

SESS. II.—1879.
NEW ZEALAND.

CALIFORNIA SALMON AND WHITEFISH OVA

(FURTHER PAPERS RELATIVE TO THE INTRODUCTION OF).

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

No. 1.

Mr. R. J. CREIGHTON to the Hon. Mr. MACANDREW.

SIB,—

San Francisco, 28th October, 1878.

I have the honor to state, in reply to your letter of 17th August, *re* whitefish eggs, that I forwarded it to Mr. Clark, Northville, Michigan, and placed myself in communication with Professor Baird, and Mr. Redding, one of the California State Fish Commissioners. Their replies accompanying this letter will show the difficulties in the way of carrying out Mr. Clark's original offer, so far as personal attention to the eggs on the overland journey is concerned.

In my letter to Mr. Clark I stated that the New Zealand Government would pay the express charges on the eggs, although not specially mentioned in your letter, inasmuch as that was part of his original offer, and I did not wish to have it included in the bill of personal expenses.

You will perceive that he cannot, for the reasons stated by himself and Professor Baird, come through this season, and I have written to say that I cannot, without specific instructions, vary the conditions on that point. An hour's neglect might fatally injure the eggs. Should, however, the Government think the ova should come through, a telegram will be in time, otherwise it will be too late this season. My own opinion is to continue the order till next year, and if the California Fish Commissioners do not join us in Clark's personal expenditure, defray it by the colony. The difference would be insignificant as compared with the results should the ova arrive sound and be hatched out. Be good enough to advise me upon these points by return mail, if not by cable.

I have, &c.,

ROBT. J. CREIGHTON.

The Hon. J. Macandrew.

Enclosure 1 in No. 1.

Mr. REDDING to Mr. R. J. CREIGHTON.

DEAR SIR,—

San Francisco, 13th September, 1878.

I have written to Mr. Clark, at Northville, Michigan, to see what he can bring for us other than whitefish eggs at the time he will be ready to come over with your consignment.

If arrangements can be made by which the State can get carp, eels, and lobsters, we will cheerfully pay one-third of his expenses.

Yours, &c.,

B. B. REDDING.

R. J. Creighton, Esq., San Francisco.

Enclosure 2 in No. 1.

The Hon. SPENCER F. BAIRD to Mr. R. J. CREIGHTON.

United States Commission, Fish and Fisheries,

Washington, D.C., 21st September, 1878.

DEAR SIR,—

I am duly in receipt of your letter of the 11th of September, in regard to procuring a supply of one million of eggs of the whitefish for the Government of New Zealand.

I expect Mr. Clark here in a day or two, and will then confer with him as to the conditions you propose. I am a little doubtful whether he will consider them sufficiently favourable to himself, especially as the Fish Commission of Nevada does not propose to ask for any eggs this season. I

would advise you to have a conference with Mr. Redding, as to his willingness to share the expenses of the shipment of the eggs under the charge of a suitable messenger, and report to me the result.

Mr. Clark will be employed by me for some time in the artificial hatching of codfish on the coast of New England. Whether he will have finished this work in time for service in propagation of whitefish is a matter of some uncertainty.

R. J. Creighton, Esq., San Francisco.

I have, &c.,

SPENCER F. BAIRD,
Commissioner.

Enclosure 3 in No. 1.

Mr. F. N. CLARK to Mr. R. J. CREIGHTON.

MY DEAR SIR,—

Gloucester, Mass., 6th October, 1878.

I am here at this point, assisting Professors Baird and Milner in the cod-work. We intend to hatch the eggs of the codfish.

Now, about the whitefish eggs. Professor Baird tells me the California and Nevada Company are not willing to enter into the arrangement we talked of, but wish their consignment of eggs sent through by express as usual. Now, unless they change their minds, what will be done about the lot for New Zealand? I think I can pack them so there will not be any risk, so far as San Francisco, if the express messengers would only do their duty; or I might go with them as far as Omaha, which would make the expense very light, and at Omaha I could give the messengers instructions how to handle them. Please write me about this, and instruct me what to do. Perhaps, if you would see Mr. Redding and talk with him, it would be well.

R. J. Creighton, Esq.

I have, &c.,

FRANK N. CLARK.

No. 2.

Mr. CONYERS to Mr. R. J. CREIGHTON.

SIR,—

Christchurch, December, 1878.

I am directed by the Minister for Public Works to acknowledge the receipt of your letter of the 28th October relative to salmon ova, and, in reply, to say that, as the ova ordered through you some time ago will be too late for this season, the Government will be glad if you will be good enough to continue it for next year.

R. J. Creighton, Esq., San Francisco.

I have, &c.,

W. CONYERS.

No. 3.

The Hon. SPENCER F. BAIRD to the Hon. the COLONIAL SECRETARY.

United States Commission, Fish and Fisheries,

Washington, D.C., 11th December, 1878.

SIR,—

I am duly in receipt of your letter of the 21st October last, and, in reply, beg to express my regret at the failure of the negotiations on the part of your Agent with Mr. Clark for a supply of the eggs of whitefish. It being considered very desirable that the eggs should be accompanied to San Francisco by Mr. Clark, and placed on board the steamer in the best possible manner, Mr. Creighton stipulated that part of the expense should be borne by the States of California and Nevada, which he supposed contemplated obtaining a supply of ova. The negotiations, however, fell through, and Mr. Creighton was, apparently, unwilling to charge the Government of New Zealand with the entire cost, and nothing was done in the premises.

Mr. Clark had a very fine stock of healthy eggs, which I have taken for distribution by the Fish Commission to various points in the United States.

I have, &c.,

SPENCER F. BAIRD,

Commissioner.

The Hon. the Colonial Secretary, New Zealand.

No. 4.

Mr. R. J. CREIGHTON to the Hon. Mr. MACANDREW.

SIR,—

San Francisco, 23rd December, 1878.

