Ectoparasites from Birds in Newfoundland

Authors: Threlfall, William, and Wheeler, Terry A.

Source: Journal of Wildlife Diseases, 22(2) : 273-275

Published By: Wildlife Disease Association

URL: https://doi.org/10.7589/0090-3558-22.2.273

Journal of Wildlife Diseases, 22(2), 1986, pp. 273–275

Ectoparasites from Birds in Newfoundland

William Threlfall and Terry A. Wheeler,[1] Department of Biology, Memorial University of Newfoundland, St. John's, Newfoundland A1B 3X9, Canada

During an ongoing survey of the ectoparasites of birds in Canada (Bourgeois and Threlfall, 1981, Proc. Entomol. Soc. Wash. 83: 799–800; Eveleigh and Threlfall, 1974a, Proc. Entomol. Soc. Wash. 76: 270–277; Eveleigh and Threlfall, 1974b, Acarologia 16: 621–635; Eveleigh and Threlfall, 1975, Can. J. Zool. 53: 82–86; Eveleigh and Threlfall, 1976, Can. J. Zool. 54: 1694–1711; Fitzpatrick and Threlfall, 1977, Can. J. Zool. 55: 1205–1209; Threlfall et al., 1979, Proc. Entomol. Soc. Wash. 81: 327–328) we acquired 75 frozen birds, of 46 species, from Newfoundland for examination. Each bird was identified and then examined under a dissecting microscope. Any parasites found were preserved in 70% ethanol and later mounted in Rubin's solution (Rubin, 1951, Stain Technol. 26: 257–260) to facilitate identification. Voucher specimens of biting lice (Mallophaga) were prepared using 5% potassium hydroxide (55 C, 8–12 hr)/10% acetic acid/70/95/100% ethanol/xylene/Canada balsam, while mites (Acarina) were cleared in lactophenol and mounted in Hoyer's medium. One complete set of representative specimens has been deposited in the Canadian National Collection (Accession numbers 1985-39 to 1985-64; Biosystematics Research Institute, Ottawa, Ontario K1A 0C6, Canada). Major taxonomic keys used to identify the parasites included Clay (1969, Bull. Br. Mus. (Nat. Hist.) Entomol. 24: 1–26), Keirans (1967, N.H. Agric. Exp. Sta., Durham, New Hampshire, 179 pp.) and Krantz (1978, A Manual of Acarology, 2nd Ed., Oregon State Univ. Bookstores, Corvallis, Oregon, 509 pp.). Classification of the Mallophaga follows that of Emerson (1972, Checklist of the Mallophaga of North America (North of Mexico). Part 1. Suborder Ischnocera, 200 pp., and Part II. Suborder Amblycera, 118 pp., Deseret Test Center, Dugway, Utah), while the nomenclature of the avian hosts follows that of the American Ornithologists' Union (1983, Checklist of North American Birds, 6th Ed., Allen Press Inc., Lawrence, Kansas, 877 pp.). Twenty-seven (36%) birds of 18 species were infested with mallophagans and/or mites (Table 1).

The majority of the birds were window or road kills and many ectoparasites undoubtedly would have been lost upon the death of the host. Consequently, little can be said about the distribution of the ectoparasites on the birds. In the case of the American coot (*Fulica americana*), however, sufficient lice were recovered to speculate on the preferred sites for each species. *Incidifrons transpositus* comprised 72.7% of the lice on the head, but accounted for only 6.6% of the lice on the rest of the body. *Pseudomenopon pilosum* made up 87.7% of the lice on the body and 27.3% of the head lice. The remaining species, *Rallicola advenus* and *Fulicoffula longiphila*, were recovered from the neck and upper back. Clay (1949, Evolution 3: 279–299) noted that the morphology of the species of louse reflects the preferred location on the host's body. Species living on the head and neck are in little danger of being removed by the host's beak during preening and tend to

Received for publication 2 July 1985.
[1] Present address: Department of Zoology, College of Biological Science, University of Guelph, Guelph, Ontario N1G 2W1, Canada.

TABLE 1. Details of infestation of birds from Newfoundland with ectoparasites (Mallophaga and Acarina).

