

1873.

NEW ZEALAND.

INTRODUCTION OF SALMON OVA,

(FURTHER PAPERS RELATIVE TO).

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

No. 1.

Mr. G. S. COOPER to Mr. BUTTS.

(Telegram.)

Government Buildings, 4th October, 1872.

No. 592: Salmon Ova.—Dunedin Society unable to contribute to shipment. Must now modify instructions to Agent-General. Can your contribution of £300 be relied on? Reply at once.

Butts, Secretary, Acclimatization Society, Invercargill.

G. S. COOPER.

No. 2.

Mr. G. S. COOPER to Mr. FARR.

(Telegram.)

Government Buildings, 4th October, 1872.

No. 593: Salmon Ova.—Dunedin Society unable to contribute to shipment. Must now modify instructions to Agent-General. Can your contribution of £100 be relied on? Reply at once.

Farr, Secretary, Acclimatization Society, Christchurch.

G. S. COOPER.

No. 3.

Mr. BUTTS to Mr. G. S. COOPER.

(Telegram.)

Invercargill, 5th October, 1872.

Our contribution may be relied on.

The Under Secretary, Wellington.

EDWARD BUTTS,
Secretary, Acclimatization Society.

No. 4.

Mr. FARR to Mr. G. S. COOPER.

(Telegram.)

Christchurch, 7th October, 1872.

£100 pounds promised by Canterbury Society still payable.

The Under Secretary, Wellington.

S. C. FARR.

No. 5.

Mr. A. M. JOHNSON to the Hon. W. GISBORNE.

SIR,—

Acclimatization Gardens, Christchurch, 7th November, 1872.

I was pleased to hear that you were endeavouring to secure for our Society some portion of the expected ova from England, as I consider it very desirable that a proportionate share of the trout ova and a little of the salmon should be obtained by the Canterbury Province, as multiplying the chances of success.

One trifling oversight or accident might frustrate the whole undertaking.

From some of the members of the Assembly who called to pay their respects to our trout, I gather that the real difficulty in the matter is the unwillingness on the part of the Southland Society to permit the chance of injudicious interference at the time of re-shipment. I would beg therefore to propose that this difficulty be overcome by the shipment on arrival being placed under the charge of the representative of the Southland Society, to see that the boxes are not opened and not exposed more than possible without a surrounding of ice. That one-fourth of the trout ova, or some portion of each variety, with some boxes of salmon ova, be handed over to the representative of the Canterbury Society; the boxes not to be all taken from one place, but some from the top, middle, and bottom.

I make this communication in an unofficial manner, as one taking a great interest in the subject, and as one that has personally spent more money and time in the introduction of trout, and also attempted introduction of salmon, than any one else in New Zealand.

I have, &c.,

The Hon. W. Gisborne, Wellington.

A. M. JOHNSON, Curator.

No. 6.

Dr. HECTOR to the Hon. the COLONIAL SECRETARY.

14th November, 1872.

I UNDERSTAND that everything is ready at the Makarewa Ponds to receive the ova, and that it is only necessary to inform the Secretary of the Society there when advice is received from the Agent-General of the shipment having been made, so that he may be ready to receive and transport the ova to the ponds immediately on their arrival at the port (Bluff or Port Chalmers) to which the ship is consigned.

If it is decided to divide the ova, it will be necessary that a qualified person, provided with apparatus, should attend at the same time on behalf of the Canterbury Societies that are to receive a share.

No other steps can be taken to prepare for the reception of the ova that I think of at present.

The Hon. the Colonial Secretary.

JAMES HECTOR.

No. 7.

Dr. HECTOR to the Hon. J. HALL.

(Telegram.)

Invercargill, 2nd January, 1873.

HOWARD, Curator of Acclimatization Society here, will take delivery of the ova. If shipped to Port Chalmers he will give share, as directed, to agent of Christchurch Society: if to Bluff, Christchurch agent must attend there. Howard will be ready to devote his whole attention on ships being telegraphed. Ponds here sufficient for 100,000: if more expected please advise early.

Hon. J. Hall, Wellington.

J. HECTOR.

No. 8.

Mr. FARR to the Hon. J. HALL.

DEAR SIR,—

Christchurch, 6th January, 1873.

I am instructed by the Council of the Canterbury Acclimatization Society to ask the General Government to grant that a small portion of the salmon and salmon trout ova be forwarded to Lyttelton for this Society on its arrival in New Zealand, provided the boxes in which it is packed are accessible, and could be given us without danger to the remaining ova.

This request is made with a view of dividing and probably lessening the risk in hatching; and feeling assured that our ponds are admirably adapted for the experiment, from the fact that their temperature can be regulated to almost any required degree by the aid of our artesian wells, we trust will be sufficient argument for the Government to grant the request.

I am, &c.,

The Hon. J. Hall, Colonial Secretary, Wellington.

S. C. FARR, Hon. Sec.

No. 9.

Mr. G. S. COOPER to Mr. FARR.

SIR,—

Colonial Secretary's Office, Wellington, 10th January, 1873.

I have the honor to acknowledge the receipt of your letter of the 6th instant, requesting to be supplied with a portion of the salmon ova expected from England, and am directed by the Colonial Secretary to state that Government will endeavour to meet the wishes of the Society.

As soon as Government are informed of the manner in which the ova is packed and the port to which it is shipped, you will be again communicated with.

I have, &c.,

S. C. Farr, Esq., Hon. Sec.,
Acclimatization Society, Christchurch.

G. S. COOPER,
Under Secretary.

No. 10.

Mr. BUTTS to Mr. G. S. COOPER.

SIR,— Southland Acclimatization Society, Invercargill, 4th January, 1873.

By desire of Dr. Hector, I have the honor to inform you that the Curator of the Society, Mr. Howard, will be prepared to take charge of the salmon ova on its arrival in New Zealand.

This gentleman has been engaged for the last four years solely in fish hatching. He has taken every pains during that period to render himself proficient, not only by collecting and reading every book published on the subject, but also, practically, by visiting the Waiwarau ponds in Otago (when under the charge of Mr. Dawbin), and the salmon ponds in Tasmania. His success here has been very marked, especially during the last winter, when several thousand trout have been successfully hatched.

Our establishment is at present in good working order, and is ready for the reception of 100,000 eggs. I do not imagine that the number of ova transmitted to New Zealand will greatly exceed this quantity, but should that be the case we can, within a week or ten days, double or treble the amount of room by increasing the number of hatching boxes and laying syphons on to them from the reservoir.

Dr. Hector having asked if a share of the ova could be conveniently given to the other Provinces, I informed him that there appeared to be no difficulty in doing so, and that, as regards the sea trout ova, it would be advisable to distribute them; but it should be understood that the whole shipment comes in the first instance into the charge of Mr. Howard, who will undertake the responsibility, and distribute the ova as you may direct, on being satisfied that proper preparations are made for taking charge of and forwarding them to their ultimate destination.

I shall be glad to receive as early intimation as possible of the name of the vessel which is bringing the shipment, and a copy of the invoice which will be forwarded to you.

In the expectation that the destination of the vessel will be Dunedin, I have arranged that a steamer shall be in waiting to transmit the ova, without the slightest delay, to the Bluff.

I have, &c.,
EDWD. BUTTS,
Hon. Secretary.

No. 11.

Mr. G. S. COOPER to Mr. BUTTS.

SIR,— Colonial Secretary's Office, Wellington, 20th January, 1873.

I have the honor to acknowledge the receipt of your letter of the 4th January, 1873, stating that the Curator of the Southland Acclimatization Society will be prepared to take charge of the salmon ova on its arrival in New Zealand.

In reply, I am to thank you for your communication, and to state that the Government will communicate to you information as to the shipment of the ova as soon as it reaches them, which they expect will be by the next mail.

E. D. Butts, Esq., Hon. Sec.,
Acclimatization Society, Invercargill.

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

No. 12.

The AGENT-GENERAL to the Hon. the COLONIAL SECRETARY.

7, Westminster Chambers, Victoria Street, Westminster, S.W.,
27th November, 1872.

SIR,—

Referring to former correspondence on the subject of shipping salmon ova to New Zealand, I have now to report, for the information of the Government, that I have induced Messrs. Shaw, Savill, and Co. to lay on the first-class iron-clad clipper ship "Lutterworth," 882 tons burden, for Dunedin, and that she will sail on or about the 20th proximo.

I am glad to be able to report further that Mr. Youl, who has had considerable experience in the taking and shipping of salmon ova to the Colonies, has very kindly undertaken to assist me in this matter by personally superintending all the necessary operations.

The ice-chamber is now in course of construction, and Messrs. Shaw, Savill, and Co. are affording Mr. Youl every facility in their power, in adapting the hold of the vessel to the necessary fittings and accommodation.

I have applied to the Severn Fishing Conservators for permission to take the salmon ova from the rivers within the district under their control, and I have received, in reply, an assurance of their active co-operation and assistance in the matter.

I have also written to Mr. Lander Lindsay, of Perth, inviting his aid in the enterprise, more especially with reference to a supply of ova from the Tay.

Mr. Youl has over and over again urged on my attention the importance of there being some responsible person on the spot to receive the ova on its arrival in New Zealand, and to superintend its conveyance to the breeding ponds.

As has been already pointed out in Mr. Buller's memorandum forwarded in my letter of 26th June (No. 326), the slightest inattention or neglect there would render perfectly useless all the previous care in packing and shipping the ova.

It is further of importance that the breeding troughs for the reception of the ova on its arrival in New Zealand should be all in perfect order when required. On this point, Mr. Youl has himself written at some length, and I beg to forward herewith a copy of his letter.

If the experiment is to be crowned with ultimate success, it is of the first importance that Mr. Youl's directions should be followed in every particular. I may venture to suggest that if Dr. Hector could himself be present when the ova is landed, and personally direct all the operations, it would be of the utmost advantage, especially as there are so few persons in the Colony to whom it would be safe to intrust such a duty.

I have, &c.,

I. E. FEATHERSTON,

Agent-General.

The Hon. the Colonial Secretary, Wellington, N.Z.,

Enclosure in No. 12.

Mr. YOUL to Mr. W. L. BULLER.

MY DEAR SIR,—

Waratah House, Clapham Park, 27th November, 1872.

It being of the utmost importance that the breeding troughs for the reception of the salmon ova now about to be shipped for New Zealand should be all in perfect order to receive them immediately on their arrival, or the whole experiment will be a failure, I write to you to urge upon those in authority at Otago to have the matter well looked into beforehand.

I am confident the troughs for the reception of the ova shipped in the "Celestial Queen" were not in a fit condition to receive the ova when they were placed in them.

If the troughs have been made any time, or used, I would advise that the gravel be taken out and washed, and if possible all boiled, to destroy the larvæ of any insects that would come to life and prey upon the ova or young fry.

The troughs ought to be watertight, and the supply be regulated so as to prevent too great a stream of water from running over the ova.

It is of the utmost importance that the ova should lay perfectly quiescent; any rolling motion of the water passing over them is death. The specific gravity of an ovum is only a little greater than that of water, hence the necessity of great care.

I believe to insure success it is necessary that a pond with a rill running into it, with a gravelly bottom, be provided to receive the young fry when they are above two months old, and to keep and feed them in it until they have put on the silvery smelt dress and are ready to emigrate to the salt water.

It is also of the utmost importance that the ova be placed in the troughs as soon as possible after the arrival of the ship.

The young fish cannot be hatched in moss, and when the time comes that they should come forth, if not in water they die.

A few days or even a few hours' detention in the moss may therefore cause the death of thousands, which, if placed in water, would have been saved.

I have never been able to hatch any salmon ova that had been kept in moss and ice over 100 days.

Yours, &c.,

JAMES A. YOUL.

