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Source: Comparative Parasitology, 78(1):120-128. 2011.
Published By: The Helminthological Society of Washington
DOI: 10.1654/4472.1
URL: http://www.bioone.org/doi/full/10.1654/4472.1

Comp. Parasitol.
78(1), 2011, pp. 120–128

Helminths from Lizards (Reptilia: Squamata) at the Cerrado of Goiás State, Brazil

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ABSTRACT: Forty-three specimens representing 11 species of lizards (*Ameiva ameiva*, *Anolis chrysolepis brasiliensis*, *Cnemidophorus* cf. *parecis*, *Hemidactylus mabouia*, *Mabuya dorsivittata*, *Mabuya nigropunctata*, *Ophiodes striatus*, *Philautus acutirostris*, *Tropidurus itambere*, *Tropidurus oreadicus*, and *Tupinambis merianae*) collected in 6 localities of the Cerrado biome in the Brazilian state of Goiás were examined for helminths. Thirteen species of nematodes (*Cruzia travassosi*, *Gynaecometra bahiensis*, *Oswaldofilaria* sp., *Parapharyngodon* sp., *Parapharyngodon largitor*, *Parapharyngodon sceleratus*, *Pharyngodon travassosi*, *Physaloptera* sp., *Physaloptera lutzi*, *Physaloptera retusa*, *Physalopteroides venancioi*, *Subulura lacertilia*) and an unidentified species of cestode (*Oochoristica* sp.) were recovered from lizard hosts. Thirteen new host records and 7 locality records are reported.

KEY WORDS: Nematoda, Cestoda, Squamata, Sauria, Brazil, Neotropical, South America.

The state of Goiás is located in the midwestern region of Brazil, with territory situated at the Cerrado domain. The Cerrado (savanna-like vegetation) is the second largest biome of Brazil, occupying more than 2,000,000 km^2 and harboring considerable lizard diversity, with high levels of endemism (Colli et al., 2002).

Helminthological surveys of lizards from the Goiás state are older, fragmented, and restricted to a few species. Araújo and Gandra (1941) described the nematode *Amphibiocapillaria* (=*Capillaria*) *freitaslenti* and Alho (1969) described *Strongyluris travassosi* (=*S. oscari*), both from *Tropidurus torquatus*. Vicente (1981) reported *Parapharyngodon sceleratus* and *Strongyluris oscari* from 2 localities of the state. The purpose of this article is to report helminths from 11 lizard species of 6 localities in the Goiás state, thereby increasing our knowledge of helminths from lizards of Brazil.

MATERIALS AND METHODS

Lizards collected from November 2005 to October 2008 from 6 municipalities of Goiás state, Brazil, and housed at the Coleção Zoológica da Universidade Federal de Goiás (ZUFG) were examined for the presence of helminths: Aparecida do Rio Doce (18°17′S; 51°08′W), Barro Alto (14°58′S; 48°54′W), Itarumã (18°46′S; 51°20′W), Niquelândia (14°28′S; 48°27′W), Silvânia (17°50′S; 52°39′W), and the Parque Nacional das Emas (18°46′S; 51°20′W), in the Mineiros municipality. Lizards were captured by hand or by pitfall-traps during biological surveys, euthanized, fixed in 10% formalin, and preserved in 70% ethanol. For each lizard, snout–vent length (SVL) was measured (in millimeters) using a digital caliper.

The body cavity of each lizard was opened by a longitudinal incision from throat to vent, the gastrointestinal tract was slit longitudinally, and the stomach and intestinal contents were removed and examined under a dissecting microscope. Helminths found in the gastrointestinal tract, lungs, or body cavity were placed in vials of 70% ethanol for later identification. For species identification, nematodes were cleared in phenol and analyzed using image analysis software (Qwin Lite 3.1, Leica Microsystems, Wetzlar, Germany). Voucher helminth specimens were deposited in the Coleção Helmintológica do Instituto de Biociências da Unesp de Botucatu (CHIBB).

