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Source: Bulletin of the Wildlife Disease Association, 4(1) : 15-17

Published By: Wildlife Disease Association

URL: <https://doi.org/10.7589/0090-3558-4.1.15>

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AVIAN HAEMATOZOA OF CENTRAL WASHINGTON

Studies on avian haematozoa in Central Washington is limited to blood parasitism in the american robin, *Turdus migratorius* (Clark, 1967, Bull. Wildlife Disease Assoc. 3:69-70 and Clark, 1967, J. Protozool. 14 (Suppl.):124).

Blood smears used in this study were made from 462 adult birds of 50 species (47 genera, 23 families) collected in 1966 and 1967. Most of the birds were shot and as soon as possible after death thin blood smears were made from large thoracic vessels or directly from the heart. Direct examination of fresh blood was made on some birds. Blood samples were taken from chuckars and pheasants raised on the local game bird farm. Starlings were taken and sampled from traps located in the Yakima valley.

Blood smears were air dried, fixed in absolute methyl alcohol and stained with Giemsa. All smears were examined for at least 10 minutes with low power (200X), medium power (430X) and with oil immersion lens (970X).

Results and Discussion

Examination of these blood preparations revealed 136 (29.4%) infected with *Haemoproteus* (6.0%), *Leucocytozoon* (10.0%), *Trypanosoma* (12.7%), *Plasmodium* (1.7%), *Hepatozoon* (4.5%), and microfilariae (11.1%). The data in Table I summarized our findings. Genera and species names throughout are

listed according to the 5th (1957) edition of the A.O.U. Check-list of American Birds.

As far as the authors are aware, the following are new host records: microfilariae sp. in *Iridoprocne bicolor* (tree swallow); *Leucocytozoon* sp. and *Hepatozoon* sp. in *Hirundo rustica* (barn swallow); *Haemoproteus* sp. in *Tachycineta thalassina* (violet-green swallow); *Haemoproteus* sp. in *Chordeiles minor* (common nighthawk); *Haemoproteus* sp. (common nighthawk); *Haemoproteus* sp., *Plasmodium* sp. and microfilariae sp. in *Actitis macularia* (spotted sandpiper).

The higher incidence of microfilariae in magpies and robins was due apparently to the direct examination of heart blood. This gave a better indication of the true incidence than did observation of peripheral blood smears, 92.8% (13/14) and 28.6% (4/14) respectively for magpies and 53.6% (30/56) and 10.7% (6/56) for robins. Lung smears were also made from these two species of birds at the time of sacrifice. The data obtained also indicated a higher microfilarial infection than did peripheral smears (71.4% or 10/14 for magpies and 44.6% or 25/56 for robins).

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October 3, 1967

Table I. *Relative Incidence of Haematozoa in Birds from Central Washington.*

Common Name	Scientific Name	No. exam- ined	No. infect- ed	Haem.	L.	T.	P.	Hep.	M.
Cliff Swallow	<i>Petrochelidon pyrrhomota</i>	35	16	—	—	—	—	16	—
Tree Swallow	<i>Iridoprocne bicolor</i>	2	2	—	—	—	—	—	2
Rough wing Swallow	<i>Stelgidopteryx ruficollis</i>	10	0	—	—	—	—	—	—
Barn Swallow	<i>Hirundo rustica</i>	15	3	—	1	—	—	2	—
Violet-green Swallow	<i>Tachycineta thalassina</i>	8	1	1	—	1	—	—	—
Starling	<i>Sturnus vulgaris</i>	100	0	—	—	—	—	—	—
Red-shafted Flicker	<i>Colaptes cafer</i>	11	4	4	1	1	—	—	1
Downey Wood-pecker	<i>Dendrocopos pubescens</i>	2	0	—	—	—	—	—	—
Black-billed Magpie	<i>Pica pica hudsonia</i>	17	14	2	9	8	—	—	13
Common Crow	<i>Corvus brachyrhynchos</i>	2	1	—	1	1	—	—	—
Eastern King-bird	<i>Tyrannus tyrannus</i>	3	2	—	—	1	—	1	—
Western Kingbird	<i>Tyrannus verticalis</i>	1	0	—	—	—	—	—	—
Common Nighthawk	<i>Chordeiles minor</i>	5	1	1	—	—	—	—	—
Mourning Dove	<i>Zenaidura macroura</i>	4	1	—	—	—	1	—	—
Great Horned Owl	<i>Bubo virginianus</i>	1	1	—	1	—	—	—	—
Spotted Sand-piper	<i>Actitis macularia</i>	3	2	1	—	—	2	—	1
Redbreasted Nuthatch	<i>Sitta canadensis</i>	1	0	—	—	—	—	—	—
Western Wood Pewee	<i>Contopus sordidulus</i>	3	0	—	—	—	—	—	—
Audubon's Warbler	<i>Dendroica auduboni</i>	1	1	—	1	—	—	—	—
Black-capped Chickadee	<i>Parus atricapillus</i>	1	0	—	—	—	—	—	—
Clark's Nut-cracker	<i>Nucifraga columbiana</i>	2	2	—	2	—	—	—	—
California Quail	<i>Lophortyx californicus</i>	2	0	—	—	—	—	—	—
Sage Grouse	<i>Centrocercus urophasianus</i>	1	0	—	—	—	—	—	—
Mallard Duck	<i>Anas platyrhynchos</i>	2	0	—	—	—	—	—	—
Robin	<i>Turdus migratorius</i>	70	56	—	26	43	—	—	34