I have received a letter from Mr. Clark offering to send the fish eggs, chancing payment, should they succeed, and have taken the responsibility of ordering them to be forwarded upon those terms. You will be good enough, therefore, to take measures for receiving them by the steamer sailing in January, by which occasion I will more fully advise. Mr. Clark had saved the eggs on the original understanding with the Government, and would entirely lose his market were they not to be taken by New Zealand.

I would impress upon you the necessity for hatching out the eggs at the nearest point of arrival, otherwise the failure, if any, could not be traceable to the eggs.

I shall draw upon the Government for the express charges, ice, &c., and forward vouchers, also bills from Mr. Clark, to whom draft should be made payable, as it is a private transaction, and not directly through the United States Fish Commission.

I have, &c.,

ROBERT J. CREIGHTON.

The Hon. J. Macandrew, Wellington.

No. 5.

MEMORANDUM by DR. HECTOR.

Colonial Museum, Wellington, 29th January, 1879.

Memorandum re Whitefish Ova.

MR. CREIGHTON'S letter advises Government to expect one million ova on 12th proximo in Auckland, so that there is hardly sufficient time to make arrangements. Unfortunately no particulars have been sent of the number of packages, so that a definite scheme for their distribution cannot be arranged beforehand. If possible, they should be distributed in four lots: to (1) Auckland, for lake, in deference to Mr. Creighton's wish; (2) Christchurch, for Lake Coleridge; (3) Dunedin, for Lake Wanaka; (4) Invercargill, for Lakes Wakatipu and Te Anau.

Action required.—1. Telegraph to Mr. Firth, Auckland, requesting him to receive and tranship the ova on arrival in Auckland, and to take charge of the share for Auckland Society. 2. Telegraph to Secretaries of Acclimatisation Societies at Christchurch and Dunedin to prepare to receive and hatch ova. 3. Telegraph to Mr. Howard, the officer in charge of the Government Ponds at Wallacetown, to prepare to receive and hatch ova. 4. Copies of the Parliamentary Paper H.—11, 1878, should be posted to the above for their guidance. 5. If it were possible to arrange for the "Hinemoa" to be in waiting for the mail, with a temporary icehouse fitted up to receive the ova boxes, and instructions to take them South without delay, the chance of a successful issue to the experiment would be improved.

JAMES HECTOR.

No. 6.

The ASSISTANT UNDER SECRETARY to MR. J. C. FIRTH.

(Telegram.)

Wellington, 30th January, 1879.

MR. CREIGHTON informs Government of shipment of one million whitefish ova from San Francisco. They will arrive by mail steamer at Auckland on 12th proximo. He has sent no particulars of number of packages, so that definite scheme for distribution impossible. Government wish shipment to be divided into four lots—one for Auckland, one for Christchurch, one for Dunedin, and one for Invercargill. You would greatly oblige Government by undertaking distribution, and by receiving and transshipping ova on arrival in Auckland, and by taking charge of Auckland portion, which, it is suggested, should be sent to Lake Taupo, as requested by Mr. Creighton. Professor Scott, of Dunedin, will be in Auckland, and will gladly assist you, and Mr. Burton, of the Museum here, will also be present to assist, and to take charge of southern portions. Letter by post giving all information in possession of Government.

J. C. Firth, Esq., Auckland.

AMELIUS M. SMITH,

Assistant Under Secretary.

No. 7.

Mr. J. C. FIRTH to the Hon. the COLONIAL SECRETARY.

(Telegram.)

Auckland, 31st January, 1879.

MESSAGE *re* whitefish ova received. Ova boxes will arrive in icehouse unprotected, and must be at once provided with insulating chests and ample supplies of ice. My time is more than occupied with private and public affairs, but, as my experience may probably help to render the enterprise successful, I will undertake the management requested. Please cause officers in command at Rotorua and Taupo to be instructed to render me assistance about 15th February.

The Hon. the Colonial Secretary, Wellington.

J. C. FIRTH.

No. 8.

The ASSISTANT UNDER SECRETARY to MR. FIRTH.

(Telegram.)

Wellington, 1st February, 1879.

THE Colonial Secretary desires me to thank you for accepting task of receiving and distributing ova to arrive on 12th instant. The "Hinemoa" will be sent to bring it down direct; and you are authorized to procure all necessary ice and labour you may require in transshipment. "Hinemoa" will be fitted with icehouse; but get what you consider necessary.

J. C. Firth, Esq., Auckland.

AMELIUS M. SMITH.

No. 9.

Mr. GREENFIELD to the UNDER SECRETARY.

(Telegram.)

Nelson, 5th February, 1879.

THE Nelson Acclimatisation Society will have everything ready at the snow-fed Lake Rototoi for whitefish ova promised by Government. Can you inform me when it may be expected; what quantity; and whether the "Hinemoa" will land it here *en route*?

The Under Secretary, Wellington.

ALFRED GREENFIELD.

No. 10.

The ASSISTANT UNDER SECRETARY to Mr. GREENFIELD.

(Telegram.)

Wellington, 7th February, 1879.

WHITEFISH ova, to arrive, were not ordered by the Government, but came unexpectedly. If possible, box will be sent you either direct from Manukau or from Wellington, but of this you will be informed by Dr. Hector, from Auckland. He has gone by "Hinemoa" to receive them, and will wire you direct.

A. Greenfield, Esq., Nelson.

AMELIUS M. SMITH,

Assistant Under Secretary.

No. 11.

Mr. S. C. FARR to the Hon. the COLONIAL SECRETARY.

SIR,—

Canterbury Acclimatisation Society, Christchurch, 3rd February, 1879.

I have to acknowledge receipt of communication (No. 165) in *re* whitefish, and, in reply, beg to state that everything shall be in readiness to receive them, and nothing left undone to secure success.

Permit me again to ask for a reply to mine dated 11th November, 1878, and telegram of 20th December.

I have, &c.,

S. C. FARR.

The Hon. the Colonial Secretary.

Hon. Secretary and Treasurer.

No. 12.

The Hon. Dr. MENZIES to the Hon. the COLONIAL SECRETARY.

(Telegram.)

Edendale, 10th February, 1879.

