REPORT OF A WHOLESALE DIE-OFF OF YOUNG HERRING GULLS, HOGBACK ISLAND, MOOSEHEAD LAKE, MAINE

BY CLARENCE M. ALDOUS

ON August 18, 1939, Dr. Clifford Nelson, Parasitologist at the University of Maine, and the writer made a trip to Moosehead Lake in Maine to investigate a report of a wholesale die-off of young herring gulls on Hogback Island. Assisted by Warden Ed Lowell, we carefully searched that small island for sick and dead birds. Thirty-six carcasses were found. Some of the bodies were completely disintegrated, while a few showed that the birds had not been dead more than about two days. In no case was it possible to examine any of the bodies because of the bad state of decomposition.

This situation was of particular interest to us because during the month of June in the past four breeding seasons we had banded a total of 462 young herring gulls.

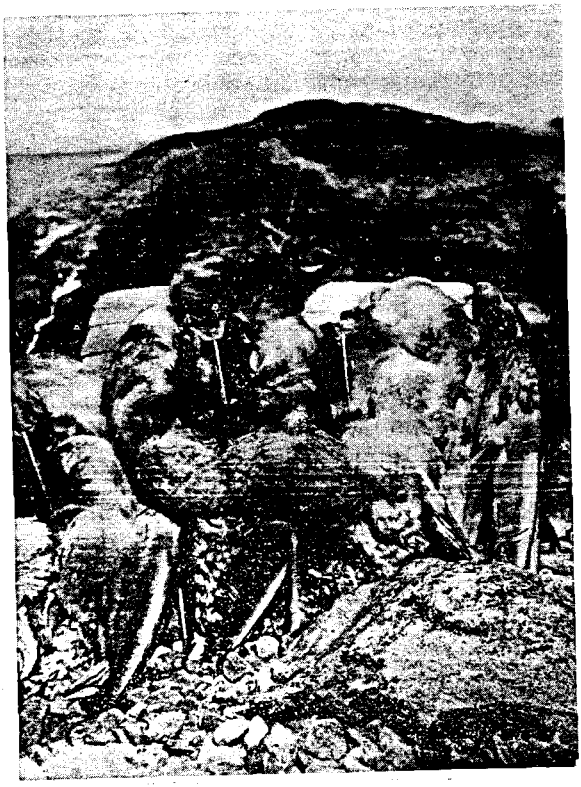
Of the 36 dead juvenile birds found, only 9 had bands on their legs. Some fishermen had previously picked up many of the dead gulls and had removed some of the leg bands. The number of dead birds found probably does not represent all the gulls that died, as no doubt many died while in the water and were washed away.

No sick birds were seen on the island, but when we cruised on the water in the vicinity of the island we noted that several of the young gulls had considerable difficulty in taking off. Five of these weak young gulls were collected for study. Four of these were extremely emaciated. There was very little muscle tissue on the breasts, as the accompanying photograph shows. Two of the five birds collected had been banded in June, 1939. The viscera of the five birds were examined for parasites by Dr. Nelson, and his findings are given in the following table:

PARASITES FOUND IN THE FIVE HERRING GULLS

	Bird No.				
Parasite	*1*	*2*	*3*	*4*	*5*[1]
NEMATODES					
Cosmocephalus obvelatus	...	...	...	...	2
Contracoecum spiculigerum	...	7	...	6	2
Capillaria sp.	...	1	...	1	...
CESTODES					
Diphyllobothrium sp.	...	9	5	...	...
TREMATODES					
Diplostomum sp.	183	112	241	500+	142
Cotylurus communis	24	6	12	15	6
Mesorchis pseudoechinatus	221	88	12	500+	3

[1] Bird No. 5 was in good flesh, as shown by the photograph. As will be noted in the table, this bird had slightly fewer parasites than did the other four birds.



Note emaciated condition of the breast of the bird on the right as compared with the bird on the immediate left.

Of three nestlings found soon after they had died during the banding work in June, 1939, only one was at all parasitized. It had one specimen of *Contracoecum spiculigerum* in the esophagus and one specimen of *Diplostomum* sp. in the intestine. In six adult herring gulls collected in June from the same colony, a number of species of parasites were found that did not occur in the young at Moosehead Lake. These were *Streptocara tridentata, Choanataenia ransomi, Ornithobilhartzia lari, Clinostomum marginatum, Strigea bursigera, Parorchis avitus,* and *Psilostomum plicitum.* Only a few individuals of each species, however, were present.

In view of the complete absence of parasites in newly hatched young, it is reasonable to assume that the heavy parasitism found in the gulls taken in August—when they were a little more than

two months of age—came from their food, which is made up almost entirely of rough fishes. Dr. Nelson is of the opinion that *Cotylurus communis*, even though present in small numbers in the infested juvenile birds, may have contributed largely to their emaciated condition and general weakness. He quotes from the writings of LaRue[2] on this subject: "When present in numbers *C. communis* causes emaciation which becomes marked by the eighth day to the tenth day after feeding with the infested *Percopsis*. Paralysis of the leg muscles may be noted at about the same time and death usually follows on the twelfth to fifteenth day after feeding. The host may survive less severe infestations for weeks and may eventually recover."

Dr. Nelson also believes that the common sucker found in Moosehead Lake is the host for *C. communis* and no doubt is the chief source of parasitism in the young herring gulls. It is probable, however, that chubs, minnows, sunfishes, and other species of rough fishes, which are present in the waters of Moosehead Lake and which are also eaten by the gulls, may be hosts for some or all of the parasites found in the herring gulls there. This point cannot be settled, however, until collections of these fishes are made and examined for the presence or absence of the parasites. Further studies will be necessary to determine the cause of such extensive losses of birds as herein reported.

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[2] 1932. LaRue, George R., Morphology of *Cotylurus communis* Hughes (Trematoda: Strigeidae), Trans. Amer. Mic. Soc. 51:1, 28–42.