We examined 43 individual specimens from 11 lizard species: giant ameiva *Ameiva ameiva* ($N = 9$; SVL = 109.7 ± 38.1 mm; ZUFG 3–5, 32, 87, 118, 120, 127, 128), goldenscale anole *Anolis chrysolepis brasiliensis* ($N = 8$; SVL = 56.4 ± 8.1 mm; ZUFG 16, 17, 41, 46–49, 116), whiptail lizard *Cnemidophorus* cf. *parecis* ($N = 3$, SVL = 73 ± 25.7 mm; ZUFG 39, 60, 62), house gecko *Hemidactylus mabouia* ($N = 2$; SVL = 48.8 ± 20.9 mm; ZUFG 125, 126), Paraguay mabuya *Mabuya dorsivittata* ($N = 4$; SVL = 61.8 ± 12 mm; ZUFG 58, 61, 63, 64), no common name *Mabuya nigropunctata* ($N = 3$; SVL = 65.5 ± 14 mm; ZUFG 13, 43, 45), striped worm lizard *Ophiodes striatus* ($N = 1$; SVL = 253 mm; ZUFG 66), Brazilian bush anole *Polychrus acutirostris* ($N = 5$; SVL = 90.2 ± 29.4 mm; ZUFG 1, 12, 77, 99, 119), lava lizard *Tropidurus itambere* ($N = 1$; SVL = 84.5 mm; ZUFG 69), lava lizard *Tropidurus oreadicus* ($N = 6$; SVL = 64.0 ± 14.7 mm; ZUFG 9–11, 50, 51, 80), and golden tegu *Tupinambis teguixin* ($N = 1$; SVL = 169 mm; ZUFG 133).

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RESULTS

A total of 1,345 helminths from 13 nematode species and an unidentified species of cestode were recovered. Host species and their parasites are as follows:

Polychrotidae
Anolis nitens brasiliensis Vanzolini and Williams, 1970

Eight specimens were examined from 2 localities: 1 from Silvânia (uninfected) and 7 from Niquelândia (2 of which were infected with nematodes), Brazil.

Subulura lacertilia Vicente, Van-Sluys, Fontes and Kiefer, 2000 (CHIBB 4017)

Prevalence and intensity of infection: One of 7 hosts infected (14.3%, 8).

Temporal distribution: December 2005.

Site of infection: Large intestine.

Type host and locality: Eurolophosaurus nanuzae, Minas Gerais, Brazil.

Other reported hosts: Eurolophosaurus nanuzae Fontes et al. (2003), *Cnemidophorus nativo* Menezes et al. (2004).

Locality records: Cited in the Brazilian states of Minas Gerais and Bahia.

Remarks: Anolis nitens brasiliensis represents a new host record for *S. lacertilia*; Goiás state is a new locality record.

Polychrus acutirostris Spix, 1825

Five specimens were examined: 2 from Barro Alto and 1 from Parque Nacional das Emas were uninfected. Results of infected specimens from Silvânia and Niquelândia follow:

Gynaecometra bahiensis Araújo, 1976 (CHIBB 4021 and 4037)

Prevalence and intensity: One specimen from Niquelândia was infected with 959 nematodes, and 1 specimen from Silvânia was infected with 137 nematodes.

Temporal distribution: November 2005 and August 2008 in Niquelândia and Silvânia, respectively.

Site of infection: Large intestine.

Type host and locality: Polychrus acutirostris, Bahia, Brazil.

Other reported hosts: None.

Locality records: Cited in the Brazilian states of Bahia (Araújo, 1976) and Mato Grosso do Sul (Ávila et al., 2010a).

Remarks: Goiás state is a new locality record for *G. bahiensis*.

Physalopteroides venancioi (Lent, Freitas and Proença, 1946) Sobolev, 1949 (CHIBB 4036)

Prevalence: One specimen from Silvânia was infected with 17 nematodes.

Temporal distribution: August 2008.