PRAY advise Curator Southland Ponds of number and weight of boxes whitefish ova, date of arrival at Bluff. Give him railway pass when conveying them.

The Hon. the Colonial Secretary.

J. A. R. MENZIES.

No. 13.

The Hon. the COLONIAL SECRETARY to the Hon. Dr. MENZIES.

(Telegram.)

Wellington, 10th February, 1879.

DR. HECTOR will advise Curator *re* fish ova.

The Hon. Dr. Menzies, Edendale.

G. S. WHITMORE.

No. 14.

Mr. H. HOWARD to the UNDER SECRETARY.

(Telegram.)

Invercargill, 10th February, 1879.

PLEASE instruct Railway Manager here to pass men to carry whitefish ova from rail to ponds.

The Under Secretary, Wellington.

HENRY HOWARD,

Curator of Salmon Ponds.

No. 15.

The ASSISTANT UNDER SECRETARY to the ACTING COMMISSIONER of RAILWAYS, Christchurch.

(Telegram.)

Wellington, 11th February, 1879.

KINDLY instruct officials to expedite by all means in their power, and to pass free from Lyttleton to Invercargill, persons in charge of whitefish ova, to arrive by Frisco mail per "Hinemoa."

W. M. Hannay, Esq.,

Acting Commissioner of Railways, Christchurch.

AMELIUS M. SMITH.

No. 16.

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

(Telegram.)

Auckland, 1st February, 1879.

MY preparations to receive whitefish ova completed. I am anxious to place Auckland portion in Taupo without delay. Can "Hinemoa" land me at Tauranga as she goes South. No other boat leaving till 17th. Latter course will lose five days, and may involve loss of ova.

A. M. Smith, Esq., Assistant Under Secretary.

J. C. FIRTH.

No. 17.

The Hon. the PREMIER to Mr. J. C. FIRTH.

(Telegram.)

Wellington, 11th February, 1879.

ORDERS were sent yesterday to land you at Tauranga.

J. C. Firth, Esq., Auckland.

G. GREY.

No. 18.

Mr. H. CONNELL to the UNDER SECRETARY.

(Telegram.)

Oamaru, 11th February, 1879.

PLEASE wire if any whitefish shipment shortly due intended for our Society. What number cases, and when expected at Lyttelton?

G. S. Cooper, Esq., Wellington.

H. CONNELL,
Hon. Secretary, Acclimatization Society.

No. 19.

The ASSISTANT UNDER SECRETARY to Mr. H. CONNELL.

(Telegram.)

Wellington, 11th February, 1879.

WHITEFISH ova to arrive per Frisco steamer not part of any ova ordered by Government, but a small shipment sent by a firm on speculation. Not intended to send any to Oamaru. Dunedin Society might possibly spare you some.

AMELIUS M. SMITH.

H. Connell, Esq., Hon. Secretary, Acclimatisation Society, Oamaru.

No. 20.

Mr. A. M. JOHNSON to the Hon. the COLONIAL SECRETARY.

SIR,—

Trout Dale Farm, Opawa, Christchurch, 1st February, 1879.

If the Government should kindly see fit to intrust me with any of the whitefish ova, I beg to state that I have every appliance for hatching out a very large number, and that I have made especial arrangements, as regards temperature and other details, with a view to carrying out the wishes of the American Government in throwing further light on the successful hatching and rearing of these fish artificially.

My ice-chest is still at Messrs. Macfarlane and Henderson's, Auckland, and is large enough to hold the ova and sufficient ice to bring them here without opening the box during transit to replenish, which is detrimental to the ova.

I have, &c.,

The Hon. the Colonial Secretary.

A. M. JOHNSON.

No. 21.

Mr. A. M. JOHNSON to the Hon. the COLONIAL SECRETARY.

(Telegram.)

Christchurch, 8th February, 1879.

HOPE you will let me have some whitefish ova. Every preparation made.

The Hon. the Colonial Secretary, Wellington.

A. M. JOHNSON.

No. 22.

The ASSISTANT UNDER SECRETARY to Mr. A. M. JOHNSON.

(Telegram.)

Wellington, 10th February, 1879.

YOU had better see Mr. Farr about ova. I have wired him asking if he can let you have some.

A. M. Johnson, Esq., Opawa, Christchurch.

AMELIUS M. SMITH.

No. 23.

The ASSISTANT UNDER SECRETARY to Mr. S. C. FARR.

(Telegram.)

Wellington, 10th February, 1879.

MR. JOHNSON, of Opawa, asks for box of whitefish ova. He has made all arrangements for hatching-out. Can you spare him some from those to be sent you? Have told him to see you.

S. C. Farr, Esq.,

AMELIUS M. SMITH.

Secretary, Acclimatisation Society, Christchurch.

No. 24.

Mr. S. C. FARR to the ASSISTANT UNDER SECRETARY.

(Telegram.)

Christchurch, 10th February, 1879.

WE have made every arrangement to receive the whole of the ova on behalf of the Government for the public, and we think they ought not to be separated, especially as Mr. Johnson's application is for a private purpose.

Amelius M. Smith, Esq., Wellington.

S. C. FARR.

No. 25.

Mr. A. M. JOHNSON to the ASSISTANT UNDER SECRETARY.

(Telegram.)

Christchurch, 11th February, 1879.

SOBRY to hear your arrangements. So many whitefish and salmon shipments have been lost through gross mismanagement of Society here. Farr violently seized box of salmon ova forwarded me, and refused to recognize right of the Government. The many experiences of his jealous ill-will affords no hope that public interest will have any consideration.

Amelius M. Smith, Esq., Wellington.

A. M. JOHNSON.

No. 26.

The ASSISTANT UNDER SECRETARY to Mr. A. M. JOHNSON.

(Telegram.) Wellington, 11th February, 1879.
 GOVERNMENT have directed Dr. Hector to arrange for you to have portion of ova. Meet "Hinemoa" on arrival at Lyttelton.

A. M. Johnson, Esq., Opawa, Christchurch.

AMELIUS M. SMITH.

No. 27.

The ASSISTANT UNDER SECRETARY to Dr. HECTOR.

