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FIN ROT AND PEDUNCLE DISEASE OF SALMONID FISHES

By
S.F. Snieszko 1/
Bacteriologist
Branch of Fishery Research
Bureau of Sport Fisheries and Wildlife

INTRODUCTION

These two diseases are discussed together because both are most likely caused by bacteria. Both diseases are very inadequately known. It seems likely that in both diseases myxobacteria may play an important role. Their differentiation from other bacterial fish diseases may often be difficult.

IDENTIFICATION

Fin rot symptoms may also occur in the course of some better known fish diseases as ulcer disease and furunculosis. This disease is characterized by fins becoming opaque first at the margin. This condition usually progresses toward the base. Fins also become thicker due to proliferation of epithelium. In advanced cases fins are frayed with rays protruding like stretched fingers. Bacteria of various shapes or even fungal mycelia may be abundant.

Peduncle disease is characterized by swelling, inflammation, discoloration, and gradual necrosis of the caudal peduncle. Disease is always fatal.

1/ Headquarters: Eastern Fish Disease Lab., Leetown (P.O. Kearneysville) West Virginia

CAUSE OF THE DISEASE

In fin rot bacteria are implicated. Some may be well known fish pathogens as Hemophilus piscium or Aeromonas salmonicida. In peduncle disease the infected tissues show the presence of long thin gram-negative bacteria which are strikingly similar to known fish-pathogenic myxobacteria. In May of 1958 myxobacteria of the columnaris type were isolated from a yearling brook trout at Leetown, West Virginia.

SOURCE AND RESERVOIR OF INFECTION

Unknown.

MODE OF TRANSMISSION

Unknown.

INCUBATION PERIOD

Unknown.

PERIOD OF COMMUNICABILITY

Unknown.

SUSCEPTIBILITY AND RESISTANCE

Unknown.

RANGE

Fin rot is very common in hatchery-raised small fingerlings of salmonid fishes. Peduncle disease is not common. In rainbow trout it usually follows rough handling. The occurrence of these diseases in warm-water fishes seems to be less frequent.

OCCURRENCE

Fin rot is common among hatchery-raised fingerling trout. Peduncle disease is much less common.

METHODS OF CONTROL

Fin rot, if treated in time, responds well to external disinfectants as copper sulphate, formalin, malachite green and others. Cleanliness in hatchery tanks is recommended. Peduncle disease being a systemic infection is usually fatal. Chemotherapeutic drugs have not been tried as yet.

ANNOTATED BIBLIOGRAPHY

A. Fin Rot (Tail Rot)

Connel, F. H.
1937. Chlorine treatment of bacterial fin rot of trout. Prog. Fish-Cult., No. 34, pp. 6-9.
Chlorine in form of calcium hypochlorite is used. Free chlorine concentration in water should not be more than 2 p.p.m. Treatment should last for 2 minutes and be stopped with sodium thiosulfate. This seems to be a good treatment method but extreme care is required in order not to kill fish.

* Davis, H. S.
1953. Culture and Diseases of Game Fishes. University of California Press, Berkeley, Cal. Fin rot pp. 258-260.
Very good description of the disease and of treatment methods.

van Duijn, C., Jr.
1956. Diseases of Fishes. Water Life. London, England. Tail and fin rot pp. 95-97.
Use of Phenoxethol and Acriflavine for the treatment of aquarium fishes is described.

* Eicher, C. J., Jr.
1947. Dual treatment for bacterial fin rot. Prog. Fish-Cult., Vol. 9, pp. 94-95.
Prolonged or flush treatment with formalin followed by malachite green flush treatment. A safe and apparently effective treatment if administered in time. Treatment method inadequately described.

* Hewitt, E. R.
1937. Fin rot eliminated by continued tank sterilization. Prog. Fish-Cult., No. 33, pp. 19-20.
Frequent disinfection with chlorine of hatchery troughs from which fish were removed for the duration of treatment. This sanitary measure seems effective but is time and labor consuming.

B. Peduncle Disease

* Davis, H. S.
1935. Culture and Diseases of Game Fishes. University of California Press, Berkeley, Cal. pp. 273-274.
Good description of symptoms. Cause and control insufficiently known.

* Wood, E. M. and W. T. Yasutake
1956. Histopathology of fish: III. Peduncle ("Cold Water") Disease. Prog. Fish Cult., Vol. 18, pp. 58-61. Illus.
In opinion of the reviewer this paper contains description not only of peduncle disease but chiefly the histopathology of Columnaris disease in Pacific salmon. Possibly also an infection with a virus. Bacteria were not identified. Control is not discussed.

* Papers indicated by an asterisk are of special importance to fish culturists.

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