

No. 32.

The Hon. the COMMISSIONER of TRADE and CUSTOMS to the AGENT-GENERAL.

(Telegram.)

Wellington, 10th March, 1886.

HERRING ova: If expense reasonable, and you approve, send assistant.

No. 33.

The AGENT-GENERAL to the Hon. the COLONIAL TREASURER.

SIR,—

7, Westminster Chambers, London, S.W., 12th March, 1886.

You will be glad to hear that the "Ruapehu" takes out some millions of herring ova which Professor Cossar Ewart has succeeded in getting for you on the west coast of Scotland.

It is impossible for me to describe at length to-day all that Professor Ewart has done, or the immense pains he has taken, ending in his going himself in Her Majesty's ship "Jackal" to take the ova for you. Indeed, I could not attempt to give you an account of the innumerable details that have had to be provided for in order to let the experiment have a good chance of success; and I must confine myself for the present to saying that the greatest care has been taken at every point through a long and anxious time.

When Professor Ewart consented to take charge of the work, I do not think even he had any idea of the number of things to be thought of for so novel an experiment. It has been altogether a most difficult and delicate work. The initial difficulty alone—of providing a current of cold sea-water over the eggs during the whole voyage—was so formidable that I almost gave up of overcoming it; but fortunately it happened that to the unrivalled knowledge and experience of the Professor himself we were able to add the mechanical skill and ingenuity of Mr. Johnson, who has for so many years helped in the acclimatization of salmon in Tasmania and New Zealand. I sent him up to Edinburgh to consult with the Professor about the appliances to be invented, and after repeated trials they decided upon a plan which may be roughly described in a few words by saying that the ova had to be placed in a number of glass jars and wooden boxes, which had to be set up in chambers adjoining the ship's refrigerator, with tanks and pipes carefully devised for passing a constant stream of sea-water over the eggs at a temperature of about 33°. This required a very elaborate design, but I can only send you to-day a brief explanation of it by Mr. Johnson, with tracings to show how the appliances work.

Professor Ewart has desired me to request you to have made as quickly as possible a wooden box, or "car," of rough planks, about 12ft. square by 6ft. deep, such as is used for keeping live fish in harbours here. I annex an extract from his letter on the subject, with a rough diagram of what is wanted; and I presume there will be no difficulty in putting the planks together in a few hours after the ship's arrival. The cheese-cloth required for it is on board, in the captain's charge. The jars and boxes are to be placed in this "car" for removal to the place you have chosen for the ova to be deposited in; and Professor Ewart suggests that you should ask Professor Parker, at Dunedin, to assist, as everything depends on it if the ova get out safely.

It would have been useless to send out the ova at all without some one in charge who understood what to do during the voyage and immediately after arrival. Professor Ewart wished very much that a scientific man should accompany the ova, to watch over them during the voyage and for some time after arrival, to examine the various creeks and bays where future consignments of eggs should be deposited, and to study the surface fauna and the temperatures of the water around part of the coast; and he proposed for this purpose to send Dr. Lamont, one of his assistants in the Fishery Board of Scotland, a distinguished graduate who has for some time been engaged in fishery work at the Professor's laboratory. I did not hesitate to telegraph for your sanction to this proposal; and we were much gratified by the promptness with which you were pleased to give it. But we decided, after all, to take further time for considering so large a step, and to content ourselves for the present with sending one of the Professor's laboratory assistants, Mr. Jamieson, for whom a second-cabin passage has been accordingly taken in the "Ruapehu."

The ova, after being put ashore from H.M.S. "Jackal" at Stranraer yesterday, came up by the night train, and arrived safely at Plymouth only an hour ago; and I must put off further details until next mail.

I may be allowed to hope that the care with which this experiment is being made will insure its success. Here it is considered to be one of very great interest and importance; and I take the opportunity of giving you one or two particulars from a report on the progress of fish-culture in America by Professor Ewart, in order to show what the introduction of the herring may be to us, and what, if the present experiment succeeds, you will have done for New Zealand by directing me to make the attempt. In the course of his investigations into the subject of increasing fish-supply by artificial means, he had to speak of the American shad, which belongs to the herring family—differing, however, from the Scotch herring in being larger, and in resorting for part of the year to fresh water, where (like the salmon) it deposits its spawn. Rivers on the Atlantic coast which once teemed with shad had been so completely denuded that when artificial culture was first started it was for some time impossible to obtain fish enough to do any work at all; yet now the artificial introduction of millions of fry each year has not only resulted in shad being more abundant than ever along the Atlantic coast, but in one of the most interesting experiments ever made with fish—viz., the taking of the shad right across the American continent into the waters of the Pacific at the Sacramento River. "From this small beginning," says Professor Ewart, "mighty results have followed; for the shad have already extended their range two thousand miles along the Pacific coast, making themselves at home in the Pacific Ocean and the rivers entering it from the American continent." It may be your good fortune, from an equally small beginning, to see shoals of the Scotch herring one day around our coasts; and it is in the hope of