Legend: Haem. = Haemoproteus, L. = Leucocytozoon, T. = Trypanosoma,
Hep. = Hepatozoon, M. = microfilariae, P. = Plasmodium.

Table 1. (Continued)

Common Name	Scientific Name	No. exam- ined.	No. infect- ed	Haem.	L.	T.	P.	Hep.	M.
Redwing	Agelaius								
Blackbird	phoeniceus	1	0	—	—	—	—	—	—
Western	Sturnella								
Meadowlark	neglecta	4	1	—	1	—	1	—	—
Red-tailed	Buteo								
Hawk	jamaicensis	2	2	—	2	—	—	—	—
Cedar Wax- wing	Bombycilla cedrorum	1	0	—	—	—	—	—	—
Marsh Hawk	Circus cyaneus	1	0	—	—	—	—	—	—
Sparrow Hawk	Falco sparverius	1	1	—	—	1	—	—	—
Chuckar	Alectoric graeca	50	0	—	—	—	—	—	—
Ring-necked	Phasianus								
Pheasant	colchicus	50	0	—	—	—	—	—	—
Broad-tailed	Selasphorus								
Hummingbird	platycercus	1	0	—	—	—	—	—	—
Mountain	Parus gambeli	1	0	—	—	—	—	—	—
Williamson's	Sphyrapicus								
Sapsucker	thyroideus	1	1	—	—	1	—	—	—
Western	Piranga								
Tanager	ludoviciana	1	1	1	—	—	—	—	—
Sage Thrasher	Oreoscoptes montanus	1	0	—	—	—	—	—	—
House Sparrow	Passer domesticus	3	0	—	—	—	—	—	—
White-crowned	Zonotrichia								
Sparrow	leucophrys	1	0	—	—	—	—	—	—
Song Sparrow	Melospiza melodia	3	1	1	—	—	—	1	—
American	Spinus								
Goldfinch	tristatus	2	2	2	—	—	—	—	—
Cassin's Finch	Carpodacus cassinii	5	5	4	—	1	—	1	—
Chipping	Spizella								
Sparrow	passerina	8	4	3	—	—	—	—	1
Lazuli Bunting	Passerina amoena	3	0	—	—	—	—	—	—
Rufous-sided	Pipilo								
Towhee	erythrophthalmus	3	3	3	—	—	3	—	—
Purple Finch	Carpodacus purpureus	1	0	—	—	—	—	—	—
Vesper Sparrow	Pooectes gramineus	9	3	3	—	1	—	—	—
Oregon Junco	Junco oreganus	5	5	2	2	—	1	—	1
Pine Siskin	Spinus pinus	1	0	—	—	—	—	—	—
Brewer's	Spizella								
Sparrow	breweri	1	0	—	—	—	—	—	—
Totals		462	136	28	47	59	8	21	53

Legend: Haem. = Haemoproteus, L. = Leucocytozoon, T. = Trypanosoma,
Hep. = Hepatozoon, M. = microfilariae, P. = Plasmodium.