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Do Trout Shrink in the Creel?

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Very often in the past fisheries workers have been asked this pertinent question and have had little actual data to present in answer to it. Research on this point seemed desirable both from scientific and legal viewpoints, as what fisherman has not claimed that his "big one" shrunk between the time he left the stream and the time he reached home, or what warden has not heard the plaintive wail of the fisherman who may quite justly argue that the 6 7/8 brookie in his basket was quite legal when he caught it? It has been well established in studies of commercial fishes that there is a weight shrinkage following death, but little or no work has been done in the past on shrinkage in length on game fishes.

Incidental to other studies, 156 brook trout (Salvelinus fontinalis) were seined from the North Branch of the Au Sable in front of the Akron Club near Lovells, Michigan on October 30th, 1935. They were measured alive, allowed to die, to stand for three hours, and were then remeasured. No attempts were made to keep individual measurements. The same person measured the fish both before and after death.

After measuring them alive they were all placed in a small cardboard carton, the only moisture present being the slime left on the fish after the process of measuring. The temperature of the room in which they were measured was 66° at the time of live measurement, and 64 degrees F. at the close of the experiment.

The size range of the fish measured varied from about 2 3/4 inches to

10 1/4 inches total length.

The average length when measured alive was 5.378 inches.

The average length of these fish after 3 hours (following rigor mortis) was 5.235 inches.

The difference between these two averages is .143 inches, or 2.7% of total length.

It is possible there may be an even greater shrinkage at the higher summer temperatures, frequently occurring in a fisherman's creel as he wades the stream during July and August. So don't laugh when your neighbor proudly displays that monster next summer, and states that it was one-half inch larger when he caught it, because the results of this experiment show that he is probably correct. On the basis of these figures, a 20-inch brook trout would shrink .54 inches in the three hours following death.

The evident loss of length following the death of a fish as demonstrated by this experiment should make it clear to all conscientious fishermen that if they are to protect themselves legally they should make allowance for this shrinkage when they take fish from a stream. In other words, to be on the safe side they should establish a personal limit slightly higher than the legal limit, say 3/8 of an inch higher, as it is doubtful if the trout of 7 3/8" would shrink to less than the legal limit in the average period of time that a man spends on the stream.

The results of this experiment should also be a source of consolation to the conscientious fisherman who upon his return home finds one or two illegal trout in his creel in spite of having carefully measured his catch on the stream.