

## NOTE

**TROPIDURUS SEMITAENIATUS  
(SQUAMATA: TROPIDURIDAE) AS A  
SEED DISPERSER OF THE PLANT  
COMMIPHORA LEPTOPHLOEOS  
(BURSERACEAE) IN THE  
CAATINGA OF NORTHEASTERN  
BRAZIL**

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Reptiles were, together with fish, the first vertebrates to interact with seed-bearing plants (Tiffney, 1984). Recent studies (Cooper and Vitt, 2002; Olesen and Valido, 2003; Castro and Galetti; 2004; Pérez-Mellado *et al.*, 2005) show the important role of lizards in seed dispersal (saurocory) of some plants. Traits of fruits/seeds (e.g. odor, contrasting color: orange or red) and the fact that many fruits/seed grow close to the soil or fall when ripe (Iverson, 1985; Valido and Nogales, 1994; Van Damme, 1999) provide stimuli that lizards respond to. Published diets of *Tropidurus* species include plant material as leaves, flowers, fruits and seeds such as reported for *T. itambere* (Van Sluys, 1993), *T. torquatus* (Teixeira and Giovanelli, 1999), *T. erythrocephalus* (Fontes *et al.*, 2003), *T. montanus* and *T. hispidus* (Van Sluys *et al.*, 2004), and also for *T. hispidus* and *T.*

*semitaeniatus* (Vitt, 1995; Kolodiuk *et al.*, 2007). Exactly in the locality of this last study, we report for the first time during direct observation, seed dispersal of *Commiphora leptophloeos* (Mart.) Gillett. by *T. semitaeniatus*.

*Tropidurus semitaeniatus* is broadly distributed in the rocky habitats of the caatingas of northeastern Brazil (Vanzolini *et al.*, 1980). In the context of a behavioral ecology work, a *T. semitaeniatus* population was studied at the Estação Ecológica do Seridó (ESEC Seridó; 06.5767° S, 37.2558° W, datum: WGS84; elev. 192 m), Serra Negra do Norte municipality, Rio Grande do Norte State, Brazil. One of the studied aspects included the foraging behavior of lizards recorded by focal animal samples that consisted of 10 continuous minutes of behavioral monitoring on different individuals, with one session from 0700-1000 h and other from 1400-1700 h, during two consecutive days.

On 09 May 2008, during the morning session, four *T. semitaeniatus* were observed under a *C. leptophloeos* situated in a crevice on a rocky outcrop where we made behavioral observations. *Commiphora leptophloeos* is a deciduous tree (popularly known as imburana) belonging to the family Burseraceae. It has one of the largest values for importance index in phytosociology studies developed in caatinga ecosystems, including at the ESEC Seridó (Sampaio, 1996; Santana and Souto, 2006). This plant has a drupaceous fruit (approximately 2 cm of mean size) that opens up to the middle dropping a single seed, which is coated at the base with an orange or red aril, making it attractive to potential dispersers (Maia, 2004). In each of the four foraging observations (one of these video-documented), focal lizards ingested arils. Seeds, which fell from as high as 300 cm, were quickly bitten by lizards when they hit the sur-



**Figure 1.** *Tropidurus semitaeniatus* approaching of seed *Commiphora leptophloeos* (A) and biting the seed aril (B) in a rock surface at the Ecological Station of the Seridó, Brazil.

face of the rocky outcrops (Fig. 1A-B). The lizards then moved away from nearby lizards. Once away from other lizards, the focal lizards bit the aril repeatedly. From the perspective of the seed, being eaten by a lizard may reduce the attack by pathogenic fungi on seeds, increasing the germination rates (Leal and Oliveira, 1998). Moreover, removal of the aril exposes the seed micropyle, allowing the absorption of water needed for germination (Leal, 2005). Lizards ate the aril but not the seeds. Seed arils are generally rich in lipids and likely offer a highly nutritious food source to the lizards, particularly in semi-arid environments where resources may be limited (Horvitz, 1981). Considering that plant material constitutes nearly 30% by volume of the diet of *T. semitaeniatus* and more than 63% of the

diet of *T. hispidus* in caatinga (Vitt, 1995), dispersal of seeds by lizards that eat fruit is likely to be very common. Seed dispersal distance by lizards ranged from 210 to 550 cm from the parent tree. Saurocory provides benefits for *C. leptophloeos*, because it may reduce competition among seeds and seedlings under the parent tree. Finally, our observations of lizard-plant interaction when combined with published dietary information, reveal that *T. semitaeniatus*, an endemic lizard of caatingas, may be an important seed disperser of *C. leptophloeos* likely contributing to reproductive success of this plant and may affect spatial distribution of the plant. Finally, our results suggest that conservation of this plant in the semi-arid of northeastern Brazil requires consideration of animal-plant interactions that contribute to reproductive success of the plant species.

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