Herpetology Notes, volume 4: 265-267 (2011) (published online on 6 August 2011)

A case of cannibalism in the territorial lizard *Tropidurus hispidus* (Squamata: Tropiduridae) in Northeast Brazil

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Cannibalism is a widely reported phenomenon in the animal kingdom (Fox, 1975; Polis, 1981). In a literature review of reported cannibalism cases in reptiles and amphibians, Polis and Myers (1985) suggest that in most species of reptiles cannibalism appears to occur opportunistically as a by-product of normal predatory behaviour. In lizards, cannibalism is frequently partial, taking place by consumption of autotomised tails (Rudolf and Antonovics, 2007). *Tropidurus hispidus* (Spix, 1825) (Fig. 1) is a widely distributed Neotropical lizard, occurring from Northeast Brazil to Venezuela (Vanzolini, Ramos-Costa and Vitt, 1980). Its diet is composed of arthropods, mainly ants, beetles, insect larvae and termites, and plant material, including leaves, flowers and fruits (Vitt, Zani and Caldwell, 1996; Van Sluys et al., 2004; Kolodiuk, Ribeiro and Freire, 2010). The ingestion of small vertebrates, such as frogs (Vitt, Zani and Caldwell, 1996; Ribeiro and Freire, 2009) and other lizards (Vitt, 1995) may occasionally occur. In the present study we report one case not hitherto described of intraspecific predation with consumption of autotomised tail in *T. hispidus*.

Our observation occurred during field work in a Caatinga area of Northeast Brazil: the Ecological Station of Seridó, Rio Grande do Norte State (06°57'67"S, 37°25'58"W, 192 m elev., datum: WGS84). At 13:20 h on 27 March, 2010, JSJ and RFDS observed an adult male *T. hispidus* (105 mm in snout-vent length) amongst herbaceous vegetation, beneath a tree, attacking a conspecific juvenile. The noise in the leaf litter attracted the attention of the observers, who clearly witnessed the juvenile fleeing and the adult male with the autotomised tail in its mouth. It was not possible to see which part of the juvenile's body was bitten by the predator, but the fact that the juvenile managed to escape and that the predator was seen simultaneously with the tail in its mouth indicates that the attack was made in the tail area. The adult male shook the tail continuously from side to side for several seconds and upon seeing the observers, ran from their field of view, but was pursued and located three minutes later approximately six meters from the attack site, still ingesting the juvenile's tail. We collected it using a compressed air rifle and the non-ingested portion of the tail fell to the ground, but was not found. The lizard was dissected and stomach content analysis confirmed the ingestion of the distal portion of the juvenile's tail. A 51mm portion of the autotomised fragment had been swallowed.

In the literature, cases of cannibalism in species of the genus *Tropidurus* have been reported for *T. hygomi*, *T. torquatus*, *T. oreadicus* and *T. montanus* (see Siqueira and Rocha, 2008). Juveniles were predated in all of these cases. According to Rocha, Vrcibradic and Araújo (2000), there is a general tendency of lizard cannibalism being directed against the juveniles, owing to their smaller size compared to adults, which favors ingestion, and to the coexistence of adult and young animals during the recruitment period, especially between territorial adult males and young lizards dispersing in search of establishing their individual areas. In addition, the lack of experience in detecting potential predators and the inefficient recognition of habitat structure make juveniles potential prey for several types of predators, including conspecific adults (Vitt, 2000; Siqueira and Rocha, 2008). Van Sluys et al. (2004) studied the diet of *T. hispidus* and *T. montanus* living in sympatry and reported the presence of a portion of a *Tropidurus* tail in the stomach of a female *T. hispidus*. However, as it was only the distal part of the tail, they were unable to

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Figure 1. An adult male of *Tropidurus hispidus*. Note the black patches on the ventral surface of the thighs, a characteristic present only in adult males. Photo: L.B. Ribeiro.

positively identify the species of *Tropidurus*. Conversely, our field report characterizes a cannibalistic act in *T. hispidus* that may have occurred when the juvenile trespassed on the territorial space of the adult male, likely owing to inexperience, resulting in the predatory attack observed.

In addition to the previously mentioned factors, cannibalism in a natural population may be stimulated by an increase in population density (Fox, 1975; Polis, 1981). During the period in which we recorded the cannibalistic event in *T. hispidus*, we observed an increased number of juveniles in the study area. *Tropidurus hispidus* is a sit-and-wait forager and territorialist, as are other species of *Tropidurus* (Van Sluys, 1997; Ribeiro, Sousa and Gomides, 2009; Ribeiro, Kolodiuk and Freire, 2010) and, according to Polis (1981), many territorialist individuals are intolerant to territorial intrusion by conspecifics. In this sense, we propose that cannibalism in *T. hispidus* may represent an opportunistic feeding habit when an increase in the juvenile population occurs. A similar phenomenon was observed for the teiid *Cnemidophorus ocellifer* in the same study area during the recruitment period of this species, when a whole juvenile was found in the stomach contents of an adult female (Sales, Ribeiro and Freire, 2010). The voucher specimen *T. hispidus* (CHBEZ 3447) was deposited in the herpetological collection of the Universidade Federal do Rio Grande do Norte, Natal, Brazil.

Acknowledgements. We thank the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) for financing the PELD-Caatinga Program entitled Structure and Functioning, and for the research scholarship granted to RFDS (process 124403/2009-3), LBR (process 141993/2006-5) and EMXF (process 304077/2008-9). IBAMA provided a permit (Permit 206/2006 and Process 02001.004294/03-15).

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Accepted by Philip de Pous; Managing Editor: Enrique La Marca