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Predation of *Hemidactylus mabouia* (Sauria: Gekkonidae) by a vine snake *Oxybelis aeneus* (Serpentes: Colubridae) in an Atlantic Forest fragment, Northeastern Brazil

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Predação de *Hemidactylus mabouia* (Sauria: Gekkonidae) pela cobra-bicuda *Oxybelis aeneus* (Serpentes: Colubridae) em um fragmento de Floresta Atlântica, nordeste do Brasil

Resumo: *Oxybelis aeneus* (Wagler, 1824) é uma espécie de serpente arborícola de ampla distribuição no continente americano cuja dieta é composta principalmente por vertebrados, como lagartos. Diversas espécies de lagartos já foram reportadas como presas desta serpente, incluindo a espécie exótica *Hemidactylus mabouia* (Moreau de Jonnès, 1818). Aqui descrevemos em detalhes um evento de predação de *H. mabouia* por *O. aeneus*, ampliando o conhecimento acerca da história natural de ambas as espécies à literatura científica.

Palavras chave: Dieta, ecologia alimentar, lagarto, presa, serpente.

Abstract: *Oxybelis aeneus* (Wagler, 1824) is an arboreal snake species that is widely distributed in the American continent whose diet is composed mainly by vertebrates, such as lizards. Several lizard species have already been reported as prey of this snake, including the alien species *Hemidactylus mabouia* (Moreau de Jonnès, 1818). Herein we describe in details a predation event of *H. mabouia* by *O. aeneus*, widening our knowledge regarding the natural history of both species to scientific literature.

Key words: Diet, feed ecology, lizard, prey, snake.

The vine snake *Oxybelis aeneus* (Wagler, 1824) is a widely distributed arboreal species, which occurs in the American continent, from southern North America to Central America and almost all South American continent (Savage 2002; Uetz 2017). This species is frequently found in open areas, such as grassland with scrubs, forest edges and small clearings within the forest. However, there are also records from understory areas of primary forest (with no record of disturbance), in abandoned pastures, and in premontane rain forests (Franzen 1996). This snake is easily recognized by its slender body, elongated snout, and gray to brown dorsum without lateral stripes (Keiser 1974). This coloration changes gradually into a light brown or tan on the anterior portion of the body and is most pronounced on the head (Kennedy 1965). *Oxybelis aeneus* has sit-and-wait strategy and its diet is composed of a wide variety of organisms, including birds, small arboreal mammals, insects (Campbell 1998) and fishes (Hetherington

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2006), but the main prey items of this species are lizards (Henderson 1982; Campbell 1998; Savage 2002; Grant & Lewis 2010).

Hemidactylus mabouia (Moreau de Jonnès, 1818) is native from Africa and has been introduced in several countries, including Brazil, where it is well established and widely spread (Vanzolini 1978; Rocha *et al*. 2011). This Gekkonidae family is characterized by a round snout, well developed limbs and brown to gray dorsal coloration, also, it has a relatively wide and villose tongue and digital lamellae as striking features (Avila-Pires 1995). This nocturnal lizard is commonly found in urban environments in almost all Brazilian biomes (Rocha & Bergallo 2011), but there are also several records of its occurrence in natural environments (Rocha *et al*. 2011). It feeds primarily on arthropods such as insects and arachnids (Rocha & Anjos 2007) and it has been recorded as a prey by other lizards and snake species (Rocha *et al*. 2011).

The presence of *Hemidactylus mabouia* in the stomach content of *Oxybelis aeneus* was first reported by Mesquita *et al*. (2012) in a population of a semi-arid region, but the event of predation was not observed and therefore not described by the authors. Moreover, this prey was detected in a single stomach, being lizards of the families Teiidae and Tropiduridae, the most common items in the studied specimens. In semi-arid areas of Mexico, the most common prey item found in *O. aeneus* diet were anoline lizards (Henderson 1982), but no predation events were observed. Description of a predation event between *O. aeneus* and a lizard is provided in Almeida *et al*. (2009), who observed an adult snake that was located on a bush at 20 cm from the ground attacking a *Tropidurus cocorobensis* Rodrigues, 1987 lizard that was on open ground. The snake snapped the prey on its left flanc and subsequently took it to a higher branch of the bush, and started to ingest it head first.

Herein, we described in details a predation event of *Hemidactylus mabouia* by *Oxybelis aeneus*. Predation was observed on October 29, 2010 at 17:45 h, in the border of a disturbed Atlantic Forest area at *Centro de Ciências Exatas e da Natureza*, *Universidade Federal da Paraíba* – Campus I, João Pessoa Municipality, Paraíba State, Brazil (07º07'48" S, 34º50'42" W). There was low illumination, and the temperature was 26ºC. The snake was first noticed when it fell from a tree with the prey *H. mabouia* on it jaws, immobilized by the dorsal region (**Figure 1A**). After grounding, the snake rapidly climbed a nearby bush, and grabbed a branch with the posterior portion of the body, staying there for about fifteen minutes. During this period, the *O. aeneus* performed slightly oscillatory movements, simulating a branch or a vine movement, making it less conspicuous in the environment (Fleishman 1985). The prey was almost immobilized, but it presented a little resistance to predation: its forelimbs were evolving the snake's head, specifically at the lower jaw region (**Figure 1B**). When the gecko stopped to resist, it was easily swallowed. The *H. mabouia* was swallowed tail first by the *O. aeneus* (**Figure 1C–D**), which is not common in the majority of snake species (Greene 1997).

