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REPORT ON AFFECTED SALMON IN THE MIRAMICHI RIVER, NEW BRUNSWICK.

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In the early part of October, 1915, Mr. G. J. Desbarats, the Deputy Minister of the Naval Service, requested that the Biological Board arrange an investigation of a disease which had broken out among the salmon in the Northwest Miramichi river. I was instructed to proceed to the Miramichi hatchery, South Esk, New Brunswick, examine the conditions there, investigate the possibility of organisms other than bacteria being responsible for the disease, and arrange for the shipment of material for bacteriological examination to Principal F. C. Harrison, of Macdonald College, Ste. Anne de Bellevue, Que.

The hatchery was visited on October 11 and 12. It is located near the mouth of a small stream which empties into the Northwest branch of the Miramichi river, a few miles from Newcastle. Mr. Donald Morrison, the local inspector of fisheries, and Mr. Wm. Sheasgreen, the officer in charge of the hatchery, gave every assistance.

Down the stream from the hatchery is a pond for retaining the salmon previous to the stripping at spawning time. It consists of a portion of the stream enclosed by boards, with spaces between for the circulation of the water. The water is changed regularly by the action of the tide and by the current of the stream. The level of the water in the pond is prevented from falling too low by a dam across the stream below the pond.

A large proportion of the fish in the pond had been officially reported to be visibly affected, and I found white patches of fungus with extensive ulcerations in the centre of many of the patches in the worst cases. The head, the back, and the tail were the parts that in most instances showed evidence of the disease. In the earlier stages the affected parts were seen to be covered with a greyish thin film of fungus, which was easily rubbed off. If the fish were removed from the water these greyish patches could scarcely be seen. The fish that were in the worst condition were sluggish, came inshore into the shallow water, or floated near the surface with the fins exposed. Frequently the caudal fin was partly out of the water and the head very low, the fish floating at an angle approaching the vertical.

Mr. Sheasgreen gave the following information on October 12:—

"During the latter part of September small marks, chiefly on the head, were noticed on a large proportion of the fish in the pond. A few marked fish (those with definite wounds) had been received from the fishermen. It has been the custom whenever an opportunity presented to take these marked fish from the pond and bury them. The records show that twenty-two fish were taken out from the 18th to the 21st of September, three on the 25th, and five on the 28th. On the outbreak of the disease (the last of September) at first only dead fish were removed, but later badly infected living ones as well. Beginning with September 30, fish were received every day, never less than seven, and once as many as thirty-eight. The dead fish were all well covered with the fungus. On October 6 we began to reject some of the fish brought in by the fishermen, who by this time were noticing the fungus on some of the fish that they were catching. Of the fish brought in there were no large number badly marked previous