

3rd. Whitefish, as soon as hatched out, rise and swim, unlike trout and salmon, which lie dormant. The little fellows are, therefore, carried down the trough with the current, and, unless fine wire screens are placed across it to intercept them, they are almost certain to be lost. It was in this way, I suspect, the Christchurch society lost their whitefish, and not by a fresh during the night, as reported. No. 18 mesh (eighteen) will keep them in. They should have as much back-water as possible to swim in. In ten days, as I have said, they lose their sack at a temperature of 35°, but, as they may lose it earlier, it is necessary that a register of the daily temperature of the water be kept, and food be furnished as above described.

4th. In the interest of science and acclimatization, should any portion of these eggs be sent South, I have to request that you communicate these facts to the persons in charge of them, for their guidance. One way and other I have written a decent volume in this connection, and cannot possibly duplicate or quadruple these notes, which are in the rough. I have not written on this subject to the Government, which must depend upon your society and similar bodies for the propagation and distribution of the whitefish.

I may remark here that the acclimatization of whitefish is in its infancy, and much has yet to be learned regarding it. It was thought, less than four years ago, that the eggs could not be sent across this continent. Several parcels failed, but at length a few were hatched and placed in Lake Tahoe, in the North. This was less than three years ago, and now the fishes which come to the sandy pebbly banks on the Californian side of the lake, are being netted and sent to Virginia City Market. They spawn, it is believed, the third year. Last year, ten men and two teams were employed by the Lake Commissioners to cut a road several miles through the snow, to place whitefish in another Northern California lake, and Lake Tulare in the South, warmer than Taupo and about as large, has been stocked. The entire shipment of whitefish ova for California and Nevada, from Northville, Michigan, packed precisely as those for New Zealand by Mr. Clark, and coming in the same car, were spoiled in transit. On being opened by Mr. Woodbury and myself they stank and were putrid. They had been placed near the stove by the express agents to prevent their freezing. Ours had been less considerably treated, and arrived sound and lively, as I had proof, every box having been opened and examined by Mr. Woodbury, in my presence. We then ascertained their temperature, and gave them a drenching with water at a similar heat; screwed them up, reversed their position, placed them upon and surrounded them with ice in the Pacific Company's ice-houses. I telegraphed to Mr. Woodbury, and brought him twice from a considerable distance, by road and rail, in extremely wet weather, to assist me, and as it was a labor of love, I am anxious that he should, at least, have honorable mention. I should also remark that Woodbury has invented a hatching basket, in which 30,000 salmon eggs may be hatched with certainty. It occupies about two feet square, and would, I think, be a great assistance to you. I don't know the price, but it is trifling, and I thought I would mention it to you. If I can get one by next steamer, I will send it down.

Perhaps it would not be trespassing too much upon your kindness to ask the Secretary of your society to make copies of this letter, or so much of it as may be necessary for their guidance, and forward one to the Christchurch, Dunedin and Nelson Societies; or send one to the Government requesting them to communicate the same to those bodies.

I dare say I have nearly wearied you, but I know your enthusiastic love for acclimatizing such natural products as animals and fishes as may be useful to man, and therefore presume upon your time and patience. I forgot to say that whitefish take bait. They should be closely protected for, *at least, four years*. The wire screen referred to in paragraph 3, should be higher than the water, to prevent loss of fish by overflow.

I have, &c.,  
ROBT. J. CREIGHTON.

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No. 27.

Mr. J. C. FIRTH to the UNDER-SECRETARY.

(TELEGRAM.)

Auckland, 16th February, 1878.

Since wiring last I find I can push on preparations at the hatching house, and will therefore take charge of one box. The other goes on by Rotorua.

G. S. Cooper, Under-Secretary.

J. C. FIRTH.

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No. 28.

Mr. J. C. FIRTH to the UNDER-SECRETARY.

SIR,—

Auckland, 18th February, 1878.

Whitefish ova turned out very badly in the box you wished me to take charge of. All destroyed but thirty. Some of these died in hatching, others died soon after. Two fish living; eight ova yet to hatch. Cause of destruction too many in one box, and too much compression. Shall I forward the second box or open it here?

G. S. Cooper, Esq., Under-Secretary.

J. C. FIRTH.

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No. 29.

The Hon. the COLONIAL SECRETARY to JAMES HECTOR, M.D.

SIR,—

Wellington, 15th February, 1878.

As you are already aware, a shipment of 250,000 whitefish ova sent from San Francisco by the United States Fishery Commission has arrived by the City of Sydney at Auckland, and has been transhipped with the mail on board the Hawea.