DESCRIPTION OF THE UNITED STATES FISH HATCHERY AT ALPENA, MICHIGAN.

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This hatchery was built in the fall of 1882. It is a one-story frame building, 30 feet wide by 60 feet long, having front and rear entrances, and amply lighted by fourteen windows. The main floor includes the hatching room, and an office and sleeping apartment 10 feet wide by 18 long. The space between this office and the opposite side is conveniently utilized for storage of tools, cans, egg-cases, &c. The hatchery is arranged and equipped with especial reference to the manipulation of the embryos and minnows of white-fish (*Coregonus clupeiformis*), the most valuable commercial species of the Great Lakes. Its nominal capacity is 100,000,000 eggs.

The water is furnished by the Holly Water Works Company, of Alpena, being forced through wooden mains from Thunder Bay, an arm of Lake Huron. A 2-inch stream, under an average pressure of 20 pounds to the square inch, connects with the hatchery, the discharge being regulated by globe valves and ball cocks. The inlet pipe is laid underneath the building, near the front, and is tapped by four perpendicular arms, each dicharging into the top tank of one of the four systems of tanks for supplying water to the hatching apparatus. Each system comprises a series of four rows of tanks, one row above the other. There are two tanks to each row, making eight tanks in the series, or thirty-two in all, each of which is 15 feet long by 12 inches wide, and 10 inches deep. One series is the exact counterpart of another. A row of faucets on either side of the top tank, into which the water first enters, supplies two rows of hatching jars, or incubators, which stand on shelves placed across the second tank below and discharge into the tank between, which, in turn, feeds a second series of jars, and so on. In this way the four rows of a series operate three double rows of jars, the water being used three times over. Overflows are provided at the ends of the tanks, which discharge into the next below.

Each of these series of reservoirs is connected with larger tanks, into which the minnows are carried by the current as soon as hatched.

The outflow openings of the tanks for the reception of the minnows are protected by finely perforated tin boxes of sufficient dimensions to keep the little fish away from the vortex formed by the escaping fluid, where they would be liable to injury from the strong current. There are ten of these receiving tanks, with an aggregate capacity of 7,000 gallons.