

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

inch mesh. I looked upon these little fish as excellent food for my weak-fish; but when I introduced the weak-fish (spawning season) most of them died the next day or two after they were put in. I attributed their dying to rough handling and poor facilities for transporting them. The balance, about fifty in number, seemed to be doing well and I was surprised to find that the chubs did not seem to decrease in number, and even more surprised after close examination to find the little chubs swimming all around them without fear of being molested by their larger neighbors.

I think it was in the latter part of July, for an experiment, I also put in fourteen common size sea-bass, and soon discovered the little chubs were in trouble, and in less than three weeks from that time there was not a chub to be seen, and as about one-half the water was drainage from the meadows above, the other half from the bay every tide, concluded to let them all take their chances for food, and did not give them anything. I could never see the bass, but other persons told me they had seen them occasionally. I could see the weak-fish at any time when the pond was nearly emptied and the water running out at the gates; during all July, August, and September, and nearly all of October they seemed to be fat, healthy, and strong. I think it was the 23d of October I wrote to you that they were doing so well; about the 25th or 26th there came a very sudden change in the weather—cold and rain—and the weak fish nearly all died.

Anxious to be certain of the cause of dying, I had my men drag a net all over the pond, and could find but seven or eight still alive; they were fat and strong, but not lively, and I had them placed carefully back in the pond for further developments, and to-day I saw them all still living and apparently in good condition. When dragging the net we could not get one sea-bass. I believe they are living, but the cold weather drove them in the muddy bottom of the pond, and, if so, I fear it would be a difficult matter to get them out; and that is the pond in which I had contemplated putting the carp, should you think it advisable, and appropriate to send some to me for the experiment.

Would not even one of these greedy fish, if left in the pond, destroy or eat up the carp, and, if so, would you think it advisable to try them?

Should you decide for me to try them, I will drag a net over the pond again to see if I can capture them. With the experience I have so far, I contemplate stocking my ponds in May and June with weak-fish from the bay, from thirty to fifty thousand pounds; keep them during spawning season, and take them out for market in August, September, and the fore part of October.

In November and December I contemplate stocking the ponds with all the rock-fish I can capture from the bay, and perhaps take them out in February and March for market, reserving the largest spawning fish if they can be kept during the summer. I also think I shall have an

excellent place for growing and fattening oysters, which I have been told would produce ample food for the fish the year round. I have but little experience in this new business to me, and would be thankful for any suggestions that you or Professor Baird may give me in the enterprise, and, if I can communicate anything new and of interest to you, will gladly do so.

NOTES AND SUGGESTIONS CONCERNING THE FLORIDA SHAD FISHERY.

By J. H. OSBORN.

SORRENTO, ORANGE COUNTY, FLORIDA,

December 18, 1881.

HON. SPENCER F. BAIRD,

Commissioner of Fisheries :

SIR: At your request I will give you such information as I can in relation to shad. I fished for six years on the Hudson at Hyde Park; have fished on the Upper Saint John's, at the mouth of Lake Munroe, for the past five winters. In the winter of 1876 and 1877 shad were very plentiful; I could catch as high as 200 in one day.

I use a drift-net, 5-inch mesh (string measure), 25 meshes deep. The average depth of the river is 15 feet. Shad have been dropping off for the past two winters, until now I have to fish nights to catch fifty shad with a net 300 feet long. (The river is about 150 yards wide.) With two other drift-nets beside my own (which would cost about \$20 apiece) during the month of March I could catch about 300 a day. Shad run here from January 10 up to about the 25th of March. We do not fish after March 1, because they get very soft after that time. They are ripe about March 5, and are running the best then. I think the river ought to be stocked as high up as possible, say at the head of Lake Harney or Lake Jessup. The lakes are dead water, or, in the North River parlance, slackwater. They are very shallow, only about 7 feet in the channel, with a very gradual bottom, and good sandy beach. In March the water gets very warm on the shores of the lakes. The river proper has no beach; 10 feet of water 3 feet from shore. Would have to catch the shad at the mouth of the lakes in the narrow river. If I can be of any service to you, will be only too happy to help to get the river stocked. I think we ought to have some laws to prevent setting gill-nets at Palatka and Melaka. They completely block the river, and prevent any shad from coming up.

Hoping we may get our rivers stocked in the near future,

I am, respectfully, yours,

J. H. OSBORN.