W. L. Buller, Esq., 7, Westminster Chambers.

No. 13.

Mr. G. S. COOPER to Mr. BUTTS.

SIR,—

Colonial Secretary's Office, Wellington, 4th February, 1873.

I am directed by the Colonial Secretary to transmit to you, for your information, the accompanying copy of a letter from the Agent-General, reporting the arrangements he has made for the shipment of salmon ova to New Zealand, and covering the copy of a letter from Mr. Youl on the subject of the importance of the breeding troughs for the reception of the ova, on its arrival in New Zealand, being in perfect order when required.

I have, &c.,

G. S. COOPER,

Under Secretary.

E. D. Butts, Hon. Sec.,
Acclimatization Society, Invercargill.

No. 14.

The AGENT-GENERAL to the Hon. the COLONIAL SECRETARY.

7, Westminster Chambers, Victoria Street, Westminster, S.W.,

3rd December, 1872.

SIR,—

I have the honor to forward herewith, for the information of the Government, a copy of my correspondence with Dr. Lindsay, of Perth, relative to the proposed transportation of salmon ova to New Zealand.

I have, &c.,

I. E. FEATHERSTON,

The Hon. the Colonial Secretary, Wellington, N.Z.

Agent-General.

Enclosure 1 in No. 14.

The AGENT-GENERAL to DR. LANDER LINDSAY.

SIR,—

London, 22nd November, 1872.

Knowing the deep interest you take in everything connected with New Zealand, I venture to apply to you for assistance in a further attempt now about to be made to introduce salmon into that country.

The Colonial Government has authorized the necessary expenditure, and I have succeeded in making arrangements with Messrs. Shaw, Savill, and Co. for a fast sailing clipper ship to sail on the 20th instant. The next thing is to make sure of a sufficient supply of ova at the right moment. I have applied to the Board of Conservators of the Severn Fishery District, and I am depending on other sources of supply, so as to guard against any failure at the last, it being very essential that the ova should be brought in when the vessel is on the point of sailing.

Having been informed that the Tay would be a suitable river for the necessary operations, I am anxious, through your local influence, to obtain permission to take say 30,000 to 50,000 ova from that source.

In the event of this permission being granted, Mr. James Youl, who has kindly undertaken to superintend the practical part of the undertaking, will send a reliable agent to Perth to take and pack the ova and bring it to London.

I have, &c.,

Dr. W. Lander Lindsay, F.R.S.E., &c., &c.,
Gilgal, Perth.

I. E. FEATHERSTON,

Agent-General.

Enclosure 2 in No. 14.

DR. LANDER LINDSAY to the AGENT-GENERAL.

SIR,—

Gilgal, Perth, 27th November, 1872.

It will give me much pleasure to comply with the request contained in your favour of 22nd instant, by assisting, in the way you specify, the New Zealand Government in its proposed experiment in salmon acclimatization.

I have had an interview with one of the clerks to the Tay Board of Salmon Fisheries (his partner being from home). From him I learned that the first ordinary meeting of the said Board does not take place till the beginning of January. But subsequently, after or since consultation with his partner, I have had a letter intimating that a special meeting will be called for Friday, 6th December, at which my application on behalf of the New Zealand Government would be considered.

It is proper that I should forewarn you that there are great difficulties in the way of obtaining the privilege of taking salmon ova from the Tay or its tributaries, though I trust these difficulties may not prove in the present case insuperable. Five years ago I was consulted by the Government of Otago on the whole subject of the transportation of salmon ova from Scotland to New Zealand. At that time I had occasion to discuss the matter with all our local authorities connected with the Stormont Field breeding ponds and the Tay salmon fisheries, and in consequence of the strong representations made to me that applications for ova from the Tay had been refused, and were likely to be refused, by the Tay Salmon Fishery Board, I advised the Home Agent for the Otago Government and Mr. Youl, who was at my suggestion intrusted with the practical part of the Otago experiment of 1867, not to apply to the Tay Board for ova, which were accordingly taken from the Tweed or other rivers in England and Scotland.

The result of the inquiry made in connection with and in consequence of your letter to me of 22nd instant, is the discovery that up to the present date, notwithstanding the many applications that have been made to the Tay Board for Tay ova to stock similar experimental ponds elsewhere, not one of these requests has been complied with,—all have been refused, and those authorities here who have the most intimate knowledge of the transactions of the said Board since the Stormont Field Ponds were established in 1853, give me scarcely any hope that an application from the New Zealand Government will prove more successful than its predecessors.

Nevertheless, I have intimated to the Clerks of the Tay Board (both of whom are personal friends) that I will avail myself of the special meeting of 6th proximo, to present an application

on behalf of the New Zealand Government, and meanwhile I have put myself in communication with,—

(1.) Friends here who may be both able and willing to influence the individual members of the Board in our favour prior to the date of meeting.

(2.) Those authorities on the general subject of salmon ova transportation experiments, who can supply me with the most recent and useful facts or arguments calculated to fortify or support our application.

I will do all I can, in the interval, to secure for our application the most favourable consideration of the Tay Board. Meanwhile it is proper, I think, that I should explain my non-approval of some of the arrangements connected with the transport of the ova when obtained. When I learned what had been the arrangements for the Otago experiment of 1867, I ventured to predict its ultimate failure, and a similar impression was produced, by a perusal of the Otago newspapers of May, 1868 (announcing its apparent first success), on the late Mr. Robert Buist, the well-known "Peter of the Pools" of the *Field*, the superintendent of all the Stormont Field experiments, and the author of the fullest and best account thereof.

The points on which I differ, apparently, from the authorities who conducted the Otago experiment of 1867, and who are charged with the management of that now in progress, may be shortly summed up as follows:—

1. As regards the introduction of ova from Scotland, I hold that,—

- (a.) The transfer from the Scotch river to the New Zealand breeding pond should be as direct and speedy as possible.
- (b.) The most direct and speedy line of transit is between the Clyde and Invercargill or Dunedin, according to the position of the ponds in Southland or Otago.
- (c.) Steam transit is to be preferred to sailing ships, for its greater speed.
- (d.) Ice houses or ice boxes should be swung on the principle of the "Besemer saloon" in the proposed channel steamers, or on that of the suspension of compass lamps or glass trays on all ships, steam or other.
- (e.) Proper arrangements should be made for—
 - (1.) The collection and packing of ova.
 - (2.) The care of the ova during the voyage out.
 - (3.) The unpacking on arrival, and their subsequent culture; including—
 - (4.) The construction of suitable breeding ponds.

It was doubtless from failure in attending to some of these requisites of success, that the Otago experiment of 1867 did not realize the hopes that were at one time entertained regarding it.

2. As regards the introduction of ova from other countries, I am of opinion that a much nearer source of ova for stocking the New Zealand rivers is the seaboard of Western North America, viz., British Columbia, Oregon, or California. The ova might be collected as near as possible to San Francisco, and shipped by the mail steamers direct to New Zealand. On this subject I recently submitted my views to Dr. Robert Brown, who spent some years as a naturalist explorer in Vancouver's Island, British Columbia, Oregon, and California, and who has published a number of papers on the "Natural History of the Western American Seaboard." He has favoured me with a long communication in reply, fully approving of my views, and giving much information regarding the species of salmon there to be met with, and their value as food.

I have only to add that our resident authorities here, Mr. William Brown, the author of a work well known in Scotland on "The Natural History of the Salmon," who has been associated with the late Mr. Buist in all the Stormont Field experiments, and who has an unrivalled knowledge of the Tay and its feeders as sources of salmon and salmon ova, strongly insists upon the use of artificially fecundated ova for transportation experiments, for reasons which he specified in a letter to myself in September, 1867.

If extracts from this letter, or from others in my possession on the subject of salmon acclimatization, can be of any use to the New Zealand Government in their present experiment, I will be glad to forward them. But I may mention that it is probable I will embody all this correspondence, so far as it relates to salmon acclimatization in New Zealand, in a paper on that subject to be forwarded, at its request, to the Otago Institute.

Dr. Featherston, Agent-General for the New Zealand Government.

I have, &c.,
W. L. LINDSAY.

Enclosure 3 in No. 14.

The AGENT-GENERAL to DR. LANDER LINDSAY.

SIR,—

London, S.W., 30th November, 1872.

I have the honor to acknowledge receipt of your letter of 27th instant, on the subject of the transportation of salmon ova to New Zealand, and to thank you for the valuable suggestions contained therein, all of which I shall at once communicate to Mr. Youl.

I have, &c.,
I. E. FEATHERSTON,
Agent-General.

Dr. Lindsay, F.R.S., &c., Gilgal, Perth.

No. 15.

The AGENT-GENERAL to the Hon. the COLONIAL SECRETARY.

7, Westminster Chambers, Victoria Street, Westminster, S.W.,
12th December, 1872.

SIR,—

Referring to former correspondence on the subject of the proposed transportation of salmon ova to the Colony, I regret to have to inform you that, owing in the first place to the delay in getting the vessel into the dry dock, and in the next place to my not having received any positive answer from the Severn Fishery Board (although privately assured of their readiness to assist me), Mr. Youl has been unable to take advantage of the "Lutterworth," which sails on the 20th instant.

I have arranged, however, with Messrs. Shaw, Savill, and Co. to put on another suitable vessel, and it has been accordingly decided to ship the ova by the "Oberon" on the 15th proximo.

I am glad, however, to be able to report that, chiefly through the exertions of Dr. Lander Lindsay, of Perth, the Tay Board has given its consent to the taking of salmon for this purpose from the rivers within its jurisdiction; this being the first occasion on which an application has ever been favourably entertained.

The Hon. the Colonial Secretary, Wellington, N.Z. I have, &c.,
I. E. FEATHERSTON,
Agent-General.

No. 16.

Mr. G. S. COOPER to Mr. BUTTS.

SIR,—

Colonial Secretary's Office, Wellington, 7th February, 1873.

Adverting to my letter No. 54, of the 4th instant, I am directed by the Colonial Secretary to transmit to you the copy of a communication which has been received by this day's mail from the Agent-General, on the subject of the delay in the shipment of the salmon ova for this Colony.

E. D. Butts, Esq., I have, &c.,
Secretary to the Southland Acclimatization Society, G. S. COOPER,
Invercargill. Under Secretary.

No. 17.

Mr. BLAKISTON to the Hon. the COLONIAL SECRETARY.

(Telegram.)

Christchurch, 20th February, 1873.

PLEASE send the particulars of shipment to Dunedin of salmon.

The Hon. the Colonial Secretary, Wellington.

C. R. BLAKISTON.

No. 18.

Mr. MACDONALD to Mr. BLAKISTON.

(Telegram.)

Government Buildings, Wellington, 20th February, 1873.

AGENT-GENERAL reports, last mail, that salmon will be shipped by the "Oberon," on 15th January. Will send you copy of his letter by mail.

C. R. Blakiston, Esq., Christchurch. A. C. P. MACDONALD,
(for the Under Secretary).

No. 19.

Mr. MACDONALD to Mr. BLAKISTON.

SIR,—

Colonial Secretary's Office, Wellington, 22nd February, 1873.

Adverting to my telegram No. 90, of the 20th instant, I am directed by Mr. Waterhouse to transmit for your information copies of correspondence with the Agent-General on the subject of the shipment of salmon ova.

I have, &c.,
A. C. P. MACDONALD,
C. R. Blakiston, Esq., Christchurch. (for the Under Secretary).

No. 20.

Mr. BLAKISTON to the Hon. the COLONIAL SECRETARY.

SIR,—

Christchurch, 24th February, 1873.

I am requested by the Council of the Canterbury Acclimatization Society to acknowledge, with thanks, the receipt of (1) the telegram No. 90 of 20th, and (2) the correspondence with the Agent-General on the subject of the shipment of salmon ova, forwarded by your direction to myself.

