

First Report of the Nematode, *Physaloptera squamatae* (Spirurida: Physalopteridae) in Oklahoma, With a Summary of Hosts

Chris T. McAllister

Department of Physical and Life Sciences, Chadron State College, Chadron, NE 69337

Charles R. Bursey

Department of Biology, Pennsylvania State University-Shenango Campus, Sharon, PA 16146

The ground skink, *Scincella lateralis* Say is a small brown lizard that inhabits the forest floor, leaf litter, and decaying logs ranging from southern New Jersey to the Florida Keys and west to eastern Kansas and west central Texas (Brooks 1975; Conant and Collins 1998). Some information is available on endoparasites of the species, including reports of coccidians (*Eimeria* and *Isospora* spp.) in ground skinks from Florida (Telford 1997) and Louisiana (Atkinson and Ayala 1987) and helminths from *S. lateralis* in Florida (Brooks 1963, 1972; Telford and Bursey 2003) and Texas (Harwood 1932). However, nothing, to our knowledge, has been reported on endoparasites of *S. lateralis* from Oklahoma. Herein we report on a nematode infecting this host in the state, including the first report of this parasite in Oklahoma.

On 14 April 1989, four adult *S. lateralis* (2 males, 2 females, SVL range = 34-41 mm, mean \pm 1SD = 38.3 \pm 2.9 mm) were collected in the vicinity of the University of Oklahoma Biological Station, Marshall County, Oklahoma (33° 52.58'N, 96° 48.21'W). Specimens were placed in individual bags on ice and killed within 24 hours with a dilute intraperitoneal injection of sodium pentobarbital (Nembutal®). A midventral incision was placed from the throat to anus and the entire gastrointestinal tract, lungs, liver, gall bladder, kidneys, urinary bladder, reproductive organs, musculature, and body cavity examined for endoparasites. Their feces were examined for coccidia following

previously published methods (Upton et al. 1988). Nematodes were placed in a drop of glycerol on microscopic slides and identifications were made from these temporary mounts.

Helminth voucher specimens were deposited in the United States National Parasite Collection (USNPC), Beltsville, Maryland, USA, as USNPC 84249-84250 (vials). Skink voucher specimens were deposited in the Arkansas State University Museum, Herpetological Collection, State University, Arkansas, USA, as ASUMZ 13142-13145. All four (100%) *S. lateralis* were found to harbor a total of 29 nematodes (nine males, 20 females) in their stomachs fitting the description of *Physaloptera squamatae* (Harwood 1932); intensity ranged from three to 12 nematodes per host (mean \pm 1SD = 7.0 \pm 3.9). This nematode was originally described by Harwood (1932) from *S. lateralis* and the broad-banded copperhead, *Agkistrodon contortrix laticinctus* from Houston, Texas. Skinks were not found to be passing any coccidian oocysts in their feces. This was not too surprising given that Upton et al (1988) found no coccidia in 26 *S. lateralis* from Arkansas, Oklahoma, and Texas.

Additional hosts of *P. squamatae* include several species of lizards from different locales, primarily from the Caribbean and tropics of Cuba (Table 1). Physalopterans require various insect intermediate hosts in the life cycle, including earwigs, crickets, grasshoppers, cockroaches, and beetles infected with third-stage larvae (Schell 1952;

Table 1. Hosts and localities of *Physaloptera squamatae*.

Family/Host	Locale	Reference
Phrynosomatidae		
<i>Sceloporus woodi</i>	Florida	Telford and Bursey 2003
Polychrotidae ¹		
<i>Anolis allogus</i>	Cuba	Coy Otero and Baruš 1979
<i>A. baracoae</i>	Cuba	Coy Otero and Baruš 1979
<i>A. bremeri</i>	Cuba	Coy Otero and Baruš 1979
<i>A. equestris</i>	Cuba	Baruš and Coy Otero 1968
	Cuba	Baruš and Coy Otero 1969
	Cuba	Coy Otero 1970
	Cuba	Coy Otero and Baruš 1979
<i>A. homolechis</i>	Cuba	Coy Otero and Baruš 1979
<i>A. lucius</i>	Cuba	Coy Otero and Baruš 1979
<i>A. sagrei</i>	Bahamas	Goldberg et al 1994
	Cayman Islands	Goldberg et al 1995
	Cuba	Coy Otero and Baruš 1979
	Florida	Goldberg et al 1994
	Hawaii	Goldberg and Bursey 2000a; Goldberg et al 2002
<i>A. scriptus</i>	Caicos Islands	Goldberg et al 1996
Scincidae		
<i>Scincella lateralis</i>	Florida	Brooks 1963, 1972
	Oklahoma	McAllister and Bursey this report
	Texas	Harwood 1932; McAllister and Bursey this report ²
Teiidae		
<i>Ameiva ameiva</i>	Cuba	Baruš and Coy Otero 1969
<i>A. pleei</i>	Anguilla	Goldberg and Bursey 2000b
Tropiduridae		
<i>Leiocephalus carinatus</i>	Cuba	Baruš and Coy Otero 1969; Coy Otero and Baruš 1979
	Cayman Islands	Goldberg et al 1995
<i>L. cubensis</i>	Cuba	Coy Otero and Baruš 1979
<i>L. macropus</i>	Cuba	Coy Otero and Baruš 1979
<i>L. raviceps</i>	Cuba	Coy Otero and Baruš 1979
<i>L. stictigaster</i>	Cuba	Coy Otero and Baruš 1979
Viperidae		
<i>Agkistrodon contortrix pictiventris</i>	Texas	Harwood 1932

¹We follow Poe's (2004) proposal that *Anolis* be supported as a monophyletic genus.²A single *S. lateralis* collected on 2 March 1991 from Kaufman County, Texas, was infected with *P. squamatae* (USNPC 84250).

Lincoln and Anderson 1975; Anderson 1992). Interestingly, the finding of *P. squamatae* in Oklahoma *S. lateralis* represents the most northern latitude at which this helminth has been previously reported in any host, and the only one of approximately 14 species of North American scincid lizards (Crother et al. 2000) reported to harbor this parasite.

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