Predation of a slender-legged treefrog, *Osteocephalus oophagus* (Anura: Hylidae) by the wandering spider, *Phoneutria reidyi* (Araneae: Ctenidae) in central Amazon, Brazil

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Anurans play an important role in trophic networks both as predator and prey (Leivas et al., 2018; Salas et al., 2019). Many groups of animals feed on frogs such as insects (*e.g.* Maffei et al., 2014), spiders (*e.g.* Mathielo et al., 2021), snakes (*e.g.* Mônico et al., 2016), birds (*e.g.* Poulin et al., 2001), mammals (e.g. Cavalcante et al., 2019). Apart from animals, there are also reports of carnivorous plants feeding on anurans (Duellman & Trueb, 1994). Spiders are among the most common predators of frogs (Nyffeler & Altig, 2020). All stages of the anuran life cycle are vulnerable to spider predation, from eggs and tadpoles to adult individuals (Menin et al., 2005; Nyffeler & Altig, 2020).

In Brazil, one of the first reviews of spiders preying upon frogs was published by Menin et al. (2005). Fifteen years later, Nyffeler & Altig (2020) published a global review of spiders as frog-eaters. In the same year Meneses et al. (2020) published a neotropical review on this subject. Nyffeler & Altig (2020) reported the semi-aquatic spider family Pisauridae as the most common predator of frogs (91 reports), followed by the family Ctenidae, with 89 reports. It is known that frogs are closely linked to water, so it was expected that the water spiders of the family Pisauridae would have higher predation importance than Ctenidae. However, Pisaurid spiders have a smaller body size than Ctenidae, which limits them to prey only on small frogs, while Ctenidae can prey on both large and small frogs. In con-

trast, Menin et al. (2005) reported 16 cases of frog predation by Ctenidae and only three by Pisauridae. Meneses et al. (2020) also concluded that Ctenidae are more frequent amphibian predators than Pisauridae (71 records of ctenid as predator and only 15 predations by pisaurid species). This may be related to the low sampling, environment bias (since sampling pisaurids far from water is less likely than ctenids) or to the density of Ctenidae in relation to Pisauridae in Brazil.

Herein, we present a record of predation of *Osteocephalus oophagus* Jungfler & Schiesari, 1995 by *Phoneutria reidyi*. The treefrog genus *Osteocephalus* is in the family Hylidae and contains 27 species. The genus *Phoneutria,* known as wandering spiders, is in the family Ctenidae and has eight nominal species.

At 19:37h on June 12, 2022, during fieldwork in the municipality of Silves, state of Amazonas (2.788392°S, 58.386901°W, WGS84, 110 m a.s.l.) we observed a male individual of *Osteocephalus oophagus* being preyed upon by a wandering spider *Phoneutria reidyi* (Pickard-Cambridge, 1897). The two animals were of similar size (Fig. 1). The individuals were struggling in the adaxial surface of a stem-less palm leaf (*Astrocaryum sociale* Barb.Rodr.) about 3 m above the ground (Fig. 1A). The spider pierced the frog's left eye with its chelicerae. Approximately nine minutes later, the spider carried the frog to the abaxial surface of the same leaf, and the struggle continued (Fig. 1B). After nearly 20 minutes, the frog stopped resisting, and less than three minutes later it died, probably due to poisoning (Fig. 1C). After the frog's death, we left the site without collecting the individuals.

The distribution of *O. oophagus* covers the Amazon rainforest in Brazil, Colombia, Guyana, Surinam and French Guyana, with expected occurrence in Venezuela (Lima et al., 2012; Frost, 2022). This species is similar to *O. taurinus* but differs by the absence of bilobate vocal sac and spinous tubercles keratinized on the tip in the dorsum (Jungfer & Schiesari, 1995; Lima et al., 2012; Torralvo et al., 2021). The spider *Phoneutria reidyi* is more common in the eastern Amazon (Bucaretchi et al., 2017), especially in the Guiana Shield (Torres-Sánchez & Gasnier, 2010). This species exhibits chelicerae with bright red fur, palpi with two narrow lines, abdominal dorsum with light spots on the midline and oblique rows of bright spots, femur I sulfur color on the inner side, thorns on the legs implanted in a halo of pale hairs (Eickstedt, 1982; Bucaretchi et al., 2017). Torres-Sanchéz & Gasnier (2010) found that the density of acaule palm trees affects the abundance of *P. reidyi*. In this study the encounter occurred on an acaule palm tree of the genus *Astrocaryum*.

In general, spiders of the genus *Phoneutria* are aggressive, actively hunt at night and have highly toxic venom (Mullen & Vetter, 2019). They are reported as predators of many species of the Hylidae, especially in the Atlantic Forest. In this region, *P. nigriventer* preyed upon *Dendropsophus elegans* (Santana et al., 2009), *Boana bischoffi* (Foerster et al., 2017), *Scinax carnevallii* (Folly et al., 2017) and *S. crospedospilus* (Pacheco et al., 2016). However, this relationship is still not well documented for the Amazon.

