

northeastern and midwestern Brazil (Bailey et al. 2005. Phyllo-medusa 4:83–101) in the states of Ceará, Rio Grande do Norte, Pernambuco, Bahia, and Minas Gerais (Franco et al., 2017. Salamandra 53:339–350). Its natural history is poorly known. In June 2017, a female *T. phoenix* (SVL = 35 cm; 34.31 g) was collected at the Geossítio Cachoeira de Missão Velha (7.2222°S, 39.14143°W, SAD 69; 248 m elev.), Ceará, Brazil. The specimen was euthanized and deposited in the Coleção Herpetológica da Universidade Regional do Cariri (CHURCA 13.446). The stomach contained a *Tropidurus semitaeniatus* (Fig. 1; SVL = 70 cm; mass = 11.10 g). This is the first report of predation of *Tropidurus semitaeniatus* by *T. phoenix*, and the first diet record for *T. phoenix*.

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THAMNODYNASTES SERTANEJO. DIET. *Thamnodynastes sertanejo* is a medium-sized dipsadine snake endemic to lowlands in the Caatinga biome in northeastern Brazil (Bailey et al. 2005. Phyllomedusa 4:83–101; Guedes et al. 2014. Zootaxa 3863:1–93). As with other *Thamnodynastes*, it has arboreal habits, is nocturnal, and feeds on frogs (Guedes et al., *op. cit.*). However, no specific reports of the diet of *T. sertanejo* are available in the literature. Here we report the first documented event of *T. sertanejo* feeding on frogs in nature.

Around 2100 h on 17 September 2006, an adult female *T. sertanejo* (SVL = 40.1 cm; tail length = 14.8 cm; Fig. 1A) was collected alive moving on the ground in a forested area of the Santana Range in the municipality of Lagoa Nova, state of Rio Grande do Norte, Brazil (6.127872°S, 36.554351°W, SIRGAS-2000; 600 m elev.). When dissected, its stomach contained an *Ischnocnema ramagii* (Paraíba Robber Frog; Brachycephalidae) ingested head first. The prey was found in a moderate stage of digestion and had only the head, anterior legs, and one posterior leg remaining (Fig. 1B). *Ischnocnema ramagii* is known to have terrestrial habits and occurs in isolated remnants of Atlantic Forest in the states of Paraíba, Pernambuco, and Bahia in eastern Brazil (Hedges et al. Zootaxa 1737:1–182). Although *T. sertanejo*



FIG. 1. A) Specimen of *Thamnodynastes sertanejo* (IBSP 80223) collected in the municipality of Lagoa Nova, state of Rio Grande do Norte, Brazil. B) Remains of *Ischnocnema ramagii* removed from the stomach of *T. sertanejo*.

has been reported to have arboreal habits, the presence of a terrestrial frog in its diet indicates that foraging also occurs on the ground.

The record provided here is the 13th distribution record of *T. sertanejo* in the Caatinga biome, and the first for the state of Rio Grande do Norte. Additionally, it is also the first report of occurrence of the frog *Ischnocnema ramagii* in the state of Rio Grande do Norte in a forested remnant inside Caatinga. Both snake and frog were deposited in the Herpetological Collection “Alphonse Richard Hoge” at the Butantan Institute (IBSP 80223) and were collected under permission of the Brazilian Institute for the Environment and Natural Resources (IBAMA 02021.000075/2006-71). TBG is funded by FAPESP (2013/04170-8 and 2014/18837-7).

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THAMNOPHIS PROXIMUS (Western Ribbonsnake). DEFENSIVE BEHAVIOR. Many natricine snakes display behaviors theorized as antipredator mechanisms such as pseudoautotomy, which is initiated by rotating the body to force a break when the tail is immobilized (Gregory 2016. J. Herpetol. 50:183–195). Tail pseudoautotomy has been well documented in *Thamnophis sirtalis* (Fitch 2003. Herpetol. Rev. 34:212). The aforementioned species is often found with partial or incomplete tails suggesting successful evasion of predation attempts (Placyk et al. 2005. Amphibia-Reptilia 26:353–358). Similar behavior has also been noted in *T. butleri* and *T. sauritus* (Willis et al. 1982. Copeia

