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APR 26 1932
FISH DIVISION

April 22, 1932

Report 139

ON THE CAUSE OF DEATH OF RAINBOW TROUT FROM THE NORTHVILLE
HATCHERY, WITH JAWS LOCKED OPEN

An adult male rainbow trout, from the Northville Hatchery was brought in by Mr. Frank L. Snipes for examination. He reported ³ two other trout affected with similar injuries, one of which was gradually becoming extremely lean, because unable to eat. The specimen which was examined was alive when brought in but soon died. It was examined several days later, on April 21, 1932.

⁴ Each of the three fish was a large male. The fish were first noticed because of their wide open mouths, and one individual which was examined by one of the hatchery men was evidently unable to keep its mouth closed. Even when the mouth was closed by pressure on the lower jaw, Mr. Snipes reports that it immediately gaped open. The fish was, of course, hampered greatly in swimming and feeding was impossible.

This fish which was examined with Mr. Snipes by Drs. Hubbs and Greeley, was an adult male 19 $\frac{3}{4}$ inches long (total) weighing 3 pounds 4 ounces. The jaw hook was well developed and the jaw teeth showed the enlargement characteristic of large males. Its age was given as 4 years.

The jaw of the dead specimen gaped open very widely. When forced closed, it quickly sprung open at removal of pressure. At the corner of the jaw on each side there were two or three small punctures, evident at external examination, and extending into a bone-lined cavity. Dissection of this region disclosed inflamed and infected areas about the wounds and at the point of articulation of the jaw.

some serous fluid was present. The most conspicuous injury was that the lower jaw bone of each side was badly fractured toward the joint. On both sides the jaw was loosely suspended, the articular bone being dislocated from its normal articulation with the quadrate bone. The nature of the bone fracture and dislocation caused the muscular tension to hold the jaw open rather than closed.

No external injuries, other than the ones mentioned, were observed. Internal examination was not made, nor considered required.

Obviously, the injury was a mechanical one and, although three individuals in the concrete ponds have shown similar injuries, there is no evidence that any disease could have caused injury of the type described.

The adult males have a decided tendency to fight. These particular fish, nearly all males and greatly crowded, were observed to be particularly active in combat. Dislocation of the jaw might result from one fish lunging at another and hitting the side of the concrete pond head on. Or two fish could have locked jaws at right angles and thrashed around until their jaws were dislocated and fractured. The facts that three fish showed the same injury and that the one examined showed holes looking like teeth marks about the dislocated joint of the jaw confirm the view that the injuries were afflicted on the fish simultaneously in mutual combat.

In any event there is no reason to suspect that a disease caused the injuries.

INSTITUTE FOR FISHERIES RESEARCH

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