Site of infection: Stomach.

Type host and locality: Rhinella schneideri (=*Bufo paracnemis*), Uruguay.

Other reported hosts: Alopoglossus atriventris (Goldberg et al., 2007a), *Ameiva ameiva* (Fabio and Rolas, 1974), *Cercosaura ocellata*, *Kentropyx altamazonica*, *Kentropyx pelviceps*, *Mabuya bistriata*, *Thecadactylus solimoensis*, *Tupinambis teguixin* (Bursey et al., 2005), *Cnemidophorus nativo* (Menezes et al., 2004), *Kentropyx calcarata* (Ávila and Silva, 2009), *Mabuya agilis*, *Tropidurus torquatus* (Vrcibradic et al., 2000), and *Mabuya macrorhyncha* (Rocha and Vrcibradic, 2003).

Locality records: In the Brazilian states of Acre, Bahia, Mato Grosso, and Rio de Janeiro, and in Peru and Paraguay.

Remarks: Polychrus acutirostris represents a new host record for *P. venancioi*. Goiás state is a new locality record.

Tropiduridae
Tropidurus itambere Rodrigues, 1987
Parapharyngodon sceleratus (Travassos, 1923) Freitas, 1957 (CHIBB 4034–4035)

Prevalence: One specimen from Aparecida do Rio Doce municipality was infected with 19 nematodes.

Temporal distribution: December 2006.

Site of infection: Small and large intestine.

Type host and locality: Tropidurus torquatus, Manguinhos, Brazil.

Other reported hosts: Ameiva ameiva (Rodrigues and Pinto, 1967; Ribas et al., 1998; Bursey et al., 2005), *Cnemidophorus littoralis* (Ribas et al., 1995), *Eurolophosaurus nanuzae* (Fontes et al., 2003), *Hemidactylus mabouia* (Alho and Rodrigues, 1973; Anjos et al., 2005), *Kentropyx pelviceps*, *Mabuya bistriata* (Bursey et al., 2005), *Liolaemus lutzae* (Rodrigues, 1992), *Mabuya agilis* (Van Sluys et al., 1997; Rocha and Vrcibradic, 2003), *Mabuya caissara* (Rocha and Vrcibradic, 2003), *Mabuya frenata* (Vrcibradic et al., 1999), *Mabuya macrorhyncha* (Rocha and Vrcibradic, 2003; Vrcibradic and Rocha, 2005), *Microlophus albermalensis* (Baker, 1987), *Phyllodactylus johnwrighti* (Goldberg and Bursey, 2010), *Tropidurus guarani* (Vicente, 1981; Bursey and Goldberg, 2004), *Tropidurus hispidus* (Lopes et al., 2007), *Tropidurus itambere* (Van Sluys et al., 1994), *Tropidurus semitaeniatus*, *Tropidurus* sp. (Vicente et al., 1993), *Tropidurus torquatus* (Vicente et al., 1993; Ribas et al., 1998), and *Tropidurus melanopleurus* (Roca, 1997).

Locality records: In the Brazilian states of Bahia, Ceará, Espírito Santo, Minas Gerais, Mato Grosso do Sul, Goiás, Pará, Paraíba, Pernambuco, Rio de Janeiro, Rio Grande do Norte, and São Paulo; and in Bolívia, Paraguay, the Galapagos Islands, Peru, and Ecuador.

Remarks: Six species of *Parapharyngodon* are recognized in South American lizards: *Parapharyngodon alvarengai*, *Parapharyngodon largitor*, *Parapharyngodon riojensis*, *Parapharyngodon sceleratus*, *Parapharyngodon riojensis*, and *Parapharyngodon verrucosus* (see Ramallo et al., 2002). Ramallo et al. (2002) provided a key to identification of the species in the Neotropical region.

Tropidurus oreadicus Rodrigues, 1987

Six specimens were examined: 1 from Barro Alto municipality (uninfected) and 5 from Niquelândia:

Oochoristica sp. (CHIBB 4011)

Prevalence: One of 5 specimens (20%) was infected with 2 cestodes.