(Telegram.) Wellington, 11th February, 1879.
 COLONEL WHITMORE wishes you to keep box whitefish ova from Canterbury share to be given to Johnson, of Opawa. Johnson has all arrangements ready, and will meet steamer at Lyttelton. Premier has telegraphed for Firth to be landed at Tauranga. Don't forget Nelson share.

Dr. Hector, C.M.G., Auckland.

AMELIUS M. SMITH.

No. 28.

The ASSISTANT UNDER SECRETARY to Mr. S. C. FARR.

(Telegram.) Wellington, 11th February, 1879.
 ONE box ova has been promised by Government to Mr. Johnson, who has been instructed to meet "Hinemoa" at Lyttelton. The Agent in California advised Government to have the ova hatched out at the nearest possible point to disembarkation. Mr. Johnson's ponds appear to be even nearer than those of Society, which will, however, have greatly the larger share.

S. C. Farr, Esq., Secretary, Acclimatisation Society, Christchurch.

AMELIUS M. SMITH.

No. 29.

DR. HECTOR to the UNDER SECRETARY.

Auckland, 12th February, 1879.
 HAVE directed following distribution in event of being twenty boxes ova, thus: Five, Auckland; one, Nelson; four, Christchurch Society; one, Johnson; four, Dunedin Society; one, Wallacetown ponds; two, Wakatipu; two, Te Anau. Please confirm, and inform parties.

The Under Secretary, Wellington.

JAMES HECTOR.

No. 30.

The ASSISTANT UNDER SECRETARY to DR. HECTOR.

Wellington, 12th February, 1879.
 COLONEL WHITMORE approves your suggested distribution of ova, but, as it depends on actual number of boxes received, thinks it advisable you should wire direct to persons interested in receiving ova as soon as "Hinemoa" sails, advising them of number of boxes shipped to each. Please wire me also on departure of boat.

Dr. Hector, C.M.G., Auckland.

AMELIUS M. SMITH.

No. 31.

Mr. S. C. FARR to the Hon. the COLONIAL SECRETARY.

SIR,— Christchurch, 12th February, 1879.
 In reply to a telegram (No. 163) received yesterday from your office *re* whitefish ova for Mr. Johnson, of Opawa, we think it probable that the Government are unaware that a box, or case contains a series of small boxes, the former containing 150,000, the latter 25,000, *i.e.*, if they are packed as they were last time. If it is one of the latter intended to be given away, then we wish to state that we are positive that to break bulk on board means annihilation, nothing less; and, although we have been put to great expense in making preparation for its reception, hatching-out, and conveyance to Lake Coleridge (the water to which it was allotted), and, at the request of the Government (*vide* telegram 123, on the 30th ultimo), yet, rather than it should prove a failure under our hands, we deem it advisable to decline taking charge of any.

There is no desire on our part to obstruct or to act contrary to the wishes of the Government, nor to deprive Mr. Johnson of a portion for his own private use; but, believing it to be *pro bono publico*, for which we act in all our works, we are anxious that there should be no hitch, and that every care might be taken to insure success. To secure this, the less handling the ova has the better.

In reference to distance, there can be but about ten minutes difference, and that so much nearer their final destiny.

We have thought it right to convey our opinions and feelings in the matter as above, based as they are upon the experience of several years. Waiting reply,

The Hon. the Colonial Secretary,
 Wellington.

I have, &c.,
 S. C. FARR,
 Hon. Sec. and Treasurer.

No. 32.

Mr. W. ARTHUR to the UNDER SECRETARY.

(Telegram.)

Dunedin, 11th February, 1879.

YOUR telegram and letters, regarding whitefish ova from America, both received. The Otago Acclimatisation Society will do its best to insure success to the introduction of the fish. Have handed correspondence to Mr. Begg, our Secretary.

G. S. Cooper, Esq., Wellington.

W. ARTHUR.

No. 33.

Dr. HECTOR to the Hon. the COLONIAL SECRETARY.

(Telegram.)

Auckland, 13th February, 1879.

NO ova sent from America. Weston on board. Took charge of prairie hens, for Christchurch, from Creighton, but Creighton never mentioned ova to him. Very disappointing, as all arrangements were most perfect.

The Hon. the Colonial Secretary, Wellington.

JAMES HECTOR.

No. 34.

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

(Telegram.)

Auckland, 13th February, 1879.

EVERY preparation for whitefish ova completed at considerable expense. Mail steamer just arrived, no ova on board. In future, to avoid disappointment, it may be advisable to arrange for telegraphic message of actual shipment at San Francisco.

The Assistant Under Secretary, Wellington.

J. C. FIRTH.

No. 35.

The Hon. Sir GEORGE GREY to Mr. J. C. FIRTH.

(Telegram.)

Wellington, 14th February, 1879.

I AM much disappointed about whitefish ova. Was glad to hear of your complete preparations, and feel sorry that, when such preparations had been made, so good an opportunity was lost.

J. C. Firth, Esq., Auckland.

G. GREY.

No. 36.

The Hon. the COLONIAL SECRETARY to Mr. R. J. CREIGHTON.

SIR,—

Colonial Secretary's Office, Wellington, 19th February, 1879.

With reference to your letter of the 23rd December last, addressed to the Hon. J. Macandrew, and referred by him to this department, advising him of the action taken by you respecting the purchase and shipment of a supply of whitefish ova for this Government, and asking Government to take measures for receiving them by the steamer sailing in January (by which occasion you would more fully advise), I have to inform you that no ova were received by the San Francisco mail steamer which arrived in Auckland on the 13th instant, neither was there any communication received from you stating the reason of their not being forwarded.

I should inform you that, expecting the ova to arrive by the boat stated, the Government took every precaution in their power to insure the shipment proving a success, and to this end incurred a considerable expense. Moreover, serious expense and inconvenience were entailed upon the various Acclimatisation Societies interested, all of which have now proved useless owing to the non-arrival of the ova. To avoid a similar accident happening again, I would suggest that it would be advisable for you to inform this Government by telegraph when a ship has actually started bearing ova for New Zealand. This can be done by inserting in your monthly telegram to the Postal Department, notifying the departure of the mails for New Zealand, the following words: "Million whitefish ova" or "Million salmon ova," as the case may be—of course stating the actual number of ova shipped. On receipt of such notice the Government will be able to make the necessary arrangements for the distribution of the ova on the arrival of the mail steamer.

