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ON A DISEASED CONDITION OF BROOK TROUT FINGERLINGS AT BENTON HARBOR HATCHERY

On our arrival at Benton Harbor Hatchery May 27, 1931, we were informed by Overseer Walter Hughes that he had experienced a considerable loss among the brook trout and that copper sulphate treatment had no noticeable effect in reducing this loss.

The most noticeable naked-eye symptom of disease was the comparatively small number of sluggish fish which were not feeding. Examination of the fish showed a very heavy infestation of Gyrodactylus, a trematode parasite. More than three hundred parasites were counted on individual fish. Contrary to usual findings, more parasites were found on the under side of the head than on the fins.

This disease has apparently been of long standing as shown by the condition of the fins and the gills. It seems that in many cases the bordering membranes of the opercula had been destroyed, exposing the ends of the gill filaments which had been thickened, due to the lack of protection. Fins were badly frayed in some cases.

The parasites are provided with numerous chitinous hooks with which they attach themselves and these produce serious injury. Affected fish are susceptible to attack of fungus. The parasites feed on the skin. The composition of the blood of the fish is changed by the presence of these parasites. Fish heavily infested are usually covered with a bluish-gray slime. According to some authors the disease is most destructive when the temperature of the water is around 51°F.

It was interesting to note that the brown trout fingerlings in adjacent raceways were not affected. Eight references have been consulted and none states specifically

that brown trout are affected but several agree that brook trout are very susceptible.

These fish were promptly treated by Overseer Hughes with an acetic acid solution (3 ounces to 12 gallons of water). Several days after treatment fish were sent to us for examination and one parasite was found on one fish showing that the number of parasites had been reduced to a minimum. More specimens, however, will be requested for examination to determine the advisability of a second treatment. Salt treatment will kill a few of the parasites, acetic acid treatment should kill most of them, and potassium permanganate will kill all of them but the latter treatment cannot be used on trout.

While at this hatchery it was noted that a water temperature of 70°F. in the raceways has been recorded during the present season. It seems that it would be exceedingly beneficial to clean out the channel of the stream immediately in front of the raceways to prevent the tremendous spread of shallow water over the black bottom. The necessity of such a change, no doubt, could be determined by taking the temperature of the water upstream and comparing it with that which enters the raceways.

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