

Predation on neotropical lizards *Tropidurus* sp. by tamarin primate *Leontocebus weddelli* in Brazil

Depredación sobre la lagartija neotropical *Tropidurus* sp. por el primate tamarino *Leontocebus weddelli* en Brasil

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The diet of tamarin primates is predominantly frugivorous and insectivorous; it may include other elements in its diet such as nectar, seeds and arthropods, while vertebrate consumption is occasional. We present an unpublished record of the consumption of neotropical lizards (*Tropidurus* sp.) by the tamarin pichico (*Leontocebus weddelli*) in Porto Velho, Rondônia, Brazil. The record was conducted in 2022 at the José Ribeiro Filho campus of the Federal University of Rondônia, which is located in the peri-urban area, 9.5 km from the city of Porto Velho. The *ad libitum* method was used, continuously recording all important behavioral aspects of the primate. An adult individual of undetermined sex of *Leontocebus weddelli* was observed on the ground, completely consuming an adult individual of *Tropidurus* sp. for approximately 6 minutes. Representatives of the genus *Leontocebus* consume fruits and insects, and lizards are not the main items in their diet but represent an important energy source. This note reinforces the adaptive potential of this genus, in addition to the seasonal exploration of prey in highly disturbed environments.

Key words: Amazon; diet; forest edge; Rondônia; vertebrates.

La dieta de los primates tamarinos es predominantemente frugívora e insectívora, puede incluir otros elementos en su dieta como néctar, semillas y artrópodos, mientras que el consumo de vertebrados es ocasional. Se presenta un registro inédito de consumo de lagartijas neotropicales (*Tropidurus* sp.) por parte del tamarino pichico (*Leontocebus weddelli*) en Porto Velho, Rondônia, Brasil. El registro se realizó en el año 2022 en el campus José Ribeiro Filho de la Universidad Federal de Rondônia, la cual está situada en la zona periurbana, a 9.5 km de la ciudad de Porto Velho. Se utilizó el método *ad libitum*, registrando continuamente todos los aspectos conductuales importantes del primate. Se observó en el suelo a un individuo adulto de sexo indeterminado de *Leontocebus weddelli*, que durante aproximadamente 6 minutos consumió por completo a un individuo adulto de *Tropidurus* sp. Los representantes del género *Leontocebus* consumen frutas e insectos, y las lagartijas no son los principales ítems en su dieta, pero representan una importante fuente de energía. Esta nota refuerza el potencial adaptativo de este género, además de la exploración estacional de presas en entornos muy alterados.

Palabras claves: Amazonia; borde del bosque; dieta; Rondônia; vertebrados.

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Tamarin primates, which include the genera *Leontocebus* and *Saguinus*, have a frugivorous and insectivorous diet, including other items such as nectar, seeds, arthropods, and occasionally vertebrates (Egler 1992; Lopes and Ferrari 1994; Oliveira and Ferrari 2008; García-Castillo and Defler 2018). Records of lizard consumption by tamarin primates include the consumption of *Anolis fuscoauratus* and *Gonatodes humeralis* by *Leontocebus illigeri* in Perú (Soini 1987). Heymann et al. (2000) recorded the consumption of 6 species of lizards *Anolis* spp., *Kentropyx pelviceps*, *Mabuya nigropunctata*, *Norops fuscoauratus*, *N. nitens* and 1 unidentified species by *Saguinus mystax*

and *Leontocebus fuscicollis* in Perú. For Brazil, there is only 1 documented ancient record by Peres (1992) documented the consumption of *Anolis* sp. by *Leontocebus fuscicollis* and *S. mystax* in the state of Amazonas.

Among the different species from the genus *Leontocebus*, we highlight *L. weddelli*. This is a small primate, weighing on average 400 gr in Brazil, considered an insectivore, frugivore, and gumivore (Ferrari and Martins 1992; Paglia et al. 2012). Its distribution includes Bolivia, Perú and Brazil (including the states of Acre, Amazonas and Rondônia); it is categorized as Least Concern by the International Union

for Conservation of Nature and Natural Resources (Ravetta *et al.* 2021). Until 2022, there are no records in the literature of the consumption of lizards by *L. weddelli*.

Given this scenario, this report aims to present the predation of lizard *Tropidurus* sp. by Weddell's saddle-back tamarin (*Leontocebus weddelli*) in a peri-urban area of the city of Porto Velho, Rondônia, Brazil.

The record was made at the José Ribeiro Filho campus of the Universidade Federal de Rondônia, Brazil (8° 50' 11.96" S, 63° 56' 24.89" W; WGS84), located 9.5 km (direction Rio Branco - Acre, in the southwestern portion) from the city of Porto Velho, in its peri-urban area (Figure 1). The campus has approximately 1 km², of which 20 % have different buildings. The predominant vegetation type of the area is Lowland Open Ombrophylous Forest (Veloso *et al.* 1991), and there are large areas composed of secondary vegetation and illegal logging, as well as unfinished buildings and open areas.

A study carried out in 2008 showed that the primate fauna of the campus is of 6 species: *Plecturocebus brunneus*, *Pithecia mittermeieri*, *Saimiri ustus*, *Sapajus apella*, *Mico rondoni* and *Leontocebus weddelli*, the latter two being the 2 most abundant species (Alencar 2008). There have yet to

be published scientific papers on the lizard fauna in the area. The identification of the genus of the lizard was based on its external characteristics, such as the size and shape of its body and head, and its cryptic color (Frost *et al.* 2001).