I have further to inform you that this Society, through their Council, is taking the necessary steps for a safe transit of the Canterbury portion of the expected shipment of ova from Dunedin to Christchurch.

Yours, &c.,

CHAS. ROBT. BLAKISTON,
Chairman of Council.

The Hon. the Colonial Secretary, Wellington.

No. 21.

Re *Salmon Ova*.

MEMORANDUM for the Hon. the COLONIAL SECRETARY.

THE Agent-General advises that ova was to be despatched by "Oberon," port not stated, but I presume for Dunedin, on 15th January. If she sailed punctually, and taking the voyage at ninety days, she may be expected to arrive on 15th April.

Mr. Youl has pointed out the importance that no time should be lost in transporting the ova to the hatching boxes, as 100 days is the extreme limit of their vitality.

Three days will probably have elapsed from the taking of the ova till the vessel sails, and at least one day will be occupied in transferring the ova from Port Chalmers to the Makarewa ponds.

Before the vessel arrives, I presume that advices will be received giving full information and instructions respecting the manner in which the ova have been packed, and how they are to be unpacked.

It will then be necessary to decide on how the distribution of the ova to Christchurch and elsewhere (which has been decided on) is to be effected; but in any case, it will be necessary that an arrangement be made for securing the services of a fast steamer to be in readiness to receive the ova immediately on their arrival at Port Chalmers. If the "Luna" could be spared for this service, it will be the least expensive arrangement, as it would be necessary to wait from about as early as the 5th April up to the 20th, and during that time to be ready to start at a few hours' notice.

Mr. Howard, the Curator of the Southland Society, will no doubt be in attendance, and I believe has had some experience in the management of salmon ova.

In reply to your minute of 27th February, I shall make it my endeavour to be present in Dunedin at the time the vessel will arrive; but I have no experience of what is required to be done, and as I might be detained in other parts of the Colony, I think it desirable that the interests of Government in the success of the experiment should be represented by the appointment of some local officer, or perhaps His Honor the Superintendent of Otago might be asked to make the necessary arrangements.

JAMES HECTOR.

1st March, 1873.

No. 22.

Mr. J. A. YOUL to Dr. BULLER.

MY DEAR SIR,—

Waratah House, Clapham Park, 24th December, 1872.

Last week promised most favourably for our salmon experiment. At the suggestion of Mr. Ramsbottom I wrote to four of the proprietors of salmon fishing on the Ribble and Hodder, and to the Conservators, and got permission to take fish, and the cordial co-operation of the proprietors to give all the help in their power and that of their keeper; but upon writing to Mr. Ramsbottom that the ship's sailing was put off to the 15th January, he wrote back that in that case it would be too late to get any spawning fish from either the Ribble or the Hodder.

At the same time I received a communication from the Tay, that in all probability we should be too late to get any ova from that river, so that all Dr. Lindsay's trouble to get us permission would be lost. It appears, from all I can learn, that the spawning season is three weeks earlier than usual this season, which is terribly against our obtaining the ova, and makes me more anxious what to do for the best. It proves how right I was in proposing that the ship should not sail later than the 20th December, and how provoking it is that we were prevented shipping in the "Lutterworth."

My troubles, however, do not end here, for Mr. Johnson came late last night to see me and inform me that the "Oberon" went into dry dock to-day, and won't come out, at the earliest, until Monday, and asking leave to begin making the ice-house in her at once, or there will not be time to do so if she sails, as is proposed, on the 15th proximo. I was obliged to give him

leave, and have agreed to meet him on Thursday, at 2 o'clock, at Captain Scott's office, East India Docks, to visit the ship and fix upon a spot to build the ice-house. He reports most favourably of the "Oberon" as being adapted for our purpose.

After Johnson had left I had a letter from Shaw, Savill, in reply to one I had written, to say the "Oberon" goes into dry dock to-day and hopes to come out on Monday, so you will observe this almost appears to be like the case of the "Lutterworth." I ought to have twenty clear days after my first plank is laid before the ship sails, to give me a chance of doing my work properly, and this I stipulated for before Dr. Featherston and Shaw, Savill, and Co. promised.

I detest grumbling, but what am I to do when put into such a fix. All the shipping people and the Agent-General appear to me to think only of the emigrants, and the ova as of secondary importance; whereas, inasmuch as the shipment of ova will cost the Government at least £1,000, they ought to be of the first consideration, and in this feeling I am sure I shall have your enlightened sympathy.

Dr. Buller.

Yours, &c.,
JAMES A. YOUL.

No. 23.

The Hon. W. Fox to His Honor the SUPERINTENDENT, Dunedin.

(Telegram.)

Government Buildings, Wellington, 6th March, 1873.

SHIPMENT of salmon ova expected by "Oberon" next month. Would feel obliged if your Honor would make arrangements for receiving and transferring promptly to Makarewa ponds. Butts, Southland Acclimatization Society, has copy of correspondence. Particulars of mode of packing and unpacking not yet received, but will be sent as soon as they are.

The Superintendent, Dunedin.

WILLIAM FOX.

No. 24.

The AGENT-GENERAL to the Hon. the COLONIAL SECRETARY.

7, Westminster Chambers, Victoria Street, Westminster, S.W.,

9th January, 1873.

SIR,—

I have the honor to report, for the information of the Government, that in the hands of Mr. Youl the salmon ova business is making very satisfactory progress.

As already reported, it was found impracticable to make the shipment by the "Lutterworth," and I accordingly arranged with Messrs. Shaw, Savill, and Co. to lay on another vessel of good sailing qualities, and I fixed the date of departure for the 15th instant.

The owners have since applied for an extension of time, and as Mr. Youl had grave doubts whether, owing to the flooded state of the rivers, the ova could be obtained by the time specified, the date has, by mutual consent, been altered to the 19th instant.

The vessel chosen for the purpose is the "Oberon," 1,193 tons register, and Mr. Youl reports that she is in every way admirably suited to his requirements.

I may add that the ice-house (measuring 13 ft. 10 in. x 9 ft. 10 in. x 8 ft. 6 in.), constructed on the principle of those in use on board the P. and O. steamers, and capable of holding twenty-five tons of solid ice, has already been erected; and that a number of experienced fishermen have been sent into the various salmon districts for the purpose of taking ova.

I have again to acknowledge the ready co-operation which I have met with from the various Boards of Conservators, and to bear testimony to the great value of Mr. Youl's experienced services.

I need hardly say that no effort shall be wanting on the part of myself or those acting under my directions to make this experiment a success.

I beg, however, to call your attention to the Hon. Mr. Sewell's letter of the 8th October, No. 2,686, 1872, and to point out that he is in error in supposing that the sum at my disposal for this purpose is £900. It will be seen, on reference to Mr. Gisborne's letter of the 13th March, No. 564, 1872, that the amount originally authorized was only £900, namely, £500 voted by the General Assembly, and a further sum of £400 guaranteed by the various Acclimatization Societies. Mr. Sewell's letter apprizes me that the Otago Acclimatization Society has declared its inability to contribute £100 as originally proposed, and that the amount of funds available is accordingly reduced by that amount.

Mr. Youl, who has had experience of no less than four shipments of salmon ova to the antipodes, pronounces the sum at my disposal quite inadequate; but as both this gentleman and Mr. Buller will give me their services gratuitously, and as the strictest economy will be observed in the whole matter, I have no intention of exceeding the amount authorized, payment for freight included.

I have, &c.,
I. E. FEATHERSTON,
Agent-General.

The Hon. the Colonial Secretary, Wellington, N.Z.

No. 25.

The Hon. J. BATHGATE to the AGENT-GENERAL.

SIR,—

Colonial Secretary's Office, Wellington, 15th March, 1873.

I have the honor to acknowledge the receipt of your letter No. 21, 1873, of the 9th January last, on the subject of the shipment of salmon ova for this Colony. Extracts have been forwarded to the Acclimatization Societies interested.

With reference to that part of your letter respecting the sum available, I would point out that you are in error in stating it to be £800, as there is still £900 available, namely:—General Assembly appropriation, £500; Invercargill Acclimatization Society, £300; Christchurch Acclimatization Society, £100. Total, £900.

The Agent-General for New Zealand, London.

I have, &c.,
JOHN BATHGATE.

No. 26.

Mr. G. S. COOPER to Mr. BLAKISTON.

SIR,—

Colonial Secretary's Office, Wellington, 14th March, 1873.

Adverting to your letter of the 24th ultimo, I am directed to transmit to you, for the information of the Canterbury Acclimatization Society, the copy of an extract from a letter which was received by the last mail from the Agent-General, in further reference to the delay in the shipment of the salmon ova for this Colony.

C. R. Blakiston, Esq., Chairman,
Acclimatization Society, Christchurch.

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

No. 27.

Mr. G. S. COOPER to Mr. BUTTS.

SIR,—

Colonial Secretary's Office, Wellington, 13th March, 1873.

Adverting to my letter No. 70, of the 7th ultimo, I am directed to transmit, for your information, the copy of an extract from a letter which was received by the mail from the Agent-General, in further reference to the delay in the shipment of the salmon ova for this Colony.

E. D. Butts, Esq., Secretary,
Southland Acclimatization Society, Invercargill.

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

No. 28.

Mr. BLAKISTON to Mr. G. S. COOPER.

SIR,—

Christchurch, 19th March, 1873.

I beg to acknowledge, with thanks, the receipt of your letter of the 14th instant, covering copy of letter from the Agent-General, of date 9th January, 1873.

The Council of the Canterbury Acclimatization Society have instructed the Curator here, Mr. Johnson, to proceed to Dunedin in time to await the arrival of the "Oberon." We should be glad to know what instructions the Government propose to give as to the allotment of the Canterbury share of salmon ova. Also whether any burn (or brook) trout ova have been shipped.

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

I have, &c.,
CHAS. ROBT. BLAKISTON,
Chairman, Acclimatization Society.

No. 29.

Mr. G. S. COOPER to Mr. BLAKISTON.

SIR,—

Colonial Secretary's Office, Wellington, 22nd March, 1873.

I am directed by Mr. Fox to acknowledge the receipt of your letter of the 19th instant, relative to the allotment of the Canterbury portion of the salmon ova, also inquiring whether any burn (or brook) trout ova has been shipped, and to inform you that as yet no particulars have been received, but when they are you shall be further communicated with.

C. R. Blakiston, Esq., Chairman
Acclimatization Society, Christchurch.

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

No. 30.

The AGENT-GENERAL to the HON. the COLONIAL SECRETARY.

7, Westminster Chambers, Victoria Street, Westminster, S.W.,

(Memo.)

24th January, 1873.

It is requested that letter No. 21B, of 9th January, 1873, forwarded by last San Francisco Mail, may be withdrawn, and the annexed (of the same No. and date) substituted for it, as it was forwarded by mistake, without having certain corrections made therein.

I. E. FEATHERSTON,
Agent-General.

The Hon. the Colonial Secretary.

Enclosure in No. 30.

The AGENT-GENERAL to the HON. the COLONIAL SECRETARY.

(No. 21, 73.)

7, Westminster Chambers, Victoria Street, Westminster, S.W.,

SIR,—

9th January, 1873.

I have the honor to report, for the information of the Government, that in the hands of Mr. Youl, the salmon ova business is making very satisfactory progress.

As already reported, it was found impracticable to make the shipment by the "Lutterworth," and I accordingly arranged with Messrs. Shaw, Savill, and Co. to lay on another vessel of good sailing qualities, and I fixed the date of departure for the 15th instant. The owners have since applied for an extension of time, and as Mr. Youl had grave doubts whether, owing to the flooded state of the rivers, the ova could be obtained by the time specified, the date has by mutual consent been altered to the 19th instant. The vessel chosen for the purpose is the "Oberon" (1193 tons register), and Mr. Youl reports that she is in every way admirably suited to his requirements.

