

# REPORT UPON THE DIVISION OF FISHERIES.

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*Assistant in charge.*

## A.—INTRODUCTION.

The second report on the division of fisheries, which is herewith presented, covers the fiscal year ending June 30, 1889, and shows concisely the work of the division during the year.

In reviewing the operations of the division, its organization, and the investigations in which it has been engaged, it is well to have in mind the fact that the work was carried on under peculiarly adverse conditions, due to the fact that the exigencies of other branches of the Fish Commission work made it necessary for me to devote almost all of my time to duties not directly connected with the division. Elsewhere more detailed mention is made of this; here it will suffice to say that, in addition to my connection with the exhibit of the Commission at Cincinnati, I was assigned to the following duties: (1) That of fitting the *Grampus* for sea in the summer of 1888, and employing a captain to take command of her. (2) That of attending to some special matters at Gloucester, Mass., relating to the fish-cultural work at that station. (3) That of making an official investigation of the circumstances connected with the stranding, abandonment, and rescue of the *Grampus*; also making repairs, fitting her for sea, and employing officers and men to go on her. (4) Preparation of reports as follows: (a) On the investigation above referred to; (b) on the construction and equipment of the *Grampus*; (c) on the operations of the *Grampus* from March 15, 1887, to June 30, 1888; (d) on the participation of the Fish Commission in the exposition of the Ohio Valley and Central States, together with a catalogue of the exhibit.

## B.—RESOURCES AND EXPENDITURES.

*Appropriation.*—The available means for conducting the inquiries prosecuted by the division of fisheries during the year 1888–89, for the preparation of reports, and for the payment of salaries, etc., consisted of an appropriation of \$10,000, in addition to which \$5,000 was assigned by the Commissioner from the appropriation for scientific inquiry for a “study of the methods and relations of the fisheries.”

*Need for economy.*—The extended scope of the work of the division, the great expanse of territory to be canvassed in the obtainment of statistical and descriptive data, and the relatively small sum available for the investigations have made the most careful use of the funds necessary. It is thought that expenses of the field agents for travel and subsistence (including railroad and steamboat fares, carriage and boat hire, hotel bills, etc.) have been kept remarkably low, and that the average daily expenditure of \$3.86 per man will compare favorably with the record for other branches of the Government service.

*Analysis of disbursements.*—The funds of the division were expended as follows:

Salaries .....	\$10,940.08
Travel and subsistence of agents.....	2,980.21
Miscellaneous, including printing, supplies, furniture, etc.....	853.95
Total.....	14,774.24
Balance .....	225.76
Amount of appropriation .....	15,000.00

C.—CONSIDERATION OF THE STATUS OF THE WORK, ITS PROGRESS, ETC.

PERSONNEL AND DUTIES.

*Changes in personnel.*—During the year there have been many changes in the personnel of the division of fisheries, due to various causes, among which the chief have been the general expansion of the work and the assignment of certain persons from the division to the preparation and conduct of the exhibit made by the Fish Commission at the Centennial Exposition of the Ohio Valley and Central States. The following notes in relation to the personnel will present a clear idea of the changes indicated:

*Assignment of persons to other duties.*—As was mentioned in my report for the previous year, it became necessary, in carrying on the work of preparing and conducting the exhibit of the Commission, to detail to duty in connection therewith Messrs. E. C. Bryan and W. H. Abbott, who continued in service at Cincinnati until the close of the exposition. Mr. H. R. Center, who was temporarily assigned to duty in connection with the preparation of the exhibit, resumed his ordinary duties in the division soon after the beginning of the year. He was detached from the division of fisheries on November 30, 1888, and assigned to duty in the division of scientific inquiry.

*Special assignments and duties in office and field.*—The following noteworthy assignments to special duties were made during the fiscal year:

During my absence from Washington (to which more extended reference will be made elsewhere), Mr. Hugh M. Smith was placed in charge of the office work, acting under my direction, with the exception of the time during which he was employed in fieldwork, when the office affairs

were under the immediate charge of Mr. W. de C. Ravenel. Early in the year Mr. Smith was ordered to investigate the fisheries of Virginia, Maryland, Delaware, Pennsylvania, and New Jersey, assisted by Mr. M. M. Snell. The work was begun on July 12, 1888, and he returned to Washington October 6. During the remainder of the year Mr. Smith was chiefly engaged, together with Mr. Snell, in the compilation of the report on the fisheries of the Great Lakes, which was completed in the spring of 1889 and submitted for publication. He also had charge, under my direction, of the preparation of statistics and of the general work of the statistical office.

