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6-15-31

INSTITUTE FOR FISHERIES RESEARCH
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ANN ARBOR, MICHIGAN

RECEIVED
JUN 17 1931
FISH DIVISION

June 10, 1931

Report No. 68

ON A DISEASED CONDITION OF BROOK TROUT AT THE WATERSMEET HATCHERY

According to Overseer R. S. Marks, no loss other than a rather steady "normal" loss had been experienced at the hatchery. Examination of the fish on June 3, 1931, showed the troughs of larger fingerlings to be in good condition but in the troughs of smaller fish there were "pinheads" and some very weak fish which were not feeding. All fish showed a mediocre response to a stimulus. An occasional fish was found in a dying condition. No naked-eye symptoms of disease were apparent but the microscope revealed parasites in abundance.

The organisms found on the fish were colonial protozoans very closely related to the genus Epistylis. A similar epidemic, as far as we are aware, has never been reported.

to what extent these animals are actually parasitic is very questionable but the fact that they take up a habitat on the fish, eyes included, is reason enough to consider them as serious. These animals grow a little stem by which they attach themselves to the fish. At first the animal consists of a single individual and probably would not be noticeable but it reproduces by dividing repeatedly, forming a colony of individuals. This colony, for sake of comparison, resembles a miniature tree. The weakest fish were invariably covered with these colonies, while on the stronger fish they were proportionately smaller in number. Some were found in the troughs of larger, stronger fish. In spite of the great number of colonies they were practically invisible to the naked eye

under ordinary conditions, due to their transparency.

Since fish had been treated weekly at the hatchery with salt (about 7 pounds to a trough) it was necessary to try other treatments. Acetic acid and concentrated salt solutions were tried and both were successful. Since salt is more desirable it was used for treatment. A dipper was used in mixing a solution of one dipper of salt to 20 dippers of water. Some of the solution was placed in a feeding pan to which the fish were added and allowed to remain for at least 3 minutes after which the pan was emptied into the lower end of the trough. A few of the weaker fish turned belly-side up soon after they were in the salt but this was not fatal.

A single trough of fish was treated in this way without a single loss and the activity of the fish was entirely different. Examination of specimens a half-hour after treatment showed no living protozoans but the fish were not entirely free of debris and slime on the surface of the body and in the gills, for which the organisms had been responsible. Instructions were left with Overseer Marks for the treatment of all the rest of the fish if the detrimental effects were observed in the treated trough in 24 hours.

Such a condition has never been observed by us in fish but a similar situation occurred in a large tank of frog tadpoles. The organisms in this case, however, was not exactly the same, for the tadpoles with heavy infections, were white, indicating that these organisms did not possess the degree of transparency observed in those on the trout. In the tadpoles the weak ones were attacked and infection spread to the larger, stronger tadpoles and finally the parasites died out, after having killed numerous tadpoles in the meantime.

Overseer Marks was requested to send specimens of treated fish to us for examination. We feel that possibly after an initial loss that the "normal" loss in these fish should decrease under the treatment.

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