

that off-shore wind creates an enormous overtow; and, as it does not lower the surface of the water in the ocean, the cold water from the depths below must take the place of the surface water. Under such conditions as I have just described, go to our ocean beach from Cape Florida to north of Jupiter Inlet, and it will be found covered with fish of all kinds, except such as are known as surface fish, or those that live near the surface. They are all, *without exception*, rock or bottom fish; and many, judging from their looks, must have come from a great depth. What is it that brings them to the shore if they are not paralyzed by the cold water? It is after such a time as this that I think I can supply you with a great many kinds of fish new to science. I have seen many kinds that I never heard of and had no names for.

BISCAYNE BAY, MIAMI, FLA., *November 24, 1883.*

I have the pleasure of informing you that I have sent the whale's jaw, through the kindness of Mr. Colonna, of the Coast Survey. I was unable to procure any bluefish spawn the past winter, but in a conversation with Mr. Colonna, who has wintered on Lake Worth, he tells me that they have caught with a seine large quantities of roe bluefish, eating the roe. It is a fact worthy of notice that of the large quantities taken, trolling with hook, none had roe, and the seine only developed the fact that there were not any roe bluefish. I am located so far from what seems to be their favorite ground that I cannot do much, but if I should be transferred to the Jupiter Life-Saving Station, when built, I should be better able to note their habits, &c.

February 26, trolling for Spanish mackerel, I caught seven; weight of the seven, 15 pounds; found spawn in them about half grown. February 27, I caught two Spanish mackerel, and found spawn about the same size as those caught the day before. March 8, saw large schools of young bluefish, about one month old, moving south.

MIAMI, FLA., *April 7, 1884.*

143.—CHARACTER OF THE CARP INTRODUCED BY CAPT. HENRY ROBINSON ABOUT 1830.

By JOSEPH D. REDDING.

[From a letter to Prof. S. F. Baird.]

I inclose a communication from Mr. O'Meara, of Santa Rosa, Cal., to the San Francisco Bulletin. Under date of March 4, 1884, he says:

"I first saw French carp in the autumn of 1837. The fish were in the artificial fish-ponds of Capt. Henry Robinson, of Newburg, N. Y. .

"Captain Robinson commanded one of the five lines of packet ships which regularly traded between New York and Havre, and had accumulated a fortune. His country seat at Newburg was a splendid es-

tate of beautiful grounds. A small stream ran through the tract; its bed was in a deep ravine, and its waters emptied into the Hudson River.

"A copious artificial fish-pond, in the center of which was a small island surmounted by a summer-house, was midway between the broad front gateway and the mansion. There was a narrow bridge across the fish-pond to the summer-house, and from the bridge could be seen hundreds of French carp, which Captain Robinson had himself brought with great care from France in his own ship. The place was in charge of a man named Beckwith, a trusted agent of Captain Robinson, during his absence on his voyages, and he devoted especial care to the fish-pond and the carp.

"They were the first of that species of fish I had ever seen, and I remember their form and appearance as well as I do the place, its owner, and all that I have described of the one and the other. I have seen the carp bred from the imported stock of Mr. Poppe, in Sonoma County, California, and on first seeing those I immediately recognized them to be of the same species as the carp I had seen in Captain Robinson's fish-ponds. Although I was young at the time I distinctly remember what Captain Robinson said in his enthusiastic description of the fish.

"At what period he first brought them to this country I know nothing. I remember, however, that he had added to the original stock the year I visited his place, and I am sure that my recollection of the fish itself is as clear as it is of the varieties of fish in New York Harbor, in the North and East rivers, which I used to catch when a boy."

Mr. Robert Poppe, of Sonoma, introduced some carp from Germany in 1872 and claims that his were the first German carp introduced. Mr. O'Meara calls both "French carp." Are both *Cyprinus carpio*?

REPLY BY PROFESSOR BAIRD.

There is much uncertainty as to what was done in the way of introducing carp before the efforts of Mr. Poppe, in 1872; but while it is doubtless the fact that Captain Robinson brought over fish, there is no certainty that they were the genuine carp. I am inclined to think that they were the Prussian carp, an allied species much inferior in value.

A so-called carp is found in great abundance in the Hudson River. I have seen wagon-loads brought up by a single haul of the seine. These appeared to me, when I saw them, to be hybrids between goldfish and the Prussian carp.

In former times it was very difficult to obtain perfectly pure breeds of carp, as they were kept largely in the same waters with goldfish, with which they hybridize very readily.

The improvement in the stock is due almost entirely to the Germans, neither France nor England yet having anything better than the old-fashioned variety, which is of poor quality.

WASHINGTON, D. C., March 15, 1884.