R. J. Creighton, Esq., San Francisco.

I have, &c.,

G. S. WHITMORE.

P.S.—Since the above letter was written Mr. Macandrew has shown me your private note of the 21st January, announcing your inability to send the whitefish ova by the mail steamer then leaving.

No. 37.

EXTRACT from Letter of Mr. R. J. CREIGHTON to the Hon. Mr. MACANDREW.

DEAR SIR,—

San Francisco, 21st January, 1879.

* * * * *

It was impossible to get whitefish through this month, and I find that only half a million is to the fore, but this will be sufficient to take the risk upon if they come through in time next month.

Hon. Mr. Macandrew.

I have, &c.,

ROBT. J. CREIGHTON.

No. 38.

Mr. FIRTH to the ASSISTANT UNDER SECRETARY.

SIR,—

Auckland, 14th February, 1879.

I have the honor to state that, in accordance with your request, I had made the necessary preparations for properly transhipping the million whitefish ova to arrive by mail steamer "Australia," due yesterday. As my telegram will have informed you, the ova did not arrive. I regret this, as the labour and expense have been considerable. I retain the twenty insulating boxes and their fittings here in case the ova arrives by next mail. The ice, being in the "Hinemoa" icehouse, went on in her to Wellington, together with three ice-boxes marked "Ice, C.D. 1.," retained on board in error, and which please return to me. In future it would be better to have telegraphic advice of actual shipment before making costly preparations. I enclose an account of the expenses incurred.

The Assistant Under Secretary, Wellington.

I have, &c.,
J. C. FIRTH.

Enclosure in No. 38.

The NEW ZEALAND GOVERNMENT in Account with J. C. FIRTH.

	£	s.	d.
February 5 to 13. To cash paid for telegrams	1 10 9
" American cloth	0 4 10
" cartage	0 12 6
" labour on boxes	6 13 0
" Owen and Graham's account, blankets	4 15 0
" " " " American cloth	2 10 0
" G. Grey's account, ice, &c.	25 15 8
" Sash and Door Company, 20 fish-boxes	4 0 0
" " " " 3 ice-boxes	1 17 6
" Anderson's account, felt, &c.	11 10 8
" Porter and Co.'s account, hinges, screws, &c.	2 0 10
			£61 10 9

Auckland, 17th February, 1879.

No. 39.

The UNDER SECRETARY to Mr. J. C. FRITH.

SIR,—

Colonial Secretary's Office, Wellington, 5th March, 1879.

I have the honor to acknowledge the receipt of your letter of the 14th ultimo, and, in reply, am directed to inform you that Captain Fairchild will be asked to return to you the ice-boxes left on board the "Hinemoa" in error.

As regards the account which accompanied your letter, I am to state that, on sending a voucher to the Audit for payment to you of the £61 10s. 9d., the Auditor-General asks for sub-vouchers, and the voucher is enclosed in order that it may be returned with as many receipts in its support as you may be able to furnish.

J. C. Firth, Esq., Auckland.

I have, &c.,
G. S. COOPER.

No. 40.

EXTRACT from a Letter from Mr. R. J. CREIGHTON to the SECRETARY, General Post Office.

San Francisco, 4th August, 1879.

* * * * *

Be good enough to say to Mr. Macandrew that I have had a letter *re* whitefish, which will come early and on more favourable terms than were offered last year. Mr. Craig will take one million for Auckland, and I take another for the colony. As there will be considerable charges to pay, a draft for \$200 or \$250 should be forwarded by return mail. I will telegraph in time to make all arrangements in the colony.

* * * * *

The Secretary, General Post Office.

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

No. 41.

The COLONIAL SECRETARY to Mr. R. J. CREIGHTON.

SIR,—

Colonial Secretary's Office, Wellington, 13th September, 1879.

I have the honor to inform you that, at the request of the Hon. Mr. Macandrew, a sum of £50 has been advanced to you to defray expenses connected with the shipment of one million whitefish ova, for which you have reported that you are in negotiation.

A draft is enclosed for the amount, for which you will be good enough to account when it is expended.

As soon as your arrangements for the shipment of the ova are completed, I should be glad to be advised fully on the subject; and, as an expected consignment of fish ova requires a considerable amount of trouble to be taken, and of expense to be incurred in making preparations for its reception and distribution, I should be glad if you would send me notice of the actual shipment by telegraph, in the manner suggested in my letter to you of the 24th February last.

I have, &c.,
G. S. COOPER,
(for the Colonial Secretary.)

R. J. Creighton, Esq., San Francisco.

No. 42.

Mr. R. J. CREIGHTON to the Hon. Mr. MACANDREW.

SIR,—

San Francisco, 1st September, 1879.

In accordance with your instructions last year, I have arranged for an early shipment of whitefish ova on better terms than were then offered. Accompanying correspondence* will explain what I have done. I shall take every pains to have the eggs forwarded in prime condition. You will perceive that I have taken precautions to have instructions prepared for their hatching by Mr. Clark, who promises to send a model of his hatching-trough. I will telegraph the departure of the ova from San Francisco.

Hon. J. Macandrew.

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

No. 43.

The UNDER SECRETARY to Mr. R. J. CREIGHTON.

SIR,—

Colonial Secretary's Office, Wellington, 3rd October, 1879.

I have the honor, by direction of the Colonial Secretary, to acknowledge the receipt of your letter of the 1st ultimo, addressed to Mr. Macandrew, and to express to you the thanks of the Government for the trouble you are taking in arranging for another shipment of whitefish ova from America, and for your endeavours to insure its proving successful.

R. J. Creighton, Esq., San Francisco.

I have, &c.,
G. S. COOPER.

No. 44.