Temporal distribution: May 2006.

Site of infection: Small intestine.

Remarks: Thirteen species of *Oochoristica* are known from the Neotropical region (see Guillén-Hernández et al., 2007). Because of the poor condition of our specimens, they cannot be identified to species.

Physaloptera lutzi Cristofaro, Guimarães and Rodrigues, 1976 (CHIBB 4012–4013)

Prevalence: One of 5 specimens (20%) was infected with 10 nematodes.

Temporal distribution: January 2006.

Site of infection: Stomach and large intestine.

Type host and locality: Ameiva ameiva, Bahia, Brazil.

Other reported hosts: Ameiva ameiva (Cristofaro et al., 1976; Ribas et al., 1998), *Cnemidophorus abaetensis* (Dias et al., 2005), *Cnemidophorus littoralis* (Ribas et al., 1995), *Enyalius bilineatus* (Vrcibradic et al., 2007), *Eurolophosaurus nanuzae* (Fontes et al., 2003), *Liolaemus alticolor*, *Liolaemus ornatus*, *Liolaemus quilmes* (Ramallo and Díaz, 1998), *Tropidurus guarani* (Vicente, 1981; Bursey and Goldberg, 2004), *T. itambere* (Van Sluys et al., 1994), and *T. torquatus* (Vicente, 1981; Van Sluys et al., 1997; Ribas et al., 1998; Vrcibradic et al., 2000).

Locality records: In the Brazilian states of Bahia, Espírito Santo, Minas Gerais, Mato Grosso do Sul, Goiás, Pará, Rio de Janeiro, and São Paulo; and in Argentina, Bolívia, and Paraguay.

Remarks: Four species of *Physaloptera* have been recognized in South America (*Physaloptera liophis*, *Physaloptera obtusissima*, *Physaloptera lutzi*, and *Physaloptera retusa*), and identification is based on male caudal morphology and spicules length (see Vicente et al., 1993). *Tropidurus oreadicus* represents a new host record for *P. lutzi*.

Physaloptera retusa Rudolphi, 1819 (CHIBB 4014)

Prevalence: One of 5 specimens (20%) was infected with 1 worm.

Temporal distribution: May 2006.

Site of infection: Stomach.

Type host and locality: Tupinambis teguixin, Brazil.

Other reported hosts: Ameiva ameiva (Vicente, 1981; Ribas et al., 1998; Bursey et al., 2005), *Ameiva festiva* (Goldberg and Bursey, 2009), *Amphisbaena alba* (Molin, 1860), *Anolis fuscoauratus* (Goldberg et al., 2006), *Anolis punctatus*, *Kentropyx altamazonica*, *K. pelviceps*, *Mabuya bistriata*, *Plica plica*, *Plica umbra*, *Stenocercus roseiventris*, *Thecadactylus soli-*

moensis (Bursey et al., 2005), *Cnemidophorus abaetensis* (Dias et al., 2005), *C. lemniscatus* (Caballero and Vogelsangi, 1947; Dias-Ungria, 1964), *C. littoralis* (Vrcibradic et al., 2000), *C. nativo* (Menezes et al., 2004), *Cnemidophorus ocellifer* (Ribas et al., 1995), *Enyalius bilineatus* (Vrcibradic et al., 2007), *Iguana iguana* (Diaz-Ungria and Gallardo, 1968), *Kentropyx calcarata* (Goldberg et al., 2007b; Ávila and Silva, 2009), *Potamites ecpleopus* (Goldberg et al., 2007a), *Leiosaurus bellii*, *Leiosaurus catamarcensis*, *Liolaemus neuquensis* (Goldberg et al., 2004), *Liolaemus lutzae* (Rocha, 1995), *Mabuya agilis* (Ribas et al., 1998), *M. dorsivittata* (Rocha et al., 2003), *Ophiodes striatus* (Baker, 1987), *Tropidurus guarani* (Vicente, 1981), *T. hispidus* (Prieto, 1980), *T. melanopleurus* (Roca, 1997), *T. torquatus* (Vicente and Santos, 1967; Vicente, 1981; Ribas et al., 1998; Vrcibradic et al., 2000), *Tupinambis longilineus* (Ávila et al., 2010b), *Tupinambis rufescens* (Sprehn, 1932), *T. teguixin* (Baylis, 1947; Noronha et al., 2004), *Uracentron flaviceps* (Goldberg and Bursey, 2007).

