

of the mother fish while on the spawning grounds is still carried on to a large extent, and the nursing and feeding capacities of the rivers are being seriously injured by the wholesale deposition of sawdust in them. To these objectionable features must be added the more vigorous efforts put forth by the fishermen to capture these fish while on the coast; nets are becoming more numerous set, and of a form and description much more destructive than formerly used. The ready cash market found for the sale of these fish offers inducements for larger numbers to engage in this fishery, and as the catch continues to increase and become more remunerative, still greater efforts will be put forth to gather in these treasures from the sea. To maintain this fishery in its present condition and to continue the satisfactory increase of the past few years, more hatcheries will be necessary and the number of young salmon distributed should be at least 2,000,000 per year. The results would soon become apparent and the return would bear even more favorable proportion to the outlay than has been shown to exist at the present time. The nursing and feeding capacities of our rivers, while no doubt seriously impaired by the many detrimental influences brought to bear upon them, are still capable of furnishing food for many more young salmon than are hatched in them under the natural process. It perhaps will be unnecessary to attempt to show why the natural reproductive powers of our salmon are less now than formerly as it will be readily admitted by all intelligent minds that sawdust, mill-dams, mill rubbish and other obstructions, and the pollution of the spawning and feeding grounds in the rivers have been largely instrumental in bringing this about. The settlement of the country and the clearing away the timber and forests has had a tendency towards reducing the quantity, as well as increasing the temperature of the waters in most rivers; this again has produced a change in the migratory habits of the salmon, causing them to remain in the cool salt waters of the bays and harbors until late in the season, and only enter the streams when compelled to do so by the exigencies of nature. Having entered the river, being then heavy and sluggish, they in many cases are unable to surmount the obstructions met with and are prevented from reaching the upper portions of the streams where only are the proper spawning grounds found, consequently the greater portion of the ova is deposited in unnatural, and unsuitable beds, and is ultimately destroyed either by freshets or eaten up by eels, and other predaceous fish. The small number of young salmon that may hatch cannot reach the heads of the rivers where food abounds, owing to the obstructions referred to, and the result is almost total loss of the whole production. Now, by artificial process, the mother fish are caught in the estuaries and spawned and liberated again uninjured, the ova gathered from them are kept in safety in the hatcheries until hatched, and young fry when distributed are placed in the extreme upper parts of the rivers from whence, during the time of their growth to smolts, they work their way down to the sea, partaking of the food found throughout the whole length of the streams, and the intervening lakes. It may be truly said that the ova deposited by one mother fish at the head waters of a river, will have more effect in maintaining the stock belonging to that stream, than the product of ten or more salmon, whose ova are deposited at or near the mouth of the river. If the system of fish breeding was applied only to the enabling of the mother fish to reach the natural and proper spawning grounds at the head of the rivers, a wonderful effect would be produced. But how much more effective, and beneficial must this artificial process be, when the many safe-guards with it surrounds the embryos from the time the mother fish are taken until the young have attained the fry stage. The simple fact that well provided hatchery rooms remove the production of the mother fish from the destructive provisions of nature, which to be understood must be considered in all its bearings upon the young, from the period when first deposited by the parent fish, through all the different stages, until it becomes a fully developed fry and capable of taking care of itself, is probably the whole secret in the success which attends the industry of fish culture, which has been so zealously worked out in this country.

Before the settlement of the country, and while it was yet in a state of nature, each river contained a given supply of the different kinds of fish. That these preyed