1885.

NEW ZEALAND.

THE IMPORTATION OF SALMON OVA

(REPORT ON).

Presented to both Houses of the General Assembly by Command of His Excellency.

Mr. S. C. Farr to the Hon. the Colonial Secretary.

Report on the Importation of Salmon Ova into New Zealand in the Year 1885.

Sir,— Christchurch, 12th June, 1885.

I beg leave to report that, in pursuance of the wishes of several acclimatisation societies in New Zealand that I should go to England for the purpose of procuring and bringing out a shipment of salmon ova, I sailed in the New Zealand Shipping Company's vessel the steamship "Doric," commanded by Captain Jennings, leaving Lyttelton on the 1st November, 1884.

The voyage was an uneventful one. Landed at Plymouth on the morning of 13th December. Travelled same day by train to London.

On the 16th December reported myself at the office of the Agent-General for New Zealand. Sir Francis told me at once that I was too late for that season, especially so as nothing could be done to assist me just then, owing to the midwinter holidays. However, through an introduction which I had taken from the colony to a gentleman in London, succeeded in finding out that if I went at once to Scotland I could get ova from the Tay. With this good news I went off quite elated; but after the trouble and expense, found it was only obtainable by a system of tipping and poaching. This I respectfully declined, preferring to risk my chance rather than incur a stain upon the honour of the colony I represented.

I then wrote to the several Superintendents of Fisheries in England, Scotland, and Wales, inquiring as to the probability of my getting ova from the rivers under their care. With one exception the reply was "Too late." The exceptional proved eventually to be the successful.

I then applied to the Scottish Fisheries Board for assistance; but was informed that a formal, official introduction by the Agent-General was necessary ere anything could be done for me. This I wrote for at once, upon receipt of which I waited again upon the Board, from whom I received several introductions, and went off to Perth to try my luck on the Tay. The Superintendent said he thought it was useless to try, being so very late; but he would take his men to the River Earn, one of the principal tributaries of the Tay, and see if anything could be done for me. We met at the Forteviot Railway Station, and walked to the river near Dupplin Castle. Here we met Earl Kinnoul's bailiff, who also said it was too late for that river. The men, however, made six shots with the net and took ten fine fish, but the whole of them were clean. Result *nil*, except expenses.

Returned to Edinburgh, where I found a pile of letters in which was shown a great deal of interest in my mission, conveying expressions of willingness to render every assistance if it had not been "too late." Disappointed, I returned to London, not knowing what to do. I had just resolved to go over to Ireland, having been told there was a chance for me there, when I received a letter from a Mr. Anderson, of Trinity, near Edinburgh, enclosing a note he had received from the Superintendent of the Tweed, in which he stated that should a heavy rain come there was a chance of a late run of fish.

Returned to Scotland, clinging to this only hope held out. Went down to Melrose; called upon the Superintendent of the Tweed Fisheries, Mr. R. C. Donaldson, who informed me that he had received instructions from Mr. Tait, clerk to the Tweed Commissioners, to make all necessary arrangements, and superintend the fishing if opportunity offered. This, he said, would require a heavy rain to bring the fish up, of which he was doubtful. I told him I intended remaining at Melrose for the rain. I did not think it was far off, as the glass was falling. On the 27th January the rain began, and for the three following days fell something like our southwesters, and without cessation. On the morning of the 28th we were astir before daylight, and went by first train to Walkerburn. Here we met his men, who at once took a shot with the net, but took no fish. We then went on to Innerleithen, where we made two shots with like result. Walked on to Quairfoot and tried four shots; result, *nil*. Thus ended our first day, drenched with rain and footsore from walking. The next morning, January 29th, we went by first train to Peebles, where the nets were soon in the water at the Cowford. Four shots were made here without effect. Moved down stream