Mr. W. de C. Ravenel was assigned by the Commissioner to duty in the division of fisheries immediately after the close of the season for hatching shad at the so-called Battery Station, Maryland, of which Mr. Ravenel was superintendent. During the absence of Mr. Smith in the field Mr. Ravenel had charge of the office work, as before stated, and rendered efficient service. In the early winter he was ordered to make an investigation of the fisheries of the South Atlantic coast from Florida to North Carolina. Entering upon the work on December 3, 1888, and beginning his investigation in southern Florida, he carried the inquiry as far north as the vicinity of Elizabeth City, N. C. On March 27, 1889, he was ordered to Washington and assigned to other duty in connection with the division of fish-culture; but as soon as the work at the Battery Station was completed, in the spring, he was again detailed to assist in the work of the division of fisheries.

Mr. M. M. Snell was ordered to assist Mr. H. M. Smith in the investigation of the fisheries of Maryland, Virginia, Delaware, Pennsylvania, and New Jersey. He began work on July 12, 1888, and completed his investigation on December 31 of the same year. After his return he was engaged mainly in assisting in the compilation of the report upon the fisheries of the Great Lakes.

Mr. W. A. Wilcox began a canvass of the fisheries of eastern Massachusetts, including Gloucester, on July 2, 1888. The investigation was discontinued August 15, 1888. On November 15, 1888, he was detailed to make a canvass of the fisheries of the Pacific States, including the river basins, and at the close of the year was engaged in this work and had made good progress, being then in the Puget Sound region.

Mr. Luther Maddocks was ordered to make an investigation of the fisheries of Maine on July 1, 1888, and began work in the vicinity of Boothbay. The investigation was suspended on August 15, 1888, and Mr. Maddocks was relieved from duty.

On April 4, 1889, Mr. W. H. Abbott was ordered to Elizabeth City, N. C., to complete the investigation of that State which had been inaugurated by Mr. Ravenel. The work was finished and Mr. Abbott returned to Washington on June 13, 1889.

On January 3, 1889, Capt. D. E. Collins was placed on the rolls of the division of fisheries and ordered to make an investigation of the

fisheries of the Gulf States, including western Florida. He began at Key West and prosecuted the inquiry along the west coast of Florida, and thence westwardly. On April 22, 1889, the canvass was abandoned at Scranton, Miss., the failing health of Capt. Collins rendering it impossible to continue the inquiry.

On May 8, 1889, Mr. Ansley Hall was appointed as a statistical agent and ordered to collect statistics and study the methods and relations of the fisheries in Rhode Island. At the close of the year this investigation was still in progress.

Mr. Charles H. Stevenson was appointed a statistical agent on May 2, 1889, and on May 6 was detailed to make an investigation of the fisheries of New York. The inquiry had not been completed at the close of the fiscal year.

Capt. S. J. Martin was employed as resident agent at Gloucester, Mass., in collecting statistics of the daily receipts of fish from vessels and boats.

On April 15, 1889, Mr. F. F. Dimick was appointed as the resident local agent at Boston, Mass., for the collection of fishery statistics at that port.

Mr. E. F. Locke, who is the custodian of the fish-hatchery at Gloucester, has been detailed to assist in the collection of statistics at that port, and at the close of the year is engaged in that duty.

After the completion of his duties in connection with the exposition at Cincinnati, Mr. E. C. Bryan was detailed to assist in the compilation of the report prepared by me on the construction and equipment of the *Grampus*, and also the report concerning her operations. Later he was assigned to his regular duties in the division of fisheries.

Mr. C. B. Hudson was employed as artist for the division from September 15, 1888, to the close of the fiscal year. In the early part of the year he was employed as artist in connection with the preparation of material for the Fish Commission exhibit at Cincinnati.

Mr. J. J. Corridon was detailed from the Commissioner's office to assist me in an official investigation of the stranding and abandonment of the *Grampus*, etc., and later he was assigned to the office of statistics of the division of fisheries and placed on its rolls.

Mr. T. W. Keller was assigned to duty in the division of fisheries July 1, 1888, and continued in the service of the division until March 31, 1889, when he was transferred to the fish-cultural division. His work in the office was chiefly in pasting newspaper clippings.

Mrs. I. M. Palmer was detailed from the Commissioner's office for duty in the division of fisheries to assist in the work of pasting and classifying newspaper clippings.

Mr. H. E. Martin was appointed as clerk in the statistical office of the division on July 11, 1888, and resigned on March 31, 1889.

