

## II.—REPORT ON THE WORK OF THE UNITED STATES FISH COMMISSION STEAMER FISH HAWK FOR THE YEAR ENDING DECEMBER 31, 1885.

BY LIEUT. L. W. PIEPMAYER, U. S. N., COMMANDING.

[Abstract.]

On January 1, 1885, Lieut. W. M. Wood, U. S. N., having been detached from the command of this vessel, I assumed command, being the next in rank in the naval branch of the service. From that time until the 7th of that month I caused to be made such repairs as the weather would permit, and made preparations for shad-hatching work in Florida.

On the morning of the 7th, at 7.40 o'clock, the river being comparatively free of ice and the weather clear, I proceeded down the Potomac River and Chesapeake Bay to Norfolk, Va., arriving at Norfolk at 9.20 a. m. on the 8th, having anchored off Fort Monroe during part of the night. On February 1st I received orders to coal at the Norfolk navy-yard, and on the 2d steamed to the navy-yard and filled up with coal.

On March 15 received orders from Professor Baird to proceed to Havre de Grace, calling at Saint Jerome Station for a scow to be towed up. In obedience to these orders I got under way on the morning of the 16th and proceeded up the bay. At 6.20 p. m. came into Potomac River. At 12.05 p. m. secured scow astern of ship, hoisted boats, and steamed up the bay. In the morning of the next day, when within 3 miles of Battery Station, found the ice too heavy to proceed, and anchored, but, finding that the ice was drifting the vessel ashore, got under way and steamed toward Baltimore. Arrived at Baltimore and secured to Hooper's wharf, where I repaired damage caused by the ice, and awaited the disappearance of ice from about the mouth of the Susquehanna River.

On the morning of the 2d of April cast off from the wharf, steamed up the river, took in tow a coal schooner with 40 tons of coal for the station, and steamed towards Battery Station. Arrived off the Battery at 5.25 p. m., and at 11.30 a. m. next day secured to wharf. During the passage up, found most of the buoys displaced by the ice. Remained at this station until April 8. During this time the crew were employed in dragging the seine-haul and clearing it of obstructions.

On the morning of April 8, at 7 a. m., in obedience to orders of Professor Baird, got under way with Generals Heth and Smith, United States Army, of the Engineer Corps, on board, and steamed towards the Sassafra River to search for the wreck of two coal barges which had sunk in the track of vessels bound up the bay. After cruising about for some time in the supposed vicinity of the wrecks, getting what information I could from fishermen, I was unable to find the wrecks. I headed for Betterton and sent the launch ashore to bring off some persons who knew the location of the wrecks. The launch brought off Mr. Turner, who had reported the obstructions, and a fisherman whose nets had fouled them. They piloted the vessel to the wreck buoys, which we had seen, but which did not correspond with the description of them given in the reports. They explained that the buoys had been changed. After sounding with boats for a long time, it was found that one buoy was entirely wrong; the other buoy was on the wreck of one of the barges with 13 feet of water over it. We took up the first buoy with our dredging-boom. General Heth went out with the two boats, with a long line weighted with lead, and swept for the other barge, which he finally found with 12 feet of water over it. I steamed up and anchored the buoy, which we had taken up on the wreck. The buoys are 400 feet apart. I then steamed back to Betterton, landed Mr. Turner and the fisherman, then returned to Battery Station, and secured to wharf at 3 p. m.

The bearings (magnetic) of the wrecks are as follows: Grove Point, SE. by E.  $\frac{1}{2}$  E.; Turkey Point, NE.  $\frac{3}{4}$  N.; Sandy Point, N.  $\frac{3}{4}$  E.; latitude N.  $39^{\circ} 23' 30''$ ; longitude W.  $76^{\circ} 03' 30''$ . On April 9 Generals Heth and Smith left the vessel.