I may add that the ice-house, measuring 13 ft. 10 in. by 9 ft. 10 in. by 8 ft. 6 in., constructed on the principle used on board the P. and O. steamers, and capable of holding 25 tons of solid ice, has already been erected, and that a number of experienced fishermen have been sent into the salmon districts for the purpose of taking ova.

I have again to acknowledge the ready co-operation which I have met with from the various Boards of Conservators, and to bear testimony to the great value of Mr. Youl's experienced services.

I need hardly say that no effort shall be wanting on the part of myself, or of those acting under my direction, to make this experiment a success. I beg, however, to call your attention to Hon. Mr. Sewell's letter of the 8th October (No. 2,686, 1872), and to point out that he is in error in supposing that the sum at my disposal for this purpose is £900. It will be seen on reference to Mr. Gisborne's letter of the 13th March (No. 564, 1872), that the amount originally authorized was only £900, namely, £500 voted by the General Assembly, and a further sum of £400 guaranteed by the various Acclimatization Societies. Mr. Sewell's letter (L.C.) apprises me that the Otago Acclimatization Society has declared its inability to contribute £100, as originally proposed; and that the amount of funds available is accordingly reduced by that amount.

Mr. Youl, who has had experience of no less than four shipments of salmon ova to the antipodes, pronounces the sum at my disposal quite inadequate.

But as he will give his services gratuitously, and as the strictest economy will be observed in the whole matter, I have no intention of exceeding the amount authorized, payment for freight included.

I have, &c.,

I. E. FEATHERSTON,
Agent-General.

The Hon. the Colonial Secretary, Wellington, N.Z.

No. 31.

Mr. G. S. COOPER to Mr. BUTTS.

SIR,—

Colonial Secretary's Office, Wellington, 27th March, 1873.

Adverting to my letter No. 162, of the 14th instant, I am directed to transmit, for your information, the accompanying copy of a letter, with its enclosure, received by the last mail from the Agent-General, reporting the satisfactory shipment of salmon ova on board the "Oberon," which vessel left London on the 21st January last.

I have, &c.,

E. D. Butts, Esq., Secretary,
Southland Acclimatization Society, Invercargill.

G. S. COOPER,
Under Secretary.

No. 32.

The Hon. W. Fox to His Honor J. MACANDREW.

SIR,—

Colonial Secretary's Office, Wellington, 27th March, 1873.

Adverting to my telegram No. 160, of the 25th instant, I have the honor to transmit to you, for your information, the accompanying copy of a letter and its enclosure, received by

the last mail from the Agent-General, reporting the satisfactory shipment of the salmon ova on board the "Oberon," which vessel left London on the 21st January last.

His Honor the Superintendent, Otago.

I have, &c.,
WILLIAM FOX.

No. 33.

Mr. G. S. COOPER to Mr. BLAKISTON.

SIR,—

Colonial Secretary's Office, Wellington, 27th March, 1873.

Adverting to my letter No. 184, of the 22nd instant, I have the honor, by direction of Mr. Fox, to transmit to you for your information the accompanying copy of a letter, with its enclosure, received by the last mail from the Agent-General, reporting the satisfactory shipment of the salmon ova on board the "Oberon," which vessel left London 21st January last.

C. R. Blakiston, Esq., Chairman,
Acclimatization Society, Christchurch.

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

No. 34.

Mr. G. S. COOPER to Mr. BUTTS.

SIR,—

Colonial Secretary's Office, Wellington, 29th March, 1873.

Adverting to my letter No. 198, of the 27th instant, I am directed to transmit to you for your information the accompanying copy of a letter and enclosure received by Dr. Hector from W. L. Buller, Esq., on the subject of the removal of the salmon ova from the ice-houses to the ponds.

E. D. Butts, Esq., Secretary,
Southland Acclimatization Society, Invercargill.

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

No. 35.

The Hon. W. FOX to His Honor J. MACANDREW.

SIR,—

Colonial Secretary's Office, Wellington, 29th March, 1873.

Adverting to my letter No. 102, of the 27th instant, I have the honor to transmit to you for your information the accompanying copy of a letter and enclosure received by Dr. Hector from W. L. Buller, Esq., on the subject of the removal of the salmon ova from the ice-houses to the ponds.

His Honor the Superintendent, Otago.

I have, &c.,
WILLIAM FOX.

No. 36.

Mr. G. S. COOPER to Mr. BLAKISTON.

SIR,—

Colonial Secretary's Office, Wellington, 29th March, 1873.

Adverting to my letter No. 199, of the 27th March last instant, I am directed to transmit to you, for your information, the accompanying copy of a letter, with enclosure, from Mr. Buller to Dr. Hector, on the subject of the removal of the salmon ova from the ice-houses to the ponds.

C. R. Blakiston, Esq., Chairman,
Acclimatization Society, Christchurch.

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

No. 37.

The AGENT-GENERAL to the Hon. the COLONIAL SECRETARY.

7, Westminster Chambers, Victoria Street, Westminster, S.W.,
24th January, 1873.

SIR,—

I have the honor to forward herewith copy of a letter received from James A. Youl, Esq., reporting the satisfactory shipment of salmon ova to New Zealand.

The "Oberon" left the East India Docks on Tuesday, the 21st instant.

The Hon. the Colonial Secretary, Wellington.

I have, &c.,
I. E. FEATHERSTON,
Agent-General.

Enclosure in No. 37.

Mr. YOUL to the AGENT-GENERAL.

MY DEAR DR. FEATHERSTON,—

Waratah House, Clapham Park, January, 1873.

I have the pleasure of reporting to you that the shipment of salmon ova to New Zealand by the "Oberon" was completed yesterday afternoon. Ice-houses filled, soldered down, and the ship may proceed to-day so far as the ova is concerned.

In consequence of the excessive floods, there was very great difficulty in catching the fish, and at one time it was predicted by many who take an interest in the matter, that I should fail in obtaining a sufficient supply of eggs this season.

However, I am glad to report that we have obtained and shipped a larger number than heretofore, viz., about 120,000, packed in 227 boxes, and I was enabled to place 187 at the bottom of the ice-house, the best possible position for their safety, and only 40 boxes on the top of the ice, a very insecure position; but having the ova at the docks, I thought it worth while to run the risk.

These ova have all been taken and fertilized by the persons who did the same work for the shipments made to Tasmania by the "Norfolk" in 1864, and the "Somersetshire" in 1866, which proved so very successful, and the eggs have, as they were by those ships, all been packed in the moss with my own hands, except some dozen boxes packed by Mr. Buller.

The whole operation has if possible been better done than in former shipments, excepting perhaps that by the "Winderamere" in 1869, which turned out, however, a complete failure, owing to the vessel having made so long a passage.

Should the "Oberon" make the passage in ninety days, I feel confident of success, provided they have properly-constructed ponds, and the same careful supervision in removing the ova from the ship to the ponds as we have used here.

Dr. Featherston, Agent-General for New Zealand.

I have, &c.,

JAMES A. YOUL.

No. 38.

Mr. G. S. COOPER to Mr. BLAKISTON.

(Telegram.)

Government Buildings, 25th March, 1873.

No. 159.—"Oberon" sailed 25th January, 120,000 eggs.

C. R. Blakiston, Christchurch.

G. S. COOPER.

[Similar telegrams sent to Superintendent of Otago and E. D. Butts, Esq.]

No. 39.

Mr. BUTTS to the Hon. the COLONIAL SECRETARY.

Southland Acclimatization Society,

SIR,—

Invercargill, 16th March, 1873.

Adverting to my letter of the 4th January, and your reply of the 20th same, I have now the honor to inform you that Mr. Howard, Curator of this Society, will be prepared to leave for Dunedin early in March, to await the arrival of the "Oberon" at Port Chalmers.

Arrangements have been made for a steamer to go alongside the vessel when inside the Heads to bring the ova at once to the Bluff, and the hatching-house is in thorough working order and will carry 120,000 ova if need; and everything has been done on our side to render the hatching a thorough success.

Will you be good enough to forward me at your earliest convenience an order for Mr. Howard to receive the ova? Also, what quantities (if any) are to be given to other Provinces.

I am instructed to add that the Society are of opinion that it would be well to share the ova of the salmon and lake trout, if any are shipped, but that it would be better to keep the salmon ova together.

I have, &c.,

E. D. BUTTS,

The Hon. the Colonial Secretary, Wellington.

Hon. Secretary.

No. 40.

Mr. G. S. COOPER to Mr. BUTTS.

SIR,—

Colonial Secretary's Office, Wellington, 3rd April, 1873.

I have the honor to acknowledge the receipt of your letter of the 16th March last, explaining the arrangements which have been made for receiving the salmon ova expected by the "Oberon," for which I am directed by Mr. Fox to thank you.

I am to state that no trout ova are coming, and that 20,000 salmon ova have been allotted to Canterbury, leaving 100,000 for you; but if the Canterbury Agent is not in time, you will of course take the whole shipment.

E. D. Butts, Esq., Hon. Secretary,
Southland Acclimatization Society, Invercargill.

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

No. 41.

Mr. G. S. COOPER to Mr. BLAKISTON.

SIR,—

Colonial Secretary's Office, Wellington, 3rd April, 1873.

Adverting to previous correspondence on the salmon ova expected from England by the "Oberon," I am directed by Mr. Fox to inform you that 20,000 of the ova have been allotted to Canterbury on condition that you send an accredited agent to Dunedin to meet the vessel early this month, and have a steamer ready to ship the ova with the least possible delay for Lyttelton.

Should the Canterbury agent not arrive in time, of course the whole shipment will be sent to Invercargill.

C. R. Blakiston, Esq.,
Acclimatization Society, Christchurch.

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

No. 42.

Mr. BUTTS to the Hon. the COLONIAL SECRETARY.

Southland Acclimatization Society,

SIR,—

Invercargill, 16th March, 1873.

I am desired by the above Society to acknowledge receipt of your letters dated the 4th and 7th February, together with their very interesting contents, which have received my attention.

I am further instructed to point out to you, that although Dr. Featherston was very strongly advised by this Society to ship the ova from the Clyde, if possible, directly to the Bluff, and this course was also strongly recommended in the very interesting letter from Dr. Lindsay, of Perth, the shipment is nevertheless made from London to Port Chalmers, nor is any reason assigned why this course should have been adopted in preference to the one so urgently advised.

I have, &c.,

The Hon. the Colonial Secretary, Wellington.

Edw. D. BUTTS,
Hon. Secretary.

No. 43.

Mr. G. S. COOPER to Mr. BUTTS.

SIR,—

Colonial Secretary's Office, Wellington, 3rd April, 1873.

I have the honor to acknowledge the receipt of your letter of the 16th March last, on the subject of the salmon ova expected from England, and am directed by Mr. Fox to state that you are in possession of all the information the Government have received from Dr. Featherston.

The representations of the Invercargill Acclimatization Society have been duly communicated to the Agent-General, who doubtless, acting under the best advice he was able to obtain, saw good reason for not acting on the suggestions of the Society; the Government, however, hope that, with the assistance Dr. Featherston has had from so experienced a shipper of ova as Mr. Youl, no failure will take place in the experiment, especially as there is now little reason to doubt that shipments to Tasmania, conducted under his supervision, have turned out successfully.

I have, &c.,

E. D. Butts, Esq., Hon. Secretary,
Southland Acclimatization Society, Invercargill.

G. S. COOPER,
Under Secretary.

No. 44.

Mr. BLAKISTON to Mr. G. S. COOPER.

SIR,—

Christchurch, 29th March, 1873.

I have to thank you for your communications of 22nd and 27th March, letters numbered 184 and 199.