Mr. S. Le R. Pritchard was appointed as clerk in the statistical office of the division on April 16, 1889.

Miss Lillian M. Collins was appointed as clerk on April 8, 1889, and assigned to the duty of classifying, arranging, and indexing newspaper clippings.

*List of employés and their salaries at the close of the year.*—The following is a list of the employés of the division and their salaries at the close of the year. This does not, however, include the names of those who have been temporarily detailed to service in the division from other divisions of the Commission:

Name.	Designation.	Monthly compensation.
J. W. Collins .....	Assistant in charge of division.	\$200
W. A. Wilcox .....	Statistical agent.	115
Hugh M. Smith .....	Clerk	100
E. C. Bryan .....	do	100
J. J. Corridon .....	do	100
C. B. Hudson .....	Artist	75
M. M. Snell .....	Clerk	75
W. H. Abbott .....	do	65
S. Le R. Pritchard .....	do	50
Lillian M. Collins .....	do	50
S. J. Martin .....	Local statistical agent	50
Ansel Hall .....	Statistical agent	45
C. H. Stevenson .....	do	30
F. F. Dimick .....	Local statistical agent	25

FIELD WORK, SOURCES OF INFORMATION, ETC.

*General considerations.*—The work, as considered under this heading, is that which relates more particularly to the obtainment of information upon which reports can be based, and is distinct from the routine work and the preparation of reports, which will be mentioned later.

The principal sources of information are: (1) Special investigations prosecuted by the statistical or field agents; (2) the statistical circular of the Treasury; (3) reports received from local statistical agents and fish bureaus; (4) general correspondence; (5) newspaper clippings.

*Special investigations.*—The special investigations undertaken by the division during the year were as follows:

An inquiry into the statistics, methods, and relations of the fisheries of the Middle and South Atlantic States, from New York to Florida, inclusive, all of which was completed before the close of the year with the exception of New York.

A similar inquiry concerning the fisheries of the States bordering on the Gulf of Mexico was undertaken but was not finished. A canvass was made, however, of the coast from Key West to Scranton, Miss.

A comprehensive investigation of the fisheries of the west coast was begun in November, 1888, and at the close of the fiscal year was so well advanced as to give reason to anticipate its completion at a comparatively early date. This included a canvass of the coast and river fisheries from San Diego to Puget Sound. It is expected that this will be supplemented, so far as the commercial fisheries are concerned, by the work done by Dr. Bean and assistants in Alaska in connection with

the investigation of the salmon rivers of that region, of which fuller mention will be made in a subsequent report.

In the early part of the year inquiries were begun in New England, more especially in Massachusetts and Maine, but, owing to my absence from Washington and the difficulty of properly directing the work under the circumstances in which I was then placed, the Commissioner thought it necessary to suspend the work, which he did on August 15, 1888. Toward the close of the year, however, the investigation was resumed, and, in addition to the work performed by the local agents at Boston and Gloucester, a special agent was sent to Rhode Island to make a canvass of its fisheries. It is proposed to continue this work so as to cover the entire coast fisheries of New England, and it is expected that the inquiry will be completed in a few months.

*Treasury circular, statistics of the fisheries.*—Through the continued courtesy of the Treasury Department, the Fish Commission receives, from the various collectors of customs, reports on this circular covering the operations of fishing vessels. The value and condition of these returns were fully discussed in my previous report. The number of statements received during each fiscal year since the circular went into effect is as follows:

1886. ....	892
1887. ....	5,088
1888. ....	5,436
1889. ....	4,816
Total .....	16,262

*Reports of S. J. Martin.*—Capt. Martin, resident statistical agent of the Fish Commission at Gloucester, Mass., has continued to send monthly and semimonthly reports to this division. These show the daily arrivals of vessels, the amount of fish landed by each, the localities where the fish were taken, and many other valuable data, including the statistics of fish landed by boats operating from Gloucester harbor, catch of the local fish-traps, etc.

*Reports of F. F. Dimick.*—Since his appointment, on April 15, 1889, Mr. Dimick has furnished the division with monthly reports showing the arrivals of fishing vessels at Boston, the quantities of fish received, importations of fish products, etc., together with the grounds upon which the fish were taken. He has also submitted statistics of the vessel and boat fisheries of Boston and vicinity, including persons employed, capital invested, and amount and value of catch.

