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Source: Journal of Wildlife Diseases, 10(4) : 399-403

Published By: Wildlife Disease Association

URL: <https://doi.org/10.7589/0090-3558-10.4.399>

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THE HELMINTH PARASITES OF THE RED-WINGED BLACKBIRDS FROM SOUTH BASS ISLAND, OHIO, INCLUDING A CHECK LIST OF THE HELMINTHS REPORTED FROM THIS HOST

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Abstract: Fifty red-winged blackbirds, *Agelaius phoeniceus*, from South Bass Island, Ottawa County, Ohio, were examined for helminth parasites. Thirteen species of helminths were found, four species of trematodes, two of cestodes, five of nematodes, and one species of acanthocephalan. A check list of the helminth parasites reported from this host is included.

INTRODUCTION

This study was undertaken to determine the prevalence and intensity of helminth parasitism in red-winged blackbirds, *Agelaius phoeniceus*, on South Bass Island, Ottawa County, Ohio. South Bass Island is located in the western basin of Lake Erie. A large roosting site on this island serves several species of birds which forage throughout the western basin region during the late summer months. This association of birds, which includes the brown-headed cowbird, grackle, red-winged blackbird, robin, and starling, feeds on ripening fruit and grain and for this reason is of considerable concern to the agricultural community of the region. The red-winged blackbird is the nucleus species of this association.

A considerable number of helminth species have been reported from the red-winged blackbird. These records are presented in Table 1.

METHODS

All birds examined during this study were collected alive from a decoy trap on South Bass Island from July 6 through August 14, 1969. Birds were killed in the laboratory by exposing them to chloro-

form vapors for no more than 30 sec in a 2 gallon jar. The body, brain, and nasal cavities were examined; all organs were separated and examined under a dissecting microscope. Preparation of the helminths for identification followed standard techniques; the trematodes, cestodes, and acanthocephalans were killed in heated Ringer's 'Warm' solution, fixed in Landowsky's AFA solution, stained with Semichon's Carmine, and mounted in Piccolyte Medium. The nematodes were cleared and studied in a glycerine-alcohol solution.

RESULTS AND DISCUSSION

During the course of the study, 13 species of helminth parasites were removed from 42 of the 50 birds examined. The trematodes *Leucochloridium variae* and *Zonorchis alveyi*, the cestodes, *Chonotaenia musculosa* and *Hymenolepis farciminosa*, the nematodes *Capillaria ovopunctatum*, *Dispharynx nasuta*, *Microtetrameres helix*, *Porrocaecum ensicaudatum* and *Syngamus trachea* are reported from this host for the first time. The results are summarized in Table 2. Individual birds harbored as many as four species of parasites, more often one or two.

TABLE 1. Published and unpublished records of helminth parasites taken from the Red-winged Blackbird, *Agelaius phoeniceus*.

Parasite	Record	Locality
Trematoda		
<i>Brachylecithum americanum</i>	Lumsden and Zischke 1963	Louisiana
<i>Brachylecithum mosquensis</i>	Carney 1970	experimental infection
<i>Collyriclum faba</i>	Riley, <i>In</i> Beaudette 1940	Minnesota
<i>Conspicuum icteridorum</i>	Hodasi 1963	Manitoba
	Spory 1965	Ohio
	Stanley and Rabalais 1971	Ohio
<i>Gigantobilharzia gyrauli</i>	Brackett 1942	Wisconsin
<i>Leuchloridium actitis</i>	Bennett 1942	Louisiana
<i>Plagiorchis gonzalchazezi</i>	Hodasi 1963	Manitoba
<i>Plagiorchis noblei</i>	Park 1936	California
	Ellis 1963	Iowa
	Hodasi 1963	Manitoba
	Williams 1964	Ohio
	Bourns 1966	Ontario
	Wallace and Olsen 1966	Colorado
	Stanley and Rabalais 1971	Ohio
<i>Plagiorchis</i> sp.	Blankenspoor 1970	Iowa
<i>Posthodiplostomum minimum</i>	Ulmer 1960, 1961	experimental infection
	Campbell 1972	experimental infection
<i>Tanaisia atra</i>	Lumsden and Zischke 1963	Louisiana
Cestoda		
<i>Anonchotaenia globata</i>	Rausch and Morgan 1947	Ohio, Wisconsin
	Spory 1965	Ohio
<i>Anonchotaenia mexicana</i>	Wallace and Olsen 1966	Colorado
<i>Anonchotaenia quiscali</i>	Stanley and Rabalais 1971	Ohio
<i>Choanotaenia iola</i>	Wallace and Olsen 1966	Colorado
Nematoda		
<i>Acuaria</i> sp.	Wallace and Olsen 1966	Colorado
<i>Capillaria tridens</i>	Read 1949	Wisconsin
<i>Diplotrriaena agelaius</i>	Walton 1927	United States
	Anderson 1959	Texas
<i>Diplotrriaena thomasi</i>	Anderson 1959	Texas
<i>Diplotrriaena</i> sp.	Anderson 1957	Ontario
<i>Dispharynx pipilonis</i>	Stanley and Rabalais 1971	Ohio
<i>Microfilaria</i> sp.	Robinson 1961	Ohio