Locality records: In the Brazilian states of Bahia, Espírito Santo, Mato Grosso do Sul, Mato Grosso, Pará, Rio de Janeiro, and São Paulo; and in Paraguay, Bolívia, Argentina, Peru, Surinam, Uruguay, Venezuela, and Colombia.

Remarks: See comments under *P. lutzi* above. *Tropidurus oreadicus* represents a new host record for *P. retusa*. Goiás state is a new locality record.

Physalopteroides venancioi **Lent, Freitas and Proença, 1946 (CHIBB 4009)**

Prevalence: One of 5 specimens (20%) was infected with 7 nematodes.

Temporal distribution: May 2006.

Site of infection: Stomach.

Remarks: See comments under *Polychrus acutirostris*. *Tropidurus oreadicus* represents a new host record for *P. venancioi*.

Subulura lacertilia **Vicente, Van-Sluys, Fontes and Kiefer, 2000 (CHIBB 4010, 4013, 4015)**

Prevalence and intensity: Three of 5 specimens (60%) were infected with 27 nematodes (9 ± 7).

Temporal distribution: May 2006.

Site of infection: Large intestine.

Remarks: See comments under *A. nitens brasiliensis*. *Tropidurus oreadicus* represents a new host record for *S. lacertilia*.

Gekkonidae

Hemidactylus mabouia **(Moreau de Jonnès, 1818)**

Parapharyngodon **sp. (CHIBB 4043)**

Prevalence: One of 2 specimens collected in the Itarumã municipality was infected with 8 nematodes.

Temporal distribution: September 2008.

Site of infection: Large intestine.

Remarks: See comments under *Tropidurus itambere*. According to Ramallo et al. (2002), species of *Parapharyngodon* are distinguished based on male caudal characteristics and female reproductive features, such as the location of the ovary. Our specimens possess an ovary wrapping around the esophagus, which eliminates *P. riojensis* and *P. senisfasciecaudus* from consideration.

Anguidae

Ophiodes striatus **Spix, 1824**

Physaloptera retusa **Rudolphi, 1819 (CHIBB 4031–4032)**

Prevalence: One specimen from the Parque Nacional das Emas was infected with 2 nematodes.

Temporal distribution: December 2006.

Site of infection: Stomach and large intestine.

Remarks: See comments under *Tropidurus oreadicus*. *Ophiodes striatus* represents a new host record for *P. retusa*.

Subulura lacertilia **Vicente, Van-Sluys, Fontes and Kiefer, 2000 (CHIBB 4032)**

Prevalence: One specimen from the Parque Nacional das Emas was infected with 3 nematodes.

Temporal distribution: December 2006.

Site of infection: Large intestine.

Remarks: See comments and remarks under *Anolis nitens brasiliensis*. *Ophiodes striatus* represents a new host record for *S. lacertilia*.

Oswaldofilaria sp. Travassos, 1933 (CHIBB 4030)

Prevalence: One specimen from the Parque Nacional das Emas was infected with 10 nematodes.

Temporal distribution: December 2006.

Site of infection: Body cavity.

Remarks: Five species of *Oswaldofilaria* have been recognized from lizards in South America: *Oswaldofilaria azevedoi*, *Oswaldofilaria belemensis*, *Oswaldofilaria brevicaudata*, *Oswaldofilaria petersi*, and *Oswaldofilaria spinosa*. Species identification is based on male characteristics, shape and length of spicules, and arrangement of caudal papillae (see Bursey et al., 2005). Our specimens cannot be identified because only females were found. *Ophiodes striatus* represents a new host record for the genus *Oswaldofilaria*.

