42 mm snout-vent length) was deposited in Coleção Zoológica de Referência of Universidade Federal de Mato Grosso do Sul (ZUFMS 03354) and *P. oxyops* deposited in Coleção Entomológica do Museu Paraense Emilio Goeldi (two minor workers and one major; MPEG.HHY 03021757; Fig. 1B-C).

Myrmicinae ants are reported affecting the recruitment of lizards (Chalcraft & Andrews, 1999; Darracq et al., 2017), but records of predation are scarce (Sousa & Freire, 2010; Ribeiro et al., 2011). Species of *Pheidole* adapt their foraging pattern according to prey size; large prey demand the recruitment of many workers while small prey are attacked by individual foragers (Detrain & Deneubourg, 1997). In Brazil, *P. oxyops* is distributed in Mato Grosso, Mato Grosso do Sul, Goiás, Minas Gerais, São Paulo, and Paraná states (Janicki et al., 2016). Moreover, *Pheidole oxyops,* of the *P. diligens* group (Wilson, 2003), is essentially carnivorous, has a nest structure which acts as a pitfall trap and has the unique behavior of laying feathers along the edges of the entrances to its nests to increase prey abundance and diversity (Gomes et al., 2019).

Most predation records of *H. mabouia* by arthropods have been reported in the last eight years (Pedroso-Santos et al., 2019; Borroto-Páez & Reyes Pérez, 2020), suggesting an observational bias or that such records are very occasional events. Therefore, the present record demonstrates the importance of investigations on *P. oxyops* as a possible controller of invasive exotic species.

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Figure 1. Specimen of **A)** *Hemidactylus mabouia* (42 mm snout-vent length; ZUFMS 03354) preyed on by *Pheidole oxyops* **B)** minor worker and **C)** major worker; MPEG.HHY 03021757) during fieldwork at Cerrado fragment of the Reserva Particular do Patrimônio Natural of Universidade Federal de Mato Grosso do Sul. (photos by Rony P.S. Almeida).