April 24, at 3.45, started fires under main boiler. At 5.30 unmoored ship and steamed up the Susquehanna, in obedience to orders from Professor Baird. At 6.20 moored at coal wharf at Havre de Grace. Took in 65 tons anthracite coal. Draught before coaling: Forward, 7 feet 4 inches; aft, 7 feet 6 inches. After coaling: Forward, 7 feet 10 inches; aft, 8 feet 2 inches. Received  $2\frac{3}{4}\frac{8}{10}$  tons of coal for steam launch. Hoisted in steam launch.

April 25, at 5, unmoored ship and steamed down river and bay. At 10.20 passed the U. S. S. Wyoming, cruising in the bay with the naval cadets for practice. At 12.30 p. m. passed Point Lookout and proceeded up the Potomac River, and on April 26, at 12.30, arrived at the Washington navy-yard.

April 29, George F. Nelson was appointed apothecary for duty on board this vessel; and on April 30, J. A. Kite, M. D., left the ship, having resigned his position as assistant in the Fish Commission.

May 7, at 10.40, in obedience to orders of the Fish Commissioner, unmoored and steamed around to the Sixth street wharf, Washington. At 12.20 cast off and steamed down the river with party of fish-culturists on board. At 2 p. m. turned off White House fishery and proceeded

up the river. At 2.45 arrived at Fort Washington and secured to wharf. The party left the ship to inspect the hatching station. At 5.25 the party returned on board, unmoored ship, and steamed up the river. At 6.50 arrived at the Sixth street wharf.

May 16, at 8.30 a. m., cast off from wharf and steamed down Potomac River. At 10 a. m. arrived at Fort Washington. At 11.30 a fire broke out in the fort; landed crew with fire-buckets, and went to assist in putting out the fire. The following named men were detailed to take spawn under instructions: Jacob Svedlin, quartermaster; R. W. Owens, coxswain; John Baker, quartermaster; Andrew Solvin, seaman; Charles Stiffinson, seaman. On May 17, the spawn-takers visited the fisheries, and returned with 90,000 shad eggs, which were delivered to the station.

May 20, at 11.55, in obedience to orders from Professor Baird, got under way and steamed down the river, bound for the Delaware; and at 9.25 on the 26th arrived off Gloucester Point, New Jersey. On May 28, the spawn-takers reported Bakeoven's fishery as having ceased fishing for the season. At 7.55 p. m. the steamer Lookout arrived with steam launch Cygnet in tow, and anchored near this vessel. Obtained 677,000 shad eggs to-day.

June 1, at 10.35, got under way and steamed down the river. At 11 stopped off Bennett's fishery, and I took some young shad ashore to show the fishermen. At 11.55 steamed up the river. Deposited 330,000 young shad. On June 3, Faunce's fishery stopped work for the season, and Frank N. Clark left the ship, having been connected with the shad work since May 23. On the 13th, at 8 a. m., got under way and steamed down the Delaware River.\* At 12 arrived at Port Richmond, Philadelphia, and moored ship to coal wharf.

June 14, at 9.20, got under way and steamed down Delaware River; and on the next day at 7.50, passed Cape Charles and steamed up Chesapeake Bay.

June 19, at 11.10, got under way and steamed out of Hampton Roads. At 1.40 anchored off Butler's Bluff in 5 fathoms of water, veered to 10 fathoms of chains. Took two spawn-takers in flat-boat and went to inspect trap-nets. At 3.30 returned to ship with 200,000 mackerel eggs. On the next day these 200,000 Spanish mackerel eggs were dark colored and did not seem to be thriving, owing to rust in the tank. At 9.20 of this day arrived off Butler's Bluff with schooner Oriole in tow. Sent four boats with spawn-takers to attend pound-nets. About 150 Spanish mackerel were caught in four pound-nets, but few found ripe. On the 21st, of the 200,000 Spanish mackerel eggs obtained on the 19th, a few had hatched, but all died, caused probably by rust in the water. On June 23, W. P. Sauerhoff reported on board for duty in connection with Spanish mackerel hatching.

\* For a fuller account of the shad work of this season, see Bulletin U. S. F. C., 1885, pp. 395-399.

June 29, at 2.40 p. m., while unmooring ship from navy-yard at Norfolk the after mooring line parted, and the port propeller took against a large spar fender across the slip, carrying away two blades of propeller.

