

experiments which he intends carrying out. He recommended that, until the herring experiments are worked out, we should go on with the importation of other fishes, such as the cod, turbot, haddock, &c., which he thinks can be carried alive provided due consideration is given to the season when the fish are in the best condition, as they would then be able to stand the confinement and stress of the journey better, as well as requiring less food, which he considers an important matter as regards their health on the voyage. The laboratory is well equipped, and very valuable work is being done by Dr. Fulton and his two assistants, Drs. Scott and Williamson. Dannevig's hatching-boxes are used in the hatchery. The supply of sea-water for the ponds, observation-tanks, and hatchery is pumped up into a large reservoir-tank by means of an ordinary centrifugal pump. Ordinary galvanised-steel pipes are used throughout, but, as there is an ample supply of water, it is never used a second time.

At the Plymouth Station Dr. Allen showed me over the laboratory and hatchery. With regard to the experiments with the turbot and other fish, Dr. Allen stated that, owing to the illness of one of his assistants and pressure of other work, it had been somewhat delayed, but that he expected to be able to get on with it at once. The water-supply for the station is pumped up from the bay. A vulcanite pump was used for a time, but it was so liable to get out of repair that it was abandoned, and ordinary centrifugal pumps put in instead. The large pipes used are enamelled iron and the smaller pipes are vulcanite. Dr. Allen stated that at some stations lead piping is used with satisfactory results. When the experiments which are being made by Drs. Fulton and Allen are completed, and it is decided to import some species of fish or their ova, it would, I think, be advisable to send Mr. Anderton from the Portobello Hatchery to England to assist in collecting the fish, and to attend to them on the voyage out. It will probably take a considerable time to collect and prepare the fish for shipment, and I think that this work could be better and as cheaply done by Mr. Anderton than by a special expert employed in England to do it. The experience which Mr. Anderton would gain in connection with the marine-fish work while in England would also be of the greatest value to the Dominion in the future work which will require to be done here.

I have, &c.,

L. F. AYSON,

Chief Inspector of Fisheries.

The Secretary, Marine Department, Wellington.

SIR,—

Wellington, 27th April, 1909.

I have the honour to report as follows with regard to the minnows which the Tourist Department wished brought out from England.

Owing to the difficulty in procuring the salmon-eggs in England, I could not devote much time in arranging for a supply of minnows to bring out with me. I was, however, able to visit some trout-hatcheries from which it was thought a supply of minnows could be obtained. A few days before the "Rakaia" sailed, Mr. Richmond, of the Surrey Trout-farm, offered to supply a number; but, as I was aware by that time that the voyage would be a protracted one, and that there was no suitable place on board where they could be kept at a fairly regular temperature, I considered that it would be unwise to attempt to take any, as there would be but little chance of their surviving the voyage.

When in England and Germany I made considerable inquiry from fish-culturists and other experts, as I travelled about, with regard to the value of the minnow as a means of increasing the food-supply for trout, and every one with whom I discussed the matter gave a most unfavourable opinion as regards his utility in that respect, the unanimous opinion being that he did a great deal of harm to streams by eating up the food of young trout, and that he did not by any means provide, himself, a corresponding amount of food for larger trout.

I attach a letter from Mr. Riddel, of Bergstedt, Germany, on this subject.

I have, &c.,

L. F. AYSON.

The Secretary, Marine Department, Wellington.

Forellenzucht Saselbek. C. Riedel.

DEAR SIR,—

Bergstedt, bei Hamburg, 6th March, 1909.

In pursuance of our recent conversation as to the importation of the minnow (*Leuciscus phoxinus*) into the waters of New Zealand, I should certainly not advise you to introduce this fish, as this little fellow will do fifty times more harm by eating up the food for the young fry and small trout than he will do good by providing food for the larger trout by his body.

We consider the minnow rather bad company in a good trout-stream, and, when using a small brook for rearing fry and yearlings, we are most particular to get all the minnows out of that brook, as we find that the result in trout without this fish is a far better one than when left to stock the brook together with trout.

If I am asked what fish I should recommend to you to stock your rivers and lakes with, besides trout and salmon, I would draw your attention to another fish of the species of Salmonidae—*i.e.*, *Coregonus marena*. This is a splendid fish indeed, and would suit your New Zealand waters admirably. In good rivers, and lakes especially, this fish runs in size up to 25 in., spawns plentifully, and provides food for trout of all sizes, and not only for trout, but also for the table. Here, on the Continent, it is, indeed, considered finer eating than even trout or salmon, and fetches higher prices. I could supply you with fertilised ova of this fish, and they could very well be carried to your country together with ova of *S. salar*. These eggs would stand the journey very well, I should think, as they hatch slower than ova of trout or salmon. Shipment would have to be made about December.

I am, &c.,

CURT. RIEDEL.

L. F. AYSON, Es., Wellington.