

2015

New County Record of Black-Spot Disease in Arkansas

C. S. Thigpen

Arkansas State University, christopher.thigpen@smail.astate.edu

S. E. Trauth

Arkansas State University

L. I. Bagwell

Arkansas State University

J. D. Konvalina

Arkansas State University

S. A. Schratz

Arkansas State University

Follow this and additional works at: <http://scholarworks.uark.edu/jaas>



Part of the [Animal Diseases Commons](#)

Recommended Citation

Thigpen, C. S.; Trauth, S. E.; Bagwell, L. I.; Konvalina, J. D.; and Schratz, S. A. (2015) "New County Record of Black-Spot Disease in Arkansas," *Journal of the Arkansas Academy of Science*: Vol. 69 , Article 29.

Available at: <http://scholarworks.uark.edu/jaas/vol69/iss1/29>

This article is available for use under the Creative Commons license: Attribution-NoDerivatives 4.0 International (CC BY-ND 4.0). Users are able to read, download, copy, print, distribute, search, link to the full texts of these articles, or use them for any other lawful purpose, without asking prior permission from the publisher or the author.

This General Note is brought to you for free and open access by ScholarWorks@UARK. It has been accepted for inclusion in Journal of the Arkansas Academy of Science by an authorized editor of ScholarWorks@UARK. For more information, please contact scholar@uark.edu, ccmiddle@uark.edu.

New County Record of Black-Spot Disease in Arkansas

C.S. Thigpen^{1*}, S.E. Trauth¹, L.I. Bagwell¹, J.D. Konvalina¹, and S.A. Schratz¹

¹Department of Biological Sciences, Arkansas State University P.O. Box 599, State University, AR 72467

*Correspondence: christopher.thigpen@smail.astate.edu

Running Title: New County Record of Black-Spot Disease in Arkansas

Black-spot disease is an infection in fishes caused by metacercariae of neascus-type (*Uvulifer ambloplitis*, *Crassiphiala bulboglossa*, and others) and non-neascus type (*Apophallus brevis*, *Cryptocotyle lingua*, and others) digenetic trematodes (Hoffman 1999, McAllister et al. 2013, Roberts et al. 2013). Much of what is known about black-spot disease in Arkansas is from game species (Cloutman 1974, Becker and Cloutman 1975 and Hlass et al. 1998), although McAllister et al. (2013) provided several accounts of infection from new host species, both game and nongame, and new counties (Figure 1).

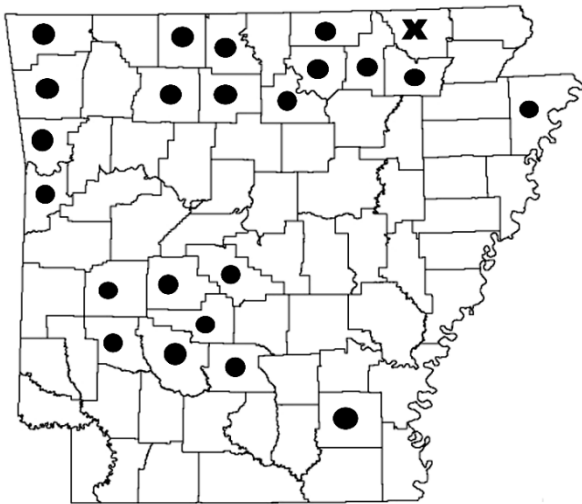


Figure 1. Counties where black-spot disease has been documented. Accounts by McAllister et al. (2013) (•) and reports herein (x).

As this report is intended to expand the knowledge of the distribution of black-spot disease in Arkansas, we did not assess prevalence of infection, infection abundance or intensity. Fish were collected from an upstream and downstream location from Jane's Creek in Randolph County on 17 January 2015. Fish were fixed in the field in a 10% neutral buffered formalin solution and placed on ice. The fish were then stored in 70% ethanol and held in the teaching collection.

