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A SEARCH FOR BLOOD PROTOZOANS IN THE AMERICAN WOODCOCK

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Abstract: Smears were prepared from heart blood of 55 woodcock collected in central Maine between spring and fall, 1972 and 1973. Peripheral blood taken from the wings of 41 of these birds also was examined. Examination of stained films revealed no infected blood cells. Samples of heart blood from 35 of the 41 woodcock were injected into young ducks, quail, and a gull. Plasmodia were not seen in inoculated birds.

INTRODUCTION

A search for blood protozoans in the American woodcock (*Philohela minor*) was undertaken because of limited data on the subject. D. C. O'Meara (per. comm.) found no parasites in blood films from 114 woodcock collected in Maine during spring and fall, 1954 through 1964. Similarly, blood smears from 359 woodcock collected in New York State were negative (W. B. Stone, per. comm.). Pursglove,[7] recognizing the decreased chance of discovering blood parasites in birds shot during the fall, found no parasites in smears from 51 woodcock collected in West Virginia during the fall of 1967. In a range-wide study of woodcock parasites, he[6] reported only three of 265 birds infected with *Haemoproteus* spp. In eastern Maine, *Plasmodium circumflexum* was found in one of three bobwhite quail (*Colinus virginianus*) inoculated with woodcock blood.[2]

METHODS

Woodcock were collected in Penobscot and Piscataquis counties, Maine, by mist-netting in the spring and summer, night-lighting in the summer, and shooting in the fall. Fifteen adult males were netted on singing-grounds; 26 birds of both sexes were captured on roosting fields (13 adults, 13 immatures); and 14 woodcock were shot in feeding covers (4 adults, 10 immatures). Thirty-five of these 55 woodcock were tested by examining heart and wing blood, and by isodiagnosis; heart and wing blood was taken from 41 of the birds; and only heart blood was collected from 14 of the woodcock. The age and sex of each bird was determined by the methods of Martin.[4]

Wing blood was obtained by puncturing an artery of live birds. Heart blood was collected from woodcock which were shot, or killed after being caught. Two smears each of wing and heart blood were prepared. One to 2 ml of blood were drawn from the hearts of most sacrificed woodcock and immediately injected (isodiagnosis[1]) into the breast muscles of ducklings (26 birds), young bobwhites (8), and a gull chick. Inoculated ducks were Pekins and mallards (*Anas platyrhynchos*). 1 to 6 weeks of age. The quail and gull (*Larus argentatus* or *L. marinus*) were less than 1 month old when injected. Peripheral blood smears were prepared from the inocula-

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ted birds three times each week, starting 5 days after injection, and continuing for 6 weeks. Subinoculated birds were housed in a vector-free building and were provided with ample amounts of water and high protein food.

Blood films were fixed with methanol, stained with Giesma's stain and coverslipped. Each smear was examined for 15-20 min. Slides were scanned under a high-dry objective (X400) and suspicious looking inclusions were examined under oil immersion (X1000). Blood protozoans which were looked for were of the following genera: *Haemoproteus, Leucocytozoon,* and *Plasmodium.*

RESULTS AND DISCUSSION

No parasites were found in the blood cells of the woodcock, nor in the subinoculated birds. However, at least two genera of blood protozoans occur in habitats frequented by Maine woodcock. Both *Leucocytozoon* and *Haemoproteus* frequently infect Maine grouse[3] and ducks.[5,6] During the present study, a young Pekin duck exposed for an hour on a woodcock courtship field in early June, 1972, became infected with *Leucocytozoon* spp. Because plasmodia in Maine waterfowl has not been investigated by isodiagnosis, the true prevalence of this parasite is unknown.

Malaria has been reported, with use of isodiagnosis, in one Maine woodcock.[2] This finding is difficult to explain in light of the present results. However, the previous study was undertaken in a different area of Maine, and under different experimental conditions (quail were in outdoor, unscreened, cages). The present data suggest that blood protozoans occur infrequently in Maine woodcock.

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