

had grown together in mats by the action of fungus. On visiting the Clinton hatchery, I found that Ranger Burt's lot had been in a similar condition, and yielded about the same percentage.

Since the ova were placed in the hatching-boxes a good many bad ones have been removed, but that is to be expected, as no doubt some will have received unavoidable injury while unpacking, and also some will have suffered from contagion. They are just beginning to hatch, and should they do so fairly well, I estimate we will have about 320,000 young salmon.

During the unpacking I came across a box, numbered 111, containing 9,200 salmon ova, and 8,800 Lochleven trout ova. It was the last box I unpacked. Had I known of it sooner I would have communicated with you as to its destination, but, as they (Lochleven) were in an advanced state, I thought it better to place them in the hatching-boxes at once. They turned out 78 per cent. good, and are now nearly all hatched. As we have plenty of our own, you probably could arrange with this society during the season just coming for some in exchange as an equivalent.

With reference to your instructions *re* the returning of the ova-boxes, I will, as usual, see that everything is returned clean and in good order.

I have, &c.,

F. DEANS, Curator.

L. H. B. Wilson, Esq., Assistant Secretary, Marine Department, Wellington.

The MINISTER having Charge of the MARINE DEPARTMENT to the AGENT-GENERAL.

SIR,—

Marine Department, Wellington, 30th April, 1889.

Referring to my letter (No. 679/59) of the 18th instant, I have the honour to forward herewith, for your information, copy of a report by the Curator of the Southland Acclimatisation Society's fish-hatchery on the salmon ova handed to the society for hatching.

I have, &c.,

T. FERGUS,

(For Minister having Charge of the Marine Department.)

The Agent-General for New Zealand, London, S.W.

The CURATOR, Southland Acclimatisation Society, to the MINISTER having Charge of the MARINE DEPARTMENT.

SIR,—

Wallacetown, 4th April, 1889.

I have the honour to report the receipt of seven boxes of salmon ova, *ex* "Aorangi," at Invercargill Railway-station on the 30th March, 1889. I had the boxes conveyed to the Wallacetown hatchery the same evening, and after reducing the temperature of the water from 50° to 44° with ice, I placed some of the trays in the water for the night, in readiness to start unpacking next morning. I was kindly assisted at that operation by Mr. Henry Howard and the Messrs. H. and T. Brass, who have had previous experience in the work.

I regret to say that the condition of the ova, as a whole, was very inferior to that lately received by me *ex* "Arawa." It was my intention to have had all the ova counted, both good and bad, so as to be certain of the exact number received. We succeeded in doing this with the contents of the first two boxes opened, but after that it was found to be impossible, as some of the layers of ova were so matted and grown together with the moss as to render the attempt impracticable. The first boxes unpacked were Nos. 102 and 45, and they gave 81 and 80 per cent. of good ova respectively. Some of the others, however, were so bad that the average of good ova in the seven boxes was only 67 per cent. Box 99 was the worst, as it only contained 8,794 good, or about 50 per cent.

The method of packing was the same in all the boxes, and, as far as I could see, was identical with that of the previous shipment. The moss, however, did not look so bright and green as that in the "Arawa's" lot, but presented a dead and withered appearance, and in many of the trays the top of the moss was quite mouldy, or, in other words, seemed to be covered with cobwebs. The bottoms and insides of some of the boxes, on removal of the trays, I observed to be the same. A great many layers were in such a putrid and offensive condition that I should think the damage had taken place early on the voyage. There were also a large number of indented eggs, which shows they had suffered from want of moisture. I did not observe a single indented egg in the "Arawa" lot.

You will observe, on referring to the detailed statement which accompanies this, that it was the lowest layer of the bottom tray that was always the worst. Under the present mode of packing, the only explanation I can think of, and that I express with diffidence, is that, as the cleats on the bottoms of the boxes are very shallow—only about a $\frac{1}{4}$ in.—any substance getting under the boxes might check the drainage to such an extent as to cause the damage. It is a very great pity this shipment should have suffered so on the voyage, as they seem a particularly large and even lot of ova, and I am afraid that the bad effects may not yet be at an end. The ova were in a very advanced stage—a few were hatching in the moss, and quite a number are already out in the hatching-boxes.

The number of ova supposed to be in each box I received was 18,400, and judging from the boxes we were able to count, and from the quantity of ova in each layer, I think they were within a few hundred of that number. According to the list I received the total number of ova in the seven boxes was 128,800, and as the number of ova placed in the hatching-boxes was 83,098 the percentage would only be 64.51; but, as I consider the number was slightly overestimated, I think 67.45 per cent. of good ova is more correct.

I now beg leave to draw your attention to a more satisfactory subject—the progress made by the "Arawa" shipment since I last had the honour of reporting to you. These ova were unpacked on the 14th March, and on the 23rd there was a fine show of alevins in two of the boxes. On the 26th hatching was general, and by the 31st they were nearly all out and commencing to crowd together. They are certainly the best lot of imported ova I have had to do with, and some of the boxes presented an appearance which would have been very creditable had they been from New Zealand