Mr. Johnston, the Curator to the Acclimatization Society of Canterbury, proceeds tomorrow to Dunedin, furnished with all the necessary appliances for securing a safe transit of the Canterbury portion of the ova from Dunedin here.

We hope to know soon what arrangements the Government intend making as regards the Canterbury quota of the ova and ice.

I have, &c.,

G. S. Cooper, Esq.,

CHAS. ROBT. BLAKISTON,
Chairman, Canterbury Acclimatization Society.
Assistant Colonial Secretary, Wellington.

No. 45.

Mr. G. S. COOPER to Mr. BLAKISTON.

SIR,—

Colonial Secretary's Office, Wellington, 5th April, 1873.

I have the honor to acknowledge the receipt of your letter of the 29th March last, on the subject of the salmon ova expected by the "Oberon," and to inform you that my letter of the 3rd instant will have answered your letter by anticipation.

I have &c.,

G. S. COOPER,

Under Secretary.

C. R. Blakiston, Esq., Christchurch, Canterbury.

No. 46.

The AGENT-GENERAL to the Hon. the COLONIAL SECRETARY.

7, Westminster Chambers, Victoria Street, Westminster, S.W.,

30th January, 1873.

SIR,—

Referring to my letter No. 52, 1873, of the 24th instant, I have the honor to forward you bill of lading for one ice-house containing salmon ova, shipped per "Oberon," for Otago.

The "Oberon" sailed from Gravesend on the 24th instant; Deal, 27th January.

I have, &c.,

I. E. FEATHERSTON,

Agent-General.

The Hon. the Colonial Secretary, Wellington, N.Z.

No. 47.

The AGENT-GENERAL to the Hon. the COLONIAL SECRETARY.

7, Westminster Chambers, Victoria Street, Westminster, S.W.,

5th February, 1873.

SIR,—

I have the honor to forward herewith, for the information of the Government, copy of correspondence which I have had with Mr. Frank Buckland, one of Her Majesty's Commissioners, on the subject of the transportation of salmon ova to New Zealand.

I beg to direct the special attention of the Government to the valuable practical suggestions which Mr. Buckland has given for the guidance of those persons to whom the Government may intrust the very delicate task of hatching and rearing the salmon; for, as Mr. Youl has very forcibly pointed out in former correspondence on this subject, the ultimate success of the experiment will depend in a great measure on the care and attention bestowed on the ova after its arrival in the Colony.

Mr. Buckland, who speaks with considerable authority on such questions, has taken the trouble to explain very fully the ordinary causes of failure, and to show how they may be most effectually guarded against.

I have purchased two copies of the handbook recommended by Mr. Buckland, one of which will be forwarded by the present mail, and the other by Suez.

In carrying out the instructions of the Government, I have received the cordial co-operation of Her Majesty's Commissioners, as well as that of the various Boards of Conservators in England and Scotland; and on all hands I have received assurances of assistance if required at any future time.

I have, &c.,

I. E. FEATHERSTON,

Agent-General.

The Hon. the Colonial Secretary, Wellington, N.Z.

Enclosure 1 in No. 47.

Mr. F. BUCKLAND to the AGENT-GENERAL.

Salmon Fisheries Office,

SIR,—

4, Old Palace Yard, Westminster, S.W., 30th January, 1873.

I have the honor to acknowledge the receipt of your letter of the 25th instant, in which you are good enough to "convey your thanks for the valuable information which I have furnished on the subject of the taking and hatching of salmon ova."

I will take this opportunity of making some remarks which are now uppermost in my mind.

In the month of May or June last, Mr. W. L. Buller was good enough to call upon me with reference to obtaining salmon eggs for shipment to New Zealand. I promised that I would do all I could, both officially and privately, for the New Zealand Government in the matter.

My colleague Mr. Walpole, and Mr. J. W. Willis Bund, Vice-Chairman of the Severn Fishery Board, also saw Mr. Buller and promised their assistance. Mr. Willis Bund placed his fish-trap at Wick Episcopi, near Worcester, at the service of the Agents of the New Zealand Government, so that salmon could be caught with facility and without much expense.

Between June and November I obtained permission to take salmon eggs for scientific purposes, under section 60 of "The Salmon Fishery Act, 1865," from the following five Boards of Conservators:—Tyne, Tees, Severn, Usk, Dee; and during my inspections between June and November the following gentlemen kindly volunteered their services in the actual collecting of the salmon eggs:—Mr. Willis Bund, Vice-Chairman, Severn Board; Mr. A. D. Berrington, Chairman, Usk Board; Rev. H. Blunt, Chairman, Wye Board; Mr. N. Hodgson, Vice-Chairman, Dee Board; Mr. Mostyn Owen, late Secretary, Dee Board; Captain Bush, R.N., Secretary, Dee Board; Mr. J. Dodds, M.P., Secretary, Tees Board; Mr. Hotchkis, of the Wye Board.

I myself (with Mr. C. E. Fryer, Secretary to this office, with Mr. Searle, my private Secretary, and Mr. Edon, Curator of my Fish Museum) held myself in readiness to assist in any way in the collection of the eggs.

The official permits to take eggs for New Zealand, and, I must in fairness add, for the Thames at the same time, remained unused on my table; and I was surprised, as time went on, to find that the assistance of Mr. Walpole and myself, as Her Majesty's Inspectors of Salmon Conservators, had not been called in requisition.

My surprise was great on hearing that Mr. Youl had undertaken the responsible task of collecting the eggs, but of course I took no notice of this: Mr. Youl, I learn, from a letter in the *Times*, had employed skilled servants to carry out this operation. Mr. Peter Marshall, of Stormont Fields, ought certainly to know how to take eggs, as he has been so long engaged at Stormont Fields; Mr. Ramsbottom has also had experience in the matter.

A few months since I gave Sergeant Harbottle, of the Tyne district, full instructions as to the proper way to take salmon eggs in a seemingly easy but really difficult operation, for the simple reason that unless the fish are properly manipulated, a large number of the eggs will prove to be "blind" eggs—i.e., the embryos will not be developed in them. I feel sure that the eggs taken by Sergeant Harbottle would have been properly impregnated.

Of course, Mr. Walpole and myself, and the members of the Boards of Conservators, are all most anxious that the experiment should succeed. Nevertheless it is a matter of regret to all of us that this great and important undertaking was not allowed to assume the features of an official and international Government transmission of the elements of a vast industry at the antipodes, instead of being intrusted to one individual, to whom access to all the above-mentioned resources would have been freely open on application, which, however, was never made.

I candidly acknowledge that there is no man in the world who, from his practical experience, knows better than Mr. Youl how to pack salmon eggs on board a ship which is bound to the antipodes; but at the same time, I cannot help observing that Mr. Youl has assumed to himself the knowledge of a matter *ultra vires* when he practically takes the command of collecting salmon eggs, which, indeed, is the most important operation in the whole affair.

Mr. Youl had probably good ground for having intrusted the taking of salmon eggs to his agents, but I make bold to assert that Mr. Youl's experience in the actual *breeding* of salmon has not been very great.

Under the above circumstances, and with an earnest desire that salmon should indeed be established in New Zealand, I now venture, at the request of Mr. Buller, to send to those who will have the conduct of the experiment in New Zealand a few hints as to how the ova should be treated when they arrive at Dunedin.

I do not know how the eggs have been packed; I trust, however, that the temperature will have been sufficiently low to prevent the ice melting. Special notice should be taken as to whether the boxes have been much knocked about by the melting of the ice; and the condition of the ova from the boxes should be particularly noted with reference to the position of the boxes in the hold of the ship. Practical experience has taught me that sudden change of temperature is fatal to salmon ova; when, therefore, the boxes are unpacked, their temperature should be noted, and they should be gently sunk into water just in the condition in which they arrive. This water should be as nearly as possible the same temperature as that of the boxes. I think it would be advisable, then, to open the lids of the boxes, and let the eggs have, so to speak, a "drink" of water for five or six hours before they are ultimately placed in the hatching-boxes, though I should recommend that all the eggs should not be treated in this way, but that various modes should be adopted, so as not to risk the success of the whole experiment by one mode of procedure. The question of temperature, however, is most important. If the boxes, for instance, have a temperature of 45°, they should not be suddenly plunged into a temperature of 50° or of 40°, but should be gradually "coaxed" to accommodate themselves to their new temperature.

A temperature of 38° or 40° is about the best for the water in the hatching troughs. The moss should be carefully removed by the fingers, and the eggs removed one by one, by a spoon or by a glass "catcher," made according to the drawing sent herewith (Diagram No. 1), it being well understood that the boxes with the ova are all this time well submerged in water. The boxes should be unpacked by the side of the hatching troughs, so that there be no more carrying.

I do not approve of the out-door system of hatching. Mr. Ponder and myself have hatched many thousands of salmon and trout for the Thames during the last nine years. We obtained boxes made of slate, which are 3 feet long, 7 inches broad, and 3¼ inches deep, and which are worked according to the drawing enclosed herewith (Diagram No. 2). Each box holds about 3,000 salmon ova. The water is conducted through an inch pipe, which should be made to run about half full in at one end of the first trough and out at the other into trough No. 2, and so on, keeping a continual current of water throughout all the troughs. A little fine gravel about the

size of the ova, thoroughly clean, and boiled to kill all vegetable or animal matter in it, should be placed at the bottom of the boxes, and a board covering should be put over them, to keep the light from the ova.

Every morning the dead eggs should be picked out by means of the catcher, and as the young ones begin to hatch out, the stream of water should be gradually increased, as young fish consume more oxygen than eggs do. The eggs, when dead, turn opaque and white: some of the eggs contain no embryo, but yet they do not turn white. They should not be removed till they do turn white.

The formation of the embryo is shown by two small black specks, which are the eyes of the fish. The young ones, on emerging from the egg, are provided with a bag or sack (the "umbilical vesicle"), which is absorbed as the fish grow. When this vesicle has nearly disappeared, the young fish should be fed with red worms, or the yolk of egg boiled hard and cut fine, or the food of larger fish very finely powdered, namely, rump steak and biscuit, as below described.

During this time the troughs should have a little charcoal, in small lumps, sprinkled in them, to prevent the putrefaction of the food.

The moment the fish begin to die they should be thinned; and my advice is that they should be placed in wooden troughs 5 or 6 feet long, 18 inches wide, and 1 foot deep. Into these troughs they should have certainly double the current of water running that was passed through the hatching boxes. The water should be let to run into the troughs through a series of jets, as shown in the diagram. (Diagram No. 3.)

If they still die, thin them again, and immediately make more boxes; if they still die, they should be turned out.

I never have approved, and never will, of semi-stagnant ponds as a nursery for salmon. If I were in New Zealand, I should distribute my fish, when they were five or six months old, up and down in the shallow parts of the tributaries of the stream in which I wished to acclimatize them, choosing a locality where the water was generally running about six or eight inches deep. I would arrange stones (the natural stones of the bottom of the brook), which should be of gravel, in a shape V (Diagram No. 4), covering them with larger stones or slates, leaving free ingress and egress between the stones: these would form hiding-places for the fry. Before doing this, I would carefully drive out of the stream, by walking in it or netting it, all natural enemies, such as eels, &c.; and choosing about half a mile of stream for this purpose, I would place fine gratings at the top A (Diagram No. 5) and at the bottom B, and cutting down trees or poles, I would make shelters, about 3 feet wide, for the fish right across the stream, about two feet from its surface, by placing on these poles the boughs of the trees growing near, or rough hurdles, which should be placed at intervals of 3 or 4 feet: this should be done to keep off the sun. I would appoint a man to carefully watch this mile or half-mile of water, and see how things went on.

