

## THE GRAYLING

The Michigan grayling is native to the waters of only a small portion of Michigan, but is also found in the headwaters of the Missouri, in Montana, and in the region of the Yellowstone Park. It never occurs south of latitude 43° north, and its principal habitat on this continent is, or was until recently, in the northern part of the southern peninsula of Michigan, in the clear, cold, rapid streams emptying into Lakes Michigan and Huron, especially in the Manistee and Au Sable Rivers.

The Michigan grayling was first called to the attention of local scientists in 1854 or 1855, and it was described and locally known as *Thymallus michigansis* up to 1864, when its present name of *T. tricolor* was given it after a careful examination by Prof. E. D. Cope. The Fish Commission Report for 1872-'73, printed in 1874, contained a valuable article on this fish by the late James W. Milner.

The average size of the grayling is about 10 inches in length and 8 ounces in weight; though they have been taken 16 inches long and weighing 2 pounds, and even more. It is said to be equal to the brook trout in flavor, and is one of the gamiest of fish; but, unlike the trout, it is more likely to be found in the swift ripples and shallows than in the quiet pools of the stream. While the adult trout and grayling live together in harmony, the eggs and young of the latter often furnish a dainty meal for the trout, and hence the grayling is being driven from streams which are congenial to the trout.

Thirty years ago the grayling were very abundant in some of the streams and rivers of Michigan; but of late years they have been disappearing so rapidly that their final extermination in this region is feared, unless something is done to prevent it. This disappearance is due somewhat to excessive fishing, but largely to the migration or introduction of the trout into the famous grayling streams, and perhaps still more to the settling up of the country and the consequent increase in lumbering. The grayling spawns in spring, about or immediately preceding the beginning of running the logs down the streams, generally spawning in the body of the stream where the water is not very deep. Then the logs come down, driving off the fish, raking up the beds, and destroying the spawn.

In favorable waters this fish is prolific (more so than the brook trout), yielding an average of from 3,000 to 4,000 eggs per spawner. Its spawning season seems to range, in Michigan, from about the middle of March to the middle of April, according to the severity of the season. In 1878 it was found that the spawning season in the Manistee was about over on March 30; while in 1885 the last eggs were taken in the Manistee on April 24, and in the Au Sable on April 18.

Several attempts have been made to propagate the grayling, but all without much success. Some have gone so far as to hold that it is beyond the reach of artificial fish-culture, but it has been done on a small scale with a slight measure of success, and may succeed with more experience, as the previous work has been largely experimental. In the spring of 1876 there were handled at the Northville station 2,000 eggs taken from grayling caught by Mr. Fred Mather, and a small percentage hatched; and in April, 1885, 20,000 eggs were taken from fish caught with hooks in the Au Sable and Manistee Rivers, and the hatching was fairly successful, but heavy mortality occurred after hatching, as no suitable food was found for the young fish. Those that lived, however, did well and grew rapidly. The Michigan State Fish Commission has made several experiments in cultivating this fish, but all without definite result. Experience seems to show very clearly that the grayling will not successfully endure domestication or confinement in trout ponds, as in 1884 the Michigan Commission placed a number of adult grayling in its trout ponds at Paris, Mich., but not a fish has spawned or showed the slightest inclination to do so.

while they have gradually died, till but few are left. Experiments in this line will probably be continued under more favorable and natural conditions. Credit is due to Mr. Martin Metcalf for first obtaining the eggs artificially from grayling reared in the ponds of the Michigan Fish Commission, and for impregnating and hatching the same. This was done in the winter of 1879-'80.

The Wytheville Station.--In the spring of 1885 about 300 grayling were hatched from eggs collected from wild fish in the streams of Michigan by Mr. F. N. Clark and forwarded to Wytheville. These 300 fish are being kept for breeders, and at the close of the year were in fine condition.

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