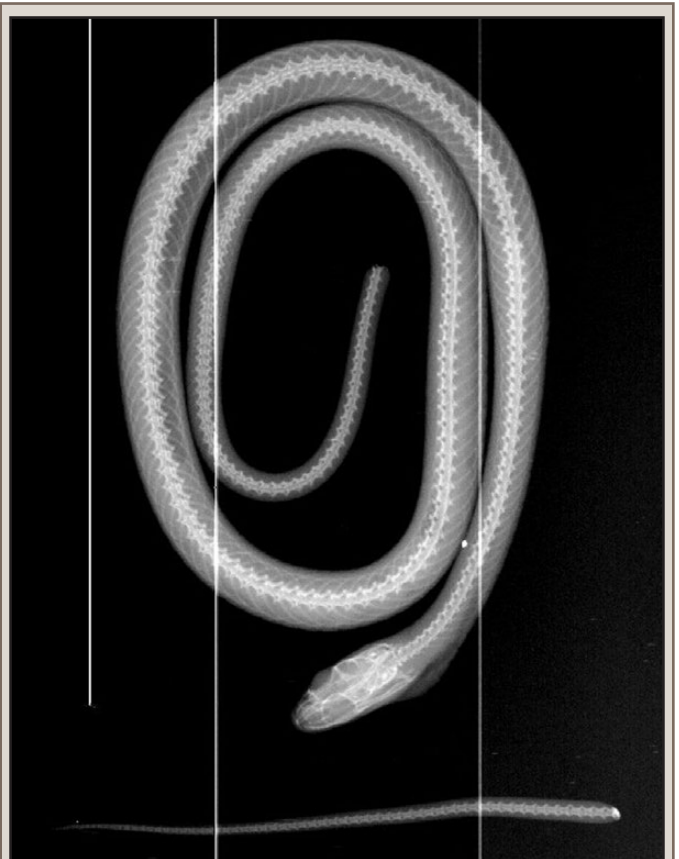


FIG. 1. Radiograph displaying the intervertebral fracture in the tail of a juvenile *Thamnophis proximus* (MZFC-HE 30636).

1982:98–101).

On 13 December 2015, we collected two juvenile *Thamnophis proximus rutiloris* near Playa Palancar, on the west coast of Cozumel island, Quintana Roo, Mexico (20.35486°N, 87.02282°W, WGS 84; 5 m elev.). Both individuals were active above ground in mangrove forest adjacent to a developed parking lot. The specimens were deposited in the herpetological collection of the Museo de Zoología “Alfonso L. Herrera,” Facultad de Ciencias, Universidad Nacional Autónoma de México, México (MZFC-HE 30635–30636). One of the two snakes exhibited tail pseudoautotomy after minor pressure was applied immediately behind the vent during capture. The specimen’s tail detached, fell to the ground, and continued to writhe. The intervertebral break was captured in an x-ray (Fig. 1). To our knowledge, this is the first record of the species exhibiting deliberate tail loss in response to a perceived predation attempt (Rossman et al. 1996. *The Garter Snakes: Evolution and Ecology*. University of Oklahoma Press, Norman, Oklahoma. 332 pp.). Fieldwork was conducted under the authority of collecting permit FAUT 0243 issued to Uri O. García-Vázquez by the Secretaría de Medio Ambiente y Recursos Naturales.

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THAMNOPHIS RUFIPUNCTATUS (Narrow-headed Garter-snake). **SHARED REFUGE**. Congregation by *Thamnophis* species that share communal hibernacula and sometimes congregate during breeding events, such as *T. radix* (Plains Gartersnake) and *T. sirtalis* (Common Gartersnake; Shine et al. 2001. *Copeia*. 2001:82–91; Shine et al. 2004. *Can. J. Zool.* 82:1091–1098), is well known. However, non-breeding aggregations of gartersnakes during the active season are sparsely documented. Seasonal feeding congregations have been observed in *T. eques* (Northern Mexican Gartersnake) when prey reach high densities in isolated pools (d’Orgeix et al. 2013. *Herpetol. Rev.* 44:213–215), but further assessment of active season aggregation and shared refuge behavior in *Thamnophis* and other snakes is warranted to better understand how seasonality may influence activity and behavioral ecology of ectotherms.

The semi-aquatic *Thamnophis rufipunctatus* is endemic to cool-water high elevation streams in the Mogollon Rim region of Arizona and western New Mexico (Wood et al. 2011. *Mol. Ecol.* 20:3856–3878). This species is specialized for riparian stream riffle habitat (Hibbitts et al. 2009. *Southwest Nat.* 54:461–467), with small home ranges seldom exceeding 2 ha (Nowak 2006. Final Report to Arizona Game and Fish Department IIAPM Division). The active season of *T. rufipunctatus* ranges from March to November, and offspring have been reported from June–August (Nowak 2006 *op. cit.*; Hibbitts et al. 2009 *op. cit.*). In Arizona, neonates are typically observed in July and August (SL, *pers. obs.*).

During a visual encounter survey on 16 May 2017 at 1445



FIG. 1. S. Lashway holding three *Thamnophis rufipunctatus* captured during a VES survey. An adult (male), subadult (female), and one neonate (male) were discovered underneath the same rock.



FIG. 2. Canyon Creek (Arizona) habitat where three *T. rufipunctatus* co-occurred underneath the same flat rock. The yellow arrow depicts the site of capture and the inset shows microhabitat underneath the rock.

h, we uncovered three *T. rufipunctatus* underneath a single flat rock (width = ca. 40 cm) on a northwest facing slope within 5 m of Canyon Creek in Payson, Gila County, Arizona, USA (34.2408°N, 110.7879°W, NAD83; 1893 m elev.). The snakes were cool to the touch and easily captured by hand (Fig. 1). At the time of capture, the sky was overcast ($T_A = 13.2^\circ\text{C}$; relative humidity = 42.2%; mean wind speed = 0.8 m/s), but it had hailed and rained earlier that morning (ca. 0800 h). The substrate and surrounding microhabitat was mostly barren rock with scant low vegetation at a bend in the creek (Fig. 2). Adjacent (ca. < 10 m) to this streamside bedrock formation was *Pinus ponderosa* (Ponderosa Pine), which provided only sparse overhead canopy cover to the snake locality. The aggregation included one adult male (SVL = 48.0 cm; tail length = 15.8 cm; 57.5 g), an immature female (SVL = 41.2 cm; tail length = 11.4 cm; 34.5 g), and one male juvenile (SVL = 24.5 cm; tail length = 7.7 cm; 8.5 g).

There is little information about daily refuge congregation