Mr. R. J. CREIGHTON to the Hon. Mr. MACANDREW.

Office of the Post Publishing Company, 500, Montgomery Street,
San Francisco, 29th September, 1879.

SIR,—

In continuation of my correspondence *re* whitefish, I beg to call your attention to the accompanying documents:—

First: The Auckland Acclimatization Society refused to approve Mr. Craig's order, and I verbally released him from it.

Second: I wrote to Mr. Clark apprising him of the fact, and, while continuing the order for two million eggs, put it to him whether he could not make a reduction on cost. In doing so, I bore in mind the interests of the colony, because, although he makes no reduction whatever, the price for two million is much lower than the original order for one million, with freight and expense of an agent added. The charge was to be 70 cents a thousand, with the expenses of Mr. Clark and freight paid. I have not since heard from him in reply, and I hardly think I shall in time for this mail. As I regard this matter as of more importance to New Zealand than the introduction of salmon, I am naturally anxious about it. Should Mr. Clark refuse to make any abatement in price, I shall order them, anyhow, and, should the Government disapprove of my action, let a calculation be made and charge me with any surplus over and above what one million eggs would have cost upon the original agreement. I am sending 40,000 eggs, as you will see by the accompanying letter, which I hope will add to the food supply of the colony. The economical gain of this fish is found in the fact that, while it is admirable for table fresh and adapted for curing, it lives in lakes and rivers, and therefore would be at the door of the miner and farmer in the centre of Otago, for example.

However, I have received from Mr. Clark a most interesting and valuable letter upon the subject of fish culture, in its bearing upon the propagation of whitefish. This gentleman's father was the first man who ever propagated whitefish artificially, and he has made it a speciality. Professor Baird referred me to him in the first instance for reliable information on the subject. His letter should be printed and sent to every acclimatization society in the colony, because, should ice be prepared to pack them in upon arrival and the distribution take place under favourable circumstances, nearly every section should be stocked with fish. The bulk, however, should be hatched out at Auckland, as suggested by Mr. Clark, to guard against accidents.

I would also respectfully suggest that the accompanying article, with illustration, from the *Scientific Manufacturer*, together with Mr. Clark's address on the artificial breeding of fish, or as much of it as may be pertinent to the subject, be printed along with his letter of advice. These documents throw a great deal of light upon the subject which those who have not experimented cannot know.

In his letter Mr. Clark also says, referring to models of his patent fish-box, which accompany this letter, "I advise the use of this box, not for any pecuniary benefit it may be to me, but for the success of your Government in hatching the whitefish. The box is now largely used by States and private parties, and one of the largest hatching-houses in the United States is built on this plan (that of Ohio, at Toledo). The model I send you is for you or your Government, and I send it thus early hoping your Government may adopt it this season before the eggs are sent. Any right I have in the box I freely give the Government the use of."

Now, in this matter I have to request, first, that, should you adopt this model, which is applicable to all kinds of fish, and preserves the largest possible number of fry, you shall cause duplicates to be

* For enclosures see H.—14, 1879.

made at the Government workshops, and furnished to responsible parties. This would facilitate the hatching process.

Second, inasmuch as this is a valuable patent, and as Mr. Clark generously donates it through me to the colony, I have to request that you will take steps to preserve his proprietary interest. This can be easily done not alone in New Zealand, but in Australia, and I think it is as small a return as the colony can give to this gentlemen. A short Act, if requisite, could be passed, and upon proper representations I have no doubt the neighbouring colonies would adopt any suggestion you might make. As a pure matter of equity, I think this should not be lost sight of. I have not written to Mr. Clark on the subject, but shall in due course.

You will pardon these suggestions, which I conceive to be necessary under the circumstances.

The Hon. J. Macandrew.

I have, &c.,

ROBT. J. CREIGHTON.

Enclosure in No. 44.

Mr. F. N. CLARK to Mr. R. J. CREIGHTON.

United States Commission, Fish and Fisheries,

Northville, Michigan, 27th August, 1879.

AGREEABLY to my promise in a former letter, I herewith transmit to you my plans and ideas in regard to the hatching and care of young whitefish (*coregonus albus*). You will find, accompanying this letter, a model of my patent hatching-box and nursery-trough, which I think absolutely necessary in the hatching of this fish. My practical hatching-box is filled with trays 9 inches by 12 inches, and everything proportionately large. The nursery-trough in my house is 20 inches wide by 25 feet long, with a depth of water of 2 feet. You will find, with the nursery-trough it will hold from three to four million fish without any escapes. The fish will do well in this trough for at least ten days, but my plan is to commence shipping as soon as the eggs commence hatching, and continue until all are disposed of: the fish are running into the trough, and we are taking out all of the time for a period of three to four weeks. The eggs should be placed on the trays not more than one deep if there is plenty of room in the hatching-boxes, but will bear two deep if necessary.

The eggs should be looked over once a day, being careful to remove all dead eggs, and washing the eggs when necessary to clean them from sediment: to wash them, take a hold of tray at each end and gently work them up and down. When the fish commence hatching they will work down the hatching-trough into the nursery-trough, but I should advise the removal of the trays once a day, emptying the eggs, fish, and shells into a pan; then turn the fish and shells off into the first compartment of nursery-trough, when you will find the most of the shells will settle, and the fish will work down to the last. What shells do not settle in the first compartment will find the bottom in the next; thus you will find the fish all in the last compartment, free and clean from shells and sediment, where they should be dipped from when shipping. In pouring the fish off from the pan, you will find the eggs in bottom of pan, which should be carefully placed back on the trays. I have in my hatching-house a trough for placing the trays when removed from hatching-box for looking them over. This trough runs the same length of hatching-trough, is only $1\frac{1}{2}$ inches in depth, just water enough to keep the eggs under water.

In reference to hatching the eggs at the lake or lakes where you wish to plant them it is, of course, better, everything else being equal; but I think, with eggs going the distance from here to New Zealand, the sooner they can be placed in the hatching-boxes the better. I should advise having a hatching-house as near the point where your steamer first touches as you can. With good water you can transport the young fish in cans for eight or ten days if there can be water procured on the route of a low temperature, or ice; temperature of water should not be above 50° . I transport whitefish about 1,500 to 2,000 to the gallon of water.

