

XLI.—REPORT OF A TRIP OF EXPLORATION IN THE CHESAPEAKE BAY.

BY J. W. COLLINS.

[Made in the spring of 1882 by the steamer Fish Hawk, Lieut. Z. L. Tanner, commanding.*]

Leaving Washington at about 1 p. m. February 25, we steamed down the Potomac and anchored that evening in Cornfield Harbor, at Point Lookout. The weather being fine the following day we began operations by setting a gang of nets on the southwest side of the Potomac in 5 fathoms of water, about $3\frac{1}{2}$ miles SSW. one-half S. from Point Lookout Light. Nothing whatever was found in the nets when they were hauled on the following morning, except a large number of Medusæ (sun-jellies, both red and white). Monday evening we set four nets off Barren Island in about 20 fathoms of water, and two in the Patuxent River. The latter were put out near the ship, Drum Point bearing N. by W. about one-half mile distant. Nothing was caught in the river; but about 20 young menhaden (*Brevortia tyrannus*) were taken in the nets set off Barren Island. These fish, with the exception of the largest, we have preserved in alcohol. They vary in length from about 3 to 8 inches, and were caught by the mouth, the twine passing, in between the upper and lower jaws, after which they became more firmly entangled in the meshes. The next set we made off Smith's Point, and off Point Lookout Spit, on the evening of the 28th of February. In the first-named locality we set four nets in from 4 to 6 fathoms, while two nets were moored to the westward of the spit buoy at Point Lookout in 7 to 8 fathoms. During the night the wind breezed up strong from the southeast, making it quite rough in Cornfield Harbor, where the ship was anchored. Therefore, at about 4 a. m. March 1, we got under way, ran up the Potomac a few miles to smoother water, and anchored about an hour before daylight off Smith's Creek. After we anchored a dense fog shut down, and did not clear off until about the middle of the forenoon, when, the wind still blowing fresh and weather looking stormy, we weighed our anchor and ran into Smith's Creek for a harbor.

* A brief account of this trip by Captain Tanner has been published in the United States Fish Commission Bulletin, volume II, 1882, p. 133.—EDITOR.

When we hauled the nets yesterday morning we found that the sea and tide had parted the head rope of one of those off Smith's Point. This left the whole string to swing free with the tide to one mooring (a 60-pound boat anchor), and the consequence was that the nets dragged over the bottom, catching some oysters in the twine, and finally drove afoul of the anchor and anchor-line, with which they became so badly entangled that two of them, the two best fishing nets we had, were very much torn, and another, which we have since repaired, had the cork-line parted and was also torn considerably. It is possible that we may be able to partially repair one of the others, a fine-twine shad-net, but it is somewhat doubtful. Last night we set four nets off the southern end of Tangier Island, but found nothing in them this morning except sea-weed and grasses, with which they were literally filled. The tide runs very strong in all the localities we have visited so far, and I find that setting gill-nets at anchor is anything but an exact science. I have endeavored, as much as possible, to "lay out" the apparatus partially across the current, and so as to intercept any fish coming in or going out of the bay, rivers, and sounds, but in most cases this has not been even partially successful, the tide sweeping nets, boat, and all in whichever direction it chanced to run. The distance at which the nets are set from the bottom is also very much affected by the swift running water, and, even with the greatest care, nothing like definite results can be arrived at. I will add that for this work it will be necessary to have some new shad-nets, and that they should be hung to stouter lines, so that they can sustain the strain that is brought to bear on them. I would also mention that I was somewhat deceived about the nets. Several of those that were put down on the list as shad-nets I find are whitefish-nets, and others that we took aboard from the navy-yard, and which I understood were for cod, are also whitefish-nets. A long, fine-twine shad-net we took from the armory, and a large mackerel-net, though, perhaps, strong enough for ordinary purposes, have been used considerably, and were hardly fit to bear the extraordinary strain, wear and tear to which they must be subjected in these experiments. Those are the nets which were torn so badly off Smith's Point during the storm. As the case now stands we have a surplus of whitefish-nets (eleven in number), but a sad lack of shad-nets, upon which, of course, in an investigation of this kind, we chiefly depend. However, I think we will be able to tell pretty definitely whether or not there are any fish in the bay. The dredgings have shown but little to attract fish, and scarcely anything has been caught in the surface tow-net. In fact I am firmly convinced that there are no fish in the waters we have visited, except at Barren Island, where the beam-trawl brought up young menhaden, young alewives, and other young fish not yet identified.