to Factory. Here we caught three females and two males, ripe and full, and by noon I was in possession of 38,000 fine salmon eggs. I may here state that I informed Mr. Donaldson I wished to strip and impregnate the whole, as I hoped to prevent one of the causes of failure in previous shipments to the colony. Having arranged with Mr. Donaldson that the men should continue fishing, I proceeded by train to Edinburgh, thence to Linlithgow, with my choice freight. Here I had engaged a hatchery, to deposit the ova if required. The ova was placed that night in the trays, and I left a man in charge with full instructions as to what I wished done. Returned to Edinburgh by the last train, weary and worn. Next morning I was on my way back to Peebles by first train, and was pleased on my arrival to find eleven fine female fish and seven males; but of the former only eight had spawn in them. Going to work at once, I secured from these about 160,000, duly impregnated them, and, with the aid of the Superintendent, conveyed them to the hatchery, thus making a total placed in the trays of about 198,000. Knowing that I was too late to get my cases and fittings ready for the February steamer, I decided to risk leaving them in the hatchery until March. Thus I had been successful in quantity, but I had to wait patiently to be certain of the eggs being fecundated or not, and I was not a little gratified on the seventh day after impregnation to find the whole in a most perfect state; and, although I had proved it to be a most difficult and by no means a pleasant task to collect salmon eggs, especially so being obliged to manipulate on the bank of the river, without shelter, in driving sleet and rain, requiring an amount of energy and enthusiasm until then I little dreamed I possessed, yet, success having crowned my efforts, I was delighted when perseverance was thus rewarded.

I then went to London, arranged all necessaries for shipping ova, and the voyage. Returned again to Scotland, being anxious about the ova. The man, I found, had taken great care of it, picking out the dead every day, and, as he evinced much intelligence in the management of ova, I again left him in charge, so as to prepare everything for its transit from Scotland to London, thence to the vessel. Having done all that I could in Edinburgh, I took another journey to London, so that I might inspect and direct the works on the ship, arrange for ice and all the etceteras requisite to insure as great a success to the undertaking as possible. Being satisfied these were as complete as they well could be, I went back to Scotland, and, finding I could get some salmon parr at the Stormontfield Ponds, I decided to make the attempt to bring some out with me. For this I had a special vessel made from my own design. Proceeded to the ponds, where, with the aid of Mr. A. Lumsden, Superintendent of the Fisheries, and six men, I secured fifty parr, healthy and strong, with one exception. Brought them to Linlithgow and placed them in the hatchery, where they did well, although still in the tin vessel, so that I was encouraged to think I should get them out to New Zealand by careful management.

On the 9th March packed the ova in glass jars made expressly for that purpose. The ova had been in the trays five weeks and four days: during that period 1,891 dead ova had been taken out. The water flowing through the trays had a temperature averaging 40° Fahr. The glass jars were placed in wooden boxes, well packed with moss, and the boxes were slung on frames resting on spiral springs, with a view to minimize the effects of oscillation in van. I had engaged a van for the journey, which was sent to Linlithgow Station. In this everything was carefully and strongly packed, a good supply of ice was also secured, and, thus equipped, I left Edinburgh by the 10.20 p.m. train, with my precious freight. The night was dark and dreary, for a regular winter's storm came on soon after we left. I was alone in the van, the oscillation of which, when going at the top speed, soon disarranged my packing and jeopardized the ova to such a degree that my excitement and anxiety cannot easily be pictured or explained. It was certainly the longest night I ever experienced. Arrived at King's-Cross Station at 9.20 a.m., where the spring-van I had engaged was in readiness. Reached the vessel at the Albert Docks at 1·30 p.m. on the 10th March. Packed in trays and placed in cases as packed, reducing the temperature to the proper degree in the cases by means of ice. Continued packing until 8.30 p.m., when, feeling tired and hungry, suspended work for the night. The next morning, 11th, finished packing ova. The young salmon were all well and getting quite tame, coming up to the top of water for their food (Spratt's patent fish-food) without showing the least timidity. On the morning of the 12th, the day we sailed, I procured a dozen small lobsters and a dozen crabs, with the hope of bringing them out alive: the food for these was shrimps and small crustacea. I also had with me three dozen small sticklebacks, from the Brighton Aquarium, which took the patent food and did well until we had to use the condensed water, when they all died.

