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Report 219

DEATH OF FISH IN HUNTOON LAKE AND LAKE ORION, OAKLAND COUNTY; IN GRASS LAKE, JACKSON COUNTY, AND IN BALDWIN LAKE, MONTCALM COUNTY.

During May and the early part of June of this year (1933), a considerable number of reports on fish deaths in lakes have come to our attention. Presumably these deaths were due to disease, which reached epidemic proportions on account of the hot weather. We report on some of these cases below:

1. HUNTOON LAKE, OAKLAND COUNTY

On June 5, Mr. A. T. Stewart of the Drayton Plains brought into the Institute a sample of the fish which for some time had been dying in Huntoon Lake, Waterford Township, Oakland County. He reported that the fish were dying in large numbers in this small lake (estimated by Mr. Stewart as 5 acres, by Michigan Lakes and Streams Directory as 30 acres). Mr. Stewart mentioned that the lake was quite weedy, so we thought of the possibility that the oxygen might be low. Since that condition would be treatable, the Institute dispatched Mr. R. W. Eschmeyer to make oxygen tests on June 7.

It was found that there had been quite a serious loss, since a large number of fish were found dead along the shore. These had evidently died over a period of several weeks. Some were still relatively fresh, indicating death not more than a day or two prior to the investigation. However, no dying fish were located on June 7.

Tests showed almost 11 parts per million of oxygen near the surface, indicating a moderate supersaturation of the surface waters with oxygen during the day. No indications were obtained that bad water conditions were responsible

for the deaths, and it is our opinion that the deaths were due to disease.

The fact that bluegills comprised the large proportion of the fish which died, also favors the theory of disease. Other fish found dead were mud pickerel (Esox vermiculatus) and large mouth bass.

The fresher specimens picked up by Stewart and by Eschmeyer were examined fairly carefully. No condition on the surface of the body nor among the digestive organs was found, which could possibly cause the death. The bluegills appeared to have been in good conditions, though the pickerel were somewhat lanky.

On examining the gills of these fish (of all three species), we found in every instance patches of badly diseased gill tissue, looking like a rot. Here the gill tissue was gone or so soft as to be easily rubbed off, exposing the small connective tissue cores of the gill filaments. It seems almost sure that a gill disease, probably bacterial, caused the deaths. Very likely the disease is the one described by Dr. H. S. Davis of the U. S. Bureau of Fisheries, as caused by a long rod-like bacillus living on the gills, [see Davis' publication, "A new bacterial disease of fresh-water fishes", Bulletin of the U. S. Bureau of Fisheries, Vol. 38 (Document No. 924), 1922, pp. 261-280, fig. 231-259]. That disease is very similar to the gill disease of trout, which causes heavy losses in hatcheries.

There is no reason to suppose that this disease or any similar disease can be treated in a lake. All we can say is that the death is due to natural causes over which we have as yet no control. (There was no evidence that the killing was due to dynamiting.)

2. LAKE ORION, OAKLAND COUNTY

Apparently there has been a rather serious mortality of fish also in Lake Orion, Oakland County. The report furnished the Department by Conservation Officer Fred A. Eckhout is as follows:

Mr. Joseph Shillire 147 Davision Ave., Detroit, called me this morning in regards to condition on Lake Orion he claims that fish are dying by the

thousands both small and large fish alike. He examined some of them and he claims they all have a fungus on the snout.

Very probably the mortality of fish in Lake Orion has been caused by an epidemic, perhaps the same disease as caused the deaths of the fish in Huntoon Lake. The fungused snouts as observed by Mr. Shillire presumably represents a secondary infection, and not the primary cause of death.

The Institute regrets to report that the absence of the staff in the field makes an investigation of this regrettable condition in Lake Orion impracticable. However, it is extremely unlikely that any brief investigation would furnish any hints as to how the disease might be controlled.

3. GRASS LAKE, JACKSON COUNTY

On June 10, 1933, Mr. Carmen of the U. S. Fish Hatchery at Northville, brought in a recently dead adult perch from Grass Lake, Jackson County. He brought also the information furnished by Mr. W. H. Miller of Grass Lake, that a large number of fish "of all kinds" have died in this lake over the last few months.

This perch was examined while still fresh. Its gills were almost completely decomposed on each side in one spot, while they were elsewhere firm and normal. This observation suggests that the perch died of the same, or a similar disease as that causing the deaths in Huntoon Lake, as described above.

Again we have nothing to suggest in the way of remedial measures.

4. BALDWIN LAKE, MONTCALM COUNTY

The report of fish deaths in this lake was furnished the Department by Mr. Frank M. Buzzell, of 2448 Beechwood Drive, SE, Grand Rapids, as follows:

I have a cottage at Baldwin Lake in Greenville, Montcalm County and fish have been dying in considerable numbers. I have buried about 50 of them—all sizes—found on my shore line and the same condition exists all along the shore. There is no evidence of injuries. Thought you would want this investigated to see if it is pollution or disease.

It is very likely that the fish deaths here are also due to disease. Since we are not advised as to whether this lake receives any sewage, we can not pass any judgement on Mr. Buzzell's suggestion that pollution might be involved.

Carl L. Hubbs.

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