Teiidae
Ameiva ameiva (Linnaeus, 1758)

Nine specimens were examined: 2 from Itarumã, 1 from Barro Alto municipality, 2 from Silvânia, and 4 from Niquelândia:

Oochoristica sp. (CHIBB 4029)

Prevalence: One of 4 specimens (25%) from Niquelândia was infected with 3 cestodes.

Temporal distribution: April 2006.

Site of infection: Small intestine.

Remarks: See comments under *Tropidurus oreadicus*.

Parapharyngodon sp. (CHIBB 4042)

Prevalence: One of 2 specimens (50%) from Itarumã municipality was infected with 2 nematodes.

Temporal distribution: September 2008.

Site of infection: Large intestine.

Remarks: See comments under *Hemidactylus mabouia*.

Pharyngodon travassosi Pereira, 1935 (CHIBB 4033, 4038–4039)

Prevalence: One specimen from Barro Alto municipality was infected with 12 nematodes. Two specimens from Silvânia were infected with 53 nematodes (100%; 26.5 ± 16.3).

Temporal distribution: February 2008 and August 2008 from Barro Alto and Silvânia municipalities, respectively.

Site of infection: Large intestine.

Type host and locality: Ameiva ameiva, Brazil.

Other reported hosts: None.

Locality records: Paraíba state, Brazil.

Remarks: According to Bursey et al. (2008), there are currently 36 species of *Pharyngodon*, which are distinguished based on the presence and absence of a spicule, the morphology of the caudal alae, the shape of the egg, the presence or absence of spines on the tail filaments of adults, and distributional patterns. Goiás state is a new locality record for *P. travassosi*.

Physaloptera sp. Rudolphi, 1819 (CHIBB 4026–4028)

Prevalence: One of 4 specimens (25%) from Niquelândia municipality was infected with 21 larvae.

Temporal distribution: April 2006.

Site of infection: Stomach, small and large intestine.

Remarks: See comments under *P. lutzi* of *T. oreadicus*. Our specimens cannot be identified because of their immature condition.

Physalopteroides venancioi Lent, Freitas and Proença, 1946 (CHIBB 4024–4025)

Prevalence: One of 4 specimens (25%) from Niquelândia municipality was infected with 5 nematodes.

Temporal distribution: April 2006.

Site of infection: Stomach and large intestine.

Remarks: See comments under *Polychrus acutirostris*.

Subulura lacertilia Vicente, Van-Sluys, Fontes and Kiefer, 2000 (CHIBB 4025, 4038)

Prevalence: One of 4 specimens (25%) from Niquelândia municipality was infected with 8 nematodes.

Temporal distribution: April 2006.

Site of infection: Large intestine.

Remarks: See comments under *A. n. brasiliensis*. *Ameiva ameiva* represents a new host record for *S. lacertilia*.

Cnemidophorus aff. *parecis* Colli et al., 2003 *Subulura lacertilia* Vicente, Van-Sluys, Fontes and Kiefer, 2000 (CHIBB 4018–4019)

Prevalence and intensity: Two of 3 specimens (67%) from Parque Nacional das Emas were infected with 7 nematodes (66.7%; 3.5 ± 0.7).

Temporal distribution: October–November 2006.

Site of infection: Large intestine.

Remarks: See comments under *A. n. brasiliensis*. *Cnemidophorus* cf. *parecis* represents a new host record for *S. lacertilia*.

Tupinambis merianae (Duméril and Bibron, 1839) *Cruzia travassosi* Khalil and Vogelsang, 1932 (CHIBB 4040–4041)

Prevalence: One specimen from Silvânia was infected with 5 nematodes.

Temporal distribution: October 2008.

Site of infection: Small and large intestines.

