First recorded observation of *Agelaia* wasp (Hymenoptera: Vespidae) feeding on *Amphisbaena pretrei* (Squamata: Amphisbaenidae) carcass in the Atlantic Forest of Brazil

Of the 203 species of Amphisbaenians described globally (Uetz et al. 2023), 81 are found in Brazil (Guedes et al. 2023). *Amphisbaena pretrei* is an endemic species in Brazil (Gans 1965), occurring in the North, Northeast, and Midwest regions, with a conservation status classified as Least Concern (LC) by the IUCN. Amphisbaenians are common prey for some snake species (Marques & Sazima 1997, Caramaschi & Niemeyer 2012, Santos & Pires 2020), as evidenced by occasional predation events and the presence of regurgitated carcasses from stressed snakes (Barbosa et al. 2019a).

The genus *Agelaia* Lepeletier, 1836 (Hymenoptera; Vespidae; Polistinae) comprises 31 species distributed across Neotropical regions (Carpenter & Marques 2001, Cooper 2001), 15 of which are found in Brazil. These wasps have scavenger habits (Garcia et al. 2022) and are often observed feeding on carcasses or transporting carcass fragments to feed their larvae (Gomes et al. 2007). The behavior of social wasps underscores the complexity of ecological interactions and their importance as a crucial component of biodiversity and potential biological control agents (Prezoto et al. 2008). These insects play vital roles in secondary production and modulating processes such as decomposition and nutrient cycling (Yang & Gratton 2014).

During a herpetofauna survey study, we used active searches to record the animals. All individuals were photographed using a Canon EOS Rebel T100 camera (EF 70-300mm f/4-5.6 lens) and captured manually. The georeferenced location, sex, total length, and mass of each specimen were recorded.

On January 19, 2024, at 09:55 am, in a fragment of Atlantic Forest in Sergipe, Northeast Brazil (36º39'20" W; 10º19'35" S; WGS84, 114 m), a *Micrurus bonita* (Figure 1A) was observed regurgitating an *Amphisbaena pretrei* while being handled during processing. The amphisbaenian, which appeared recently, ingested and exhibited caudal autotomy, was placed on the ground. At 10:06 am, an *Agelaia* sp. wasp approached, landed beneath the *A. pretrei* carcass, foraged briefly, and flew away. This sequence was repeated three times, after which the wasp began feeding on the amphisbaenian's neck at 10:08 am (Figure 1C). At 10:26 am, the wasp and the amphisbaenian were deposited in the zoological collection of the Federal University of Paraíba, Campus IV (CHUFPB-RT 104).

Figure 1. An *Agelaia* sp. individual feeding on the carcass of an adult *Amphisbaena pretrei*, regurgitated by *Micrurus bonita*, A – individual of *Micrurus bonita* that regurgitated the *A. pretrei*. B - *Agelaia* sp. foraging beneath the amphisbaenian's body; C - *Agelaia* sp. feeding near the head region of *A. pretrei*; D - Red arrow indicating the post-mortem lesion caused by the necrophagous activity of the *Agelaia* sp. Wasp.

The regurgitation behavior of *M. ibiboboca* likely resulted from stress during handling, a common defensive response that facilitates escape by reducing the snake's body weight and enhancing its locomotor performance (Hudson 2007, Leyva et al. 2015). Our findings align with previous studies on snakes of the same genus, which reported similar regurgitation behavior during human handling (Barbosa et al. 2019a, Tavares-Pinheiro et al. 2021, Travaglia-Cardoso & Lempek 2022). Additionally, the observed caudal autotomy in *A. pretrei* suggests an attempted defense mechanism to evade a predator, a behavior previously documented in this species (Barbosa et al. 2019b).

Specimens of the genus *Agelaia* have been recorded feeding on mammalian carcasses (rats and pigs) in experimental studies, typically involving multiple individuals during feeding (Gomes et al. 2007, Barbosa et al. 2015, Somavilla et al. 2019). However, in this study, only a single wasp was observed. Garcia et al. (2022) similarly

documented solitary wasp feeding behavior on a locust (*Parascudderia* sp.). Unlike studies involving mammals where carcasses were exposed for extended periods to examine decomposition, the present observation, like that of Garcia et al. (2022), was a natural, unmanipulated point record. This may explain the presence of only one wasp, as the amphisbaenian carcass had not been exposed long enough to attract more individuals.

This is the first report of *Agelaia* wasps feeding on reptile carcasses, reinforcing the potential of using species from this genus in forensic studies, like other insects already in use. Our study contributes to the understanding of trophic interactions and scavenging behavior in social wasps and may serve as a reference for future studies involving this and other genera.

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Vanessa BARBOSA [1, *], Élida SILVA [2], Jéssica AMARAL [2], Maria SANTOS [3], Mateus DUTRA [2], Letícia SANTOS [3] and Frederico FRANÇA [4]

1. Programa de Pós-Graduação em Ciências Biológicas. Universidade Federal da Paraíba (UFPB), CEP 58051-900, João Pessoa - PB, Brazil.
2. Programa de Pós-Graduação em Ecologia e Monitoramento Ambiental. Universidade Federal da Paraíba (UFPB), CEP 58297-000, Rio Tinto – PB, Brazil.
3. Universidade Federal Rural de Pernambuco (UFRPE), CEP 52171-900, Recife - PE, Brazil.
4. Universidade Federal da Paraíba (UFPB), CEP 58297-000, Rio Tinto – PB, Brazil.

* Corresponding author: V. Barbosa, E-mail: nascimentob.vn@gmail.com