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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 redwinged 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 glycerinealcohol 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 Spory 1965 | Ohio, Wisconsin Ohio | | |
| Anonchotaenia mexicana | Wallace and Olsen 1966 | Colorado | | |
| Anonchotaenia auiscali | 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 | | |

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| Parasite | Record | Locality | | |
|--------------------------|---------------------------------|-----------|--|--|
| Microtetrameres sp. | Wallace and Olsen 1966 | Colorado | | |
| | Ulmer, IN Ellis 1971 | Iowa | | |
| Oxyspirura mansoni | Addison and Anderson 1969 not s | | | |
| 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

| | Site of Pre Infection | | Number of Helminshe | | Number of Birds Infected | |
|-------------------------|-----------------------------|-----------------|---------------------|---------|-------------------------------------|--------------------|
| Parasite | | Prevalence % | Average | (Range) | $\frac{\text{Adults}}{\text{N}=19}$ | 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 | Proventriculu | is 8 | 4.5 | (1-7) | 1 | 3 |
| Microtetrameres helix | Proventriculu | is 2 | 1 | (1) | 1 | 0 |
| Porrocaecum | 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 Rabalais²³ in northwestern Ohio, and Wallace and Olsen⁵⁷ 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.

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