Herpetology Notes, volume 12: 827-828 (2019) (published online on 07 August 2019)

A case of cannibalism in Achala copper lizard *Pristidactylus achalensis*, an endemic lizard to the highest mountain areas in Central Argentina (Squamata: Leiosauridae)

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Cannibalism in reptiles seems to occur opportunistically as a by-product of normal predatory behaviour influencing competitive interactions, dynamics and life histories of populations (Polis and Myers, 1985). In some species this behaviour has been linked to island populations as a symptom of scarce resources and high lizard densities (e.g. Pérez- Mellado and Corti, 1993; Cooper et al., 2015).

Pristidactylus achalensis (Gallardo, 1964) belongs to the Leiosauridae family from austral South America and is endemic to the highest mountains areas in central Argentina (Minoli and Avila, 2017), living at an isolated highland ecosystem known as Pampa de Achala, a granite plateau extending up to 2,250 m elevation. This species is considered omnivorous, feeding on a variety of insects and flowers (Etheridge and Williams, 1985). However, there are no records of either saurophagy or cannibalism, defined by the process of eating conspecific individuals (Mitchell, 1986). *Pristidactylus achalensis* hibernate in rock crevices or below ground and emerge during the warm and rainy season from October to March. Therefore, the diet and feeding behaviour is a key factor for resources storage.

We report here a case of cannibalism in *Pristidactylus achalensis* recorded in the wild and discuss insights on this behaviour. We observed a mature male of approximately 110 mm Snout-Vent Length (estimated using measurements of surrounding rocks as reference) basking at 1048 h on the 22nd of March 2019 under sunny weather conditions and air temperature of 21.9°C. The location was Provincial Reserve Pampa de Achala, Argentina (31.6111°S, 64.8294°W; Datum WGS 84; 2,241 m elevation).

While we were filming the individual, we observed a tail and posterior limbs of another lizard protruding from the male's mouth (Fig. 1A). We recorded a 63 seconds video until he escaped to his shelter with his prey. The morphological traits and size of the observed tail and limbs match with characteristics of *P. achalensis*, and more specifically with the coloration of a juvenile or female (Fig. 1B). Considering the size of the prey's tail as reference, we estimated the size of the corresponding individual as approximately 50% of the male predator. In addition, the area is known for its low reptiles' diversity, with *P. achalensis* being the only lizard species registered (Cabrera, 2015).

Cannibalism and saurophagy are common behaviours in reptiles that seem to occur opportunistically as a by-product of normal predatory behaviour (Polis and Myers, 1985). While saurophagy has been recorded in other species of the genus, such as *P. scapulatus* (Burmeister, 1861) (Sanabria and Quiroga, 2009; Villavicencio et al., 2009; Victorica et al., 2018) and *P. nigroiugulus* Cei, Scolaro and Videla, 2001 (Cei et al., 2004), this is the first record of cannibalism in *Pristidactylus*. We were not able to determine whether the prey had been previously dead or if the male predated a conspecific individual, but there are evidences of aggressive encounters within this species (Sinsch et al., 2002).

The cannibalism behaviour could be related to aggressive territoriality of males influenced by competitive dynamics (Polis, 1981). Furthermore, Pampa de Achala region is a mountain ecosystem with harsh climate conditions, and our observation occurred at the end of the species' active season. Cannibalism may

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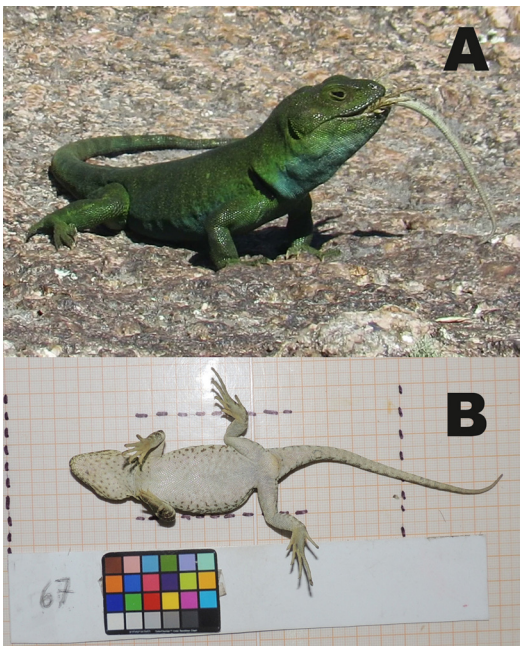

Figure 1. A) Male of *Pristidactylus achalensis* predating on a conspecific. B) Ventral view of a juvenile of *P. achalensis* for reference. Photos by Leonel Viladrich and Sergio Naretto.

give nutritional and energetic benefits when traditional food sources are scarce (Polis, 1981). Therefore, the necessity of obtaining resources to face hibernation may favour cannibalism events. This unique observation opens new questions about the role of cannibalism in intraspecific interactions as, for example, if this strategy may provide advantages to reproductive competition or if these events may be related to temporary variation of food resources in highlands environments.

Acknowledgements. We are grateful to Dr. Facundo Cabezas Cartes for his pre-peer review of this manuscript. We thank the FONCYT PICT 2015 Number 497 for financing project entitled "Armaments and ornaments of lizards: reproductive tactics and animal behaviour". Secretaría de Ambiente y Cambio Climático from Cordoba Province government provided a permit to work with *Pristidactylus achalensis* (tramite 913508053318-dic2018).

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Accepted by Pedro Pinna