I send you by this mail a short essay on the whitefish, written by my father, the late N. W. Clark, which may give you some additional light on the subject, also description of the box from the *Scientific Manufacturer*, of June 15th, 1874, which describes the box. You will also find, in the report of U.S. Commission of Fish and Fisheries of 1872-73, a description of letters patent of the box.

I advise the use of this box, not for any pecuniary benefit it may be to me, but for the success of your Government in hatching the whitefish.

The box is now largely used by States and private parties, and one of the largest hatching-houses in the United States is built on this plan, (the State of Ohio, at Toledo.)

The model I send you is for you or your Government, and I send it thus early hoping your Government may adopt it this season, before the eggs are sent. Any right I may have in the box I freely give to your Government the use of.

About the prairie chickens: I am sorry to say we have none here; the nearest point is Chicago. However, I will write to dealers there, and see what I can do for you.

The eggs for your Government, as well as for Mr. Craig, will be forwarded some time in December. I will inform you by letter later. I feel greatly obliged to Mr. Craig for his order of whitefish; also receive my thanks for the work you have done for me in getting this order.

I will take great care in shipping the eggs, and shall get instruction from the Superintendent of Express as to their agents and messengers.

The order for yourself I do not understand whether to be 10,000 or 40,000. I shall, however, take the liberty of donating the latter number to you.

Hoping the views I have written you, with what I have sent in printed form, may help you and your Government,

R. J. Creighton, Esq., San Francisco.

I have, &c.,

FRANK N. CLARK.

Any further questions you may wish to ask will be cheerfully answered.

Sub-Enclosure to Enclosure in No. 44.

[Extract from "Scientific Manufacturer," Chicago and Detroit, 15th June, 1874.]

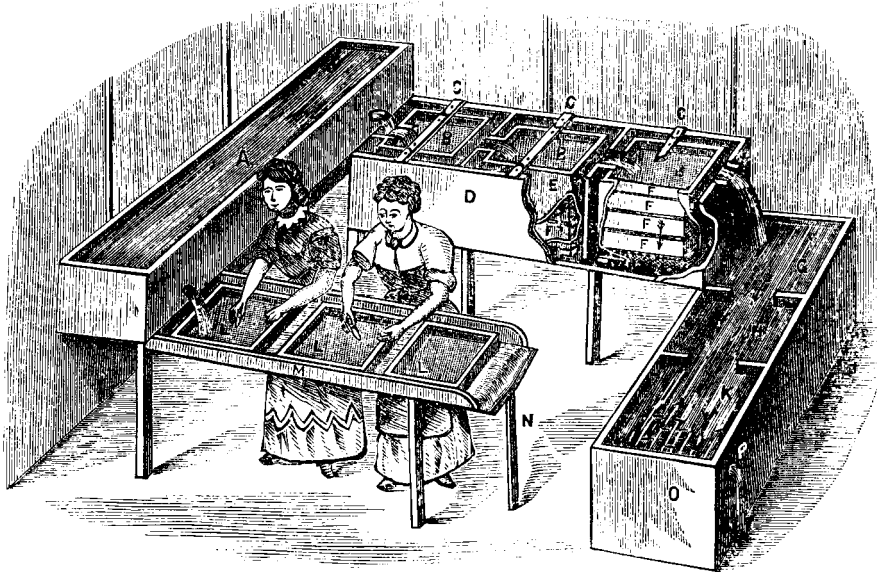
IMPROVEMENT IN FISH-HATCHING APPARATUS.

THE re-stocking of the rivers and lakes of the country with valuable fish is a matter of so much importance that it has not only attracted the attention of the public, but has caused the enactment of laws and

the appointment of proper officers to carry these laws into effect, with proper appropriations to provide for a new, and we hope, hereafter, an inexhaustible food supply. In this connection it is a pleasure for us to illustrate the latest improvement in artificial fish-hatching boxes, with a suitable construction for the rapid separation of the dead eggs, with necessary and suitable tanks and sluiceways for storing the fish when hatched, and separating them from the shell of the eggs.

That the artificial propagation of our best food-fishes is of the greatest benefit to the human race in the most rapid and cheapest manner possible, is universally admitted by all thoughtful minds. That this desideratum has been accomplished to the fullest extent is also admitted by highly scientific and practical fish breeders who have witnessed the operation of this valuable improvement, which has been in operation on a large scale at Clarkston, Michigan, during the past year. An examination thereof is earnestly solicited, knowing full well that all who have an interest in this great work of replenishing our exhausted waters with the best varieties of food-fish will adopt this method over all others now in use.

This invention consists in the construction of a suitable building, at one end of which, nearest the water supply, are tanks, containing many barrels of water conveyed through faucets from spring or lake, as the nature of the eggs to be hatched may require, which passes through flannel screens, and is thus filtered from all sediment before entering the troughs containing the hatching-boxes. These troughs are about one foot (or more, as the case may be) in width and ten inches deep, each of them containing a series of water-tight compartments, which contain the same number of boxes of less dimensions, also water-tight, except the bottoms, which are covered with finely-perforated copper or brass wire cloth to prevent the eggs or fish from escaping when hatched out.



These last boxes are filled with several screens, each containing many thousand eggs, and may be of sufficient capacity to hatch an almost unlimited number of eggs.

Over these screens, and after the eggs are equally distributed over them, there is placed a finely perforated metallic plate, B, and the whole is kept in place by a cross-bar, C, fastened to the sides of the main trough. These boxes are elevated upon feet to raise them from the floor of the trough, to allow a free passage of water under them, and to raise them above any sediment that may pass through and settle on the said floor.

The first screen that lies over the copper cloth is also raised to gain free circulation to the water. The main trough must have a descent of 3-16th of an inch to the foot, to form sufficient fall of water into each separate box to produce a moderate current of water down through the eggs.

