

of salmon. Experiments made in Norway and elsewhere have shown that fish can be kept in a perfectly fresh condition by the Roosen process for an indefinite time without any steps having been taken to get rid of the infected air. The fish are introduced into a steel barrel containing a solution of salt and boracic acid. The cask, after being completely filled with the solution, is sealed, and a pressure of from 60 to 90 pounds to the square inch is maintained until the fish are required for use. Large fish preserved in this way are said to remain fresh for several days after being removed from the liquid. Herring might be kept for a time under pressure at the fishing station, and then forwarded in ordinary barrels to Billingsgate and other markets. Further, all the necessary preserving appliances can be carried on board the fishing boats. A boat provided with the Normal Company's (Sahlström's) appliances could cure at sea large parcels of herring and other fish, and carry them (or send them by fish-carriers) direct to either home or foreign fish-markets. Sahlström's process, it should be remembered, admits of fish being either simply treated with common salt or with a mixture of salt and boracic or some other acid. [From the Scotsman, Edinburgh, Scotland, January 29, February 2, and March 9, 1886.]

21.—SCARCITY OF COD AND HADDOCK ON THE COAST OF MAINE.

By N. V. TIBBETTS.

[Letter to Prof. S. F. Baird.]

I resided for fifteen years, from 1855 to 1870, near the coast of Maine. Most all farmers, like myself, were fishermen at times, and relied on catching our yearly supply of fish of various kinds, especially codfish and haddock; but these fish have long since deserted Penobscot Bay and Eggemoggin Reach, and few are left but young herring, which are caught and converted into "sardines."

If the fish do not come back themselves, and it is evident from their long absence that they will not, the fishermen and farmers along our coast must look to you to coax them back or give us a new supply. If you will do so we will try to have a law passed, if there is not one already, that may protect them from being driven away by the fishermen, as the original supply was. In my opinion, the reason why the fish left our shores was because the fishermen took to using troll-lines. Some say the steamboat was the cause, but I don't think that is so. Codfish know no more what is going on at the surface than we know about the bottom. I have caught haddock and cod where the steamboat had been over the water every day for years, and in not over ten fathoms of water at that.

We used to row out on the Reach two or three hundred yards from shore, and in a few hours were as sure of catching a few hundred pounds

of haddock and some cod as we were sure to find potatoes by pulling up the tops and digging where we had planted the seed in the spring. But after two or three years of using the troll-lines, leaving the fish to die on the hook at the bottom, a man might as well stay at home and fish for haddock in the well—he would catch just as many; but the trollers at that time, I remember, claimed that the steamboats drove the fish out of our Reach.

I have faith that you can help us out of our present trouble, and restore, in a measure, the supply of cod and haddock along our coast. Please inform me what steps are necessary to procure a number of young fish for Eggmoggin Reach, in Hancock County, Maine. Haddock were the fish that mostly frequented that place. Can young haddock be procured from your hatchery at Wood's Holl, Mass.?

BROOKLIN, ME., *February 27, 1886.*

REPLY OF PROFESSOR BAIRD.

I have read with much interest your letter relating to the abundance and disappearance of fish in Penobscot Bay. It is a very difficult matter to say positively what has been the most potent of the many causes for the disappearance of fish from their accustomed haunts. I think, however, I can answer with some certainty that it is within our power, by means of artificial propagation, to restock waters and re-establish such fish as cod and haddock in localities where they formerly abounded. From the experiments which have already been made, it can be asserted with considerable confidence that a school of cod may be established in any given locality by constant deposits of fish produced by artificial means.

I trust that, in the course of time, we shall be enabled to extend the work now being carried on at Wood's Holl and Gloucester, all along the coast of the Northeastern States.

WASHINGTON, D. C., *March 2, 1886.*

22.—NOTES ON THE FISHERIES OF PENSACOLA, FLA.

By SILAS STEARNS.

The fishing business of Pensacola has been more extensive during the year 1885 than at any time before. The first of the year found an unusually large fleet of well equipped vessels at work in the red-snapper fishery. One schooner of the fleet was a Portland, Me., mackerel catcher, with a crew of sixteen men, and several others were recent purchases from New England, with large Yankee crews. The outfit of all the vessels had been improved, and it can justly be said that no better equipped fishing fleet existed anywhere. The most competent skippers that could be found were employed, and under their direction some methods new to