

July 25, 1930

Report No. 19

REPORT ON THE EXAMINATION OF TWELVE SPECIMENS OF BROWN TROUT
FROM THE STATE FISH HATCHERY, GRAYLING, MICHIGAN

On July 8th, Dr. Hubbs visited the Grayling Hatchery and was informed of a peculiar mortality of brown trout yearlings, which were kept in the large round pond. About a hundred brown trout were being retained here with a larger number of brook trout of like size. During the previous night about 20 of the brown trout died, although they appeared in excellent condition. One dying fish examined in the morning appeared wholly normal and well fed, and the gills seemed normal too. In the gill cavity, however, was a mass of food filled with fine bubbles-suggested some internal trouble. Mr. Zalsman stated that just previously a shipment of unfrozen food was received and used. Otherwise no change in care of the fish was made (the food is ordinarily obtained frozen). Some trouble with farunculosis had been experienced in the ponds at this hatchery, during the previous warm weather, as is usual in Grayling, but Mr. Zalsman reported that he had been able to hold down this infection with copper sulphate treatment. Dr. Hubbs asked that specimens of the diseased brown trout be sent to Ann Arbor for study by Dr. Krull.

The fish on which this report is based were received in excellent condition for examination, thanks to the excellent care taken in packing them in ice. According to a letter from Mr. P. G. Zalsman, Overseer, dated July 22, 1930, announcing the shipment of specimens, these fish died in the course of a couple of hours and were taken from a pond in which both brook and brown trout were kept together.

The average length of specimens was 270 mm. As to sex the specimens were about equally divided. Externally the fish were normal. In several specimens the gills were still in a good state of preservation and in every case except one the stomach was full of food. There was plenty of surplus food in the form of fat in the visceral cavity of all the fish.

These statements indicate that the fish died as the result of an acute malady. Considering the apparent hardiness of the brown trout and the fact that they were living with brook trout which appear to be uneffected seems to indicate that a disease organism is attacking the fish.

Complete macroscopic and microscopic examinations were made of four specimens and only a macroscopic study of the remaining. The only abnormal condition observed occurred in the very terminal part of the intestine. This section, a length varying from 1 to 3 cm., was red, inflamed, and the main blood vessels congested. The condition was very pronounced and the intestinal wall was decidedly abnormal. This inflamed condition was found in all twelve fish.

In several cases conjection of waste in the intestine was suggested.

Examination of scrapings from the intestinal wall contained many non-motile bacteria (bacilli) of considerable size and they were present in all twelve specimens.

In view of the facts presented it is quite logical to assume that these may bring about a disease causing death of the fish. Additional support for this conclusion is found in the fact that our examinations of the intestine of brook trout

show the organ to be comparatively free from bacteria. It remains possible, on the other hand, that the condition referred to may have been produced by this organism after the death of the fish.

A more reliable conclusion in this connection could be obtained by an examination and comparison of the living fish in the ponds.

Report prepared by

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/s/ Carl L. Hubbs

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