Type host and locality: Tupinambis teguixin, Argentina and Brazil.

Other reported hosts: Tupinambis teguixin (Ruiz, 1947; Baker, 1987), *T. merianae* (Ávila et al., 2010a).

Locality records: Argentina, Bolivia, and Mato Grosso do Sul state, Brazil.

Remarks: Two species of *Cruzia* have been reported from South American lizards: *Cruzia fulleborni* Khalil and Vogelsang, 1930, and *Cruzia rudolphi* Ruiz, 1947. *Cruzia tentaculata* (Rudolphi, 1819) and *C. travassosi* are described as mammal parasites (Bursey et al., 2007). However, both are also cited as a parasite of *Tupinambis teguixin* Linnaeus, 1758 (Ruiz, 1947: unpublished thesis, Universidade de São Paulo, Brazil; Lent and Freitas, 1948). According to Bursey et al. (2007), species of *Cruzia* are distinguished based on morphology of the esophagus and male caudal papillae. Goiás state is a new locality record for *C. travassosi*.

Scincidae *Mabuya dorsivittata* Cope, 1862 *Parapharyngodon largitor* Alho and Rodrigues, 1963 (CHIBB 4022–4023)

Prevalence: Two of 3 specimens (67%) from Parque Nacional das Emas were infected with 1 worm each.

Temporal distribution: November–December 2006.

Site of infection: Large intestine.

Type host and locality: Hemidactylus mabouia, Guanabara, RJ, Brazil.

Other reported hosts: Ameiva ameiva (Rodrigues and Pinto, 1967), *Hemidactylus mabouia* (Anjos et al., 2005), *Mabuya agilis* (Rocha and Vrcibradic, 2003).

Locality records: In the Brazilian states of Rio de Janeiro and São Paulo.

Remarks: See comments under *T. itambere*. *Mabuya dorsivittata* represents a new host record for *P. largitor*. Goiás state is a new locality record.

Mabuya nigropunctata (Spix, 1825) *Oochoristica* sp. (CHIBB 4020)

Prevalence: One of 3 specimens (33%) from Niquelândia municipality was infected with 2 cestodes.

Temporal distribution: August 2006.

Site of infection: Small intestine.

Remarks: See comments under *T. oreadicus*. *Mabuya nigropunctata* represents a new host record for the genus *Oochoristica*.

DISCUSSION

There were at least 14 helminth species recovered from our survey, and 13 new host records and 7 new locality records are reported. This enhances our knowledge of the helminth parasites of lizards from the Cerrado biome.

Of the 22 infected specimens (overall prevalence of 51%), none harbored more than 3 helminth species. Of the infected individuals, 14 (64%) harbored only 1 helminth species, 6 (27%) harbored 2 helminth species, and only 2 (9%) harbored 3

helminth species. There were 1.45 ± 0.67 helminth species/infected lizard. Hosts that harbored 3 helminth species included the tropidurid *T. oreadicus* and the anguid *O. striatus*.

No host species harbored more than 5 helminth species. Of the 11 lizard species infected, 7 (64%) harbored only 1 helminth species, 1 (9%) harbored 2 helminth species, and 2 (18%) harbored 5 species. The species that harbored 5 helminth species were *A. ameiva* and *Tropidurus oreadicus*. There were 2 ± 1.61 helminth species/host species. Aho (1990) compiled information on 100 populations from 9 families of lizards, and stated that mean total number (±SE) of helminth species per host species were 2.06 ± 0.13, with a range of 0–5. Our findings agree with those from Aho (1990), as well other studies with Neotropical lizard assemblages (Bursey et al., 2005, 2007).

ACKNOWLEDGMENTS

Two anonymous reviewers made valuable suggestions that improved our manuscript. We thank Rogério P. Bastos, who provided lizards for dissection. This study was financially supported by Fundação de Amparo a Pesquisa do Estado de São Paulo (FAPESP 06/59692-5). R.W.A. thanks the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) for a grant.

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