Original copy: Fish Division
cc: Mr. Ruhl
Mr. Murphy
Mr. Cheatum

INSTITUTE FOR FISHERIES RESEARCH
UNIVERSITY MUSEUMS
UNIVERSITY OF MICHIGAN
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REPORT No. 370

POSSIBLE CAUSE OF DEATH OF A RAINBOW TROUT TAKEN AT THE FOOTE DAM ON THE AUSABLE RIVER

The viscera of a female Rainbow Trout and a mass of thread-worms removed from the body cavity were received for examination and identification May 12, 1936 from Mr. W. T. Murphy. The fish was collected by D. V. Gray and died while being transferred from Foote Dam to Flatrock on the Au Sable River, May 9.

A copy of Mr. Murphy's letter follows:

> "Under separate cover you will receive the organs of an adult female rainbow trout and also some worms which were found in the same fish.
>
> "This trout died on Saturday May 9 while being transferred from Foote Dam to Flatrock on the AuSable River. Mr. Gray cut it open and on finding these parasites deemed it advisable to send them to you for diagnosis and classification.
>
> "A report from you on these items would be deeply appreciated as it will be helpful in making up our statistical notes on life histories of rainbow trout."

The thread-worms are determined as belonging to the genus Cystidicola Fischer. This genus is of common occurrence in the air bladders of salmonid fishes, and is probably of no pathological significance.

The lower intestine was heavily infested with Acanthocephalan (spiny-headed) round worms of the genus Fessisentis. Two hundred and twenty-five worms were removed, of which number approximately 75% were concentrated in the lower three inches of intestine. The embedded probosces with their recurved hooks had resulted in areas of laceration and inflamation of the intestinal wall. Sections of the intestine were made and microscopical examination revealed hemorrhages (blood-flow) around the spiny heads embedded deeply in the sub-mucosa.

Although this infestation of Acanthocephala may not have been directly the cause of the fish's death, the loss of blood and chronic irritation may well have lowered the vitality to such an extent that in transporting such fish from one locality to another a heavier mortality is resultant.

Life cycle of the Acanthocephala of fishes:

So far as is known there are at least two hosts involved in the life cycle. The worm reaches maturity in the intestine of its appropriate fish host. Eggs are passed in the feces. They undergo no further development unless swallowed by a suitable intermediate host, which in some cases is an amphipod crustacean. The eggs hatch in the intestinal tract of the crustacean and the larvae grow to the infective stage. Fish become infested by feeding on crustaceans containing the infective larvae of the worms.

Prepared for The Institute for Fisheries Research

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