A much larger percentage died before hatching, and there did not appear to be so much strength in the young fry, many of which died in the baby stage.

I cannot at all account for this delicacy of constitution in this naturally hardy fish, except on the presumption that the parents having been excluded from the salt water, which is their natural habitation for a portion of the year, the progeny became delicate in consequence.

The society have only succeeded, I believe, in rearing some half-dozen of these fish; but I am glad to learn that after my departure from Southland they had commenced spawning, and as the parent fish will now spawn every year, there will be a good quantity of young fry, which may be turned into the streams annually. There is every hope, therefore, that the acclimatization of this fish may now be considered as secured.

Regarding salmon, the evidence I can give must be necessarily limited, from the fact that only two shipments have been made in which I had any personal share; the first being a complete failure, from the extreme length of the voyage; and the second, unfortunately, being attended with a very small modicum of success.

I will briefly narrate the management of the ova after arrival at Port Chalmers, the packing and shipment of them having been fully described by the Agent-General in letters addressed to the Government. Shortly after the arrival of the vessel, our Curator (who was sent to Dunedin for the purpose) went alongside her with a steamer chartered to convey the ova to the Bluff.

The eggs, which were packed in small boxes, containing about 800 each, were placed within two large cases, resting upon straw sacks to prevent concussion, and covered with large blocks of ice. On arrival at the Bluff, a special train conveyed the ova to Wallacetown, within two miles of the ponds, whither they were conveyed in hand-barrows. The water having been sufficiently cooled, and a proper temperature attained, the process of unpacking commenced, and in all these operations the greatest precautions were adopted to prevent failure from slovenliness or want of proper care on our parts. Some few of the boxes turned out excellently, the moss being beautifully green, and the greater part of the eggs bright and apparently healthy, the eyes of the fish in most cases being distinctly visible. This was the case unfortunately with but a few; in the generality of instances the boxes had an appearance as if a sort of dew or mist had settled on the moss. In all these boxes the eggs were principally bad; in many cases not a good ovum in the whole box. Altogether, about 10,000 apparently healthy eggs were placed in the hatching-house.

These eggs kept their bright appearance for the first two or three days, only a small percentage turning opaque. In the course of a week or so, and towards hatching, they died off very quickly, the result being that of the whole number only about 700 were hatched. The result of this I attribute solely and entirely to the length of passage from home, the eggs having been in ice for considerably over 100 days before being placed in their natural element. In consequence, the vitality of the ovum was so much weakened that there was not sufficient strength for the embryo to emerge from the shell, numbers dying just at the point of hatching.

I believe, also, there were a large number of blind or unfertile eggs sent, which would account for a great number of dead eggs which were received.

It is quite possible, however, that even with this small number of salmon fry, success in acclimatizing this fish may be attained. But it is very hazardous, as it is certain that some of them will die, from various causes, before they are ready to go to sea, and there are some deformed fish which will be useless.

Probably 350 will be about the number that may survive, of which only half will lose the parr mark in the first season.

There appears, however, to be one method in which success may be rendered as nearly as possible certain, and that would be by placing say 100 of the fish (as an experiment) in a salt-water pond.

For this Southland has every facility, as the Bluff Railroad cuts off small bays of sea, from which the water flows in and out by means of a culvert under the railway. This being secured by wire netting, you have a perfect pond, where the fish, secure from their natural enemies, would have every chance of growing to maturity. I have the greater confidence in this experiment being successful, as I see that they are experimentalizing in this direction at the Brighton Aquarium, and so far successfully. This appears to me to be the best method for successfully managing the small number of salmon fry in our possession.

No doubt, however, it would be desirable, if possible, to obtain a further shipment or two from home. But if this were done, it should be insisted on that the ova be shipped in a clipper vessel from the Clyde, which vessel should call at the Bluff to deposit this portion of her cargo. I pointed out the necessity of a Clyde shipment most strongly to the Government, and also to Mr. Frank Buckland in England; and Dr. Featherston, I observed, acknowledged having received such recommendations. For reasons, however, which were no doubt good, but which I believe were not communicated, the shipment was made from London.

There is one other method by which I believe salmon ova could be brought out successfully to New Zealand, and that is by screw steamer from England to Melbourne. At the latter port the vessel might be met by the Curator of the Southland Ponds, who would see to the transhipment of it to a steamer direct for the Bluff.

It has been urged that the vibration on board a screw steamer would be dangerous to the vitality of the ova. I am inclined to think, however, that this danger is exaggerated, because I may mention that in 1870 I brought 2,000 trout ova from Hobart Town to the Bluff, via Melbourne, in steam vessels, the passage for the most part being an exceedingly stormy one, and on unpacking them at the Southland Ponds there were only ten bad eggs. If, therefore, on a passage of about eight days the result was so favourable, why should it not be proportionately so were the time extended to sixty days?

Finally, I would beg to point out to the Committee, that if it intends to recommend to the Government a further shipment of salmon ova from Great Britain for one or two years more, which, in the interests of the Colony at large, I should very strongly urge, the order for a shipment this year must be made by telegram.