On July 6, the spawn-takers reported considerable numbers of Spanish mackerel taken, as many as 800 in a single pound-net; they also reported that the fish were either spent, or in various degrees of immaturity. On the 8th the spawn-takers visited the several pound-nets during the day and night but obtained no spawn. Fishermen report a large decrease in the catch of Spanish mackerel. At 2, the steamer Lookout arrived and anchored near this vessel. At 3.15, the Lookout got under way and proceeded to Hampton Roads.

July 13, at 9.20 a. m., the steamer Lookout, with Assistant Commissioner T. B. Ferguson, arrived and anchored near this vessel. Received from the Lookout six small hatching cylinders in bad order. I visited the Lookout, and the assistant commissioner visited this vessel and inspected the hatching apparatus. At 11.20 the Lookout proceeded down the bay.

July 15, at 4.30, the spawn-takers returned, having obtained from gillers 500,000 good Spanish mackerel eggs. At 12.20 I went in steam launch to inspect hatching operations at Cape Charles City and to make arrangements for quartering spawn-takers. Returned with steam launch at 2. Sent Mr. Cleaveland ashore at Cape Charles City to establish a sub-station for the purpose of hatching Spanish mackerel. F. J. Barry, machinist, and Charles Winters, boatswain's mate, were sent with steam launch. The 500,000 Spanish mackerel eggs obtained last night all died while under process of hatching.

On July 18, W. P. Sauerhoff and C. Stiffinson, spawn-takers, with one flat-boat, were stationed on Tangier Island to attend pound-nets. On the 20th, received 125,000 Spanish mackerel eggs; of this number, 30,000 good fish were hatched out on the 22d, and were inspected and deposited in Tangier Sound at 6 p. m. of the same day.

August 6, sent to Battery Station the hatching cones, frames, pipes, cylinders, spawning buckets, and pans; and on the 9th, took a party of men with me in the steam launch and second cutter; got pile-driver under way and towed it into Fish Commission station at Saint Jerome, Md., and returned to ship. On August 15, Assistant Engineer S. H. Leonard, jr., reported for duty, relieving Passed Assistant Engineer I. S. K. Reeves, detached from this date.

August 29, at 6, got under way and steamed up the Chesapeake. On September 1, hoisted in the steam launch, and at 8.15 got under way and steamed down the bay. At 2 p. m. arrived at foot of Skinner & Son's marine railway and moored ship alongside of steamer Mary Washington. On the 6th, the ship was hauled out on the railway to clean bottom and put on new propellers. On the 11th, Messrs. Clark & Co., machinists, took old propellers off and commenced fitting new ones in place, with the assistance of the ship's crew. On September

12, engineer's force and machinists from the shop were employed fitting new propellers. At 4 the ship was launched from the railway and moored to the wharf.

September 18, Passed Assistant Engineer I. S. K. Reeves left the ship to report to Professor Baird for special duty, having been relieved by Assistant Engineer S. H. Leonard, jr. At 12 got under way and steamed out of Baltimore harbor. At 4.30 arrived at Battery Station and moored ship to wharf.

September 19, at 7.30, unmoored ship and steamed up Susquehanna River. At 8.05 arrived at Havre de Grace, Md., and moored ship to Furnace coal wharf. At 4.50 unmoored ship and proceeded down the Susquehanna River. On the next day, at 5.30, arrived off Saint Jerome Creek, Maryland; and at 11.30 got under way and steamed down Chesapeake Bay.

September 24, at 12.45 a. m. got under way. At 2.10 Cape Henry was abeam, and about 4 passed out of Chesapeake Bay, bound to Wood's Holl, Mass. On the 25th, at 5.55 a. m., passed Sandy Hook and steamed up New York Bay. At 8 arrived at the Brooklyn navy-yard, and moored ship to wharf. The next day, at 10.45 a. m., left the navy-yard and proceeded up the East River. On the 27th, at 5.30, arrived at Wood's Holl, Mass., and moored to Fish Commission wharf; and on the 28th, sent all articles of hatching apparatus ashore and stored them in Fish Commission storehouse. Sent fyke-net to storehouse. On November 18, hauled ship to coal wharf and moored. Stored three flat-boats and the black gig in Fish Commission storehouse. On December 3, Ensign W. J. Maxwell reported on board this vessel for duty.