TABLE 1. (continued)

Parasite	Record	Locality
<i>Microtetrameres</i> sp.	Wallace and Olsen 1966	Colorado
	Ulmer, <i>IN</i> Ellis 1971	Iowa
<i>Oxyspirura mansonii</i>	Addison and Anderson 1969	not stated
<i>Oxyspirura petrowi</i>	Pence 1972	Louisiana
spiruroid nematode	Wallace and Olsen 1966	Colorado
Acanthocephala		
<i>Mediorhynchus grandis</i>	Van Cleave 1947	Ohio
	Moore 1962	Texas
	Spory 1965	Ohio
	Byrd and Kellogg 1971	Georgia
<i>Mediorhynchus papillosus</i>	Wallace and Olsen 1966	Colorado
<i>Mediorhynchus robustus</i>	Van Cleave 1947	Ohio
	Byrd and Kellogg 1971	Virginia
<i>Plagiorhynchus formosus</i>	Stanley and Rabelais 1971	Ohio

TABLE 2. Helminth parasites of 50 red-winged blackbirds from South Bass Island, Ohio

Parasite	Site of Infection	Prevalence %	Number of Helminths		Number of Birds Infected	
			Average	(Range)	Adults N = 19	Juveniles N = 31
Trematoda						
<i>Conspicuum icteridorum</i>	Gall bladder	48	2.4	(1-8)	13	11
<i>Leucochloridium variae</i>	Cloaca	2	11	(11)	1	1
<i>Plagiorchis noblei</i>	Cloaca	6	1.3	(1-2)	2	1
<i>Zonorchis alveyi</i>	Gall bladder	2	0	(1)	1	0
Cestoda						
<i>Anonchotaenia globata</i>	Intestine	22	4	(1-11)	8	3
<i>Choanotaenia musculosa</i>	Intestine	6	4.7	(1-9)	1	2
<i>Hymenolips farciminosa</i>	Intestine	2	3	(3)	1	0
Nematoda						
<i>Capillaria ovopunctatum</i>	Intestine	4	6	(3-9)	1	1
<i>Disyharynx nasuta</i>	Proventriculus	8	4.5	(1-7)	1	3
<i>Microtetrameres helix</i>	Proventriculus	2	1	(1)	1	0
<i>Porrocaecum ensicaudatum</i>	Intestine	4	4	(2-6)	0	2
<i>Syngamus trachea</i>	Trachea	4	1 pair	1 pair	1	1
Acanthocephala						
<i>Plagiorhynchus formosus</i>	Intestine	10	1.8	(1-4)	0	5

The only extensive studies of helminth parasitism of red-winged blackbirds are by Spory²² in central Ohio, Stanley and Rabalais²³ in northwestern Ohio, and Wallace and Olsen²⁷ in Colorado. Three helminth species were reported by Spory²² and five by Stanley and Rabalais.²³ In the previous studies in Ohio, the *Anonchotaenia* and *Conspicuum* infections occurred in 54.1% and 44.3%, respectively, in the former study and 52.6% and 36.6% in the latter study. The results of this study are 22% and 48% for the respective infections. There is a very large population of red-winged blackbirds in

Ohio and they probably are the host species primarily responsible for the maintenance and dispersal of these helminths in Ohio.

The results of this and other studies in Ohio indicate that helminth parasites are not present in sufficient intensities to be factors which control the numbers of fully fledged juvenile or adult red-winged blackbirds under natural conditions. The effect of helminth parasitism on nestlings is unknown. Only Bourns⁷ has reported parasitism in nestling red-winged blackbirds in the wild.