This arrangement completed, the water is let in at the upper end of the long troughs upon the perforated cover, which spreads it equally over the whole part of the eggs below, which, owing to the declivity of the main trough and the water-tight partitions in them, causes it to flow over the said partition on to the next below, which produces an up-and-down movement to the current running throughout the whole series of hatching-boxes, making changes around and through the whole number of eggs in each compartment constant while in process of hatching.

Many more fish are hatched by this process than can be stored and cleansed from their shells and other impurities consequent upon the last stages of hatching; hence it becomes necessary to add a store-room, and an additional process for cleansing the fish when hatched out from the impurities above named.

To remedy this trouble a series of large tanks, G, H, K, are erected for the reception of the water as it leaves the hatching-troughs. From ten to twenty days are required from the commencement of the hatching season to its close, consequently a proportionate number of fish are hatched daily; these are washed from the unhatched eggs into the first receiving tank before-mentioned, and allowed to stand quietly without much current to the water in which they are. The eggs thus cleansed are returned to the hatching-boxes from which they came. As soon as the shells from the eggs are well settled to the bottom, a moderate current of water is allowed to flow through an opening to the next tank below, carrying the cleansed fish with it, depositing any impurities that may yet be left with the fish in said settler; and the fish are allowed to follow on with the current, passing still through another opening to the large reception-room, where they remain in perfect condition in pure running water until placed in the waters designed for them.

M is a shallow trough supplied with water drawn from the main tank, being the same temperature of that in which the eggs are hatched.

During the first few weeks of their incubation many imperfect and dead eggs are found, and for the purpose of removing them from the good ones the screens upon which they lie are removed from the hatching-boxes to the shallow trough of running water, and picked out in the usual way with forceps, as shown by the figures in the illustration.

This invention has been pronounced by many of the most scientific and practical fish-breeders in the United States to be the most practical and successful mode of propagating fish of any kind in the world, as has been demonstrated during the past year at Clarkston, where the patentee resides.

In proof of these assertions, and to show the practical results which have been achieved during the first year of its trial, it is only necessary to state that there were only 1,800,000 of the ova of the whitefish placed in this establishment at Clarkston, and that at least one-tenth of them were spoiled by standing in stagnant water too long before being placed in the hatching-boxes, which was accomplished on the 18th day of November, 1874.

Deducting the 10 per cent. which were lost in the start, leaves only 1,682,000 good eggs to start with. These eggs were well looked after by experienced persons from the time they were placed in the hatching-boxes until about the 1st of April, being about four and a half months, which is the natural time for their incubation, the water being at a uniform temperature of about 32½ degrees Fahrenheit.

The means of hatching by this improved process is so perfect in its arrangements that it only cost, to hatch out the number which were actually hatched, being 1,500,018, together with many thousand brook trout, as follows:—

1 Foreman, \$100 per month, 4½ months	...	...	...	...	\$450·00
2 Experienced men at 12s. per day, 249½ days	...	...	...	...	374·25
6 Girls to pick dead eggs, 6s. per day, 143 days	...	...	...	...	107·25
Total	...	...	...	...	\$931·50

It will be borne in mind that 5,000,000 of this class of fish ova could have been hatched with only one additional experienced man, and the extra help in picking, at the same rates per day, would cost \$2,017·25 to hatch the 5,000,000, being about 40 cents per thousand. Can any one show such favourable results in hatching this class of fish ova?

As fast as these fish were hatched, they were separated from the shells by means of the simple process as above described, and left in clear running water, to be transported to the waters designed for them at the pleasure of the Superintendent.

These young fish were transported to 194 different lakes in different parts of the State in such perfect condition that it is asserted by those who had them in charge that there were not to exceed one dozen in the whole 1,500,018 that were lost. This is believed to be without a parallel in the world, considering the delicate nature of the fish.

It is admitted by all who have had any experience in hatching this class of fish ova, that they are the most difficult of all others to carry through the process of incubation.

Not more than two persons on this continent and, as far as is known, throughout the whole world, have this species of fish eggs ever been hatched successfully to any great extent, and it is well known, so difficult has it been found by any process heretofore known to hatch them, that many pisciculturists, who are breeding other varieties of the salmonoid family without any difficulty, they have made total failures in their attempts in hatching this variety, and have abandoned the attempt in despair.

All other species of fish can also be hatched by this process, with equal additional advantages: in fact, by this greatly-improved process fish-breeding is made so plain and cheap that any one who has fair reason and common sense, can embark in the business with an assurance of perfect success, and thus may the whole waters of the world be made to produce more wholesome food for its teeming and rapidly-increasing population than the land we till.

For the satisfaction of those who take an interest in the increase and growth by artificial means of this delicate and valuable whitefish and the food that sustains them in their infancy, the patentee has ascertained, both scientifically and practically, within the last few months, and soon hopes to lay his information before the public.

This important improvement was invented by the Hon. N. W. Clark, the celebrated fish-breeder, of Clarkston, Oakland County, Michigan, who obtained his patent through the Mechanic and Inventor Association, Detroit, Michigan. Mr. Clark desires us to cordially invite all interested to visit his establishment and see the operation of his plans, or he will be happy to furnish any further desired information, if addressed as above.

No. 45.

Mr. R. J. CREIGHTON to the UNDER SECRETARY.

SIR,—

San Francisco, 27th October, 1879.

I have to acknowledge receipt of your letter of the 13th September. In reply, I beg to state that I have signed vouchers for advance, and enclosed it in a note to the Cashier of the Treasury, as requested on voucher. Touching the whitefish, I shall not fail on their shipment to telegraph, and the instructions last year and this were superfluous, inasmuch as this was the course I adopted myself on a former occasion without any instructions at all. I am sorry that any inconvenience or loss occurred last year, but I deemed it prudent not to risk sending the ova at an advanced period. If the eggs had been forwarded and had not proved a success the loss of them would have been more discouraging to the cause of acclimatisation than any expenditure the colony could have been possibly put to, under rational management, providing for their reception.

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

I have, &c.,

ROBT. J. CREIGHTON.