I have made a list of the nets, by which each has a number and a corresponding mark. Under the number on the list the length, depth, and size of mesh are given. By this arrangement we need only to make

a note of the number of the net set, and by referring to the list we can see what it is.

The officers and men seem disposed to do everything possible to aid me. Captain Tanner detailed four men to help me with the nets and to manage the launch.

FORTRESS MONROE, *March 3, 1882.*

After leaving Fortress Monroe we ran over to Cherrystone Inlet on the afternoon of the 3d. We set four nets, viz, two whitefish-nets, a trammel-net, and a menhaden-net, about one-fourth mile W.S.W. from the buoy off the entrance to the inlet, the depth of water being about 22 fathoms. The apparatus was put out between 5 and 6 o'clock p. m. Two of the nets (the trammel and menhaden nets) were set close to the bottom, the others nearer the surface, the last end of one of the whitefish-nets being sunk only 5 fathoms.

The next day after the nets were put out, as I wrote you at the time, the wind blew so strong from the northwest that it made a rough sea and prevented our making any attempt to get the gear.

When hauled on the morning of the 5th, it was found that the nets had drifted with the tide into 11 fathoms of water, one and a half miles northwest one-half west from where they were set. They were drifted into a pile around the buoy attached to the large boat anchor, which weighs 60 pounds, and were badly snarled. We lost two small anchors.

One menhaden, 6 inches long, was caught in the trammel-net, and 50 dogfish (*Squalus acanthias*) were taken, most of them being in the two nets nearest the surface. The stomachs of twenty of the dogfish were taken out and preserved in alcohol by Dr. Kite, and six fish were put on ice, three of them being males and three females. The ovaries appeared to be undeveloped.

After the nets were hauled, Captain Tanner ran across to York River, and that evening, a little after 5 o'clock, we set the shad-net (which in the mean time had been repaired), the trammel and menhaden nets in from 4 to 5 fathoms, Too's Point light-house bearing about east a half-mile distant. The upper edge of the shad-net was at the surface, the lead-line, of course, being near the bottom. The other two nets were placed from near the surface to the bottom.

When hauled on the morning of the 6th, nothing but sun-jellies were found in the nets, which had drifted slightly with the tide, notwithstanding they were heavily anchored.

Although it is probable a limited number of shad would be taken if present, it seems to me as if comparatively poor results can be obtained with anchored nets where there is such a strong tide as we have found in the Chesapeake. But there is apparently no other way of trying the deep holes, since drifting nets, even if set in deep water, would soon be carried into shoaler localities. The difficulty with anchored nets is that though they may be prevented from drifting by the use of very

heavy moorings, the twine must be floated out nearly horizontal if set across the current, or else carried up around the cork-line if the nets are put out with the tide. For a short time on the slacks, however, the nets may hang all right, providing they have not changed their positions during the run of the tide.

Leaving York River yesterday morning we ran over to the deep hole off Cherrystone, and had three sets with the beam-trawl. We caught many young hake (*Phycis regius* and *P. chuss*), some young spot (*Liostomus obliquus*), several species of flounders (all of small size), five or six skate (*Raia*), two dogfish, and several other kinds of small fishes and crustacea.

Later we proceeded to Saint Jerome, which we reached yesterday afternoon between 3 and 4 o'clock, and sent a boat ashore for the mail. In compliance with orders there received, Captain Tanner came here last evening, and will go to Washington to-day.

I have made daily reports to Captain Tanner in regard to the setting and hauling of the nets, and he has full details of the dredgings, &c.

ANNAPOLIS, MD., *March 7, 1882.*