When these fish are in their natural nursery, I think they should be fed for two or three months with rump steak, powdered finely up with biscuit powder or oatmeal, in such proportions as to make a thick paste, so as not to stick to the fingers. This should be thrown in very small particles at the head of the stream, and allowed to float down.

The only thing I am afraid of is, that possibly floods may come, and sweep the fish all away before they are strong enough. If there is any danger of this, a hatchway should be made at A, and an artificial channel A B C (Diagram No. 6) should be cut, so as to allow a current of water throughout, but to be out of the influence of floods.

I am certain that this will be found a more successful way of breeding salmon than in any ponds, and I would beg to refer to my report on the artificial breeding of salmon in Scotland (p. 134), of which I enclose a copy.

A careful watch should be kept on the salmon, and they should be allowed to go to the sea when they please.

A great difficulty now occurs as regards their prosperity in the sea.

I should first have the mouth of the river and the estuary carefully netted with small meshed nets at once, and samples taken of all sea fish that will be proved to be indigenous to the estuary. These fish should be submitted to some scientific authority, to see if they are likely to be injurious to the young salmon,—I may make bold to say that I should like to have samples of them myself, simply packed in salt, with a hole cut in the intestines to admit the salt.

I do not know at what month the young salmon would migrate to the sea in New Zealand: in England, I may remark that it is in May and June, and the corresponding months of the New Zealand seasons would probably be the time. At any rate, just previous to the time of navigation the small meshed nets should be constantly going at the estuary, and every enemy frightened away as much as possible. Careful observations should be kept as regards the relative temperatures of the sea and river.

Not knowing the habits of the New Zealand sea fish, I am unable to advise how they should be frightened from the estuary; local fishermen will probably give information on this point.

In order to ascertain whether the experiment has been successful or not, and whether the young fry return as grilse or salmon, I should most decidedly recommend at the end of the second year a fishing weir should be built, right across the river, at some convenient spot, according to enclosed plan (Diagram No. 7), and this will test, at a very slight expense, whether the salmon really come back or not. If this had been done in Australia, the question would have been settled long ago.

Finally, the New Zealand Government must not imagine that one experiment of this kind will establish salmon in that country. Reasoning from analogy, I think they ought to succeed there. English men and women live there, English cattle and horses thrive there, the temperature seems altogether very much the same as in England. Trout have already succeeded in Australia, mainly through the instrumentality of your humble servant, and I cannot see why salmon should not succeed in New Zealand. He is a co-inhabitant with Englishmen here; why should he not be a co-inhabitant with Englishmen in New Zealand also?

This is one experiment, and my advice is, that it should be repeated four or five consecutive years. I do not know what may have been the cost of the present attempt, but I should think the expense on a future occasion should be as follows:—

Freight of ship	..	..	..	..	..	£200
Ice	..	..	..	..	..	125
Leaden chamber for ice *	..	..	..	..	..	100
Collecting ova	..	..	..	..	£50 to	100
Sundries	..	..	..	..	..	25

Making a total of about £500 to £550

If the crevices of such gentlemen as His Grace the Duke of Sutherland, His Grace the Duke of Richmond, Lord Lovat, Lord Lonsdale, Mr. Willis Bund, and others, and those on the Don at Aberdeen and the Forth at Stirling, were used, the expense of catching the fish would be almost *nil*, and I am sure that these gentlemen would render any assistance in their power towards the experiment.

I would venture to suggest that the eggs being collected in various parts of England and Wales and of Scotland, should be shipped from the Clyde, where the temperature would be more favourable for packing them, and by which means the risk of danger to the eggs by deterioration in the English Channel would be avoided; such a course would be more likely to insure success, at a diminished cost, than if the eggs are despatched from London.

I beg to add that I intend to show to Mr. Buller the practical operations of salmon breeding as in actual process at my museum, and to give him all the information in my power. I have also recommended him to procure a work entitled “Domesticated Trout,” which will give valuable suggestions and hints on the subject.

In conclusion I have only to express my sincere hope that the experiment may be successful, and to assure the New Zealand authorities that on any future occasion it will give great pleasure to Mr. Walpole and myself, and to the chairmen and members of the various Boards of Conservators in England and Scotland, to assist in any way in our power in this important undertaking.

I have, &c.,

FRANK BUCKLAND,

Inspector of Salmon Fisheries, England and Wales.

The Agent-General for New Zealand.

Enclosure 3 in No. 47.

The AGENT-GENERAL to Mr. F. BUCKLAND.

SIR,—

5th February, 1873.

I have the honor to acknowledge receipt of your letter of the 30th ultimo, and to thank you for the very useful directions you have been good enough to prepare for the guidance of the authorities in New Zealand.

Your long experience and universally acknowledged success in the hatching and rearing of salmon and trout, entitle your suggestions to the utmost respect; and in my letter forwarding this correspondence to the New Zealand Government, I have pointed out the importance of every precaution being taken to prevent failure from the various causes you indicate.

I am much obliged to you for your ready offer of assistance on any future occasion; and I beg that you will convey to your secretary, Mr. Fryer, my thanks for the very intelligible diagrams which accompany your letters.

I have, &c.,

Frank Buckland, Esq.,

4, Old Palace Yard, Westminster.

I. E. FEATHERSTON,

Agent-General.

No. 48.

His Honor J. MACANDREW to the Hon. the COLONIAL SECRETARY.

(Telegram.)

Dunedin, 7th April.

WHAT proportion of salmon ova is to be allotted to Canterbury Acclimatization Society? Their agent is here with sufficient to hold fifty boxes ova.

Hon. Colonial Secretary, Wellington.

J. MACANDREW.

* This might be sold as old lead in New Zealand.

No. 49.

Mr. G. S. COOPER to His Honor J. MACANDREW.

(Telegram.)

Government Buildings, 8th April, 1873.

OF one hundred and twenty thousand ova shipped, Canterbury is to have twenty; Invercargill the rest. Long letter from Buckland arrived yesterday. Am sending copies per "Lady-bird" to agents of both Societies. I think better send bill of lading to your Honor. Will you kindly give me names of agents of two Societies who are in waiting for ova?

G. S. COOPER,
(for Colonial Secretary).

The Superintendent, Dunedin.

No. 50.

Mr. BLAKISTON to Mr. G. S. COOPER.

SIR,—

Christchurch, 5th April, 1873.

In reply to your favour of the 3rd inst., I have to inform you that Mr. A. M. Johnson, the Curator of the Canterbury Acclimatization Society, is now in Dunedin, awaiting the arrival of the "Oberon." Mr. Johnson is a thorough expert in the matter of pisciculture, and has taken down every appliance for the safe transit of the ova to Christchurch.

I have caused the instructions by Mr. Youl to be forwarded to him. It might be as well to furnish Mr. Johnson with authority direct from the Government to take over the 20,000 eggs allotted to Canterbury.

I have, &c.,

CHAS. ROBT. BLAKISTON,

Chairman, Canterbury Acclimatization Society.

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

No. 51.

His Honor J. MACANDREW to the Hon. the COLONIAL SECRETARY.

SIR,—

Superintendent's Office, Dunedin, 3rd April, 1873.

I have the honor to acknowledge the receipt of your letter No. 102, 27th March, 1873, with enclosures, referring to the shipment of salmon ova per "Oberon," and in reply to state that I shall take all due steps to have the ova carefully conveyed to the ponds on arrival.

I have, &c.,

J. MACANDREW,

Superintendent.

The Hon. the Colonial Secretary, Wellington.

No. 52.

Dr. HECTOR to Mr. G. S. COOPER.

(Telegram.)

Westport, 11th April, 1873.

HAVE several days' work here yet, and would like to inspect Collingwood Mine. When is "Oberon" due at Dunedin? You had better arrange without me. Has not Superintendent agreed to make arrangements?

G. S. Cooper, Wellington.

J. HECTOR.

No. 53.

Mr. G. S. COOPER to Dr. HECTOR.

(Telegram.)

Government Buildings, Wellington, 10th April.

"OBERON" left Gravesend 24th January; Deal, 27th. Now out 77 days. Should be in Dunedin very soon. Wish you could be there to superintend.

Dr. Hector, Westport.

G. S. COOPER.

No. 54.

His Honor J. MACANDREW to the Hon. the COLONIAL SECRETARY.

(Telegram.)

Dunedin, 9th April, 1873.

SALMON OVA.—Mr. A. M. Johnson is here, prepared to take charge of Canterbury ova, and Mr. Howard on behalf of Southland.

The Hon. the Colonial Secretary, Wellington.

J. MACANDREW.

No. 55.

His Honor J. MACANDREW to the Hon. the COLONIAL SECRETARY.

SIR,—

Superintendent's Office; Dunedin, 9th April, 1873.

I have the honor to acknowledge the receipt of your letter No. 103, of 29th March, 1873, enclosing copy of a letter received by Dr. Hector from W. L. Buller, Esq., with memorandum from J. A. Youl, Esq., on the subject of the removal of the salmon ova from the ice-houses to the ponds.

I have, &c.,

J. MACANDREW,

Superintendent.

The Hon. the Colonial Secretary, Wellington.

No. 56.

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

Re Salmon Ova.

SIR,—

Dench's Hotel, Port Chalmers, 10th April, 1873.

In accordance with instructions from our Council, I am waiting here the arrival of the salmon ova from England, to take charge of the portion that may be allotted for Canterbury.

Will you therefore kindly let me know by telegram, or as early as possible, whether the shipment contains any ova of the brook trout, salmon trout, or lake trout, and by what mark the different boxes may be known.

I have brought with me six cases, especially prepared for the purpose, capable of holding, with an ample supply of ice forty-eight boxes of ova, the cases to be slung with india rubber springs, and have taken every precaution I can think of to insure a successful transhipment.

At present no one has arrived to take charge of the Southland portion.

The "Oberon" may arrive any day now, and it is of great importance that no delay should occur in forwarding the ova to the hatching ponds.

Trusting therefore you will grant every facility in this direction,

I have, &c.,

A. M. JOHNSON,

Curator, Canterbury Acclimatization Society.

The Hon. the Colonial Secretary, Wellington.

P.S.—Please inform me the number of boxes allotted for Canterbury. There will probably be several tons of ice to spare, which, if sold, would clear the expense attending reshipment of ova, or provide funds for a shipment of American trout and salmon.

No. 57.

Mr. G. S. COOPER to Mr. A. M. JOHNSON.

(Telegram.)

Government Buildings, Wellington, 14th April, 1873.

My letter to you No. 239, of 8th April, containing Mr. Buckland's report, gives you full information *re* salmon ova per "Oberon." 20,000 allotted to Canterbury. No trout ova shipped. Have you received letter? Reply free. Superintendent has bill of lading.

G. S. COOPER.

A. M. Johnson, Esq., Dench's Hotel, Port Chalmers.

No. 58.

Dr. HECTOR to Mr. G. S. COOPER.

(Telegram.)

Nelson, 15th April, 1873.

Re Salmon. Arrived last night and missed the "Wellington" by half hour. Fear no chance to go on till 23rd. Very sorry, as would have gone on South. Propose going to-day to see Collingwood Mine.

G. S. Cooper, Wellington.

J. HECTOR.

No. 59.

Mr. A. M. JOHNSON to Mr. G. S. COOPER.

(Telegram.)

Port Chalmers, 15th April, 1873.

Just returned from Dunedin. Your letter and telegram received. Seen Superintendent. Every assistance promised, and all my arrangements completed.

Howard, from Southland, also arrived. Many thanks for valuable information.

A. M. JOHNSON.

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

No. 60.

The AGENT-GENERAL to the Hon. the COLONIAL SECRETARY.

7, Westminster Chambers, Victoria Street, Westminster, S.W.,
20th February, 1873.

