copy to: Mr. Stewart

INSTITUTE FOR FISHERIES RESEARCH
UNIVERSITY MUSEUMS
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A GILL BACTERIAL DISEASE AMONG BLUEGILLS AT THE STATE REARING POND AT FENTON, OAKLAND COUNTY, MICHIGAN, AND SUGGESTIONS FOR ITS TREATMENT.

On June 6, 1935, Mr. A. T. Stewart brought into the Institute laboratory 2 bluegills which had died during a recent mortality of the bluegill breeders in the state rearing pond at Fenton, Rose Township, Oakland County. On June 5 the Drayton Plains Hatchery personel picked up about 20 bluegills from the pond, all having died recently, apparently from some parasitic infection.

The two bluegills which were brought into the laboratory appeared to have been killed by a bacterial disease concentrated on the gills. About one-third of the entire gill-filament mass, on these two fish, had been destroyed and the space, formerly occupied by the normal gill filaments, contained a diffuse mass of decomposed tissue. A microscopical examination of this decomposed tissue revealed an abundance of bacteria (probably Bacillus columnaris Davis, and probably the causative organism for the death of these fish). Similar bacteria were also found in masses of decomposed tissue on the caudal fin.

In addition to the bacteria, the heart of one of the specimens contained many parasites, and two encysted trematodes were found on the fins of the same fish. The trematode infestations were not considered as contributing to the death of the fish.

Davis (1922) states that the buffalo fishes, the crappies, and probably the bluegill are very susceptible to infections by Bacillus columnaris, and that slight injuries to the epidermis of the fish might open an avenue of infection. Since the bluegills had been building their nests during the time when the mortality was first noted, it is probable that the fish were sufficiently bruised during this process to give the bacteria their chance.

For treatment of this disease, Davis recommends subjecting the fish to a 1 to 30,000 solution of copper sulphate for 20 minutes and then removing them to fresh running water. For the treatment, wooden vessels are preferrable to metal vessels, as copper sulphate may act on metals.

If the 20 minute treatment is too time-consuming to be practical, a 1 to 1000 solution of copper sulphate can be used for 1, 2, or 3 minutes, depending upon the condition of the fish. Fish weakened from the disease should be submerged for only 1 minute. Hardy fishes, such as bass, sunfishes, and bullheads, if in good condition, can stand this strength for 3 minutes.

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