

Parasites of the lizard *Strobilurus torquatus* Wiegmann, 1834 in Northeastern Brazil (Squamata: Tropiduridae)

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Parasitism is an ecological relationship in which one organism exploits the other for food and/or refuge sources (Poulin, 2007). Lizards are hosts to a wide variety of metazoan parasites such as, mites, nematodes, cestodes, trematodes and pentastomids, and have been the focus of many recent studies (Burse and Goldberg, 2003; Bursey et al., 2005; Ávila and Silva, 2010; Araujo-Filho et al., 2014; Brito et al., 2014a, b; Galdino et al., 2014; Sousa et al., 2014).

Tropiduridae comprise lizard species that have been well-studied regarding parasitological features (e.g., Cunha-Barros and Rocha, 2000; Cunha-Barros et al., 2003; Carvalho et al., 2006; Rocha et al., 2008; Delfino et al., 2011; Menezes et al., 2011; Araujo-Filho et al., 2017). However, some species in this lizard group still lack information about their parasite fauna.

Strobilurus torquatus Wiegmann, 1834 is a diurnal, arboreal and insectivorous lizard occurring in the Atlantic Forest from the state of Rio de Janeiro to Paraíba, as well as rainforest enclaves in the Caatinga of Ceará (e.g., Rodrigues et al., 1989; Torres-Carvajal, 2004; Martinez et al., 2011; Rodrigues et al., 2013). These studies prove that, despite its wide geographic distribution, this

lizard is a rare species and has low local abundance. For this reason, the information about this species is mostly restricted to geographic distribution in species lists and little is known about its biology and ecology (Jackson, 1978; Rodrigues et al., 2013; Teixeira et al., 2020). However, recently a study carried out by Teixeira et al. (2020) registered *Strongyluris oscar* Travassos, 1923, *Spauligodon lobo* Ramallo, Bursey & Goldberg, 2002, and *Physaloptera lutzi* Cristóforo, Guimarães & Rodrigues, 1976 as nematode species parasitising *S. torquatus*. In this study, we add new information about the parasitic fauna of this tropidurid lizard.

On 01 January 2019, we collected one female individual (voucher LBEVL1107) of *S. torquatus* (Fig. 1) (snout-vent length = 71.94 mm) in Parque Nacional Serra de Itabaiana (-10.7615°S, -37.3406°W; Datum WGS 84), Municipality of Areia Branca, Sergipe State, Brazil. In the laboratory, the lizard was dissected and analysed under a stereoscope to detect the presence of ectoparasites in its tegument and endoparasites in the celomic cavity, gastrointestinal tract, lung and liver. Endoparasites and ectoparasites were removed, counted, preserved in 70% alcohol and subsequently identified

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Figure 1. Specimen of *Strobilurus torquatus*. Photo by Hugo Andrade.

by optical microscopy. The lizard was deposited in the herpetological collection of the Laboratório de Biologia e Ecologia dos Vertebrados (LABEV), Universidade Federal de Sergipe, and the endoparasites were deposited at Universidade Estadual Paulista, Campus de Ilha Solteira, and ectoparasites at the Instituto Oswaldo Cruz.

We found that the *Strobilurus torquatus* individual had endoparasites in the lungs (larvae of *Strongyluris oscari*, n = 1), in the stomach (*Physaloptera retusa* Rudolphi, 1819, n = 4), in the intestine (*S. oscari*, n = 7) and in the celomic cavity (encysted larvae of Nematoda, n = 6). In addition, we found 64 mites of the species *Eutrombicula alfreddugesi* (Oudemans, 1910) (Trombiculidae).

The helminth species *S. oscari* was recorded for *S. torquatus* by Teixeira et al. (2020) in Paraíba State. We present new records of the parasite *P. retusa* and the encysted larvae (Nematoda). Infections by *P. retusa* have already been reported for other Tropiduridae, including *Tropidurus guarani* Alvarez et al., 1994, *T. melanopleurus* Boulenger, 1902, *T. oreadicus* Rodrigues, 1987, *T. hispidus* Spix, 1825 and *T. torquatus* Wied-Neuwied, 1820 (Vicente, 1981; Ribas et al., 1998; Roca, 1997; Anjos et al., 2012; Pereira et al., 2012).

The *E. alfreddugesi* infestation was similar to other species of Tropiduridae, for example *T. cocorobensis* Rodrigues, 1987, *T. erythrocephalus* Rodrigues, 1987, *T. semitaeniatus* (Spix, 1825) (Rocha et al., 2008; Menezes et al., 2011), *T. itambere* Rodrigues, 1987, *T. oreadicus* (Carvalho et al., 2006), *T. hispidus* (Rocha et al., 2008; Delfino et al., 2011; Menezes et al., 2011) and *T. torquatus* (Cunha-Barros and Rocha, 2000; Cunha-Barros et al., 2003; Carvalho et al., 2006; Rocha et al., 2020). Tropidurid lizards have a high intensity of mite infestation (Cunha-Barros et al., 2003; Carvalho et al., 2006; Rocha et al., 2008; Delfino et al., 2011; Menezes et al., 2011), which can be due to the presence of imbricated scales and mite pockets (Cunha-Barros and Rocha, 1995; Menezes et al., 2011) that may facilitate the fixation and protection of mites against environmental factors such as wind and temperature (Rodrigues, 1987; Cunha-Barros and Rocha, 2000).

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