*The Boston fish bureau.*—The daily trade reports of the Boston fish bureau, which have been sent to the Commission free of charge, have furnished information concerning the arrivals of fishing vessels at Boston and other ports, and a general statement of the amount of mackerel and other salt-fish products landed by them, together with much other data relating to the fresh and salt fish trades, condition of foreign markets, etc.

*Correspondence.*—Many of the correspondents of the Commission, and especially those in direct communication with the office of the division of fisheries, have shown a disposition to furnish information whenever called upon. In many cases parties have voluntarily sent important data bearing upon the fisheries that have been utilized in descriptive papers and statistical presentation.

*Newspaper clippings.*—In my last report allusion was made to newspaper clippings as being valuable for reference when properly classified. The efforts which have been made to render available this class of material have, on the whole, been satisfactory, and good progress has been made in the latter part of the year.

#### ROUTINE WORK.

That part of the work of the division which may properly be classified as routine, and of which there is a large amount in connection with the compilation of statistics, may be placed under the following heads:

*Work relating to statistical circulars.*—This consists (1) in acknowledging to collectors of customs the receipt of circulars containing statistics of the fisheries; (2) registering the same; (3) examining circulars and making comparisons for the detection of errors; (4) correcting errors (which sometimes involves considerable correspondence), and (5) making compilations.

*Miscellaneous correspondence.*—There has been a large amount of miscellaneous correspondence relating to the general work of the division. This has been chiefly with members and committees of Congress, with the statistical agents in the field, with parties engaged in the fisheries, etc.

*Card catalogue.*—The system of keeping a card catalogue of fishing vessels sailing from the United States has been continued and elaborated, and has proved a valuable adjunct in carrying on the work. This catalogue contains a complete record of the life history of each vessel since 1885, so far as the information has been obtained in the office, and by its means it is feasible to trace the work and movements of the fishing craft of the United States.

*Classification of newspaper items.*—The classification of newspaper clippings containing items relating to the fisheries may properly be classed as routine work. Allusion was made to this in my previous report, where it was stated that a rough classification had been attempted. Until the latter part of the year it was not feasible to do more than this, though two clerks were detailed to the work of pasting and arranging the clippings. Later, however, a satisfactory attempt was made at a systematic classification, and the success achieved at the close of the year gives good promise to expect gratifying results from the work.

*Pressure of routine work.*—Owing to the unusual efforts which have been put forth during the year in the prosecution of special investiga-

tions and in the preparation of extensive reports on the fisheries, the pressure of routine work has been such that the small force available has been required to make an extra effort to carry it on. My own absence from the office, in connection with other affairs, together with the detail of some of the most efficient clerks to other duties, naturally brought an additional pressure of work upon those who remained in Washington.

#### PRACTICAL WORK OF THE DIVISION.

*General considerations.*—In view of the many matters which have served to handicap the operations of the division during the year, the progress of the work in connection with the preparation of reports has been most satisfactory. As stated in my last report, when the division of fisheries was organized, near the close of the last fiscal year, the work on the compilation of reports in the office was either not commenced or in a very embryonic condition. Notwithstanding this, and despite the pressure of extensive field investigations, much has been accomplished, as will appear from the statements which follow:

#### REPORTS AND SPECIAL PAPERS SUBMITTED FOR PRINTING.

1. The Beam-Trawl Fishery of Great Britain, with notes on Beam-Trawling in Other Countries. (23 plates; 34 text figures.)
2. Review of the Fisheries of the Great Lakes in 1885. (39 full-page plates of fish, apparatus, etc., and 6 folding charts, showing number and location of pound-nets.)
3. The American Sardine Industry.
4. Notes on Certain Fishery Industries of Eastport, Me.
5. Some Reasons why the Fishermen of Nova Scotia prefer to use Salt Clams (*Mya arenaria*) for Bait in the Bank hand-line Cod Fisheries.
6. Statistics respecting certain features of the vessel fisheries of the United States.
7. Suggestions for the employment of improved types of vessels in the market fisheries.

#### REPORTS AND PAPERS IN COURSE OF PREPARATION.

1. Report on the construction and equipment of the schooner *Grampus*.
2. Report upon the operations of the U. S. Fish Commission schooner *Grampus*, from March 15, 1887, to June 30, 1888.
3. Notes on the crab fishery of Crisfield, Md.
4. Statistical and descriptive notes on the fisheries of the Middle Atlantic States.
5. Notes on the fisheries of the Lower Chesapeake Bay.
6. Report and catalogue of the Fish Commission exhibit at the Centennial Exposition of the Ohio Valley and Central States.

