

INSTITUTE FOR FISHERIES RESEARCH
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REPORT 325

REPORT ON AN ADULT MALE BROOK TROUT FROM A
PRIVATE POND IN DICKINSON COUNTY, MICHIGAN

On November 20, 1935, the Institute for Fisheries Research received a letter from Conservation Officer John Andrews, a copy of which is given below:

"I am sending by express collect tonight one Brook Trout, taken from a private pond owned by Mr. Wilford Habamer, of Waucedah, Mich., Dickinson County. They have about 100 such fish as is being shipped tonight. Since the spawning of these trout several of them have died, and they brought this one in tonight, asking me to send it in for inspection and a report on same."

On the same day that this letter was received, we also received a package by express which contained the trout mentioned in Mr. Andrews' letter. Examinations¹ of this fish have been made and the following results noted:

The fish was a male brook trout (Salvelinus fontinalis fontinalis), which had recently spawned. It was 16.25 inches in total length and weighed 1 pound 8 1/2 ounces.

The external examinations indicated that the fish was in fair condition. There were no skin abrasions other than two small reddish bruises on the belly, which were insignificant; the fins were entire and showed no fraying; and the gills were in apparent excellent condition. The coloration of the fish was

¹Parasitological and bacteriological examinations were made by E. L. Cheatum.

typical of the adult male brook trout during the spawning season. There was, however, a thick patch of mucous surrounding, and posterior to the dorsal fin, and another mucous patch about the anal fin. These two patches of mucous supported the mycelium of Saprolegnia, (a type of fungus). This fungus growth appeared to be entirely secondary and was undoubtedly not the cause of death. The internal examination of the fish disclosed hemorrhagic (bloody) spots on the liver and an extremely inflamed condition of the lower intestine. The upper intestine was less inflamed. The entire alimentary tract (intestines and stomach) contained no food.

Numerous fat globules were present in the liver.

Blood smears, made from the liver, heart, and intestines, gave no indication of septicemia-producing bacteria (bacteria which cause blood poisoning).

The gonads (testis) indicated that the fish had recently spawned. The external blood vessels on the gonads appeared rather extended.

The annuli on the scales indicated that the fish had passed through three winters and was therefore in the fourth year of life.

Possible Cause of Death

The most plausible cause of death appears to be the inflamed condition of the alimentary tract, especially its lower half. The inflammation may originally been due to one or more factors, such as:

Improper stripping of milt while the fish was still unripe, or rough handling of the fish will cause an inflammation of the viscera which sometimes results in death. We were not informed whether this fish was stripped or left to spawn naturally.

An improper diet may cause lipoidal degeneration of tissue, such as was noted in the liver. Such lipoidal degeneration may be accompanied or followed by severe digestive disturbances that may eventually cause death.

Trout may become greatly weakened during the spawning season, due to to the activity accompanying nest building, the defense and guarding of the nesting area, and spawning. Such weakened fish may succumb to a pathological condition which at any other season of the year when they were in a more resistant condition would do them no particular harm. It has been noted that the mortality rate of hatchery and wild trout is greatly increased during the spawning season.

Conclusion

It is evident from the examinations that the death of this trout was not due to a bacteriological or parasitological disease. An extremely inflamed condition of the viscera, especially the lower alimentary tract, appeared to be the primary cause of death.

No further conclusions on the mortality of the trout in Mr. Habamer's pond can be drawn from the single specimen sent us. To discover the possible cause of the loss of trout from Mr. Habamer's pond would necessitate an examination of the hatchery pond itself and the trout it contained.

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