

## 142.—NOTES ON THE BLUEFISH, MORTALITY OF FLORIDA FISHES, ETC.\*

By H. D. PIERCE.

[From letters to Prof. S. F. Baird.]

The bluefish with us is a migratory fish, going north in the spring and returning about the last of November. I never knew of any being taken in summer. The fish I have taken while in spawn would weigh, I should judge, about 6 or 7 pounds; the male fish were not quite so large as the female. I have never seen them in large schools; they come suddenly and leave the same way. I have never seen or heard of any south of Cape Florida, although I have heard that a few have been taken here in Biscayne Bay. Another thing I have noticed about them is when you have a very cold winter north they are more plenty than when you have a mild winter. If I had known that information was wanted about their spawning, I could easily have procured it at that time; but I will send my son, who is somewhat of a naturalist, to observe them the coming winter and procure such information as you want about them. Will you give me some information as to how to keep the ripe eggs so as to get them to you without their spoiling, as the weather is very warm here at all times.

In regard to my theory that it was cold water which killed the fish, I did not mean in the Gulf of Mexico, but on the Atlantic seaboard of Florida, where I have seen it happen several times, but I have no doubt it is the same in the Gulf. I think that I ought to be a pretty good judge of cold water, as when a boy I took many a swim in the ice-laden streams of Maine, and later in life many an involuntary plunge into the waters of the Arctic Ocean to get out of the way of the flukes of the bow-head whale; and I must say that I never was so thoroughly chilled as on that afternoon in July on the coast of Florida. On that occasion, while disrobed, I saw two or three fish floating about, just alive. I caught one, what is called here a grouper, and carried it home. The next day, upon going to the beach, there were thousands of them ashore, and many floating helplessly about on the surface of the water. They extended about 2 miles along the beach. I have seen the same thing twice since. The only reason or cause that I can give, and I do not know as it will hold good, is that the Gulf Stream, in its rush northward, must have a counter-current inshore, running south. If the Stream can force the warm water of the tropics from the equator to 50° or 55° north latitude, why may not the counter-current bring to Florida occasionally a body of water cold enough to kill fish such as live in the tropics? Of late years I have not kept myself posted at all

\* Continued from Bulletin, Vol. III, 1883, p. 332.

in regard to the investigations that have been made with respect to the Gulf Stream and the currents of our coast; but if I had the proper instruments, I would take the temperature of the water from the shore to the edge of the Stream from Cape Florida to Jupiter Inlet, 90 miles at least, several times a year.

I will try to capture some porpoises, so as to send the entire skeletons. I have the lower jaw of what I called a calf sperm whale. The entire whale measured about 18 feet in length. I opened the skull cavity and took out about two gallons of head oil. I saved nothing but the lower jaw. If it will be of any use I will forward it. The jaw is small, not much larger than a porpoise jaw. I think some reference was made to it some two years ago by a man named Spencer, of Jupiter Light.

I have never seen any seals on this coast. As to manatee, I think that skulls and skeletons of them could be obtained from the Indians. I have seen during the summer in New River, some 13 miles north of here, quite a number, and about two weeks ago I saw three opposite the station not more than 200 feet from shore, going north towards New River.

While out on the reef fishing last week, I caught two remarkable fish, something I had never seen before in these or any other waters. They were a flat fish, weighing about three pounds. If I could have saved them I would have sent them to you, but we are so completely out of the world that nothing can be procured here in the way of jars, alcohol, or any other preservative. If you would put something of that kind here I would gladly save all specimens, and we find some queer ones sometimes.

BISCAYNE BAY LIFE-SAVING STATION,  
*Miami, Fla., October 13, 1883.*

There is one other fact in support of my theory of cold water. In November of 1876 I happened to be here at this place on business. I was then living at Lake Worth. While here we had a heavy norther and it was very cold, the thermometer falling to 40°F. Ice formed in tubs and pails on the second day. I procured a boat and went out on the bay and picked up about 50 pounds of pompano, which were chilled to death. The bay and the shores of the ocean were covered with fish of all kinds, which acted in a similar manner to those I had seen off the coast. About noon of each day, while the sun was hottest, no fish could be seen, showing it was the cold. Of the many different kinds I did not see one of our migratory fish. They could stand the cold. Of the fish seen dead in the Gulf of Mexico, and which perished in the wells of vessels, there were no migratory fish, but were all natives of the tropical sea. Here the principal fish killed were mullet, a few barracudas, snappers, tarpon, pompano, moonfish, grunts, &c. It chilled the crocodiles so that I captured one 5 feet long with my hands. Biscayne Bay is almost open to the ocean. The warm waters of the Gulf

Stream flow in and out at every tide, but it did not make any change in the temperature of the water. If it had, the fish would have escaped.

BISCAYNE BAY, MIAMI, FLA., *November 3, 1883.*

I cannot imagine any conditions that would bring the cold water to the surface. The Smithsonian Report (page 466) mentions the so-called poisonous water as being discolored and running in long patches or streaks. If the hypothesis assumed there that the dirty water was due to the overflow of the glades or swamps, and that this water had poisoned the fish was true, there would not now be a live fish on this coast. From last November (1882) to October 15, 1883, there had been no rainfall on this coast; the everglades were particularly reeking swamps, basking under the hot tropical sun for almost one year. The Indians who had come out of them in the beginning of winter could not go back again. It is but natural to suppose that under such conditions they would generate a vast amount of poisonous water. The end came October 15, when it began to rain; it rained for eight days; the everglades got such a washing as perhaps they had never known before. As far as the eye could see from this station, north, east, and south, it was everglade water, which all came from New River, 13 miles north of the station. There were no dead fish to be found on either the east coast or the west coast. I noticed it particularly, for if I had found dead fish, I should have to abandon my theory of cold water. As it is, I hold to it more firmly than ever.

In regard to the epidemic of 1880, it took place on the west coast of Florida. The hurricane, which immediately preceded the epidemic, was from the northeast, blowing directly off shore. It was probably blowing at a rate of from 60 to 100 miles per hour, making an overtow that would bring cold water from almost any depth, and of course it would roil the water so that it would be streaked with various colors. They would naturally infer that it was everglade water. The fish that live in the glades do not suffer from the poisonous water, and I have never seen a hole that was 5 feet across that did not teem with fish, turtles, and alligators. I have been in this station one year, but have lived at Lake North, Fla., 60 miles north, for the previous twelve years.

I have stated that I knew of no condition which would bring cold water to the surface, and then went on to make just such a condition, but I think I can prove the latter assertion. When we have hurricanes here, on the east coast of Florida, if they come first from the northeast and end at the southeast, they make a very heavy undertow by blowing the surface water to the shores. At such times and under such conditions we never find any dead fish or anything else of marine life on the coast. But when our hurricane comes from the southeast, and, after blowing eight or ten hours, suddenly becomes calm, while the storm center passes; or, when it suddenly comes in from the southwest or off the land, blowing with a force that would put to shame a Kansas cyclone,

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.*

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**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-