

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

*copy to: Marquette  
Paris  
9-16-30*

RECEIVED  
SEP 8 - 1930  
FISH DIVISION

September 2, 1930

Report No. 24

REPORT ON A HEAD DISEASE OF BROWN TROUT AT THE STATE FISH  
HATCHERY, MARQUETTE, MICHIGAN

During a visit of the hatchery on August 18, 1930, attention was called by Mr. Jay G. Marks, Overseer, to spots on the heads of Brown trout.

The eggs from which the trout were hatched came from the Paris hatchery. The eggs were hatched at Thompson and the fingerlings transferred from Thompson to Marquette in two lots on July 1st and 15th respectively. The first lot came from the old hatchery at Thompson and the second from the new hatchery.

Most of the fish were put into large, cement-walled ponds and some into ponds with dirt shores, all of which were in the open. At the time of our visit some were in hatchery troughs but we failed to find how and when they got there.

The disease was thought to be noticed first in fish from the new Thompson hatchery which were transferred on July 15th to cement-walled ponds. On the other hand, the exact place of origin of the disease was rather difficult to determine since it broke out almost over night in the entire lot, independent of location and water supply.

The disease was first noticed the first week in August. At the time of our visit a large percentage was effected and the disease was spreading rapidly. The

temperature of the water in which the fish were living was about 51°F.

The disease seems to have very definite diagnostic characteristics. The organism attacks the top of the head and seems to be confined to this localized area. The first visible naked-eye evidence is found in a pair of pin-point black spots on the top of the head, one on either side of the median line at the level of the posterior margin of the eye-ball. These areas increase in size and finally a grayish or whitish spot is found in the center of each. The white spots apparently grow fast and result in two large white areas bordered with black. The whitish spots are conspicuous when the fish are swimming in the water. When the greater part of the skin on the dorsal side of the head posterior to the level of the eye-ball is affected it seems to cease spreading. In typical cases the areas are oval or round. In many cases skin between the two areas is completely destroyed and there is only a single whitish or grayish area on top of the head.

The disease at the time of our visit had no visible detrimental affect on the fish.

Stained and unstained living tissue was examined and in stained smears a coccus-form of bacterium was found exceedingly abundant. This organism was found in considerable abundance in the epithelial cells.

By use of teasing needles and a dissecting microscope it was roughly determined that the organisms invariably destroyed the epithelial cells and in many cases the sub-epithelial layers thus exposing the skull bones.

By using glucose agar, an artificial culture medium, we have been able to isolate two bacteria, one coccus-form and a very short rod-form, from these lesions. It is hoped that we may be able to reinfect brown trout in order to establish the causitive organism.

It seems that such lesions as are found on these fish should be disastrous especially if they were transferred to warmer water. For this reason a request

for further observations was made and treatment experiments suggested which we hope will be done and results given to us.

In talking with Mr. Richard Broderick, Overseer, Baldwin Hatchery, we are convinced that possibly this disease took its toll among the brown trout at this station in 1929. His verbal description referred to the spots on the head.

*Wendell H. Krull*  
Wendell H. Krull  
Fish Pathologist

*Institute  
copy*

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Wendell H. Krull  
Fish Pathologist

*Copy to Krull  
Westerman  
Institute.*

Re: Hatchery diseases

INSTITUTE FOR FISHERIES RESEARCH  
UNIVERSITY OF MICHIGAN

December 29, 1930

Mr. Jay G. Marks  
State Fish Hatchery  
Marquette, Michigan

Dear Mr. Marks:

During one of my visits at the hatchery in the late summer, a disease which seemed to be confined to the head, was noticed in the brown trout fingerlings. At that time we suggested that any further developments be watched and recorded. We are wondering whether or not you have made any observations concerning this rather peculiar disease in which the skin of the head was destroyed.

We shall be very grateful for a reply.

Wishing you a happy new year, I am,

Very truly yours,

Wendell H. Krull  
Fish Pathologist