Flanagan or Sater - Int. 2879

DEPARTMENT OF THE INTERIOR

INFORMATION SERVICE

UNITED STATES FISH AND WILDLIFE SERVICE

For Release APRIL 10, 1958

NIACIN DEFICIENCY INVOLVED IN SALMON SUNBURN

The case of the "sunburned salmon" which has plagued United States Fish and Wildlife Service fish culturists and biologists for a long while, has been partially solved, the Department of the Interior indicates. A niacin deficiency has been proved to be correlated with the sunburn, and research men are delving deeper to determine the character of this relationship.

Since circumstances—high dams and the destruction of salmon runs and spawning grounds—make successful hatchery operation a most important activity for the continuance of the Columbia River salmon fishery, biological attention is being given to sunburn and to kindred conditions associated with light.

Sunburn in salmon being reared in the Bureau's fish hatcheries in the Pacific Northwest is as noticeable on the fish as sunburn is on human beings. Distinct discoloration, a dermatitis causing sloughing off of the epidermis (which on a fish is under the scales), and swellings and lesions on the back are some of the evidences.

Salmon fry and small fingerlings also show evidence of the adverse effect of sun, or at least excess light. The death rate of young salmon being raised near sunny windows is much higher than in portions of the same brood raised farther back in the hatchery. The same thing applies to eggs. The hatch of salmon eggs kept in an area of sunlight is smaller than from eggs kept in the darker portions of the room.

Experiments conducted by the Bureau's nutrition laboratory at Cook, Washington, indicate that diets deficient in the vitamin niacin are correlated with sunburn in salmon. Fish fed a niacin-deficient diet for 30 days have developed serious sunburn. Sunburned fish fed a complete diet for 60 days under the same light conditions have shown almost complete recovery. Further and more complete experimentation and analysis are planned for this spring.

Trout are also occasionally afflicted with "sunburn" in hatcheries, particularly in the States of the southwest. Recognition of the cause will have far-reaching benefits in these areas, as well as in the salmon restoration program.

Fish in the wild, of course, are protected from sunburn by stream cover, deep pools, and a niacin-rich diet.

x x x