

## **A SURVEY OF THE OCCURRENCE OF BLOOD PARASITES IN THE LOCAL BIRD POPULATION IN THE HIRAM, OHIO, AREA**

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**A SURVEY OF THE OCCURRENCE OF BLOOD PARASITES IN THE LOCAL BIRD POPULATION IN THE HIRAM, OHIO, AREA**

A survey was made for the occurrence of blood parasites in wild birds in the Hiram, Ohio, area.

All birds surveyed, except the Red-tailed Hawks which were taken as nestlings, were trapped with mist nets between May, 1964 and September, 1964. Blood smears were taken immediately from the captured birds by piercing a toenail of the bird with a sterile surgical needle. After the smears were made they were fixed in 100% methanol and stained with Giemsa's stain.

Each blood smear was examined for fifteen minutes under low power (40x) for five minutes and under oil immersion (100x) for ten minutes to determine the presence of any parasite in the blood smear. It was felt that this method would give adequate and constant results in the determination of the parasites present in each smear. The results are given in Table 1.

**RESULTS**

Inspection of ninety-two birds revealed a 50% frequency of haemosporidian infection involving one or more of the following parasite genera: *Plasmodium*, *Haemoproteus*, and *Leucocytozoon*.

TABLE 1. Distribution and frequency of occurrence of the parasitic genera encountered in this survey.

	Number Infected					Number Parasitized/ Number Examined
	<i>Plasmodium</i>	<i>Haemoproteus</i>	<i>Leucocytozoon</i>	<i>Haemosporidian</i> (genus undetermined)	number with double infection	
Buteoninae						
<i>Buteo jamaicensis</i>						0/6
Corvidae						
<i>Corvus brachyrhynchos</i>						0/3
<i>Cyanocitta cristata</i>						0/3
Fringillidae						
<i>Melospiza melodia</i>				1		1/2
<i>Passerina cyanea</i>						0/1
<i>Pheucticus ludovicianus</i>						0/1
<i>Richmondea cardinalis</i>		2				2/3
Icteridae						
<i>Agelaius phoeniceus</i>	3		2	1		6/10
<i>Molothrus ater ater</i>	2					3/8
<i>Quiscalus quiscula</i>	2	13	16	1	...	23/26
Mimidae						
<i>Dumetella carolinensis</i>				1		1/2
Ploceidae						
<i>Passer domesticus</i>						0/4
Turdidae						
<i>Hylocichla mustelina</i>			1			1/2
<i>Turdus migratorius</i>	5	4	3	1	4	9/17
Tyrannidae						
<i>Empidonax sp.</i>						0/2
<i>Myiarchus crinitus</i>						0/2

The survey includes sixteen species of birds of which eight species showed some type of infection.

Of the ninety-two birds studied, twenty-two (23.5%) were infected with *Leucocytozoon*, nineteen (20.5%) were infected with *Haemoproteus*, and twelve (12.5%) were infected with *Plasmodium*. Although neither microfilaria nor *Trypanosoma* were observed in any of the birds taken in the stated trapping period, one red-winged blackbird trapped in May, 1966 harbored a microfilarial infection.

#### *Plasmodium*

Parasites of the genus *Plasmodium* were observed in four of the eight infected bird species. No attempt was made to record the various species of *Plasmodium*. The most common species, however, seemed to be either *P. elongatum* or *P. relictum*.

#### *Haemoproteus*

Parasites of the genus *Haemoproteus* were found to be present in three of the eight infected species.

#### *Leucocytozoon*

Parasites of the genus *Leucocytozoon* were found to be present in four of the infected bird species.

Double infections were found most frequently in the common grackle, *Quiscalus quiscula*. Infections of *Haemoproteus* and *Leucocytozoon* were found in seven of the grackles studied, or about 30.5% of the infected grackles. One double infection of *Plasmodium* and *Leucocytozoon* was observed also in the grackle.

One robin, *Turdus migratorius*, was found to harbor a mixed infection of *Leucocytozoon* and *Plasmodium*. Another robin was found to be infected with *Leucocytozoon* and *Haemoproteus*, while two other robins harbored mixed infections of *Plasmodium* and *Haemoproteus*.

There appeared to be a higher rate of *Plasmodium* infection among younger birds.

#### SUMMARY

Eight of sixteen bird species examined in the Hiram, Ohio, area harbored parasites of the genera *Haemoproteus*, *Plasmodium* and *Leucocytozoon*. Blood protozoa were found in 50% of the individuals surveyed. The most prevalent haemosporidian genus encountered was *Leucocytozoon*. *Haemoproteus* was less prevalent and *Plasmodium* was found in the fewest numbers of birds examined.

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#### POSITIONS OPEN

The Gorgas Memorial Laboratory, Panama, has positions open for an arbovirologist, a parasitologist or medical entomologist, and an ecologist or biologist to work in a Leishmaniasis project. Interested persons should write for further information to Dr. Martin D. Young, Director, P.O. Box 2016, Balboa Heights, Canal Zone.