Parasite	Host(s)	Number (%) birds infested	Number parasites/ infested bird		Status[a]
			Mean ± SD	Range	
Mallophaga: Philopteridae					
Brueelia clayae Ansari, 1956	*Cyanocitta cristata* (blue jay)	1 (100)	30	—	NCR
Brueelia nebulosa (Burmeister, 1838)	*Sturnus vulgaris* (European starling)	1 (50)	1	—	PR
Brueelia sp.	*Tachycineta bicolor* (tree swallow)	1 (50)	1	—	PR
	Seiurus aurocapillus (ovenbird)	1 (100)	2	—	NHR
Carduiceps sp. (immature)	*Calidris pusilla* (semipalmated sandpiper)	1 (100)	5	—	PR
Craspedorrhynchus haematopus (Scopoli, 1763)	*Accipiter gentilis* (northern goshawk)	2 (100)	32 ± 41	3–61	PR
Fulicoffula longiphila (Kellogg, 1896)	*Fulica americana* (American coot)	1 (100)	2	—	NCR
Incidifrons transpositus (Kellogg, 1896)	*Fulica americana* (American coot)	1 (100)	45	—	NCR
Penenirmus jungens (Kellogg, 1896)	*Colaptes auratus* (northern flicker)	1 (100)	5	—	PR
Philopterus fringillae (Scopoli, 1772)	*Pinicola enucleator* (pine grosbeak)	3 (50)	1.3 ± 0.6	1–2	PR
Quadraceps charadrii (Linnaeus, 1758)	*Pluvialis apricaria* (greater golden plover)	2 (100)	2.0 ± 1.4	1–3	NCR
Quadraceps[b] *ravus* (Kellogg, 1896)	*Actitis macularia* (spotted sandpiper)	1 (100)	3	—	PR
Rallicola advenus (Kellogg, 1896)	*Fulica americana* (American coot)	1 (100)	10	—	PR
Saemundssonia conica (Denny, 1842)	*Pluvialis apricaria* (greater golden plover)	1 (50)	3	—	PR
Saemundssonia sp. (immature)	*Larus ridibundus* (common black-headed gull)	1 (100)	2	—	NCR
Strigiphilus crenulatus (Giebel, 1874)	*Surnia ulula* (northern hawk-owl)	1 (100)	2	—	PR
Sturnidoecus simplex (Kellogg, 1896)	*Turdus migratorius* (American robin)	1 (50)	6	—	NCR
Mallophaga: Menoponidae					
Menacanthus aurocapillus Carriker, 1958	*Seiurus aurocapillus* (ovenbird)	1 (100)	14	—	NCR
Pseudomenopon pilosum (Scopoli, 1763)	*Fulica americana* (American coot)	1 (100)	185	—	NCR
Acarina					
Analges sp. (fam. Analgidae)	*Bombycilla cedrorum* (cedar waxwing)	1 (100)	12	—	PR
	Dendroica petechia (yellow warbler)	1 (20)	2	—	PR
	Seiurus aurocapillus (ovenbird)	1 (100)	5	—	PR
	Pinicola enucleator (pine grosbeak)	2 (33)	10.5 ± 10.6	3–18	PR
Bychovskiata sp. (fam. Pterolichidae)	*Actitis macularia* (spotted sandpiper)	1 (100)	1	—	NCR

TABLE 1. Continued.

Parasite	Host(s)	Number (%) birds infested	Number parasites/ infested bird		Status[a]
			Mean ± SD	Range	
Mesalgoides sp. (fam. Psoroptoididae)	*Zonotrichia albicollis* (white-throated sparrow)	1 (50)	99	—	PR
Phyllochaeta sp. (fam. Syringobiidae)	*Actitis macularia* (spotted sandpiper)	1 (100)	8	—	NCR
Proctophyllodes dendroicae Atyeo and Braasch, 1966 (fam. Proctophyllodidae)	*Dendroica striata* (blackpoll warbler)	1 (14)	1	—	NHR
Proctophyllodes musicus Vitzthum, 1922	*Turdus migratorius* (American robin)	1 (50)	4	—	NCR
Proctophyllodes sp.	*Pinicola enucleator* (pine grosbeak)	2 (33)	9.0 ± 8.5	3–15	PR
Pterodectes sp. (fam. Proctophyllodidae)	*Dendroica striata* (blackpoll warbler)	3 (43)	43.7 ± 49.0	11–100	PR
Pteronyssoides sp. (fam. Avenzoariidae)	*Tachycineta bicolor* (tree swallow)	2 (100)	23.5 ± 29.0	3–44	PR

[a] PR = previous records, NCR = new Canadian record, NHR = new host record.

[b] This genus is in need of revision. Many of its species currently are referred to *Cummingsiella* Ewing, 1930, including *Q. ravus*.

Specimens of the following avian species were examined and found to be free of ectoparasites: *Butorides striatus*, green-backed heron (1 examined), *Falco sparverius*, American kestrel (1), *Falco columbarius*, merlin (3), *Bonasa umbellus*, ruffed grouse (1), *Rallus limicola*, Virginia rail (1), *Porphyrula martinica*, purple gallinule (1), *Philomachus pugnax*, ruff (1), *Phalaropus lobatus*, red-necked phalorope (1), *Ceryle alcyon*, belted kingfisher (1), *Empidonax flaviventris*, yellow-bellied flycatcher (1), *Empidonax alnorum*, alder flycatcher (1), *Corvus corax*, common raven (1), *Regulus satrapa*, golden-crowned kinglet (1), *Bombycilla garrulus*, Bohemian waxwing (1), *Vireo solitarius*, solitary vireo (1), *Vireo olivaceus*, red-eyed vireo (1), *Dendroica magnolia*, magnolia warbler (1), *Dendroica coronata*, yellow-rumped warbler (3), *Mniotilta varia*, black-and-white warbler (1), *Setophaga ruticilla*, American redstart (1), *Seiurus noveboracensis*, northern waterthrush (2), *Oporornis philadelphia*, mourning warbler (1), *Pheucticus ludovicianus*, rose-breasted grosbeak (1), *Passerculus sandwichensis*, savannah sparrow (1), *Passerella iliaca*, fox sparrow (2), *Melospiza georgiana*, swamp sparrow (2), *Junco hyemalis*, dark-eyed junco (1), *Icterus galbula*, northern oriole (2).

be slow-moving, round-bodied lice with large heads and mandibles (e.g., *I. transpositus*). Slimmer, more elongate lice are free to exploit the remainder of the host's body since they can move easily and rapidly among the feathers to avoid the host's beak.

We wish to thank Dr. Warren Atyeo, University of Georgia, Athens, Georgia, for his help in identifying the mites, and Mr. John Maunder, Curator of Natural History, Newfoundland Museum, St. John's, Newfoundland, who supplied the birds. We also thank the Natural Sciences and Engineering Research Council of Canada for awarding an Operating Grant to the senior author and a University Undergraduate Summer Research Award to the junior author.