

The CHAIRMAN, Portobello Marine Fish-hatchery Board, to the MINISTER OF MARINE.

SIR,—

Dunedin, 3rd June, 1914.

In presenting the annual report of the Portobello Marine Fish-hatchery Board, I have the honour to draw attention to the success which has attended its operations since its inception.

These operations follow two main but distinct lines—viz., the introduction and naturalization of desirable food fishes, and the study of the local fishery question and the various problems relating to it. The latter include the life-histories, habits, migration, food, mode of propagation, &c., of the species under examination—all subjects of which little or nothing has been learned in the past; and these are not only of great interest to the naturalist and biologist, but of the utmost importance in dealing with our fishery laws and regulations.

The introduction of food fishes and crustacea has included so far only three species—viz., the European turbot, the European lobster (*Homarus vulgaris*), and the European edible crab (*Cancer pagurus*). The interesting report for the year ending the 31st March, 1914, sent in by Mr. T. Anderton, Curator of the Portobello Station, and which is enclosed herewith, gives a *résumé* of the work done during the year, and of the measure of success attending the operations carried out. It will be noted that the tending and feeding of the stock at present in the tanks and ponds has absorbed very much of the time and attention of those in charge.

In past seasons large numbers of lobster and crab fry have been liberated, and the probability is that many of these will reappear in our waters as they attain maturity. All attempts made to find traces of any of these in Otago Harbour have failed hitherto, though traps have been set on many occasions and the contents of seine nets and traws carefully examined. But when I communicated these facts to Dr. Williamson, of the Aberdeen Marine Biological Station (Scotch Fishery Board), he informed me in reply that practically young lobsters and crabs are not met with in European seas. It would seem, though the fact is only surmised, that the young of these crustaceans live in somewhat deep water until they are sexually mature. The failure to find them in our seas need not, therefore, cause us to anticipate the failure of our experiment.

It is matter for passing regret that the little lobster which was reared in the tanks of the hatchery died in April of this year, during one of its periodical moults. It was four and a half years old, and measured somewhat under 5 in. in length. As far as we know, it was the only lobster reared in confinement which had lived over a year.

In regard to the turbot which were brought out early last year, I desire to say that the remarkable success which has been achieved by Messrs. Anderton and Adams in rearing them to their present size and fine condition without the loss of a single specimen has been due to the unremitting care and attention which they have devoted to the work. At the same time the Board feels that this minute care, which is so essential, could be given with unskilled labour under supervision, and that Mr. Anderton should be freed from it to carry out research work on the native food fishes and fish-food, which is so important for the future development of the fishing industry. In this connection we consider the station has more than justified its existence and the small sum annually expended on its upkeep, and we recommend that the facilities for research work should be extended. This could be done, *inter alia*, by selling the present oil-launch and replacing it by a larger boat capable of running out twenty miles or more from the Heads. This boat should be fitted with a small otter trawl (and spare net), seine nets, tow nets for surface work and plankton, a sounding-machine, &c. Only by such means can accurate observational work be done.

We would suggest also that your Department might urge on the Minister of Education the desirability of altering the present University Science Research Scholarship scheme so as to make it more attractive to students. If the scholarships are reduced in number and doubled in value, thus making them worth £200 a year tenable for two years, the best research students of the New Zealand University would be induced to take up post-graduate work. There are numerous problems in connection with our fisheries waiting solution, which can only be worked out by trained biologists. Until they are solved, any legislation based on them is apt to be of a very imperfect character, as so much of the past fishery legislation has been. For example, the life-history of the Foveaux Strait mud-oyster requires careful and continuous skilled observation by one trained in biological technique and able to devote much and long-extended time to the research. Accommodation could be found at or near the Portobello Station for any one engaged on such work.

Everything in connection with the buildings and apparatus of the hatchery is kept in good order, and at the same time the utmost economy consistent with the maximum of efficiency has been practised by all concerned. As in the past, the secretarial and supervision work of the station has been carried out without cost to the establishment.

I have, &c.,

GEO. M. THOMSON, Chairman.

The Hon. F. M. B. Fisher, Minister of Marine, Wellington.

GENTLEMEN,—

Portobello, 31st May, 1914.

I have the honour to present the following (the eighth) annual report of operations at the Marine Fish-hatchery for the year ending 31st March, 1914.

*Lobsters*.—The stock of lobsters, forty-one in number, which arrived in March, 1913, were placed on arrival in the largest pond, and since then have not been handled. Only two deaths have taken place, and both have been due to injuries received whilst fighting. The stock in this pond now stands at thirty-nine. Many of the females carried full bunches of eggs on arrival, but owing chiefly to the low temperature of the tank-water these lobsters were not brought into