Transactions of the Illinois State Academy of Science
(1994), Volume 87, 1 and 2, pp. 43 - 45

Some Helminths of the Racer, *Coluber constrictor*, and the Eastern Hognose Snake, *Heterodon platirhinos*, in Southern Illinois

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ABSTRACT

Ochetosomatid digeneans found in snakes collected from southern Illinois included *Ochetosoma kansense* from *Coluber constrictor* and *Ochetosoma elongatum* from *Heterodon platirhinos*. The finding of *Ochetosoma kansense* in *Coluber constrictor* represents a new host record. The cosmocercoid nematode, *Cosmocercoides variabilis*, found in *Heterodon platirhinos* also represents a new host record.

INTRODUCTION

Few references are available on the helminths of snakes in Illinois and especially so on the eastern hognose snake, *Heterodon platirhinos* Latreille, and the racer, *Coluber constrictor* Linnaeus. Dyer (1970) reported ochetosomatid digeneans *Ochetosoma elongatum* (Pratt, 1903) Goodman, 1952 from the lungs of *Heterodon platirhinos* collected in Williamson County and *Ochetosoma ellipticum* (Pratt, 1903) Caballero and Vogelsang, 1947 from the mouth of *H. platirhinos* collected in Jackson County. Later, Dyer and McNair (1974) reported *Ochetosoma elongatum* from the mouth, esophagus, stomach, and intestine of *H. platirhinos* collected in Jackson County. To my knowledge, there are no reports on the helminths of *Coluber constrictor* in Illinois. The present report is concerned with the detection of ochetosomatid digeneans in *H. platirhinos* and *C. constrictor* and a cosmocercoid nematode in *H. platirhinos*.

MATERIALS AND METHODS

Digeneans were removed from the oral cavity of a single *Coluber constrictor* collected on April 30, 1992, from Heron Pond, Johnston County by Anthony Gerard. Helminths of *Heterodon platirhinos* were obtained from the water dish of an isolated and confined female snake housed in the laboratory of Dr. Ronald Brandon, Department of Zoology, Southern Illinois University at Carbondale. The snake was obtained on April 21, 1993, from Larry Keller, who said it was from Union County. The digeneans were fixed in warm alcohol-formalin-acetic acid (AFA), stained with either Harris' hematoxylin or Grenacher's alcoholic borax carmine, dehydrated, cleared in beechwood creosote, and mounted in Canada balsam. Nematodes were fixed in hot 70% ethanol, cleared in glycerin-alcohol,

and studied as temporary mounts in pure glycerine. Voucher specimens were deposited in the United States National Museum Helminthological Collection (USNM Helm. Coll.) as noted.

RESULTS AND DISCUSSION

Dronen and Guidry (1977) studied differences in measurements of morphological features between live and fixed specimens of *Ochetosoma aniarum* and *Ochetosoma ellipticum*, concluding that the absolute dimensions of various body parts are inadequate criteria for differentiating species of *Ochetosoma*. This may be due to the fact that fixation techniques are not standardized and because some specimens have been described from live material and others from fixed material. In the present report, identification of specimens of *Ochetosoma* were based on the criteria used by Brooks (1979) in differentiating species of this genus, namely, the vitelline configuration, the sucker ratio, the location of the genital pore, the posterior extent of the cirrus sac, and the amount of glandulation inside the cirrus sac. Specimens from *Coluber constrictor* were identified as *Ochetosoma kansense*, and specimens from *Heterodon platirhinos* as *Ochetosoma elongatum* (Pratt, 1903) Goodman, 1952. Voucher specimens of *Ochetosoma kansense* and *Ochetosoma elongatum* have been deposited as USNM Helm. Coll. No. 82954 and No. 82953, respectively.

Ochetosoma kansense has been reported previously by Yamaguti (1971) from the mouth, esophagus, and lungs of several snakes including the northern copperhead, *Agkistoodon contortrix mokasen*, the western cottonmouth, *A. piscivorus*, the pigmey rattlesnake, *Sistrurus miliarius*, the Mississippi ringneck snake, *Diadophis punctatus stictogenys*, and *Heterodon platirhinos*. Dyer (1970) reported *O. kansense* from the gray rat snake, *Elaphe obsoleta spiloides* and *Lampropeltus* sp. and Dyer and McNair (1974) report it from the kingsnake, *Lampropeltus getulus*. The present report represents the first finding of *Ochetosoma kansense* from *Coluber constrictor* in Illinois. *Ochetosoma elongatum* has been reported previously in *Heterodon platirhinos* from Illinois by Dyer (1970) and by Dyer and McNair (1974).

Nematodes of the genus *Cosmocercoides* Wilkie, 1930 (Cosmocercoidea, Cosmocercidae) are frequent parasites of amphibians and reptiles in North America. Previous to the work of Vanderburgh and Anderson (1987) most investigators considered the cosmocercoid nematode common to amphibians and reptiles as belonging to a single species, namely, *Cosmocercoides dukae* (Holl, 1928) Travassos, 1931. *Cosmocercoides dukae* has also been identified from terrestrial molluscs (Ogren 1953, 1959; Anderson 1960; Lewis 1973; Riggs and Ulmer 1983). As pointed out by Anderson (1984), few nematode species parasitic in vertebrates are known to mature in invertebrates. Comparative studies by Vanderburgh and Anderson (1987) of nematodes of the genus *Cosmocercoides* from toads and slugs revealed that the worms generally considered to belong to the same species (*C. dukae*) were not conspecific. *Cosmocercoides dukae*, normally a parasite of molluscs, may occur accidentally in amphibians and reptiles which feed on molluscs. *Cosmocercoides variabilis* (Harwood, 1930) Travassos, 1931 was resurrected as the name of the species occurring in amphibians and reptiles. Specimens in the present study were identified as *Cosmocercoides variabilis*. Voucher specimens of *C. variabilis* have been deposited as USNM Helm. Coll. No. 82955.

This is the first report of this nematode from *Heterodon platirhinos*. Baker (1978) reinvestigated the development of *Cosmocercoides* in toads and verified Harwood's (1930) claim that larvae penetrate the skin and develop in the lungs before taking up residence in the intestine. Parasites found in the water dish of *H. platirhinos* in the present study were probably migrating from the lungs to the rectum via the trachea and mouth.

ACKNOWLEDGMENTS

Snakes and host data were made available by Dr. Ronald Brandon, Department of Zoology, Southern Illinois University at Carbondale. Dr. Brandon also kindly reviewed the manuscript.

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