

First record of *Aplectana* sp. (Nematoda: Cosmocercidae) infecting *Gymnodactylus darwinii* (Gekkota: Phyllodactylidae) from an Atlantic Forest fragment in northeastern Brazil

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Parasites are integral components of natural ecosystems with unique roles in food webs (e.g., Dunne et al., 2013), regulating community composition (e.g., Wood et al., 2007), and maintaining host genetic diversity (Altizer et al., 2003). Nematodes are parasites of amphibians (Poulin and Morand, 2004; Campião et al., 2014; Gonzalez and Inés, 2015) and reptiles (Ávila et al., 2010; Lima et al., 2017; Quirino et al., 2018), and can be influenced by geographical barriers (Arneberg, 2002), seasonality (Brito et al., 2014; Araujo-Filho et al., 2017), and body mass (George-Nascimento et al., 2004) of their hosts.

In Brazil, the family Phyllodactylidae comprises 13 species of geckos in four genera, including *Gymnodactylus*, *Homonota*, *Phyllopezus*, and *Thecadactylus* (Costa and Bérnills, 2015). *Gymnodactylus darwinii* (Gray, 1845) (Fig. 1) is an endemic lizard of the Brazilian Atlantic Forest that occurs from Rio Grande do Norte State in the north to São Paulo State in the south, inhabiting various habitat types, including lowland forests, tropical forests, and occasionally the edges of the forest and environments influenced by human-caused disturbances (Almeida-Gomes et al., 2012).

This nocturnal lizard has a small body size (maximum snout–vent length 59.1 mm) and shelters in rock

crevices and under the bark of trees during the day (Almeida-Gomes et al., 2012). The objective of this study is to describe the composition of endoparasites associated with populations of *G. darwinii* at the Benjamin Maranhão Botanical Garden (BMBG), João Pessoa Municipality, Paraíba State, Brazil (7.1356°S, 34.8603°W; area 471 ha), assessed between November and December 2016. This locality has an annual rainfall of 1490 mm and an average annual temperature of 24.6°C (Climate-Date, 2017).

A total of 14 geckos (snout–vent length 42.2 mm ± standard deviation 14.6 mm) were collected, including 12 males (43.7 ± 14.8 mm) and two females (36.8 ± 14.5 mm). This level of variability in the size of the collected lizards is common in natural populations sampled via pitfall traps. In the laboratory, lizards were euthanized with a lidocaine injection, fixed in 10% formalin, and preserved in 70% ethanol. The body cavity was opened and the respiratory and gastrointestinal tract were dissected and analysed. Endoparasites were counted, their sites of infection recorded, and they were preserved in 70% ethanol, cleared in Hoyer's solution (Everhart, 1957), and subsequently identified using the information presented by Gomez et al. (2017). Three of the males were infected by *Aplectana* sp. (one parasite in each male). Prevalence of infection (ratio between infected hosts and sampled hosts in %, sensu Bush et al., 1997) was 21.4%.

This is the first record of *Aplectana* sp. parasitizing *G. darwinii*. Nematodes of the genus *Aplectana* are known to be parasites in the digestive tract of amphibians and reptiles (Pun and Maharjan, 2016). In northeastern Brazil, two phyllodactylid lizard species, *Phyllopezus pollicaris* and *Gymnodactylus geckoides*, are known to have nematode infections (Ávila and Silva, 2010; Lima et al., 2017). *Phyllopezus pollicaris* is a host of *Parapharyngodon alvarengai*, *Spaullogodon*

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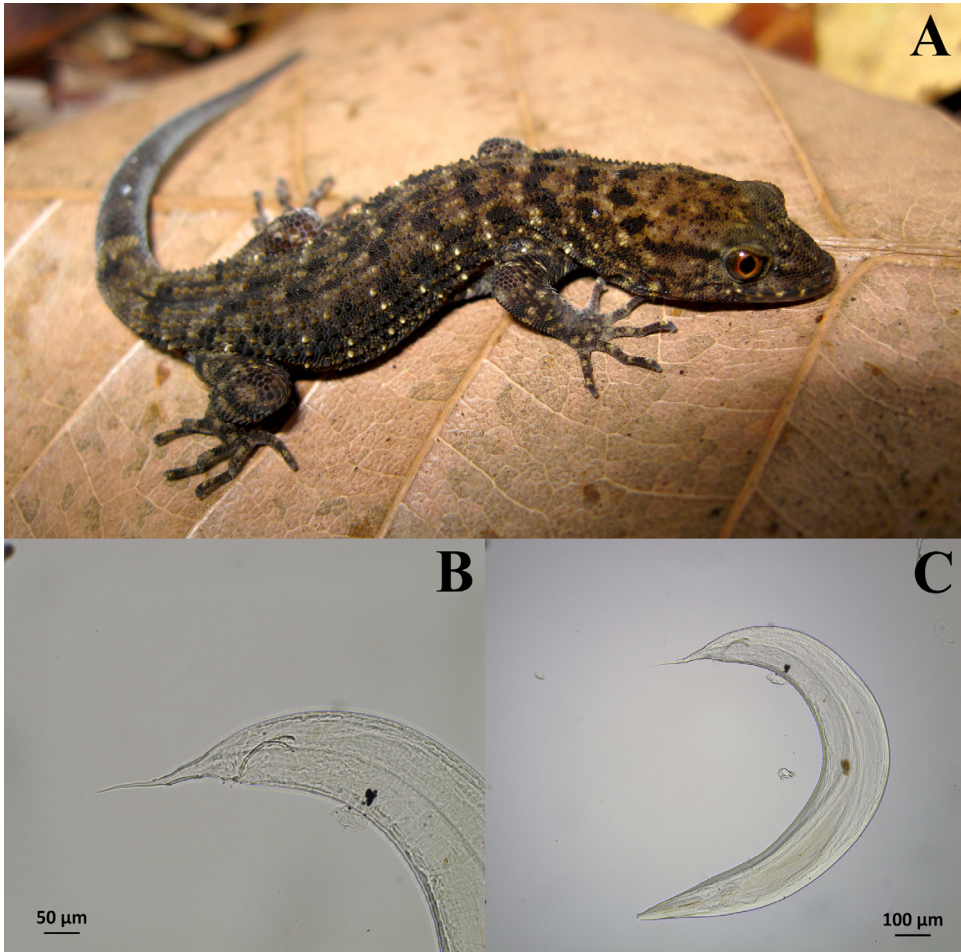


Figure 1. (A) Adult *Gymnodactylus darwinii*. Photo by S.C. Ribeiro. (B) Male *Aplectana* sp., posterior view showing the presence of pre- and post-anal papillae (total number cannot be determined) and a pair of sub-equal spicules. (C) Full view of the specimen shown in (B).

oxkcutzcabiensis, *Physaloptera lutzi*, *Skrjabinelazia intermedia*, and *Trichospirura* sp. (Lima et al., 2017), whereas *G. geckoides* is known to harbour *P. alvarengai*, *S. oxkcutzcabiensis*, *P. lutzi*, *Trichospirura* sp., and *Piratuba* sp. (Lima et al., 2017). On the other hand, *G. darwinii* was known only as host of *Physaloptera* sp. larval stages (Almeida-Gomes et al., 2012). The present study is the first to record *Aplectana* sp. infecting species of lizards of the family Phyllodactylidae, contributing to a better understanding this interaction.

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