SIR,—

I do myself the honor to forward herewith, for the information of the Government, a copy of my further correspondence relating to the late shipment of salmon ova.

I have, &c.,

I. E. FEATHERSTON,
Agent-General.

The Hon. the Colonial Secretary, N.Z.

Enclosure 1 in No. 60.

The AGENT-GENERAL to the SECRETARY, SEVERN FISHERY BOARD.

SIR,—

London, 17th February, 1873.

I have the honor to request that you will convey to the chairman and members of the Board of Conservators my best thanks and acknowledgments for the cordial manner in which permission was granted to Mr. Youl and his agents to take salmon ova from the Severn and its tributaries, for transportation to New Zealand.

It will be gratifying to the Board to learn that the experiment has been started under very favourable auspices, and that Mr. Youl writes very hopefully of the chances of success.

I have, &c.,

I. E. FEATHERSTON,
Agent-General.

The Secretary of the Board of Conservators,
Severn Fisheries.

Enclosure 2 in No. 60.

The AGENT-GENERAL to the SECRETARY, TAY FISHERY BOARD.

SIR,—

London, 17th February, 1873.

I have the honor to request that you will convey to the chairman and members of the Tay Board of Conservators my acknowledgments and thanks for the ready permission which was granted, on the personal application of Dr. Lindsay, to take salmon ova from the Tay and its tributaries, for the purpose of stocking the New Zealand rivers.

Although circumstances prevented Mr. Youl and his agents from availing themselves of this permission, I feel it no less incumbent on me to acknowledge the good feeling and liberality displayed by the Board in this matter.

I have, &c.,

I. E. FEATHERSTON,
Agent-General.

The Secretary, Tay Board of Conservators, &c., &c.

Enclosure 3 in No. 60.

The AGENT-GENERAL to Mr. YOUL.

SIR,—

London, 20th February, 1873.

I do myself the honor to thank you, on behalf of the Colony which I represent, for your very strenuous exertions in connection with the recent shipment of salmon ova to New Zealand.

I deemed myself specially fortunate in being able to avail myself of your valuable services, which were so generously offered; and the fact that you have personally superintended the most important part of the undertaking, namely, the packing and shipping of the ova, affords the strongest hope that the enterprise will prove a success.

Whether the attempt to stock the New Zealand rivers with salmon does prove immediately successful or not, I feel sure that both the Government of New Zealand and the colonists will most fully appreciate the zeal and energy which you have displayed, and will not be slow to acknowledge it.

I have, &c.,

I. E. FEATHERSTON,
Agent-General.

James A. Youl, Esq., Waratah House, Clapham Park.

No. 61.

The AGENT-GENERAL to the Hon. the COLONIAL SECRETARY.

7, Westminster Chambers, Victoria-street, Westminster, S.W.,

SIR,—

20th February, 1873.

Referring once more to the cost of the recent shipment of salmon ova to New Zealand, I have now much pleasure in informing you, that so far from my having exceeded the amount authorized by the Government, I have still in hand, after paying all charges, a balance of something over £100.

I have thought it right to give the Southland Acclimatization Society, which has contributed so liberally to the funds, an intimation of this by the present mail, in order that there may be no difficulty out there about the further cost of preparing the breeding-ponds for the reception of the ova, or other necessary arrangements of a similar kind.

I have, &c.,

I. E. FEATHERSTON,

Agent-General.

The Hon. the Colonial Secretary, Wellington.

No. 62.

Mr. G. S. COOPER to Mr. BUTTS.

SIR,—

Colonial Secretary's Office, Wellington, 3rd May, 1873.

I am directed by Mr. Reynolds to inform you that, as the Agent-General has been able to accomplish the shipment of the salmon ova at a less expense than was anticipated, the Government will only require the Southland Acclimatization Society to pay £200 out of the £300 they so liberally guaranteed; and I am therefore to request that you will take the necessary steps for the payment of that amount.

I have, &c.,

G. S. COOPER,

Under Secretary.

E. D. Butts, Esq., Secretary,
Acclimatization Society, Invercargill.

No. 63.

Mr. G. S. COOPER to Mr. BLAKISTON.

SIR,—

Colonial Secretary's Office, Wellington, 6th May, 1873.

As the salmon ova has now arrived at Dunedin, I am directed by Mr. Reynolds to request that you will be so good as to take the necessary steps for the payment to the Government of the £100 guaranteed by the Christchurch Acclimatization Society.

I have, &c.,

G. S. COOPER,

Under Secretary.

C. R. Blakiston, Esq., Chairman,
Acclimatization Society, Christchurch.

No. 64.

Mr. BLAKISTON to the Hon. the COLONIAL SECRETARY.

SIR,—

Christchurch, 17th May, 1873.

I beg to enclose a bank receipt for £100, amount of contribution due from the Canterbury Acclimatization Society towards expenses incurred by the General Government for the late introduction of salmon ova, per ship "Oberon," to Dunedin.

I have, &c.,

CHAS. ROBT. BLAKISTON,

Chairman of the Canterbury Acclimatization Society.

The Hon. the Colonial Secretary, Wellington.

No. 65.

Mr. G. S. COOPER to Mr. BLAKISTON.

SIR,—

Colonial Secretary's Office, Wellington, 21st May, 1873.

I have the honor to acknowledge the receipt of your letter of the 17th instant, and am directed to thank you for the prompt remittance of the contribution due from the Canterbury Acclimatization Society towards the expenses incurred by the General Government in the introduction of salmon ova by the ship "Oberon."

I have, &c.,

G. S. COOPER,

Under Secretary.

C. R. Blakiston, Esq., Chairman,
Canterbury Acclimatization Society, Christchurch.

No. 66.

His Honor J. MACANDREW to the Hon. the COLONIAL SECRETARY.

(Telegram.)

Dunedin, 28th April, 1873.

No sign of "Oberon." Southland and Canterbury Associations have each a man here waiting, and have, I understand, arranged with steam traders. I have made necessary arrangements for carefully unpacking ova boxes. Have directed tug to fetch vessel in as soon as signalled, so as to lose

no time. Have also directed special train to convey ova from Bluff to ponds. If vessel does not put in appearance at once, result very doubtful. Ova should have been shipped from Clyde to have insured quick passage.

The Hon. the Colonial Secretary, Wellington.

J. MACANDREW.

No. 67.

His Honor J. MACANDREW to the Hon. the Colonial Secretary.

(Telegram.)

Dunedin, 2nd May, 1873.

I ORDERED tug to bring "Oberon" alongside pier, so as to have ova despatched at once, as every moment's delay renders success more doubtful. Judge of my disappointment to find that vessel had to be anchored in the lower anchorage to discharge powder, and moreover had some eighty tons of cargo stowed above the ova; but for this, ova might have been transhipped to-day. As it is, I am sparing no efforts or expense to get over what cannot but be regarded as bad management somewhere.

The Hon. the Colonial Secretary.

J. MACANDREW.

No. 68.

Mr. G. S. COOPER to Mr. BLAKISTON.

SIR,—

Colonial Secretary's Office, Wellington, 21st April, 1873.

I am directed by Mr. Reynolds to forward herewith a copy of a work entitled "Domesticated Trout," which has been received by to-day's mail from England, and may prove useful to the Canterbury Acclimatization Society.

I have, &c.,

G. S. COOPER,

Under Secretary.

C. R. Blakiston, Esq., Christchurch.

No. 69.

Mr. BLAKISTON to Mr. G. S. COOPER.

SIR,—

Christchurch, 25th April, 1873.

I have received your favour of the 21st instant, also the work entitled "Domesticated Trout," and take the earliest opportunity of thanking Mr. Reynolds for directing the book to be forwarded to the Acclimatization Society here. I have read the work cursorily, and feel sure the hints therein will prove useful to the Society.

I fear the "Oberon" is making a long passage, whereby the safety of the salmon ova is seriously jeopardized.

I have, &c.,

C. R. BLAKISTON,

Chairman, Canterbury Acclimatization Society.

G. S. Cooper, Under Secretary, Wellington.

No. 70.

Mr. BUTTS to the Hon. the Colonial Secretary.

Southland Acclimatization Society,

SIR,—

Invercargill, 10th May, 1873.

I have the honor to inform you that the salmon ova per "Oberon" arrived here in charge of Mr. Howard on Sunday, the 4th instant, and was all deposited in the hatching-boxes by Tuesday afternoon.

I enclose herewith an extract from the *Southland Times* of the 6th instant, which gives a faithful description of the method employed in transferring the ova boxes and ice to the ponds, every care being used to prevent concussion to the ova, and so far successfully.

I regret to have to inform you that in the curator's opinion the chances of a successful hatching are unfavourable.

In a great number of the boxes there was an appearance of decay on the moss, and in all these the eggs were bad. When the moss looked green and fresh they turned out well in appearance, but even among them a very large proportion are blind eggs, *i.e.*, not properly fertilized.

I hear to-day from Mr. Howard that there are 10,000 eggs on the gravel. How many of these are good and how many unfertile it is at present impossible to say. As soon as I can give you any further reliable information on the subject I will report.

I have, &c.,

EDW. D. BUTTS,

Chief Postmaster.

The Hon. the Colonial Secretary, Wellington.

THE SALMON OVA.

THE salmon ova for Otago, brought from England by the ship "Oberon," arrived at the Bluff in the "Storm Bird," specially chartered for the purpose by the Acclimatization Society, on the afternoon of Sunday, 4th instant, about 4 o'clock.

A special train was in waiting at the Campbelltown Station, in accordance with the instructions of His Honor the Superintendent to the Railway Department. The transshipment from the steamer to the railway was effected under the direction of Mr. Howard, the Curator, assisted by Mr. Butts, the Honorary Secretary of the Society, who had engaged the services of eleven labourers for the purpose; and the whole of the ova were safely landed in the carriages within twenty minutes from the time of the arrival of the steamer at the wharf, the officers of the "Storm Bird" taking every care that the transshipment should be effected without the slightest concussion, which was the great danger to be avoided, and in this they were thoroughly successful.

The time occupied in the transit from the Bluff to the Makarewa Station was about an hour and a half, and the same care was exercised by the Railway Manager, Mr. Conyers, who was in charge of the train, to insure the safe transmission of the ova to their destination. With the view of avoiding the dreaded "concussion" which the ordinary method of stopping railway trains would be sure to produce, the expedient of using only the break in the guard's van at the rear was adopted, and with complete success. On the arrival of the train at the Makarewa, the men engaged were despatched to the ponds with three hand-barrows of ice, and one holding twenty boxes of ova, the ice being required to reduce the temperature of the water in the hatching-house. The night being very dark, it was fully two hours before this party returned to the station, when the remaining boxes were carefully arranged on the platform and covered with ice, it being thought advisable to avoid the risk of further carriage over the rough road during an unusually dark night. The train then returned to town, and the men engaged went out by the 7 a.m. Monday train, and were employed yesterday forenoon, under the superintendence of Messrs. Howard and Butts, in transferring the boxes from the railway platform to the ponds, which was effected about 1 p.m. About 110 boxes were opened by these gentlemen, assisted by a number of volunteers, before dusk last night, and the contents transferred to the hatching-houses. The remainder will be opened early to-morrow. So far as has yet been ascertained, about 10 per cent. of the boxes seem to contain ova in a very satisfactory condition, the eyes in many instances being plainly visible.

The others, we regret to say, were in most cases utterly worthless; but the number of boxes now safely landed in good condition, gives this most interesting experiment quite a fair chance of success.

Southland Times, 6th May, 1873.

No. 71.

The Hon. W. H. REYNOLDS to the AGENT-GENERAL.

SIR,—

Colonial Secretary's Office, Wellington, 2nd June, 1873.

I have the honor to convey to you the thanks of the New Zealand Government for the valuable aid rendered to this Colony, in conjunction with Mr. Youl, in procuring and shipping the salmon ova by the "Oberon."