Species was determined using Fishes of Arkansas (Robison and Buchanan 1988), and specimens were examined. Several species were infected with black-spot disease, including Central Stonerollers, *Campostoma anomalum*, Bigeye Shiners, *Notropis boops*, a Telescope Shiner, *N. telescopus*, Greenside Darters, *Etheostoma blennioides*, Rainbow Darters, *E. caeruleum*, Orangethroat Darters, *E. spectabile*, and Banded Darters, *E. zonale*. Although these species are known to be hosts of the black-spot causing trematodes, the only account of infection in Randolph County was from a mention in a paper on the diversity of fishes in Jane's Creek (Fowler and Harp 1974) where some cyprinids were infected, though no host species were identified and no percids were infected. Figures 2 and 3 contain images of several individuals infected with black-spot disease.

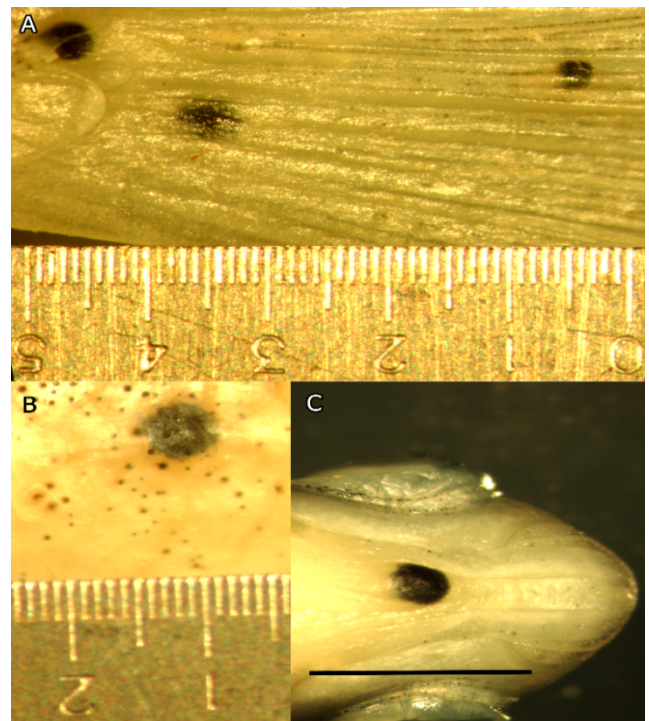


Figure 2. Encased cysts in caudal fin (A) and body (B) of a Central Stoneroller. Cyst on gular region of a Bigeye Shiner (C). Each notch on ruler is 100 μ m. Scale bar = 2 mm



Figure 3. Telescope Shiner (A), Bigeye Shiner (B), Central Stoneroller (C), Rainbow Darter (D), and Greenside Darter (E) infected with black-spot disease. Scale bar = 2 mm.

Acknowledgments

We thank the Arkansas Game and Fish Commission for a scientific collection permit and Dr. Brook Fluker for assistance in fish identification.

Literature Cited

- Becker DA and DG Cloutman.** 1975. Parasites of selected game fishes of Lake Fort Smith, Arkansas. *Proceedings of the Arkansas Academy of Science* 29:12-18.
- Cloutman DG.** 1974. Parasite community structure in Largemouth Bass, Warmouth, and Bluegill in Lake Fort Smith, Arkansas. *Transactions of the American Fisheries Society* 104:277-283.
- Fowler CL and GL Harp.** 1974. Ichthyofaunal diversification and distribution in Jane's Creek watershed, Randolph County, Arkansas. *Proceedings of the Arkansas Academy of Science* 28:13-18.

Hlass LJ, WL Fisher and DJ Turton. 1998. Use of the index of biotic integrity to assess water quality in forested streams of the Ouachita Mountains Ecoregion, Arkansas. *Journal of Freshwater Ecology* 13:181-192.

Hoffman, G. 1999. *Parasites of North American Freshwater Fishes.* Comstock Publishing Associates, Ithaca, New York. p. 539.

McAllister CT, R Tumilson, HW Robison, and SE Trauth. 2013. An initial survey on black-spot disease (Digenea: Strigeoidea: Diplostomidae) in select Arkansas Fishes. *Journal of the Arkansas Academy of Science* 67:200-203.

Roberts LS, J Janovy Jr., and S Nadler. 2013. *Foundations of Parasitology.* McGraw-Hill (New York, NY). Chapter 16, Digeneans: Strigeiformes; 235-236.

Robison HW and TM Buchanan. 1988. *Fishes of Arkansas.* University of Arkansas Press (Fayetteville, AR). 536 p.