I need not trouble with the details of the voyage in this paper further than stating that, with one or two exceptions, and those because it was quite impracticable owing to rough weather, daily attention was given to the ova, picking out dead eggs, regulating temperature of cases with ice, which averaged 34·06° Fahr. throughout the voyage. About 81,000 bad eggs were taken from the trays, leaving 117,000 in a very healthy condition up to the forty-fourth day from date of sailing, and ninety days after being taken from the parent fish: when, having arrived at Wellington, the refrigerating engine was stopped, and I found great difficulty in keeping down the temperature; consequently many died. This was not to wondered at when considering the extraordinary ordeal it had passed through, such as no ova had ever been subject to. Two cases were delivered to Mr. Rutherford for the Napier and Wellington societies, two to Mr. Edwards for the Otago and Waitaki societies, and two were detained at Christchurch for North and South Canterbury societies. Of the actual numbers hatched out I have no returns up to date; will furnish Government with it when received: in the boxes at the Christchurch hatchery we have about 21,000.

I cannot close this report without acknowledging my indebtedness to those from whom I have received much kindness and assistance—to Mr. John Anderson, Trinity, near Edinburgh, for his untiring zeal in my mission, who, through his writings and introductions, was mainly instrumental in bringing the collecting to a successful issue; to J. Tait, Esq., Kelso, W.S. and clerk to the Tweed Commissioners, who told me if I came earlier next season I should get a much larger quantity,

and far easier, than those I had secured last season, and they would be glad to do all in their power to assist me. Mr. R. C. Donaldson is deserving of a double meed for his unremitting attention and indefatigable labours throughout, and further promise to aid in procuring a larger quantity next season—"a cartload if we want it." The special thanks are also due to the directors of the New Zealand Shipping Company for their noble liberality, and the manner in which all arrangements connected with shipping were made for the conveyance of the ova from the docks to the colony quite free of charge, and myself to and fro for half a fare. The value of such services, I am sure, cannot be measured by the space occupied in the ship. My special obligations are also due to Captain Underwood, the company's manager in London; also to Captain Crutchley and his officers on board the R.M.S.S. "Kaikoura," who were ever kind and attentive throughout the voyage.

In conclusion, I would add, notwithstanding the success that has been achieved, I am of opinion that another importation of ova should be undertaken without loss of time; for the young fish now in our hatcheries will not produce spawn, by which their numbers may be multiplied, for wo or three years: thus, much loss of time will be lost in stocking our rivers unless a further supply be obtained. Such an undertaking can no longer be regarded as an experiment, for the additional experience which has been gained must insure more favourable results in future importations. The whole expense of another shipment (say a million) would not exceed one thousand pounds (£1,000), as the apparatus used for the last importation can be made available. I therefore earnestly hope that the Government will place on the estimates, and recommend to the Parliament now sitting the appropriating of, such a sum as will enable such steps to be taken as are necessary for a further supply of ova this next season. In this way, and this alone, can the long-cherished hopes of the colony be realized; and, as a sequence, ample returns will be made in a few years for all expenses and labour incurred.

I have, &c.,

S. C. Farr,

Hon. Secretary and Treasurer, North Canterbury Acclimatisation Society.

The Hon. the Colonial Secretary, Wellington.

P.S.—The young salmon in the vessel throve, and became quite tame, taking their food as soon as it was dropped on the water; but one morning, between Teneriffe and the Cape, I found them all dead, although the night previously they ate their food as usual. Their death, doubtless, was caused by wanton mischief, as urine was detected in the water; otherwise I feel confident I could have brought them out alive. The lobsters and crabs died in the tropics. Still, I believe they can be brought alive.—S. C. F.

By Authority: George Didsbury, Government Printer, Wellington.—1885.