

George Shiras. While making some collections from the shallow water of Lake Superior, not far from the Vermilion Life Saving Station near Whitefish Point, eighteen little whitefish were caught, which measured from 4.9 to 9 centimeters in length, from the tip of the snout to the tip of the caudal fin. They answer very well to the description of *Coregonus clupeaformis* (Mitchill), with certain departures undoubtedly due to their immature condition; but it is possible that some or all of them may be Lake Erie whitefish (*Coregonus albus* Le Sueur) for fry of this species have been planted in Lake Superior, according to information obtained from B. W. Evermann of the Bureau of Fisheries at Washington and H. H. Marks, superintendent of the Sault Ste. Marie Fish Hatchery. It has been impossible to distinguish the two species from a study of the structure of the small fish, for the adults are thought to differ from each other only in form and color, and no evidence can be obtained that the dark, lateral bands that are thought to be characteristic of the fry of *clupeaformis*, do not disappear shortly after that stage is passed.

The food of eight of the fish examined was found to be principally entomostracans, of which the following appear to be the chief species, according to the examinations of three typical stomach contents, made by Mr. Chancey Juday, of Madison, Wisconsin: *Bosmina longirostris* O. F. Müller, *Diaptomus ashlandi* Marsh, and *Cyclops viridus* Jurine (probably var. *parvus*, Herrick). Fragments of midge larvæ and miscellaneous insects, including winged forms, and filaments of a green alga (*Ulothrix zonata*), were the other objects noted among the food.

The eighteen specimens of young whitefish were taken in several hauls made with minnow seines, drawn over the sandy bottoms where the water was less than three feet deep and through the large schools of hundreds of small fish, that were chiefly young lake herring (*Leucichthys* sp.). These were similar in size to the young whitefish associated with them, which were relatively very few in number, and superficially so like the little herrings that

they could be picked from a collection only after a very careful examination of it.

Detailed descriptions of these young whitefish, their food, habitat and associates, will be given in the paper now being prepared on the fish-life of the Whitefish Point Region.

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IS THE POOR HATCHING OF NORMAL EGGS DUE TO  
THE PRESENCE OF MICROORGANISMS  
WITHIN THE EGGS?

THE loss of young chicks due to the non-hatching of eggs is inestimable. Poultrymen have often said that "on an average a fifty per cent. hatch and a fifty per cent. raise was all that was generally obtained." What becomes of the other fifty per cent.? Wherein lies the cause of this heavy loss? Can it be due to the presence of microorganisms within the egg or rather to some inherent quality of the egg itself? We are aware of the fact that faulty incubation may be responsible in a large measure, but in this respect even the hen may have her troubles.

During the spring hatch we have had occasion to examine some 350 eggs, taken from both incubator and from under the hen. The eggs were those tested out as "non-fertile" or "dead in the shell." The incubation period ranged from ten days to twenty-two days. The eggs were from a flock of healthy birds and may be termed "normal" eggs.

In only one egg of the 350 eggs examined were bacteria found. The organism isolated belonged to the coli-typhi group.

From this, a preliminary report, we are of the opinion that the poor hatching quality of "normal" eggs is not directly due to the presence of microorganisms within the egg.

This work may serve to verify to a certain extent the findings of Rettger.<sup>1</sup>

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<sup>1</sup> Bulletin No. 75, Storrs Agricultural Experiment Station.