December 5, by order of Professor Baird, Isaac Scott, machinist, reported on board this vessel for duty from steam launch No. 68, and F. J. Barry, machinist, of this vessel, was ordered to report to Passed Assistant Engineer I. S. K. Reeves, consulting engineer of the United States Fish Commission, for duty on steam launch No. 68. The vessel was at Wood's Holl at the end of the year.

GLoucester City, N. J., *May* 28, 1886.

## Record of Spanish mackerel hatching by the Fish Hawk during the season of 1885.

Date.	Station.	Fishery whence obtained.	Number taken.			Time put in cones.	Time of hatching.	Number hatched.
			Males.	Females.	Eggs.			
1885.								
June 19	Fish Hawk	Howard	1	1	*300,000	3 p. m.	June 22	*25,000
20	Tangier Island		3	3	*75,000	1 p. m.		
July 10	do	Cooper & Parks	3	3	*200,000	12.30 p. m.		
10	do	Spence	1	1	150,000	1 p. m.		
13	Hunger's Creek	Raynor	1	1	100,000		July 14	†75,000
13	Back River	Hamilton	3	3	600,000		July 14	‡600,000
14	do	do	3	3	‡450,000			
15	Tangier Island	Gillers: Lorton	3	3	*250,000	1 p. m.		
15	do	Gillers: Cooper & Parks.	3	3	*250,000	1 p. m.		
17	Hunger's Creek	Raynor	1	1	100,000		July 18	†75,000
18	Tangier Island	Gillers: Cooper & Parks.	1	1	*100,000	2 p. m.		
20	do	do	1	1	125,000	3 p. m.	July 24	‡30,000
21	Cape Charles City.	Raley	3	3	**1,000,000	7 a. m.		
22	do	J. S. Warren	1	1	*75,000	0 a. m.		
22	Hunger's Creek	Raynor	3	3	600,000		July 25	‡500,000
23	do	do	1	1	75,000		July 24	‡60,000
27	Cape Charles City.	Warren	1	1	*150,000	8 a. m.		
			32	32	4,500,000			1,365,000

## Record of temperatures on the Fish Hawk during the Spanish mackerel season of 1885.

Date.	Station.	Air.		Cones.		Surface.		Barometer.	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1885.		°	°	°	°	°	°	°	°
June 19	Fish Hawk	80	65	72	72	77	75	30.92	30.83
20	Tangier Island	86	70	75	73	75	73	30.87	30.80
July 10	do	95	73	80	79	80	79	30.58	30.45
10	do	95	73	80	79	80	79	30.58	30.45
13	Hunger's Creek	81	71	78	78	70	77	30.70	30.49
13	Back River	81	71	88	78	79	77	30.70	30.49
14	do	89	71	79	79	77	77	30.52	30.37
15	Tangier Island	88	75	79	78	79	78	30.72	30.50
15	do	88	75	79	78	79	78	30.72	30.50
17	Hunger's Creek	65	79	79	79	80	78	30.60	30.76
18	Tangier Island	52	79	79	77	79	77	30.80	30.70
20	do	94	74	80	79	84	83	30.79	30.65
21	Cape Charles City.	94	74	79	79	82	82	30.70	30.60
22	do	90	81	79	79	82	81	30.78	30.62
22	Hunger's Creek	90	81	79	79	82	81	30.78	30.62
23	do	86	78	79	79	82	81	30.80	30.73
27	Cape Charles City.	80	76			83	78	30.74	30.62

\*Died. † Unimpregnated. ‡ Deposited in Hunger's Creek. § Deposited in Back River.  
 †† Put on board Lookout. ††† Deposited in Tangier Sound. \*\* Escaped.