

CAUSE OF DEATH OF FISH IN GRAND RIVER, IN JUNE 1933

On June 16, 1933, Mr. Milton P. Adams of the Stream Control Commission brought to the Institute a sample of fish from the Grand River. He gave the information that these fish were found on the morning of June 15, freshly dead at the dam of the Moores Parks plant of the Lansing Water and Light Board. The death of the fish was accompanied by a smoky green discoloration of the water. The water was so low, that the power plant was being operated for only a very short period each day, the head being built up during the rest of the day. On the afternoon of that day, the oxygen was found to be satisfactory, according to Mr. Adams.

The fish were well packed in ice and arrived in excellent condition for examination. The species were:

Rock bass	-	several
Black crappie	-	several
Perch	-	two
Pumpkinseed	-	one
Mullet (<i>Moxostoma erythrurum</i>)	-	one

All the specimens were superficially examined, and a rock bass, two crappies and both perch were carefully studied, in the effort to determine any possible cause for the death.

These fish were found to be relatively free from any indication of harmful parasites or of other disease organisms. They were all in good condition, and those opened contained a normal amount of body-cavity fat. Except for one perch which had a hook through its internal organs, all the fish opened contained food in the

stomach as well as in the intestine. Every evidence pointed to a sudden death, without any preceding disease or distress.

No symptoms of disease were found, and very few parasites. One crappie had several nematode worms in the intestine; the rock bass had one cyst in its liver and several acanthocephalan worms in its gut; the perch showed very few skin cysts (black spots) and almost no internal parasites. None of these organisms was present in quantities large enough for one to suspect them as the cause of the death.

The gills showed no evidence, under superficial or microscopic examinations, of the deadly gill disease which often causes heavy natural mortality in lake fish (as indicated in Report 219, for example).

The skin showed nothing abnormal, except for some abrasions about the face, which probably merely accompanied the death of the fish. The blood in the sinus venosus and ductus Cuvieri on each side. This perhaps would indicate the cause of the death, if the condition were understood thoroughly. An experiment with cyanide seemed to indicate that such a congestion was produced in a long-eared sunfish killed by small amounts of sodium cyanide in the water, but for lack of time and material, the experiment was not carried to a very definite conclusion.

Considering the evidence furnished by Mr. Adams it is our opinion that the fish were killed in the Grand River on June 15 quite suddenly and probably by some definitely toxic pollution.

INSTITUTE FOR FISHERIES RESEARCH

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