

Predation of *Phyllomedusa nordestina* (Anura: Hylidae) by *Leptodeira annulata* (Serpente: Dipsadidae) in a temporary pond

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Amphibians have an important role in the biological trophic systems, being predators or prey of many animal groups (Seale, 1980; Altig, Whiles and Taylor, 2007). They form part of the diet of spiders, crabs, insects and many vertebrates (Toledo, 2005; Toledo, Ribeiro and Haddad, 2007). However, snakes are frequently considered the main predators of amphibians (Vitt, 1983; Toledo, Ribeiro and Haddad, 2007).

In anurans, predation results in the development of anti-predation strategies, such as the choice of specific nesting sites (Silva and Giaretta, 2008), accelerated development (Richardson, 2002) and morphological variation that increases survival chances (McCollum and Leimberger, 1997). Taxonomic groups such as Bufonidae (Jared et al., 2009), Dendrobatidae (Daly, 1995), and Phyllomedusinae (Toledo and Jared, 1995) have toxic compounds on the skin which serve as a defense against predators. In Phyllomedusinae, the presence of aposematic colors, thanatosis and peptides on the skin, which cause nausea, diarrhea, tachycardia, blood pressure variation and possibly death of predators are another important defense mechanism (Toledo and Jared, 1995; Camaraschi and Cruz, 2002).

Leptodeira annulata Linnaeus, 1758 is a snake of the Dipsadidae family with a wide geographic distribution, ranging from Mexico to eastern South America (Duellman, 1958; Rodrigues, 2005). *Leptodeira annulata* feeds mainly on anurans, especially on Leptodactylidae, Bufonidae, Hylidae and Microhylidae (Vitt, 1996; Vrcibradic et al., 2007; Cantor and Pizzatto, 2008). This feeding preference can be corroborated by its nocturnal habits (Ávila and Morais, 2007), as it is more active during the hours with a high abundance of anurans (Vitt, 1996).

In a field study carried on 29 May 2011, a predation event of *Phyllomedusa nordestina* Caramaschi 2006 by the snake *Leptodeira annulata* (Fig. 1) was observed. The event occurred at 21:44 h on the banks of a pond in the municipal district of Cabaceiras, in the state of Paraíba, in the northeast of Brazil, inserted in the semiarid Caatinga region (07°29'01"S; 36°20'36"W; elev. 462m). The *L. annulata* (snout-vent length 73.53 mm) was perched in a shrub 78 cm above the ground, preying on a *P. nordestina*, which was still undergoing body spasms. From the moment of first sighting, the snake took 25 minutes to completely swallow the tree frog. The snake was collected and housed at the Herpetological Collection of the Universidade Federal



Figure 1. Predation of *Phyllomedusa nordestina* by *Leptodeira annulata* in temporary pond in Caatinga, Cabaceiras municipal district, state of Paraíba, northeast of Brazil.

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Records of predation of *P. nordestina* are scarce in literature. It is likely that the presence of aposematic colors and toxic substances on the skin of this species are an efficient defense and inhibit the action of predators (Toledo and Jared, 1995; Caramaschi and Cruz, 2002). However, Nascimento *et al.* (2013) recently suggested that toxins found on the skin of *Phyllomedusa* may not be sufficient to avoid predation by *L. annulata* or the snake has adaptations that minimize the effects of toxic substances found in the skin of *Phyllomedusa*. Finally, studies of the diet of *L. annulata* are necessary to determine the trophic relationship between these species. This is the first record of predation of *P. nordestina* by a *L. annulata*, increasing ecological knowledge of the nutrient flux of the Caatinga Biome and the diet composition of *L. annulata*.

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