LITERATURE CITED

1. ADDISON, E. M. and R. C. ANDERSON. 1969. A review of eye worms of the genus *Oxyspirura* (Nematoda: Spiruroides). Wildl. Dis. 55: 58 pp.
2. ANDERSON, R. C. 1957. Observations on the life cycles of *Diplotrriaenoides translucidus* Anderson and members of the genus *Diplotrriaena*. Can. J. Zool. 35: 15-24.
3. ANDERSON, R. C. 1959. Preliminary revision of the genus *Diplotrriaena* Henry and Ozoux (Diplotrriaenidae: Diplotrriaeninae). Parasitologia 1: 195-307.
4. BEAUDETTE, F. R. 1940. A case of *Collyriclum faba* infestation in a purple finch. J. Am. Vet. Med. Ass. 96: 413-414.
5. BENNETT, H. J. 1942. Observations on the experimentally determined life cycle of the *Leucochloridium actitis* McIntosh (Abstract). Proc. Louisiana Acad. Sci. 6: 79-80.
6. BLANKENSPoor, H. D. 1970. Host-parasite relationships of an avian trematode, *Plagiorchis noblei* Park 1936. Ph.D. Dissertation. Iowa State Univ. Ames, Iowa. 180 pp.
7. BOURNS, T. K. R. 1966. *Plagiorchis noblei* in nestling red-winged blackbirds. J. Parasit. 52: 974.
8. BRACKETT, S. 1942. Five new species of avian schistosomes from Wisconsin and Michigan, with the life cycle of *Gigantobilharzia gyrauli* (Brackett, 1940). J. Parasit. 28: 25-42.
9. BYRD, E. E. and F. E. KELLOGG. 1971. *Mediorhynchus bakeri*, a new acanthocephalan (Gigantorhynchidae) from the bob-white, *Colinus virginianus* (L.). J. Parasit. 57: 137-142.
10. CAMPBELL, R. A. 1972. New experimental hosts for *Posthodiplostomum minimum* (Trematoda: Diplostomatidae). J. Parasit. 58: 1051.
11. CARNEY, W. P. 1970. *Brachylecithum mosquensis*: infections in vertebrate, molluscan and arthropod hosts. Trans. Am. Micros. Soc. 89: 233-250.
12. ELLIS, C. J. 1963. Trematodes of passerine birds from Chickasaw County, Iowa. Proc. Iowa Acad. Sci. 70: 486-492.
13. ———. 1971. Comparative measurements and host and geographical distribution of species of *Microtetrameres* (Nematoda: Tetrameridae) Iowa State J. Sci. 46: 29-47.
14. HODASI, J. K. M. 1963. Helminths from Manitoba birds. Can. J. Zool. 41: 1227-1231.

15. LUMSDEN, R. D. and J. A. ZISCHKE. 1963. Studies on the trematodes of Louisiana birds. *Z. Parasitkde* 22: 316-366.
16. MOORE, D. V. 1962. Morphology, life history, and development of the acanthocephalan *Mediorhynchus grandis* Van Cleave, 1916. *J. Parasit.* 48: 76-86.
17. PARK, J. T. 1936. New trematodes from birds, *Plagiorchis noblei* sp. nov. (Plagiorchiidae) and *Galactosomum humbargari* sp. nov. (Heterophyidae). *Trans. Am. Microsc. Soc.* 55: 360-365.
18. PENCE, D. B. 1972. The genus *Oxyspirura* (Nematoda: Thelaziidae) from birds in Louisiana. *Proc. Helm. Soc. Wash.* 39: 23-28.
19. RAUSCH, R. and B. B. MORGAN. 1947. The genus *Anonchotaenia* (Cestoda: Dilepididae) from North American birds, with the description of a new species. *Trans. Am. Microsc. Soc.* 66: 203-211.
20. READ, C. P. 1949. Studies on North American helminths of the genus *Capillaria* Zeder, 1800 (Nematoda): III. Capillarids from the lower digestive tract of North American birds. *J. Parasit.* 35: 240-249.
21. ROBINSON, E. J. 1961. Incidence of microfilariae in some Ohio birds and data on the habits of a possible vector. *J. Parasit.* 47: 441-444.
22. SPORY, G. R. 1965. Some internal and external parasites of the red-winged blackbird, *Agelaius p. phoeniceus* L., from central Ohio: including descriptions of three new feather mites. *Ohio J. Sci.* 65: 49-59.
23. STANLEY, J. G. and F. C. Rabalais. 1971. Helminth parasites of the red-winged blackbird, *Agelaius phoeniceus*, and common grackle, *Quiscalus quiscula*, in northwestern Ohio. *Ohio J. Sci.* 71: 302-303.
24. ULMER, M. J. 1960. Passeriform birds as experimental hosts for *Posthodiplostomum minimum* (Trematoda: Diplostomidae). *J. Parasit.* 46 (suppl.): 18.
25. ———. 1961. Passerine birds as experimental hosts for *Posthodiplostomum minimum* (Trematoda. Diplostomidae). *J. Parasit.* 47: 608-610.
26. VAN CLEAVE, H. J. 1947. The acanthocephalan genus *Mediorhynchus*, its history and a review of the species occurring in the United States. *J. Parasit.* 33: 297-313.
27. WALLACE, J. H. and O. W. OLSEN. 1966. Endoparasites of the red-winged blackbird, *Agelaius phoeniceus* L., in Colorado. *Bull. Wildl. Dis. Assoc.* 2: 80.
28. WALTON, A. C. 1927. A revision of the nematodes of the Leidy collections. *Proc. Acad. Nat. Sci. Philadelphia* 79: 49-164.
29. WILLIAMS, R. R. 1964. Life cycle of *Plagiorchis noblei* Park, 1936. *J. Parasit.* 50 (suppl.): 29.

Received for publication 11 June 1974