After the full ingestion of its prey, the snake stayed in the branch and, in order to avoid further stress to the individual, the observers left leaving the animal free in the same site it was observed.

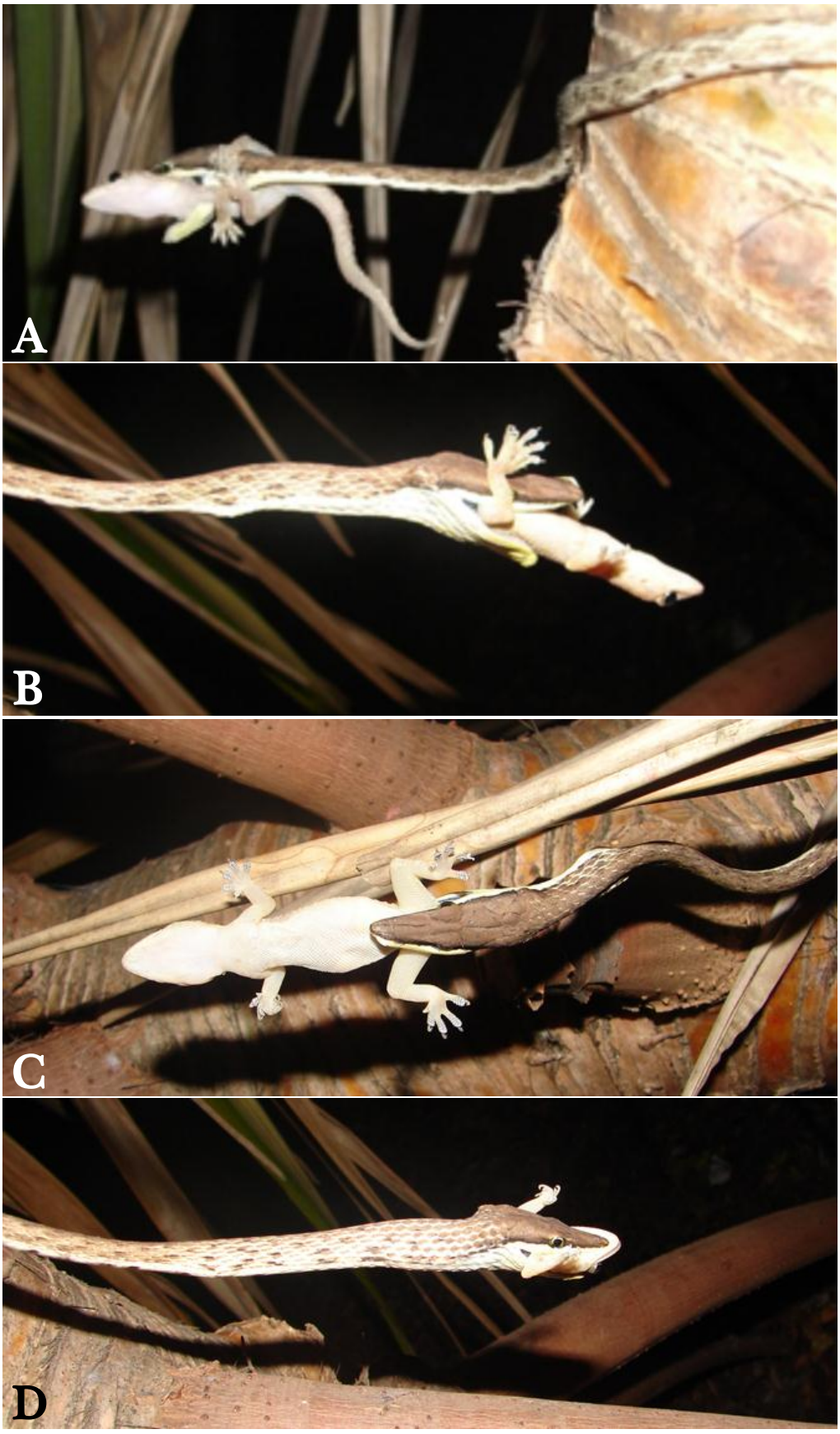

Figure 1. Sequence of events involving the predation of *Hemidactylus mabouia* by *Oxybelis aeneus*: **A**. Prey was first seen between the jaws of the snake; **B**. Prey still resisting, evolving the head of the snake with its forelimbs; **C–D**. Prey stopped to resist and was swallowed tail first. Photos: Carmem K. B. Pedro.

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