

As soon as the boxes have been put on board the steamer they should, without being exposed to the warmth for any length of time, be placed in the *ice-house* on a *layer of matting* so as to avoid *concussions*.

In the *ice-house* a place should be selected where the thermometer indicates *a few degrees above zero*,* as a lower temperature, if it should enter the boxes, would of course destroy the life of the eggs.

After arriving in port the sailors should be instructed to avoid all *concussions* of the boxes; their stay in a warm atmosphere should be shortened as much as possible; and when the boxes leave the steamer a few pieces of ice should be placed on them.

V. BEHR,

President German Fishery Association.

**INTRODUCTION OF CALIFORNIA SALMON INTO ONTARIO, WITH
REMARKS ON THE DISAPPEARANCE OF MAINE SALMON FROM
THAT PROVINCE.**

By SAMUEL WILMOT.

NEWCASTLE, ONTARIO, *November 10, 1881.*

Prof. S. F. BAIRD,

Washington, D. C. :

I have to apologize for the great neglect in not giving you previous notice of the safe arrival of the half million California salmon eggs obtained through your kind instrumentality. They all arrived in the best possible condition and are now hatched, as lively little fish. By far the greater portion of this consignment was sent to the Saint John's River hatchery in New Brunswick. Previous experience having taught me the importance of having a special messenger to look after fish eggs *in transitu*, I sent my son to meet the Californians at Chicago. He dropped off at this station a portion of the eggs for our hatchery here, and proceeded on with the balance (about 350,000) to the Saint John River, meeting with (comparatively speaking) no losses whatever.

This venture will give a very fair trial of what California salmon will actually do in our Atlantic rivers, as I propose turning the whole of the product of this hatchery directly into the Saint John near the hatching-house, which is situated about 200 miles up the Saint John's River from the Bay of Fundy. I trust, for the especial gratification of yourself and myself, these young "Californians" may not turn truants upon us altogether, but that some of them may return to us for further education "in the way in which they should go."

About this time last year I wrote you concerning a strange freak of nature with the salmon in this stream, namely that there were *no males* to be found in the creek to impregnate the eggs of the females with, and that all of the salmon entering it (though much less in numbers than

* Probably Réaumur.—(Translator's note.)

the previous years) were, with the exception of some three or four, entirely females, and of a very large size. I asked you to explain this peculiarity, or to give me some "scientific theory" for it, if it were possible. You either would not, or could but certainly did not, for I got no communication from you on this phenomenal freak of our salmon. The total absence of "grilse" in the stream last year was also a remarkable fact.

It now appears truly that "wonders will never cease," for I have to tell you of the almost total absence of salmon in this stream. So far this fall only four or five adult fish have yet been seen, although the time is now almost past for their appearance for spawning purposes; only two or three spawning-beds are noticeable in the creek where hundreds were regularly seen in former years. The only show this season is a small lot of grilse, about fifteen or twenty all told, and they look as if they came from some "infernal region," being dirty, black, scabby fellows, lean and lank, as if hybrids between eels and salmon (if such a thing could be).

Facetiously speaking, there is evidently a "missing link" concerning these salmon that were so plentiful in 1878 and for five and six years previously. In 1879 they fell off very largely in numbers, but were all very large fish. In 1880 the reduction was very great, with the strange phenomenon of all being females. In 1881 only half a dozen adult fish and a few dirty discolored grilse have thus far entered the stream.

Whether Professor Hind's theory of the "biennial spawning" of salmon (upheld, I believe, also by my friend Atkins) is being verified here this season I cannot say. [See Mr. Ralson's evidence on page 40 of report of 1879, herewith mailed you.] The evidence is certain, however, that the salmon are not showing themselves in this stream this season, and so far "biennialism" is an accomplished fact; and for consolation for their loss I must only look forward to next year for a regular "Pacific coast" run of salmon, and in such numbers as to crowd themselves upon the banks of the stream. In this idea I confess I have little or no faith, for I fear that the time is now gone by for the production and growth in the frontier streams of Ontario of the salmon and speckled trout. This view has been forced upon me from the many experiments which I have failed to carry out in the trials to restock ponds and streams (with brook trout) within short distances of their entrance into Lake Ontario. This state of things has been brought about by the almost total clearing up of the country, causing many streams to become almost dried up in mid-summer, and all others to be greatly reduced in their volume of water. This very much lessened supply becomes overheated from the sun's rays and other atmospheric influences; add to this filth and decomposed matter of all kinds, carried by every rainfall into these streams from barn-yards, plowed fields, turnpike roads, saw-mills, and factories of all kinds; this so pollutes the water that the young of the higher orders of fish, such as salmon and trout, cannot live and thrive in such places.

So marked has this been the case within the past five or six years (and it is constantly increasing) that in small ponds and in the main streams where a few years ago parrs and smolts could be seen in large numbers, it is now quite an exceptional occurrence to see them anywhere. In corroboration of this fact I have only to mention that as a matter of experiment young trout, salmon, and California salmon have frequently been taken from the spring-water tanks and placed in the ponds of creek water, and they invariably die, in the summer months, within a few days, sometimes weeks, after the change is made.

This deplorable and lamentable state of affairs just related brings me to the object I had in view in writing this letter to you; but having digressed so much, I shall now have to be brief on the subject of the carp, which you kindly promised to supply me with this autumn. I got about a dozen (living ones) from New York last winter; they were about 2 and 3 inches long. I put them in one of the smallest of these little creek ponds, and they have done very well. I noticed to-day six of them on the surface of the pond that would measure 10 and 12 inches in length, very fine and plump in appearance. Mr. Armistead, the English gentleman who brought out your "soles," called upon me to-day and in going round my ponds, expressed the opinion (from what he saw of yours at Washington) that mine would be very well adapted for the carp. This opinion is also borne out by the growth of the few carp I placed in the smallest and most inferior of these ponds.

May I still look forward to getting from you a number of carp? Our mutual friend, Mr. Witcher, is most anxious that I should introduce them in our waters.

LIVE PONDS FOR FISH IN NEW JERSEY.

By SMITH E. HUGHES.

CAPE MAY POINT, NEW JERSEY,

November 5, 1880.

Capt. M. P. PEIRCE:

DEAR SIR: Since writing to you, about October 23, there have been new developments with my *wealc* or *trout-fish*, and in your letter to me, October 27, you stated you would probably show my letter to Professor Baird, as you thought my enterprise would be of interest to him, and if so, I am sure he would like to know the result of my experiment with these fish.

Professor Baird, I know, wants facts and results, and I will give a full account of my experiment thus far. In June I put about one hundred weak-fish in my pond, which had been prepared for them some time previous to putting them in, and during that time seemingly tens of thousands of pond chubs had gotten in through the one-half inch wire-screen, or else hatched in there, and could not get through the one-half