

INSTITUTE FOR FISHERIES RESEARCH  
UNIVERSITY MUSEUMS  
UNIVERSITY OF MICHIGAN  
ANN ARBOR, MICHIGAN

July 11, 1930

Report No. 13

REPORT ON THE MORTALITY OF TROUT IN THE TWO TROUT PONDS ON THE  
W. H. McCOURTIE ESTATE,  
SOMERSET CENTER

By WENDELL H. KRULL, Fish Pathologist

On July 6, 1930, the caretaker of the W. H. McCourtie Estate of Somerset Center, Hillsdale County, brought to the Institute at Ann Arbor, as per appointment, a number of two-year old rainbow trout. He reported some loss of the trout, usually a few a day. Some of the specimens had been picked up in diseased condition, one or two when dead.

A complete examination of several dead fish brought to Ann Arbor revealed no cause of death of the fish unless due to bacterial disease. Dead fish can not be used satisfactorily for the determination of cause of death on account of the accumulation of bacteria after death. The living sick specimens must be examined to make sure of disease conditions. The amount of food in the intestine and the amount of fat around the visceral organs suggest possible feeding troubles. Poorly shaped and proportioned heads indicated feeding troubles or a weak stock of fish. Abnormal fins and opercula (gill covers) indicated injuries which they had received at some time, possibly due to overcrowding and nipping.

Since no conclusions of significance could be arrived at as a result of the examination of the trout at Ann Arbor, an examination of the trout in the ponds

was suggested. This was done on June 8. Since the ponds are private, the examination was made on a consultation basis.

As a result of the visit to the fish ponds, I found that the water in the one from which the dead fish had been taken was not as clear as might be expected. I was told by several individuals that this was merely a temporary condition, following showers.

An analysis of the pondwater was made, giving these results:

Carbon dioxide - 4 parts per million  
Carbonates - none  
Bicarbonates - 212 parts per million  
Oxygen - 9 parts per million  
pH - 8.0

This analysis of the pond water indicates nothing unsuitable for fish.

Nothing in the nature of a serious epidemic was noted among these fish. Under present conditions it is possible that a more or less constant small loss will continue to take place, and this may be expected to be accentuated when extreme temperature changes occur.

The following suggestions are offered to help remedy the present situations in the ponds.

1. Secure information from the State Department of Fisheries relative to the food of adult trout kept under controlled conditions.
2. Segregate the fish of the two ponds according to size, because the large fish are injuring the smaller ones and these injuries are sources of entrance for disease organism.
3. Destroy the small, thin fish for they are the carriers of organisms which may attack the healthy fish at periods when they are temporarily living under stresses of various kinds, in unfavorable conditions such as chemical and physical conditions of the water, improper food, etc.

4. Since a tremendous variation in size exists in the fish of the one pond (which in this case may be due to food, crowding, or weak stock) I should be inclined to reduce the numbers, in both ponds. In the fish hatcheries it is found that many of the difficulties result directly or indirectly from crowding.

A solution which may be used for cleansing and treatment of many of the common diseases is made by dissolving 1 ounce of copper sulphate in 1<sup>1</sup>/<sub>4</sub> gallons of water. Allow the fish to remain in the solution from one to two minutes depending upon the degree of distress shown by the fish. Use wooden or stone containers for the solution.

*Mendell Kull*