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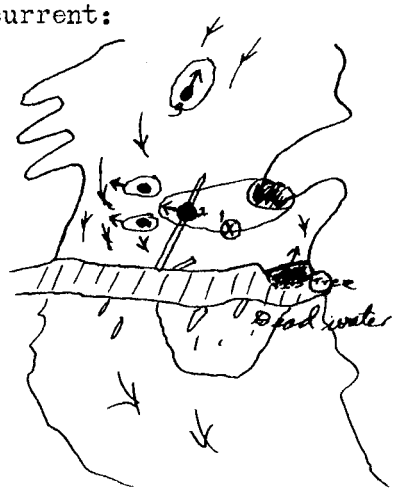
A COMPARISON OF THE NUMBER OF DEAD AND LIVING EGGS IN BROOK TROUT NESTS FROM A BEAVER POND AND THOSE FROM A NORMAL SPAWNING BED

On November 1st, 1935, a beaver dam was found on Bradford Creek, one of the headwaters of the Main Stream of the AuSable, located in Crawford County, in which a school of brook trout were observed to be undergoing courtship. Beds were well-fanned, and although the actual spawning was not observed, it was later proven that they definitely did spawn within the confines of the dam. At the same time of the year, spawning beds of brook trout in the North Branch of the AuSable, particularly around the Akron Club above the Twin Bridges, were located and noted.

On January 9th, 1936, the beaver dam on Bradford Creek was visited, and the pond searched for eggs. This procedure consisted of digging up the gravel with a shovel in the fanned area and gently shaking it about in the water to loosen the eggs, and allowing the eggs to drift into a fine meshed seine placed on the down-stream side of the nest.

Relatively few eggs were found in the beaver pond, although 3 areas worked over by trout were dug up. Following is a sketch of the dam and the position of the nests with relation to the current:



⊗- not observed to be fanned on November 1, 1935, but dug up.
1,2,3-Nest dug up.
↕ - Direction of fish's head while fanning
↓- Direction of current

The current was very slight, but perceptible nevertheless, as indicated by the positions the fish assumed while fanning their beds. In the dam proper it probably did not exceed 1 mile per hour. There are no sources of spring water within 15 feet of the nests. As there was little current within the dam confines, difficulty was experienced in getting the eggs to float into the net, and the gravel dug up had to be placed in the seine. For this reason, some eggs may have been overlooked in picking over the gravel, or lost in transferring the gravel to the seine. A total of 57 eggs were obtained from the beaver dam.

The following day, January 10th, 1936, brook trout beds were examined in the North Branch of the AuSable, where normal spawning conditions occur. Here there was no difficulty in obtaining the majority of spawn laid down, as there was sufficient current to carry the eggs into the seine. From 2 smaller beds and 1 large bed, a total of 591 eggs were obtained.

A study of the eggs from the two locations was made to determine what percentage from each source were viable. The results are shown below:

	Total	Dead	Per cent Dead
(Water - 37.5° F.) Eggs from Beaver pond -	57	14	24.56
(Water - 36° F.) Eggs from N. Br. AuSable -	591	77	13.03

The stream bottom on which these eggs had been laid varied considerably. In Bradford Creek the bottom consisted of a light layer of silt, followed by a layer of 4-6 inches of sand and silt mixed, under which there was a very small amount of fine gravel. Since the spawning season, the beds have been partially filled in with silt-like detritus and fine sand, and only by the presence of the large hollows could the spawning areas be ascertained. In the North Branch of the AuSable, bottom conditions were ideal for spawning, with an abundance of gravel, varying from moderate to fine, with copious amounts of spring water near by (2-10 feet).

No conclusions can be drawn as the number of nests studied was not adequate. The percentage of mortality in both situations falls well within the range of percentage of

mortality for brook trout eggs under normal stream conditions found by Hazzard[1] (in his studies carried on in New York trout streams).

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(1) Hazzard, A. S. - 1932. Some Phases of the Life History of the Eastern Brook Trout, Salvelinus fontinalis Mitchell - Trans. of Am. Fish Soc., Vol. 62.

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