

The fresh-water fisheries, in my estimation, are not utilized as a food-supply to anything like the extent which they might be. Even in a great sporting country like England, and in the countries of Europe, America, and Canada, trout are allowed to be marketed, and I am convinced that in this country, from certain waters, it can be allowed to be marketed under certain restrictive regulations without risk to the interests of sportsmen.

I have, &c.,

L. F. AYSON,

Chief Inspector of Fisheries.

The Secretary, Marine Department.

The CHAIRMAN, Portobello Marine Fish-hatchery Board, to the SECRETARY, Marine Department, Wellington.

DEAR SIR,—

Dunedin, 8th May, 1912.

The accompanying report by Mr. Anderton, Curator of the Portobello Marine Fish-hatchery, summarizes the work that has been done there during the past year. There are a few points which we desire to emphasize and draw special attention to.

In regard to the lobster experiments, we would point out that Mr. Anderton has not only succeeded in rearing lobsters in confinement for a length of time that has never been reached anywhere else—a result due to the minute and ceaseless care and attention which has characterized all his work—but he has also made very valuable additions to the knowledge of the life-history of the lobster, and has placed on a basis of fact statements which formerly were only surmised to be true.

Another point worth noting is that, from his observations on the cast shells both of adult and young lobsters, we believe that about an inch per annum represents the average rate of growth. It has hitherto been assumed that lobsters come to maturity in about five years; we are now led to the conclusion that probably they are from seven to nine years old before they are egg-bearing.

No young lobster of all those turned out in the past has yet been met with; but, considering that the young after reaching the fourth stage—when they cease to swim freely and sink to the bottom—at once get under cover and practically remain under shelter all their lives, only coming out to feed, we are not surprised that none have yet been taken here. We hope to make some traps similar to but much smaller than those used in Europe and America for catching them, and by sinking these in localities where fry have been liberated we hope to meet with some of the growing ones. Those first liberated ought to be now between 4 in. and 5 in. in length.

In regard to crabs (*Cancer pagurus*), as the larvae were all liberated in the free-swimming stage, the chances of their being very widely distributed are much greater than in the case of the lobsters. Many of the latter were liberated at the stage when they seek the bottom, and they probably sought shelter at once, besides which their free-swimming stage is normally a short one. But crabs take a much longer time to pass through their zoea stages, hence the English crabs are as likely to be found at Akaroa and in any of the sheltered bays along the coast—Blueskin, Waikouaiti, Moeraki, &c.—as in Otago Harbour. We hope during the coming season to make special hauls with seine nets on the banks of the harbour, and will carefully examine the weed and dragged material for young imported crabs.

As the station is now thoroughly equipped for the experiment, we think the time has come when the Government should send Mr. Anderton Home to try and obtain a shipment of herring-ova. He should renew the stock of lobsters, and especially crabs, and perhaps attempt to bring out a small number of live haddock. We suggest Mr. Anderton because he has studied the question very thoroughly, and is expert in dealing with marine-fish ova. He is also a competent and ingenious mechanic, and will make a success of the experiment as far as it lies in his power to do so. If it is decided to send him Home, he ought to leave New Zealand in August if possible, in order to give him time to look around him before making final arrangements. The boxes required should be made here.

I have, &c.,

GEO. M. THOMSON,

Chairman, Marine Fish-hatchery Board.

The Secretary, Marine Department.

Marine Fish-hatchery and Biological Station,
Portobello, 4th May, 1912.

GENTLEMEN,—

I have the honour to present the following (the sixth) annual report of operations at the Marine Fish-hatchery from the publication of the last report (13th May, 1911) to the present date. Reports of previous years' operations will be found in the "Transactions of the New Zealand Institute," Vols. 38 and 39, and in the New Zealand Marine Department's Reports for 1908-9, 1909-10, and 1910-11.

Lobsters.—At the date of the last report the stock of lobsters in the ponds consisted of twenty females and fifteen males. Several deaths have taken place during the year, and the stock now stands at fifteen females and twelve males. All that have died have been more or less injured by their fellows. Many had lost both their large claws, and all had lost a larger or smaller number of their walking-limbs. Knowing their extremely pugnacious nature, a considerable amount of mortality is to be expected through these injuries. The present proportion of the sexes should be quite satisfactory. The females were not examined until the 20th November, 1911. Of the fifteen females, eleven were found to be carrying eggs in greater or lesser quantities. Eight of them had retained practically full batches; the other three varied from about half a batch to a few dozen; and it is quite probable that the other four had spawned in the spring, but had already either hatched or lost their brood. The females were on this date placed in the newly constructed small ponds for convenience of capture, and none were removed to the indoor tanks