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Chris T. McAllister
cmcallister@se.edu

O. Amin
Institute of Parasitic Diseases

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Acanthocephalan Parasites (Echinorhynchida: Heteracanthocephalidae; Pomphorhynchidae) from the Pirate Perch (Percopsiformes: Aphredoderidae), from the Caddo River, Arkansas

C. McAllister^{1,3} and O. Amin²

¹*RapidWrite, 102 Brown Street, Hot Springs National Park, AR 71913*

²*Institute of Parasitic Diseases, P. O. Box 28372, Tempe, AZ 85285*

³Correspondence: drctmcallister@aol.com

The pirate perch, *Aphredoderus sayanus*, the only surviving member of the North American family Aphredoderidae, occurs throughout Arkansas in the Coastal Plain physiographic region and where it inhabits oxbow lakes, swamps, ditches, quiet ponds, and small rivers and streams (Lee 1980; Robison and Buchanan 1988). It is found in both clear and turbid water, often over a soft muddy bottom where it feeds on various invertebrates, especially insects (Becker 1983; Smith 1979). This fish is well-known for having the anus and urogenital openings jugular between the gill membranes in the adult where they migrated forward from the normal abdominal position in the juvenile during development (Page and Burr 1991).

The pirate perch has been the subject of several endoparasite surveys (Hopkins 1933; Elkins and Corkum 1976; Cooper 1996), some of which report acanthocephalan parasites from this host (Buckner and Buckner 1976; Williams 1976; Sukhdeo and Hernandez 2005; Hernandez et al. 2007). Herein we document new host and geographic records for 2 acanthocephalans from pirate perches from central Arkansas.

Four *A. sayanus* (mean = 30 ± 2.4, range = 27-33 mm standard length) were collected on 10 June 2002 with standard nylon seines (6 x 1.5 m and 9 x 1.5 m of 3.2 mm mesh) from the Caddo River at St. Hwy 7 bridge, Clark County (Sec. 31, T6S, R20W). They were placed in 10% formalin and returned to the laboratory for examination of helminth parasites. The entire gastrointestinal tract and coelomic cavity was examined. Acanthocephalans were transferred to 70% ethanol and shipped to the junior author (OA) for identification and further processing. Specimens were punctured with a fine needle and subsequently stained in Mayer's acid carmine, destained in 4% HCL in 70% ethanol, dehydrated in ascending concentrations of ethanol to 100% (24hr each), cleared in graduated (increasing) concentration of terpeneol in 100% ethanol to 100%, then 50% terpeneol and 50% Canada balsam (24 hr each), and finally whole mounted in Canada balsam. Voucher specimens of parasites were

deposited in the United States National Parasite Collection (USNPC), Beltsville, Maryland. Voucher specimens of *A. sayanus* were deposited in the fish collection at Henderson State University, Arkadelphia, Arkansas as HSU 3185.

One of 4 (25%) pirate perches (33 mm) was found to be co-infected in the posterior intestine with a single pomphorhynchid acanthocephalan, *Pomphorhynchus lucyi* Williams and Rogers, 1984 (USNPC 100602), and 3 (2 males, 1 female) heteracanthocephalids closest to *Aspersentis* Van Cleave, 1929 (USNPC 100603). The specimen of *P. lucyi* possessed 15 proboscis hooks per row rather than 20-23, which is more typical of the species (Williams and Rogers 1984). However, all other morphological characteristics fit the description of *P. lucyi* (see Amin et al. 2003 for key to species).

The type host of *P. lucyi* is the lake chubsucker, *Erimyzon sucetta* from Florida (Williams and Rogers 1984). Other hosts include several species (and families) of fresh and brackish water fishes of the southeastern Gulf Coast of the United States (primarily Alabama and Florida), including *Amia calva*, *Notemigonus chrysoleucus*, *Opsopoeodus emiliae*, *Carpionotus velifer*, *Minytrema melanops*, *Lepomis auritus*, *L. gulosus*, *L. macrochirus*, *L. marginatus*, *L. microlophus*, *L. punctatus*, *Strongylura marina*, *Anguilla rostrata*, and *Ameiurus serracanthus* (Williams and Rogers 1984). Eleven of these hosts occur in the Caddo River (Robison and Buchanan 1988).

Interestingly, heteracanthocephalids are parasites of fishes in New Zealand, the former Soviet Union, Antarctica, and the Kerguelen and Falkland Islands (Amin 1982), and *Aspersentis* spp. are parasites of fishes in Antarctic and subAntarctic regions (Zdzitowiecki and White 1996; Palm et al. 1998; Zdzitowiecki 1981, 2001; Pichelin et al. 2002; Laskowski and Zdzitowiecki 2004, 2005). Unfortunately, our 3 specimens of heteracanthocephalids were contracted which rendered them less taxonomically informative than desirable for

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definitive identification beyond family. Nevertheless, both acanthocephalans represent new host and noteworthy geographic records. In the future, we suggest a clinal study on *P. lucyi* as well as specific attempts at obtaining relaxed specimens of the heteracanthocephalids for specific identity.

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