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Helminths of the Brown-eared anole, *Norops fuscoauratus* (Squamata, Polychrotidae), from Brazil and Ecuador, South America

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Norops fuscoauratus (D'Orbigny *in* Duméril and Bibron 1837) occurs in northern South America east of the Andes, specifically in Brazil, French Guiana, Suriname, Guyana, Venezuela, Colombia, Ecuador, Peru and Bolivia (Ávila-Pires 1995). We know of no reports of helminths from *N. fuscoauratus*. The purpose of this note is to present the first records of helminths from *N. fuscoauratus.*

Sixty-nine *N. fuscoauratus* collected by LJV and T. C. S. Ávila Pires (MPEG) were borrowed from the Department of Herpetology, Sam Noble Museum of Natural History (OMNH), University of Oklahoma, Norman, Oklahoma, USA. Fifty-six were from Brazil (Pará State, OMNH 36640-36659, CEMEX, Agropecuária Treviso Ltda, 101 km S, 18 km E. Santarém, 03°08'S, 54°50'W, collected February-April, 1995; Acre State, 36982-36999, 5.0 km N Porto Walter, inland from the Rio Juruá, 08°15S, 72°46'W, collected February-March, 1996; Amazonas State, 37157-37162, Rio Ituxi, Madeireira Scheffer, 08°20'S, 65°42'W, collected February-March, 1997; 37645-37656, municipality of Castanho, 40 km S Manaus at km 12 on road to Autazes, 03°31'S, 59°54'W, collected January, December 1998). Thirteen were from Ecuador (Sucumbíos Province, OMNH 40338-40350, Reserva Faunistica Cuyabeno, Neotropic Turis, 00°00', 76°00'W, collected February-April, 1994). Lizards were field fixed in 10% formalin and preserved in 70% ethanol.

The stomachs had been previously removed for an ecological study (Vitt *et al*. 2003). Small and large intestines, lungs, liver and body cavities were examined for helminths under a dissecting microscope. Cestodes and Digenea were dehydrated in a series of graded ethanol, cleared in xylene, stained in hematoxylin, mounted in balsam on a glass slide and examined under a compound microscope. Nematodes were cleared in glycerol on a glass slide under a coverslip and examined with a compound microscope.

Number of helminths, prevalence (number of infected hosts divided by number of hosts examined), mean intensity (mean number of helminths per infected host) and range (lowest and highest intensities) are presented in Table 1.

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Table 1 - Number of helminths (#), prevalence (%), mean intensity (X ± SD), and range (r) for helminths in 56 *Norops fuscoauratus* from Brazil and 13 from Ecuador.

Helminth	Brazil				Ecuador			
	#	%	X±SD	r	#	%	X±SD	r
Cestoda								
Ophiotaenia sp.	2	3.6	1					
Digenea								
Urotrema shirleyae	3	5.4	1					
Nematoda								
Cosmocerca vrcibradici	3	3.6	1.5±0.71	1-2				
Oswaldocruzia vitti	90	48.2	2.9±1.83	1-9	11	31	2.8±2.1	1-5
Physaloptera retusa	1	1.8	1					
Strongyluris oscari	67	28.6	3.2±2.61	1-11	16	38	3.2±1.9	1-6
Rhabdias sp.	2	1.8	2					

Norops fuscoauratus was found to harbor one species of Cestoda, *Ophiotaenia* sp. in the small intestine, one species of Digenea, *Urotrema shirleyae* Zamparo, Brooks and Tkach, 2005, in the small intestine, and five species of Nematoda, *Cosmocerca vrcibradici* Goldberg and Bursey, 2004 in the large intestine, *Oswaldocruzia vitti* Goldberg and Bursey, 2004, in the small intestine, *Physaloptera retusa* Rudolphi, 1819, in the stomach, *Strongyluris oscari* Travassos, 1923, in the large intestine, and *Rhabdias* sp., in the lung (Table 1). *Norops fuscoauratus* represents a new host record for each of these helminth species. Selected helminths in vials of 70% ethanol were deposited in the United States National Parasite Collection (USNPC), Beltsville, MD, *Ophiotaenia* sp. (95913, 95914), *Urotrema shirleyae* (95915-95917), *Cosmocerca vrcibradici* (95918), *Oswaldocruzia vitti* (95919, 95923), *Physaloptera retusa* (95920), *Strongyluris oscari* (95921), *Rhabdias* sp. (95922).

Proteocephalid cestodes are mainly parasites of fishes of Gondwana (South America, Africa, India, Australia) but a number of species are known from amphibians and reptiles (Rego 1994). Because of the low number and fragmented nature of our cestode specimens, we were unable to assign them to a species; however, the presence of four simple acetabula and an elongate uterus with diverticula allows the assignment of the specimens to *Ophiotaenia*.

Urotrema shirleyae was originally described from specimens taken from the small intestine of *Norops oxylophus* collected in Costa Rica (Zamparo *et al.* 2005). It also has been reported from *Norops biporcatus* of Panama and *N. cupreus* of Costa Rica (Zamparo *et al.* 2005). Brazil is a new locality record for *U. shirleyae.*

Cosmocerca vrcibradici and *Oswaldocruzia vitti* were described from *Prionodactylus eigenmanni* (Gymnophthalmidae) from Rondônia and Amazonas States, Brazil and *P. oshaughnessyi* from Sucumbiós Province, Ecuador (Bursey and Goldberg 2004). *Physaloptera retusa* has been reported in lizards from North and South America (Goldberg *et al.* 2004). *Strongyluris oscari* is known from Brazil and has previously been found in *Tropidurus torquatus*, *Ameiva* sp. and an iguanid lizard (Travassos 1926, Alho 1969, 1970). Species of *Rhabdias* are common lung parasites of anuran amphibians but are infrequently found in lizards (Bursey *et al.* 2003). Because of the low number

and condition of our specimens of *Rhabdias*, we were unable to assign them to a species, but we would suggest the possibility of these specimens to represent an undescribed species.

There are 15 species of polychrotid lizards in Amazonia (Ávila-Pires 1995). Helminthological examination of additional species will be required before the diversity of helminths infecting these lizards can be ascertained. And with additional data helminth distribution patterns can be better evaluated; i.e, the differences between localities in Table 1 might be explained. Currently, to our knowledge, this is the first report of *Urotrema shirleyae* from Brazil; species of *Ophiotaenia* are known from both Brazil and Ecuador but only from snakes; however, *Ophiotaenia flava* has been reported from the lizard *Kentropyx pelviceps* collected in Peru (Bursey *et al*. 2005), *Strongyluris oscari* is known from Bolivia, Brazil and Peru (Bursey *et al*. 2005), *Physaloptera retusa* is widely distributed throughout North and South America but has not been previously reported from Ecuador (Bursey *et al*. 2005), and four species of *Rhabidas* have been reported from Brazil, *R. androgyna*, *R. fuelleborni* and *R. hermaphrodita* in amphibians and *R. vellardi* in reptiles (Sarkar and Manna 2004). Thus, much work remains to be done.

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