Over the years, isolated records of predation of the genus *Osteocephalus* by spiders have been reported, as *O. taurinus* juveniles preyed upon Trechaleidae and Pisauridae (Costa-Pereira et al., 2010) and *O. leprieurii* preyed upon *Ancylometes rufus*, Ctenidae (Almeida et al., 2020). Herein, we present the first record of predation of *Osteocephalus oophagus* by *Phoneutria reidyi*, and also the first report of this spider species eating a frog.

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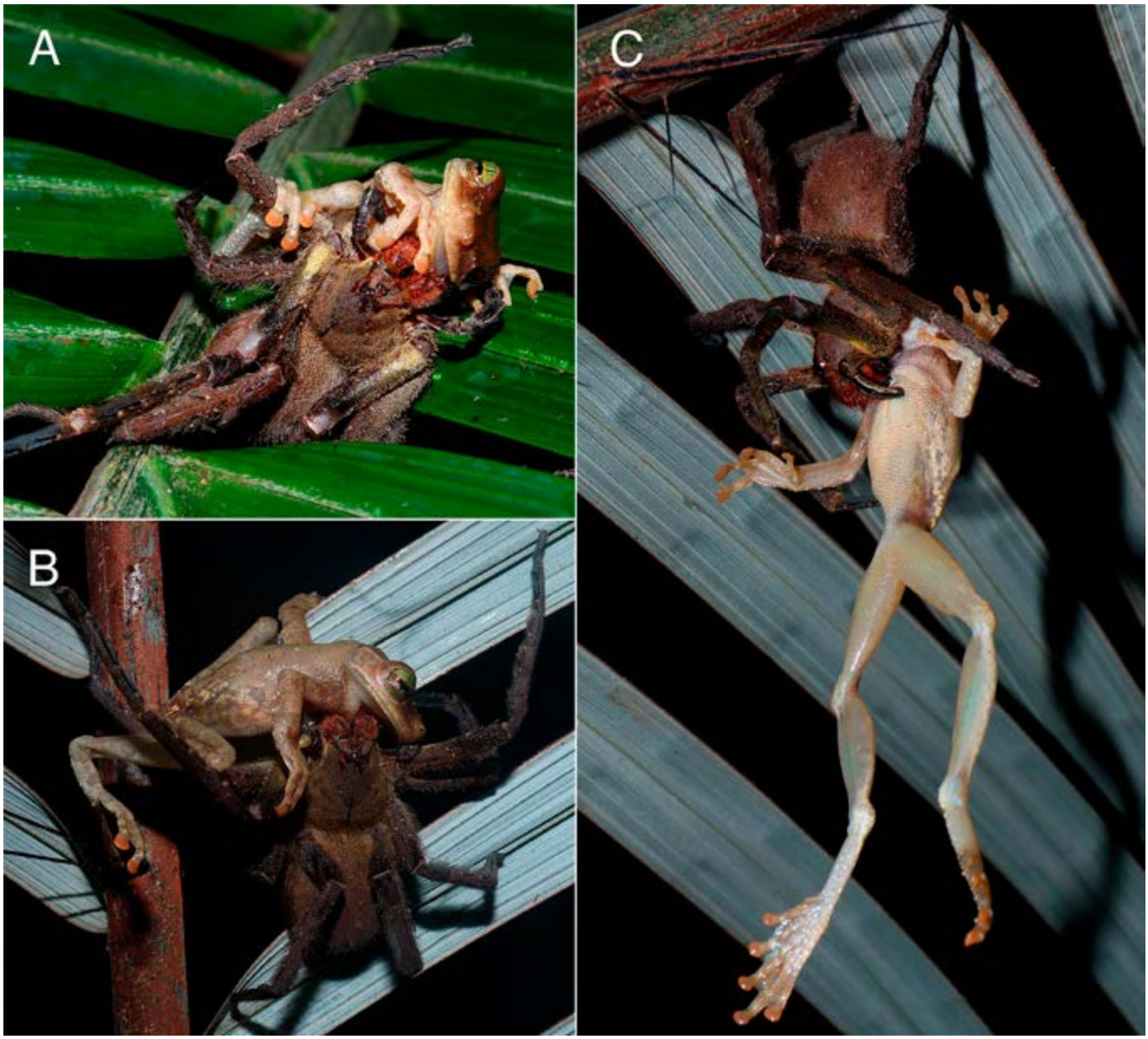

Figure 1. A wandering spider *Phoneutria reidyi* preying on a slender-legged Treefrog *Osteocephalus oophagus* on a palm leaf of the species *Astrocaryum sociale* in Central Amazon, Brazil. (A) individuals were struggling in the adaxial surface of a 'tucumã' tree leaf (*A. sociale*); (B) the spider pulled the frog to the abaxial surface of the same leaf and the struggle continued; (C) the frog died after ~20 minutes, probably due to the spider's venom.