Corallotaenia parva (Cestoidea: Proteocephalidae) from the Black Bullhead, Ameiurus melas (Siluriformes: Ictaluridae) in Southeastern Oklahoma

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Five of five (100%) Black Bullheads, *Ameiurus melas*, from a turbid pond in McCurtain County, Oklahoma, were found to be infected in their small intestine with the proteocephalid tapeworm, *Corallotaenia parva*. This is the second time *A. melas* has been reported as a host of *C. parva*, a previous record is from Colorado; however, this tapeworm is reported from Oklahoma for the first time.

INTRODUCTION

The Black Bullhead, Ameiurus melas (Rafinesque) has a native range over most of the central United States from southern Ontario, the St. Lawrence River and Great Lakes south to northern Mexico and east of the Rockies except for the Atlantic Slope (Glodek 1980; Page and Burr 2011). In Oklahoma, A. melas is found statewide where it inhabits a variety of sites including quieter, soft-bottomed backwaters, oxbows, pools of smaller streams, and especially small turbid lakes and ponds (Miller and Robison 2004). This fish has been the subject of numerous parasitological surveys where it has been reported to be a host of several helminths (see Gibson 1996; Hoffman 1999; Mayberry et al. 2000). Herein we provide information on a cestode species from small sample of A. melas in southeastern Oklahoma.

MATERIALS AND METHODS

On 21 June 2011, five adult A. melas (mean \pm 1SD total length = 111.8 \pm 15.0, range 86–123 mm) were collected with baited hook and line from a small turbid pond just south of

Broken Bow in Lukfata off co. rd. E2075, Mc-Curtain County, Oklahoma (34.007273°N, 94.765309°W). Fish were placed on ice and processed for intestinal parasites within 24 hr. They were killed by cervical dislocation and their entire digestive tract from their mouth to anus was removed, placed in Petri dishes containing 0.6% saline, and examined under a stereomicroscope. Tapeworms from the small intestine were fixed in hot 10% formalin, placed in individual vials containing 70% ethanol and shipped to coauthor C. R. B. Specimens were stained with acetocarmine, dehydrated through an ethanol series, cleared in xylene and mounted entire in Canada balsam. Voucher specimens of parasites were deposited in the United States National Parasite Collection (USNPC), Beltsville, Maryland as USNPC 104829. Host voucher specimens were deposited in the fish collection at Henderson State University (HSU), Arkadelphia, Arkansas as HSU 3390.

RESULTS AND DISCUSSION

Five of five (100%) of the *A. melas* were found to be infected in their small intestine

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with a proteocephalid tapeworm fitting the description of *Corallotaenia* (syn. *Corallobothrium parvum*) *parva* (Larsh 1941) Freze 1965 (Larsh 1941). No other helminths were found in the digestive tract. Intensity of infection was impossible to quantify as many specimens of *C. parva*, both adults and immatures too numerous to count, were found in the small intestine of *A. melas*.

This tapeworm was originally described as Corallobothrium parvum from Brown Bullheads, Ameiurus nebulosus (Lesueur) in Black Lake (Douglas Lake region), Michigan, and later in the same host in southern Illinois (Larsh 1941) (Fig. 1). It was subsequently transferred by Frese (1965) to the genus Corallotaenia (Frese 1965) Befus and Freeman 1973. A line drawing of the scolex of *C. parva* was provided by Rego (1995). Other hosts and localities of C. parva include A. nebulosus from Maine (Meyer 1958) and A. melas from Colorado (Siddiqi 1981) (Fig. 1). In addition, Hoffman (1999) reports A. parva in Channel Catfish, Ictalurus punctatus (Rafinesque) fry from fish farms. An experimental infection of C. parva plerocercoids was reported in a tropical aquarium fish, Glaridichthys talcatus (Larsh 1941). In the life cycle of C. parva, procercoids and plerocercoids are found in

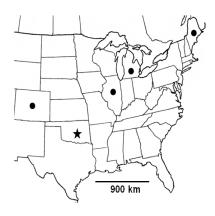


Figure 1. Geographic distribution of *Corallotaenia parva*. Dots = previous records; star = new record.

copepods (*Cyclops*) and the second intermediate host may include small fishes (Larsh 1941). We document the second report of *C. parva* in *A. melas* and the first time the parasite has been reported from Oklahoma.

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LITERATURE CITED

Frese VI. 1965. Proteocephalata–(Cestoda–Helminthes) of fish, amphibians and reptiles. Moscow (USSR): Acad Nauk USSR Osnovy Cestodologii, Tom V, Izd (Nauka). 538 p.

Hoffman GL. 1999. Parasites of North American freshwater fishes. Second ed. Ithaca (NY): Comstock Publishing Association. 539 p.

Gibson DI. 1996. Trematoda. In: Margolis L, Zabata Z, editors. Guide to the parasites of fishes of Canada, Part IV. Can Spec Publ Fish Aq Sci No. 124. 373 p.

Globek GS. 1980. Ictalurus melas (Rafinesque) black bullhead. In: Lee DS et al., editor. Atlas of North American freshwater fishes. North Carolina State Museum of Natural History. Raleigh (NC). p. 441.

Larsh JE Jr. 1941. Corallobothrium parvum n. sp., a cestode from the common bullhead, Ameiurus nebulosus Le Sueur. J Parasitol 27:221–227

Mayberry LF, Canaris AG, Bristol JR, Gardner SL. 2000. Bibliography of parasites and vertebrate hosts in Arizona, New Mexico, and Texas (1893–1984) [online]. University of Nebraska Harold W. Manter Laboratory Parasitology Web Server pp. 1–100. Available from: http://www-museum.unl.edu/research/parasitology/UTEP-UNL/utep.pdf (Accessed 14 August 2011).

Meyer MC. 1958. Studies on *Philonema agubernaculum*, a dracunculid nematode infecting salmonids. J Parasitol 44:42.

Miller RJ, Robison HW. 2004. Fishes of Oklahoma. Norman (OK): University of Oklahoma Press. 450p.

Page LM, Burr BM. 2011. Peterson field guide to freshwater fishes of North America and Mexico, Second Ed. Boston (MA): Houghton Mifflin Co. 688 p.

Rego AA. 1995. A new classification of the cestode order Proteocephalidea Mola. Revta Bras Zool 12:791–814.

Siddiqi MN. 1981. Helminth parasites of fishes of northern Colorado. Biol (Lahore) 27:75–80.

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