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REPORT NO. 868

INVESTIGATION OF YEARLING BROOK TROUT MORTALITY

AT BALDWIN PONDS

by

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Mr. J. T. Wilkinson reported on April 30th that the yearling brook trout at the Baldwin Rearing Ponds were dying at the daily rate of 40 per pond of 23,000. Two ponds of brook trout were affected and had begun to die on April 13th. This investigation was conducted on May 4th and 5th. Mr. Wilkinson said that the disease appeared to be similar to that described by Belding and Merrill (Trans. Amer. Fish. Soc., Vol. 65 (1935), pp. 76-84). No previous history of this disease at Baldwin is known.

External Lesions:

Exophthalmos. Protrusion of the eyes was observed in many of the fish examined. This was especially noticeable in fish that were still alive and swimming but in a very weakened condition.

Blisters:

Blisters containing a clear fluid were found on several specimens. Except in one case there was no involvement of the muscle tissue, such as occurs in furunculosis. In the case involving the underlying muscle, no bloody pus was found; the flesh was white and soft. A secondary infection with Saprolegnia was found on two pustules on one specimen.

Parasites:

All fish examined were found to harbor gyrodactylid worms. Many of the fish in the pond had the blue film on the dorsal fin characteristic in an infestation by these flukes.

Haemorrhagic Areas:

The vent of fish in advanced stages of the disease was an angry red, due to congestion of blood in the hind gut. Haemorrhagic areas were also noted in the roof of the mouth, the lower sides of the opercles and in the lower margins of the eyes.

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Internal Lesions:

Fluid in the body cavity was bloody, and haemorrhages were noted in nearly all internal organs, except the liver, which, in some cases, was pale yellow in color. Small white pustules or nodules were observed in all cases in the kidney, and they occurred frequently in the liver and spleen. Examination of the pustules under the microscope revealed many rod-shaped bacteria. No bacteriological cultures were made because no media was available at the time of examination.

Treatment:

No treatment is known for the disease involving haemorrhagic conditions and pustules in the internal organs. Because it is apparently a septicemia that could not be treated externally, an internal treatment through medication of the diet was prescribed.

The following treatment is that used by Mr. Hans Peterson at the Grayling Fish Hatchery to reduce losses from furunculosis.

Dissolve two ounces of potassium iodide in one pint of water. Add one ounce of iodine crystals. Add 10 cc. of the mixture to each 10 pounds of food. Feed this medicated food one day, starve the fish the second day, feed medicated food the third day. On the fourth day, feed half the normal amount of food. The latter feeding should contain 5 pounds of epsom salts per 25 pounds of feed. The epsom salts should be added to the food at least 12 hours before feeding.

The results of the above treatment will be reported at a later date.

Treatment with formalin for gyrodactylid worms was undertaken. When the pond of brook trout was drawn down to a depth of one foot it contained 52,500 gallons of water. Only five gallons of formalin was available for treatment, making the concentration 1:10,500. Since the recommended proportion is 1:6,000, the fish were concentrated in the upper one-third of the pond and the entire five gallons of formalin diluted ten times and sprayed into this area. Mr. Wilkinson will send in a sample of fish from this pond for examination approximately one week after the treatment.

INSTITUTE FOR FISHERIES RESEARCH

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