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Parasitic Arthropods of Wood Ducks, *Aix sponsa* L., in the Atlantic Flyway

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Ectoparasites were collected as part of a survey of the hematozoan and metazoan parasites of the wood duck. The study was conducted during the summer and early fall of 1976 and 1977 throughout most of the wood duck's range in the Atlantic flyway. Although the wood duck breeds as far north as southern Canada, collections were restricted to the United States. Two hundred fifteen wood ducks from 12 states from Maine to Florida were collected by live-trapping and shooting. The sample comprised 67 adult males, 48 adult females, 50 immature males and 50 immature females. Ages and sexes were determined by plumage and cloacal examination (Carney, 1964, Spec. Sci. Rep. U.S. Dept. Int. Fish Wildl. Ser. No. 82: 1– 47).

Ectoparasites were brushed from feathers and washed from feathers, eyes, ears, nares, and mouth with a spray of water into a 100-mesh (150 μ m opening) screen. The collected material was backwashed into petri dishes and examined with a dissecting microscope. Specimens were fixed and preserved in 70% ethanol. Lice were cleared in 10% KOH and mounted in synthetic resin. Mites were cleared and mounted in Hoyer's medium. Represented the section of the section of the section.

TABLE 1. Prevalence of parasitic arthropods of 215 wood ducks in the Atlantic Flyway.

	Prevalence (%)		
Species	Adult ducks $(n = 115)$	Immature ducks $(n = 100)$	Distribution ⁴
Acari			
Ingrassia sp. (1) ^{a.b.c}	27	34	1-3, 5, 7-9, 11, 15, 17-23
Rhinonyssus rhinolethrum (2)	5	17	2, 3, 5, 7, 8, 10, 13–16, 20
Freyana largifolia (1) ^b	9	3	5, 10, 11, 19, 20, 23
Bdellorhynchus sp. (1) ^{b.c}	2	2	5, 11, 20
Rectijanua sp. (1) ^{b.c}	1	1	2
Mallophaga			
Holomenopon clauseni (1)	32	44	1, 2, 4–12, 15, 17–23
Anaticola crassicornis (1)	18	29	1-3, 5-11, 15, 20-23
Anatoecus dentatus (1)	15	27	1, 2, 5, 6, 9, 11, 12, 14, 15, 18–20, 23, 24
Trinoton querquedulae (1)	5	16	1-3, 5, 7, 9, 11, 15, 17, 19-21, 23

• Numbers in parentheses indicate location in host: (1) plumage; (2) nares.

^b New host record.

^c Undescribed species.

^d Numbers refer to localities as shown in Figure 1.

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FIGURE 1. Collection sites of 215 wood ducks in the Atlantic Flyway in 1976 and 1977 (n = number of ducks examined). 1. Penobscot County, Maine (n =24), 2. Franklin County, Vermont (n = 10), 3. Worcester County, Massachusetts (n = 9), 4. Essex County, Massachusetts (n = 3), 5. Cayuga County, New York (n = 12), 6. Morris County, New Jersey (n = 12), 7. Erie County, Pennsylvania (n = 8), 8. Lancaster County, Pennsylvania (n = 3), 9. Montgomery County, Maryland (n = 11), 10. Mason County, West Virginia (n = 5), 11. Charles City County, Virginia (n = 12), 12. Chowan County, North Carolina (n = 2), 13. Tyrrell County, North Carolina (n = 4), 14. Washington County, North Carolina (n = 8), 15. Burke County, North Carolina (n = 12), 16. Georgetown County, South Carolina (n = 2), 17. Berkeley County, South Carolina (n = 15), 18. Hamilton County, Florida (n = 4), 19. Gadsden County, Florida (n = 10), 20. Leon County, Florida (n = 35), 21. Alachua County, Florida (n = 3), 22. Levy County, Florida (n = 4), 23. Hernando County, Florida (n = 6), and 24. Glades County, Florida (n = 1).

tative specimens have been deposited in the U.S. National Parasite Collection, Beltsville, Maryland (USNM Nos. 75372– 75378, 75865–75871). Prevalence data were analyzed as a linear model using FUNCAT from the Statistical Analysis System (SAS) (Helwig and Council, 1979, SAS User's Guide, SAS Institute, Inc., Cary, North Carolina, 494 pp.).

Specimens of nine species of arthropods comprising four species of Mallophaga and five species of Acari were collected. Three species of mites are believed to be undescribed. Table 1 lists the species with their prevalence and locality. Of the 215 wood ducks, 71% were infested with one to five species (mean 2.0) of ectoparasites. Fortysix percent were infested with mites and 54% were infested with lice. Mixed infestations of mite and louse species occurred in 28% of the sample. Mite, louse, and mixed infestations were significantly more prevalent in immature than in adult birds (50-30%, 71-50%, 36-22%, respectively). No significant differences in prevalence of ectoparasite infestations were evident between male and female wood ducks.

Parasitic feather mites and lice generally spend their entire life cycles on the host and are transmitted by contact between individual hosts (Cheng, 1973, General Parasitology, Academic Press, New York, New York, 965 pp.). Therefore, they can be considered common ectoparasites of the gregarious wood duck. The more prevalent species were found in localities throughout the Atlantic Flyway. Little can be said about the geographic distribution of the less commonly encountered species. Considering the recovery techniques employed, it is probable that all 10 species of ectoparasites were more prevalent and widely distributed than indicated by these findings. Further study may reveal that additional species of ectoparasites infest wood ducks in the Atlantic Flyway.

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Famphur Toxicosis in a Bald Eagle

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On 24 November 1983, an adult female bald eagle (*Haliaeetus leucocephalus* L.) was found unable to fly near Lewes, Delaware. She was kept overnight by U.S. Fish and Wildlife Service personnel at Prime Hook National Wildlife Refuge and transported to the Patuxent Wildlife Research Center, Laurel, Maryland, the following afternoon.

On clinical examination the eagle was recumbent, unable to move except for slight rotation of the head, and exhibited extensor rigidity with legs directed backward and wings slightly extended. Pupils alternately dilated and contracted and were unresponsive to light stimulation; corneal reflex was absent. Palpation revealed a mass in the crop. Packed cell volume was 54% and blood protoporphyrin was 17 μ g/dl. No abnormalities were evident radiographically, except for the presence of two shot which appeared to be in the stomach.

An endotracheal tube was inserted and a large mass of feathers and avian skeletal remains was manually removed from the crop with a long-handled hemostat. Stomach gavage with lactated Ringers solution yielded additional feathers as well as a dark fetid fluid. Supportive treatment included 70 mg prednisolone (Henry Schein, Inc., Port Washington, New York 11050, USA) and 20 ml lactated Ringers solution intravenously, and 35 mg gentamycin (Gentavet[®], Burns-Biotec, Inc., Omaha, Nebraska 68103, USA) intramuscularly. An additional 40 ml lactated Ringers was administered subcutaneously. The eagle died several hr after treatment was initiated.

At necropsy, the carcass was in good flesh with abundant subcutaneous fat and weighed 4,162 g. No external lesions were noted and there was no indication of traumatic head injury. A regurgitated mass of dark feathers and mucous was present in the oral cavity. No lesions were observed in the viscera except for a slight thickening of the right abdominal air sac with some adherent yellow caseous material. Stomach contents consisted of about 100 cc of feathers and small bird bones; one lead shot was also recovered. Air sac, liver, and lung were submitted for routine bacteriologic culture to the Maryland Department of Agriculture, Animal Health Laboratory, College Park, Maryland, but

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