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

TABLE 1. (continued)

Parasite	Record	Locality
Microtetrameres sp.	Wallace and Olsen 1966	Colorado
	Ulmer, *IN* Ellis 1971	Iowa
Oxyspirura mansoni	Addison and Anderson 1969	not stated
Oxyspirura petrowi	Pence 1972	Louisiana
spiruroid nematode	Wallace and Olsen 1966	Colorado
Acanthocephala		
Mediorhynchus grandis	Van Cleave 1947	Ohio
	Moore 1962	Texas
	Spory 1965	Ohio
	Byrd and Kellogg 1971	Georgia
Mediorhynchus papillosus	Wallace and Olsen 1966	Colorado
Mediorhynohus robustus	Van Cleave 1947	Ohio
	Byrd and Kellog 1971	Virginia
Plagiorhynchus formosus	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						
Conspicuum icteridorum	Gall bladder	48	2.4	(1-8)	13	11
Leucochloridium variae	Cloaca	2	11	(11)	1	1
Plagiorchis noblei	Cloaca	6	1.3	(1-2)	2	1
Zonorchis alveyi	Gall bladder	2	0	(1)	1	0
Cestoda						
Anonchotaenia globata	Intestine	22	4	(1-11)	8	3
Choanotaenia musculosa	Intestine	6	4.7	(1-9)	1	2
Hymenolips farciminosa	Intestine	2	3	(3)	1	0
Nematoda						
Capillaria ovopunctatum	Intestine	4	6	(3-9)	1	1
Disyharynx nasuta	Proventriculus	8	4.5	(1-7)	1	3
Microtetrameres helix	Proventriculus	2	1	(1)	1	0
Porrocaecum ensicaudatum	Intestine	4	4	(2-6)	0	2
Syngamus trachea	Trachea	4	1 pair	1 pair	1	1
Acanthocephala						
Plagiorhynchus formosus	Intestine	10	1.8	(1-4)	0	5

The only extensive studies of helminth parasitism of red-winged blackbirds are by Spory [22] in central Ohio, Stanley and Rabalais[23] in northwestern Ohio, and Wallace and Olsen[27] in Colorado. Three helminth species were reported by Spory[22] 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 Bourns[7] has reported parasitism in nestling red-winged blackbirds in the wild.

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