

Professor Herdman, in Lancashire, has done the same, and in Glasgow and Edinburgh some fishery instruction has been arranged at intervals. In St. Andrew's, Professor MacIntosh has always given prominence to fish-life and fishery matters in the university, and has established the finest existing national fisheries museum, including a very large collection of eggs, larvæ, and various stages of fish, as well as the food of the young and adult. Fishermen who visit this national fishery collection of Scotland's oldest university are enabled to learn a great deal about the inhabitants of the sea.

Such technical instruction as I have suggested should include not only a popular account of the eggs and growth of fish, but might also include instruction by some experienced man selected by the Government to demonstrate the most up-to-date methods of treating the fish after being caught. In Ireland the Department of Fisheries and Agriculture arranged for an expert to give tutorial instruction in the curing and grading of Irish mackerel. The Department offered, free of charge, such instruction at the various fishing-ports, so that the whole trade might benefit by new and improved methods of curing and packing fish. Canada adopted the same methods in regard to herring, and for some years carried out a course of instruction and demonstration in the pickling and packing of herring, a Scottish expert being brought out to Canada with a staff of herring-girls and a cooper experienced in the making of the best barrels. On the Atlantic and Pacific coasts this staff put up some of the finest herrings ever prepared in North America. The scheme also included new methods of fishing for herring by means of a steam drifter. Great interest was aroused amongst the fishing population, and abundant proof was afforded that the Canadian herring, Atlantic and Pacific, which had been alleged to be inferior in quality to the Scotch herring, were really prime herring, and when cured by the expert staff proved to be equal to the best herring put up in Scotland or Norway. Several firms in Canada have continued to pack herring as a private enterprise on the lines demonstrated by this system of technical instruction under Dominion auspices.

FISH DRIERS AND REFRIGERATORS.

It is important for the future development of the fisheries that better facilities for the cold storage of fish and the preparation of chilled and dried fish should be provided. The Dominion of Canada has found it to be a most valuable aid to the fishing industry to initiate artificial fish-drying establishments on the Atlantic coast. A system of fish-drying known as the "Whitnan system" was adopted with success, and it provided three special advantages: first, the control of the degree of dryness suitable for different foreign markets; second, increase in the rapidity of the preparation of dried fish; and, third, independence of rain and weather changes. The first fish-drier built in Canada on Prince Edward Island cost £500 or £600 to erect, and was capable of drying from 800 to 1,000 quintals per day at a cost of about three-eighths of that of the usual sun-drying process. I am satisfied that a number of fish for which there is no great demand now could be dried and converted into a commodity that would readily sell in some of the South American markets, to which Canada sends large quantities of dried fish.

The necessity of providing cold storage for catches of fish, especially when the catches are large and there is a considerable surplus, requires little argument; and if the fruit industry receives encouragement, and advances up to £3,000 can be made for erecting cold stores for fruit under the Fruit-preserving Industry Act, 1913—an amount which I understand it is proposed to increase to £9,000—there is every reason why the fish industry should receive similar encouragement, and cold storage be provided for fish in order to avoid the waste which at present occurs frequently. There are some less accessible fishing-ports where initial cold-storage establishments might be started; and I was specially struck by the position at Half-moon Bay, Stewart Island. At this place a fleet of fishing-boats operates continually, and fine catches of excellent fish are made, which for various reasons, such as bad weather or limitation imposed by the fish-merchants, cannot be fully utilized. I had evidence when visiting Stewart Island that very serious waste of fish occurs when large catches are made. This could be avoided by the erection of a cold-storage establishment in which the fish could be preserved until the weather or the market-conditions allowed of their being sent to the markets. I was also struck by the suitability of Nelson as a central fishing-port, and feel convinced that a well-managed cold-storage establishment there would be of great assistance to the fishing fleets which operate in Tasman and Golden Bays and other fine fishing-grounds in that locality.

It is of the highest importance that fish should not be exposed even for a few hours beyond the time absolutely unavoidable, as they fall off in condition and lose flavour by such exposure. Much of the fish which reaches our markets at present has altogether lost its fresh and excellent qualities owing to a few hours' exposure on boats, wharves, or steamers; whereas had it been put into cold storage as soon after capture as possible its condition would have been prime. The demand for fish, indeed, is largely influenced by its condition, and the public will not buy fish to such a large extent if it has lost its fresh and sweet qualities by exposure to the atmosphere and to the sun or by rough handling. By being properly placed in cold storage immediately after capture the fish retain these qualities for a length of time. A fish that has deteriorated in condition by exposure, &c., cannot be made into a good fish by being placed in cold storage, so that it is necessary for the fishermen to realize that their catches must be packed in crushed ice and transferred to cold storage unless marketed immediately.

FROZEN VERSUS CHILLED FISH.

An impression prevails in the public mind that frozen fish is very inferior to fresh fish, and this opinion is well founded. The method of freezing fish solid so that they resemble a stone or a block of wood is found in the case of most fishes to destroy the flavour and the texture of the fish to such an extent as to make them very inferior for table use. Freezing hard, which is the method that has been adopted for a great many years, is a bad method of treating fish. As a man of unusually large