The ova has been divided between the Canterbury and Southland Acclimatization Societies; and though, from the protracted passage made by the vessel, a quantity was found to be dead, still from the number that have been hatched out up to the present, viz., 60 in Canterbury and 600 in Southland, the Government have every reason to hope that the experiment will turn out a success.

I have, &c.,

WILLIAM H. REYNOLDS.

I. E. Featherston, Esq., Agent-General for N.Z., London.

No. 72.

The Hon. W. H. REYNOLDS to Mr. J. A. YOUL.

SIR,—

Colonial Secretary's Office, Wellington, 2nd June, 1873.

I have the honor to convey to you the thanks of the New Zealand Government for the valuable aid rendered to this Colony, in conjunction with Dr. Featherston, in procuring and shipping the salmon ova by the "Oberon." The ova has been divided between the Canterbury and Southland Acclimatization Societies, and though, from the protracted passage made by the vessel, a quantity was found to be dead, still, from the number that have been hatched out up to the present, viz., 60 in Canterbury and 600 in Southland, the Government have every reason to hope that the experiment will turn out a success.

I have, &c.,

WILLIAM H. REYNOLDS.

James A. Youl, Esq., Waratah House, Clapham Park.

No. 73.

Mr. G. S. COOPER to Mr. BLAKISTON.

(Telegram.)

Government Buildings, Wellington, 2nd June, 1873.

WHAT quantity of salmon ova has been hatched out in Canterbury up to the present time? Reply soon.

C. R. Blakiston, Esq., Christchurch.

G. S. COOPER.

No. 74.

Mr. G. S. COOPER to Mr. BUTTS.

(Telegram.)

Government Buildings, Wellington, 2nd June, 1873.

WHAT quantity of salmon ova has been hatched out in Southland up to the present time? Reply soon.

E. D. Butts, Esq., Invercargill.

G. S. COOPER.

No. 75.

Mr. BLAKISTON to Mr. G. S. COOPER.

(Telegram.)

Christchurch, 2nd June, 1873.

ABOUT sixty salmon ova hatched out here at date.

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

C. R. BLAKISTON.

No. 76.

Mr. BUTTS to Mr. G. S. COOPER.

(Telegram.)

Invercargill, 2nd June, 1873.

LAST report from ponds, Friday night. Over 600 hatched; a few more expected.

Colonial Under Secretary, Wellington.

E. D. BUTTS.

No. 77.

The AGENT-GENERAL to the Hon. the COLONIAL SECRETARY.

7, Westminster Chambers, Victoria Street, Westminster, S.W.,

16th May, 1873.

SIR,—

I have the honor to acknowledge receipt of your letter of 15th March (73, 884), on the subject of the shipment of salmon ova to New Zealand by the "Oberon," and pointing out that I am in error in supposing that the sum at my disposal was only £800, instead of £900, as originally stated.

I observe that you make up the sum which you state was available in the following manner, viz.:—General Assembly appropriation, £500; Invercargill Acclimatization Society, £300; Christchurch, £100: total, £900.

On reference, however, to the letter from the Honorary Secretary of the Southland Acclimatization Society (14th November, 1871), a copy of which was forwarded by me in the Hon. Mr. Gisborne's despatch of 13th March, 1872 (No. 30), you will find that the guarantee of £300 by that Society was conditional. The resolution passed by the Committee of the Society was to the following effect:—"This Society is prepared to guarantee the sum of £300 for the purpose of sending home, by the next outgoing mail, for a shipment of ova, trusting to the other Societies to recoup us their proportions of that amount. This is done with a view of expediting the matter."

The Canterbury Acclimatization Society having afterwards agreed to contribute £100, the guarantee of the Southland Acclimatization Society would of course be reduced by that amount. It will therefore be seen that I was right in concluding that the sum actually at my disposal (exclusive of the General Assembly grant of £500) was only £300. However, the matter is of very little consequence, for, as I have already reported, the actual expenditure fell far short of the amount authorized, leaving a balance of £100 at the further disposal of the Government.

In connection with this subject, it will, I am sure, be satisfactory to the Government to learn that an experiment made by Mr. Youl to test the vitality of the ova after 108 days' packing in ice at the Wenham Lake Ice Company's stores here, has proved entirely successful.

The ova thus experimented on was taken from the boxes shipped by the "Oberon" to New Zealand; and, as will be seen from the two letters from Mr. Youl appended hereto, the result promises very fairly for the success of our shipment.

I was present with a number of other gentlemen at the opening of the boxes on Friday, the 2nd instant, an interesting account of which I have clipped from the *European Mail*, and beg to forward herewith.

I have, &c.,

I. E. FEATHERSTON,
Agent-General.

The Hon. the Colonial Secretary, Wellington, N.Z.

Enclosure 1 in No. 77.

Mr. YOUL to Mr. BULLER.

MY DEAR SIR,—

Waratah House, Clapham Park, 28th April, 1873.

I propose opening the four boxes of salmon ova that have been kept in ice, on Friday next, the 2nd May, at 3 o'clock, at the office of the Wenham Lake Ice Company, 125, Strand, when I hope you will be able to be present, and to bring Dr. Featherston with you.

The eggs will have been 108 days in ice on Friday, a very much longer period than I had intended, as I have always considered 100 days as the maximum number they can be left and afterwards successfully hatched. If, however, we find any alive, and they are hatched, we may presume their companions who have gone to New Zealand will succeed.

Having been compelled to send these four boxes in a wagon from the East India Docks to the Ice Company's store, upon looking at them a few days afterwards, found from 15 to 25 per cent. had been killed by the jolting they got in the transmission. On another occasion, on calling in to look at the boxes, I found them covered with sawdust; and this would destroy some before I found it out and got it renewed. Upon opening the boxes on Friday, I fully expect to find a great many dead eggs; it will, however, be very interesting to notice the state of the moss and ova after so long a compression in contact with ice.

W. L. Buller, Esq.

Yours very truly,
JAMES A. YOUL.

Enclosure 2 in No. 77.

Mr. YOUL to Mr. BULLER.

MY DEAR SIR,—

Waratah House, Clapham Park, 13th May, 1873.

You will be glad to hear that the salmon was taken from the boxes on the 2nd May, and brought home by me and placed in my hatching-trough. Began hatching yesterday morning, and to-day there are about thirty young fish, and almost all the eggs have fish in them. We may hope to have good news from New Zealand should the "Oberon" have made a tolerably quick passage for a vessel of her sailing qualities.

I wish I had suggested the plan I adopted (of removing the ova from the moss by having the water cooled by ice in vessels) to the Government of New Zealand, as I feel confident that plan would have saved the lives of many thousand eggs, and have greatly facilitated the moving of so many thousands of ova from the moss.

W. L. Buller, Esq.

Yours very truly,
JAMES A. YOUL.

P.S.—It will be curious to know when the first salmon was hatched from the "Oberon" eggs in New Zealand.

Enclosure 3 in No. 77.

Extract from *European Mail*, 16th May, 1873.

ON 2nd May I received an invitation to witness a very interesting experiment in connection with the transmission of salmon ova to the Colonies. Some of you will remember to have read in this journal an interesting account of the despatch of several boxes of ova, per "Oberon," to Otago. It was about the middle of January last, when the weather was very cold, that Mr. Youl might be seen seated in a shed at the docks, surrounded with ice, ova, boxes, and moss, packing the ova for shipment. It is a work that requires considerable delicacy and patience in treatment, as the least concussion kills the fish. First there is a layer of moss, then the ova is spread as widely as may be over its surface. Then comes another layer of moss and more ova, and so on till the box is full, a due admixture of ice to keep down the temperature being added. Well, Mr. Youl was anxious to test the probable success of this effort by analogy, so to speak; and thus it was that he kept back four boxes, packed and treated exactly in the same way as those despatched by the "Oberon." These were taken in a wagon to the stores of the Wenham Lake Ice Company in the Strand, and two of them were deposited in the ice-box at the back of the shop and the other two in the vaults below. I am thus particular in order to show you that there would be a slight difference of temperature in regard to two of the boxes. Mr. Youl was apprehensive that the jolting which the ova had received *en route* from the docks to the ice-stores would prove fatal to a large number of them. But we must get on with the manipulation, or I shall tire you with details. Fancy you see two of the boxes inside a large ice-chest, and three or four pans of water placed on another chest, with Mr. Youl between the two. The water has been procured from a neighbouring tank, and is of course of the temperature of the day. Not so the ova. These are very cold, and Mr. Youl reasons that if they were suddenly translated from their ice-bed to water of the temperature of that before him they would die at once. In order to obviate such a calamity, he applies ice to the water in the pans until it approaches to within about eight degrees of the temperature of the oxygen which has kept life in the ova. He is nervously anxious upon this point, and having satisfied himself that all is ready, he proceeds to unscrew box No. 1. This was an anxious moment for us all. The lid was lifted, and lo! there

was no end of ova, with the bloom as fresh upon them as when they were first deposited in their mossy beds, while the moss, but for a little dash of white fungus, looked as fresh and as natural as when it was first gathered. The other boxes were opened with the same result. The next process was to put them into water. This was done by lifting the moss very gently from the box and separating it on the surface of the water, so that the ova dropped imperceptibly into the pans. They were afterwards removed by means of glass syphons, and placed in bottles containing water of the same temperature as that in the pans. Some of the bottles were sent to Mr. Frank Buckland, and Mr. Youl took the remainder, and the last that I heard of them was that the ova taken by Mr. Youl were hatched out in May 9, exactly 116 days after they were first deposited in the box. Here is sufficient proof, then, that the experiment by the "Oberon" ought to prove successful. Mr. Youl, after much time and labour, seems to have hit upon the right method of packing. It is an essential condition of success in this matter that the moss in which the ova are packed should retain its life-giving powers, because if the moss decays it is all up with the ova. Some of the former shipments, I believe, failed in part from this cause; and so soon as Mr. Youl became convinced of this fact, he set about procuring the moss for himself, being most careful in instructing his gardener on the point, and the result is the success I have just chronicled. Indeed, Mr. Youl has now shown that there is practically no limit to the export of ova, and that our colonial rivers may teem with salmon if only the ova can be obtained and those interested like to go to the expense of its exportation. Among those present were Dr. Featherston and Dr. Buller, and all were agreed that they never witnessed a more interesting experiment.

No. 78.

The AGENT-GENERAL to the HON. the COLONIAL SECRETARY.

7, Westminster Chambers, Victoria Street, Westminster, S.W.,

SIR,—

29th May, 1873.

Referring to my letter of 16th May (No. 317), in which I described an interesting experiment with salmon ova, conducted by Mr. Youl, I have now the honor to forward copy of a further copy of a communication from that gentleman on the same subject.

I have, &c.,

I. E. FEATHERSTON,

Agent-General.

The Hon. the Colonial Secretary, Wellington, N.Z.

Enclosure in No. 78.

Mr. YOUL to the AGENT-GENERAL.

MY DEAR SIR,—

Waratah House, Clapham Park, 28th May, 1873.

On my return yesterday from a short visit in the country, I found your letter of the 25th, with the gratifying news of the safe arrival of the "Oberon" in 93 days, for which I am obliged. The hatching from the four boxes you saw opened at the Wenham Lake Ice Company's has been most successful. Mr. Buckland's, Dr. Ord's, Mr. Johnson's, and my own, all placed in water under very different circumstances, have been equally fortunate. I should think at the very least 350 young salmon have been hatched by us; and as 220 boxes were shipped in the "Oberon," this would give, if equally successful in New Zealand, 77,000 fish. Pray be so kind as to let me know the result as soon as you learn.

Yours very truly,

JAMES A. YOUL.

