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ever, in any of the organs of the snakes examined, to suggest intermediate stages of a life cycle of such a parasite.

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HEMATOZOA OF THE MALLARD DUCK *Anas platyrhynchos* L. IN SOUTH DAKOTA

The only study of hematozoa of birds in South Dakota is that of Weib (M.A. Thesis, Univ. of South Dakota, 1962). Although his survey included 29 species of birds, belonging to 12 different families, it did not cover any waterfowl. In the present study 169 wild mallard ducks *Anas platyrhynchos* L. were examined for blood parasites during the latter part of January, 1965. The ducks were part of a large waterfowl concentration which winters annually at Lake Andes National Wildlife Refuge, Lake Andes, South Dakota. Blood smears were made from the birds during the time of the annual winter banding of waterfowl.

Blood for the smears was obtained by needle puncture of the lower leg vein located medially on the metatarsal region of the leg. The smears were air dried fixed in absolute methyl alcohol, and stained with Wright's stain according to Lillie's modification (Histopathologic Technic and Practical Histochemistry, 1954). They were examined under low power (100X) for 15 minutes and under high power (450X) for 15 minutes. Two blood smears were made from each duck so the blood of each bird was examined for a period of at least one hour. Subsequently, slides recorded as positive were scanned completely.

In this study 75 (44.4%) of the 169 ducks were found infected with at least one species of blood parasite. Five birds were infected with two different parasites. However, the parasitemia levels were low with no more than 10 parasites on any positive slides and usually only from one to three.

Leucocytozoon simondi Mathis and Leger was found in 47 ducks, 20 birds were infected with *Parahaemoproteus nettionis* (Johnston and Cleland), and seven birds were infected with microfilariae. Double infections consisted of two cases of *L. simondi* and *P. nettionis,* two cases of *L. simondi* and microfilariae, and one case of *P. nettionis* and microfilariae. A majority of the gametocytes of *L. simondi* were elongate forms but some round ones were observed. Two distinct types of microfilariae were seen. A short, broad unsheathed form with a distinctly striated cuticle was found in six birds, whereas a slender, sheathed form was present in one bird.

A relatively high infection rate for *L. simondi* (27.8%) was observed here. This suggests that the reservoir potential of this mallard population is sufficient to establish infections of the insect vectors in the areas in which these ducks will migrate in the spring. This is of interest with regard to the epizootiology of *L. simondi* infections, since it appears that infected wild ducks, at least in certain areas, are responsible for supplying an adequate parasite source to start epizootics (Fallis & Bennett, Can. J. Zool. 44:101-112, 1965). Also, this study was made at the time of the year when the parasitemias were probably lowest (see Chernin, Am. J. Hyg. 56:101-118, 1952), so that even a higher rate might have been found with a longer examination period.

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