The *ad libitum* method proposed by Altmann (1974) was adopted to record the primate's behavior, recording all behaviors observed and deemed relevant by the observer, plus rare and significant records, such as the event documented here.

The observation was made on September 13, 2022 at 13:37 hr, during the dry season. The recording site was close to a bus stop. An adult individual of *L. weddelli* of undetermined sex was observed inspecting a tree trunk 50 cm high. An adult *Tropidurus* sp. of about 25 centimeters was observed in this trunk, which used cracks and holes in the trunk to hide from the primate. After 6 capture attempts, at 13:51 hr, *L. weddelli* managed to capture the lizard with his hands. The primate remained on the ground seated on the hind limbs and started to eat the head, followed by the rest of the body (Figure 2a, 2b). The process lasted approximately 6 min. After the total consumption of lizard, the individual from *L. weddelli* returned to the forest. The consumption starting from the head is already reported in *L. weddelli* and other species of callitrichids such as *Saguinus mystax*, to immobilize the prey, reducing the risk of the predator being attacked and reducing the possibility of prey escape (Steklis and King 1978; Clarke 1987; Heymann *et al.* 2000).

Among the items of animal origin, insects are the most exploited by representatives of the genus *Leontocebus* (Soini 1987; Garber 1993; Heymann *et al.* 2000) and lizards are not the main items in the diet of these primates, but they represent an important energy source (Peres 1992). The consumption of lizards and other vertebrates by species of the genus *Leontocebus* and *Saguinus* is occasional. For example, Porter (2001) found that vertebrate consumption accounts for < 1 % of the diet of *L. weddelli*, with vertebrate predation being on time. Garbino *et al.* (2022) also agree that the consumption of vertebrates by primates has a seasonal aspect, occurring mainly in the dry season, where some fruits are unavailable.

On the other hand, Heymann *et al.* (2000) highlighted the ability of these primates to exploit open micro-habitats, capturing exposed prey. The genera *Tropidurus* include diurnal species, of terrestrial habits and that can be observed in open areas, rocks, vertical walls and anthropized environments favorable for its development having an association of the species with artificial structures (Meira *et al.* 2007). The predation observation environment presents components that both favor the development of lizards and primates. *Tropidurus* spp. present higher densities in urbanized areas compared to rural ones, and the artificial structures associated with secondary and edge vegetation of the campus favor their development (Ribeiro-Júnior and Amaral 2016). At the same time, representatives of

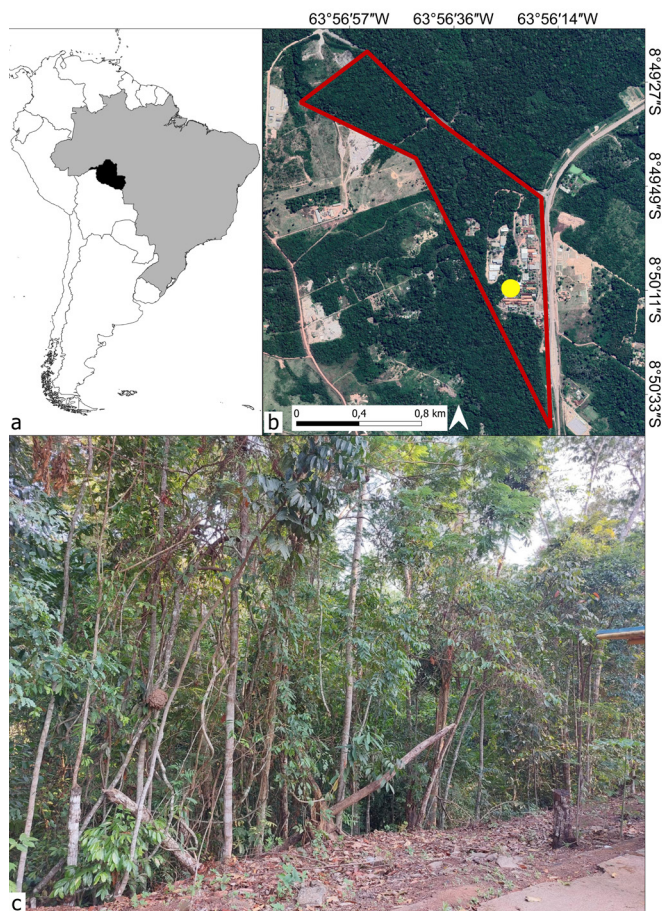


Figure 1. Geographic location of the observation site of the predation event. In a) the location of Brazil (gray) and the state of Rondônia (black). In b) the José Ribeiro Filho campus of the Universidade Federal de Rondônia (red) with emphasis on the recording site (yellow point). In c) characteristics of the registration site.



Figure 2. a) Adult individual of *Leontocebus weddelli* exploring the trunk; b) and later consuming the individual of *Tropidurus* sp.

the genus *Leontocebus* are excellent explorers of forest edge and secondary vegetation environments (Sussman and Kinzey 1984) and show high densities in anthropized or regenerating environments (Ferronato et al. 2018; Silva et al. 2021). The scenario was favorable for the encounter between these 2 species, but it had not been previously documented due to the absence of studies on the primate diet. Studies are currently being carried out with primates of the genus *Leontocebus* in large forest blocks. The present record was only possible because both species explored an open environment, favoring total visualization of the predation event. These data reinforce the adaptive potentiality of genus *Leontocebus*, besides the seasonal exploration of prey in highly altered environments.

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