more hatching and dying soon after. Towards noon found temperature rising. By applying ice kept it at 52°. Weather exceedingly hot. 7 p.m.: Natural temperature 52° (of water without ice).

January 21st, 8 a.m.—Temperature 49°. A few more fish hatched and died, some of the ova beginning to change colour and turn white; keeping temperature low as well as possible with ice, but very irregular; ice exhausted. 7 p.m.: Temperature, 52°; ova still going bad. Held consultation with Messrs. Howard and Worthington as to what should be done with the ova, there being such a variation in the temperature of the water. Decided it would be best to liberate them in 30 or 40 fathoms of water in the lake. Engaged steamer to start at 5.30 next morning, and take the ova to Beach Bay, about eight miles from Queenstown, the latter place being infested with trout and perch.

January 22nd.—Turned out all the ova in Beach Bay, with the exception of from 1,200 to 1,300, and about 30 fish. They were hatching out in the cans while going up the lake, and seemed quite lively when turned out. I regret to say I believe quite one-half of the ova have gone bad. I erected a box at the top of the spring on the hill, and placed the remaining fish and ova there, where the temperature is now equable and steadier—viz., from 47½° to 49°. I tried this by way of experiment.

January 23rd, 7 a.m.—Temperature at spring 48°. Found a few bad eggs, and some of the fish dead.

January 24th, 6 a.m.—Temperature 47½°. Found some more dead ova, and also some of the fish; the dead fish presenting a peculiar appearance, were crooked and drawn into different shapes, as if having died from cramp. Saved a few specimens.

January 25th.—Found a good many dead fish and eggs, some having died while in the act of hatching, others having the appearance of having been being attacked by fungus on the tail, which turned white while there was still life in the body.

January 26th.—Temperature keeping regular. Found a few more ova and fish dead, the number of live fish never increasing. They swim about very lively and healthy-looking for about thirty-six hours after hatching, then drop on the bottom, and occasionally struggle violently and die. Reported to Mr. J. P. Maitland.

January 27th.—Found a few more dead fish and ova. Seeing that, as they were doing, there was very little prospect of saving any out of this lot, I obtained the opinion of Mr. Worthington and several others, and we came to the conclusion that the only chance of saving any of them was to turn them out in the lake, when they would get into deep water, should they feel so inclined; also that the eggs still to hatch would do better, as they would be in a more natural position.

January 28th.—Put all the remaining ova, about 800 or 900, in can, also about 40 live fish, to take them to Half-way Bay, between Queenstown and Kingston, to be liberated there. Soon after being put in the can they began to hatch, and before they got to their destination some hundreds were hatched, and were swimming about very lively, and were turned out in a well-sheltered and cool place in Half-way Bay. The water in which they were carried being spring-water, it was gradually brought up to the temperature of the lake before they were liberated, the temperature of the lake keeping pretty steady, about 56°, with a slight rise sometimes.

I find the lake abounds with small Native fish, along the shores principally; they are from two to three inches long, and swim in shoals. I am afraid these fish will prove very destructive to the whitefish, until once the latter are thoroughly established. It is very possible that these Native fish will not be so plentiful near the snowy regions. If I might be allowed I would suggest that, if ever another opportunity occurs of trying this valuable fish, the hatching-box be removed to the head of the lake in the vicinity of the snowy ranges, if a suitable place could be found; the water might be lower in temperature, and when they would be liberated there might be less chance of their being devoured by these Native fish.

I believe there are some small lakes there that might be advantageously stocked with whitefish, with a view of getting a quick return, providing one could be got that has not being stocked with trout or perch. Or I might suggest that a few be hatched at the Society's hatching-ponds, Dunedin, and kept until the cold weather set in, when it would be more suitable for carrying them, and which I believe could be done: as two years ago a few hundreds were successfully hatched and kept for nearly four weeks in water ranging, I think, from 50° to 56°, when an attempt was made, unsuccessfully, to carry them to Wanaka Lake. I may here take the liberty of alluding to a report which appeared in Vol. xxix. of *Hansard* of 1878. It was to the effect that, while on my way to Lake Wanaka with the whitefish, I allowed them to escape in the night: such was not the case. Mr. Logan, Superintendent of Telegraphs, was with me all the way and saw the last of them. I was carrying them in the usual way I carry trout. The day was exceedingly hot and the road rough; and the result was that before reaching the Teviot they were all dead, except one or two, which I turned out in a lagoon close by.

But to return to the hatching of a few at the hatching-ponds. I believe suitable ponds could be made for retaining a few until they arrive at maturity; although this might be rather a doubtful experiment. Samuel Wilmot, Esq., of Canada, who made the first successful experiment with whitefish in 1867 and 1868, kept a few fry in very limited ponds till many of them reached a pound and upwards. I do not think it would be advisable to hatch large quantities in Dunedin, the distance to the nearest lake being so great that there would be a considerable amount of difficulty and danger in carrying them so far.

I have, &c.,

W. Arthur, Esq., Hon. Secretary, Acclimatization Society, Dunedin. F. Deans.

No. 10.

Mr. W. Arthur to the Hon. the Colonial Secretary.

Sir,— Otago Acclimatization Society, Dunedin, 5th May, 1880.

I have the honor to acknowledge your letter of the 21st April, regarding a report on the American whitefish ova sent to this society in January last by Government. On the 15th April I