STATISTICAL STATEMENTS, DESCRIPTIVE PAPERS, ETC., FURNISHED TO CONGRESS, THE EXECUTIVE DEPARTMENTS, STATE OFFICIALS, AND OTHERS.

A large amount of material that comes under this head is annually supplied by the division. Some of it requires great research and is of such a nature that it is suitable for publication in the reports of the

Fish Commission, but as a rule such information is too specialized or local in its application to warrant printing by this Commission although frequently used for that purpose by the parties and bureaus to which sent.

It is not necessary to mention here all the statements regarding the various phases of the commercial fisheries for which request has been made and which have been furnished by this office. The following list is submitted more as an index of the work and capacity of the division than as a résumé of its entire annual operations.

1. Statement of the Alaska salmon pack from 1883 to 1888, inclusive.
2. Table showing by customs districts and fishing-grounds the number of vessels engaged in the offshore bank fisheries of New England in 1888.
3. Statement showing the oyster product of the United States.
4. Statistical tables exhibiting the mackerel catch, by United States vessels, in the Gulf of St. Lawrence, during the years 1883, 1884, and 1885.
5. Tabular presentations showing the extent of the fishery industry of Sandusky, Ohio, and of Lake Erie; also of British Columbia.
6. Statement of the extent of the fishing fleet on the Grand Banks of Newfoundland and the number of vessels belonging to each country.
7. Statistical summary of the fisheries of North Carolina.

#### NOTICE OF SPECIAL MATTERS AFFECTING THE FISHERIES.

As in my previous report, it is intended, under this head, to call attention to certain matters that may not in all cases be directly connected with the work of the Fish Commission, but which, nevertheless, have such an important bearing upon the relations or prosperity of the commercial fisheries of the country as to warrant mention of them.

As a rule, every year is noteworthy for a series of events that affect, in one way or another, the present or future of certain fisheries, and perhaps few years have been more noticeable in this direction than the one covered by this report.

*Fishery treaty with Great Britain.*—Among the noteworthy events of recent occurrence none seem of greater moment than the treaty affecting the fishery relations between the United States and Canada, which was negotiated with Great Britain during the last fiscal year, reference to which was made in my previous report.

It is pertinent to mention in this connection the fact that the State Department was furnished by the Commission with a large number of copies of Sections I to V, inclusive, of the "Report upon the Fisheries and Fishery Industries of the United States," a special edition being printed for this purpose.

In addition, the Commission supplied the American commissioners with numerous statistical statements, with special papers on fisheries, and with colored maps showing the distribution of the most important species of fish, mollusks, etc., taken for food or bait between Cape Hatteras and the coast of Labrador at the intersection of the 53d degree of latitude. Besides this, the experts of the Commission rendered val-

uable service in making personal explanations of matters affecting the fisheries in North Atlantic waters.

This treaty, when submitted to the Senate, was not ratified. It is, however, noteworthy that the *modus vivendi* attached to it is to continue for two years, and this provision will probably have more or less influence upon such fisheries as are liable to be affected by it.

*Scarcity of mackerel.*—The common mackerel (*Scomber scombrus*), which constitutes one of the most important objects of fishery in the North Atlantic, was exceptionally scarce during the season of 1888,\* and, so far as could be judged from the amount taken, its lack of abundance was even more marked than during the previous year, though that also was considered an unusually bad season for mackerel fishermen.

The cruise on the southern mackerel grounds made by the *Grampus* in the spring of 1888—during the closing months of the last fiscal year—developed the fact of an alarming scarcity of mackerel, and in a measure prepared the fishing interests for the conditions met with later in the season. Nevertheless, though the fleet was not so large as on previous years, many vessels engaged in the fishery, the failure of which has entailed much financial loss upon those sections most largely interested in this industry. The result has been particularly unfavorable in its influence upon small fishing communities which have depended largely on the mackerel fishery. In some cases the effect upon these has been disastrous and discouraging, and places heretofore prosperous have received a check that it may take many years to recover from, if, indeed, their interests in the fisheries are not in a large measure permanently destroyed.

As in all cases of business disaster, particularly where the conditions are not definitely understood, many causes are assigned for the scarcity of mackerel, and many methods are suggested to secure their abundance. It is, perhaps, needless to say that those most prolific in assigning causes and suggesting remedial measures are often least qualified from study and experience to speak on the subject. It is not practicable to refer in detail to these matters here. It may suffice to say that the cause for the scarcity of mackerel most commonly assigned is the use of the purse-seine in their capture, while some have advised not only the abandonment of fishing with this form of apparatus, but the entire discontinuance of net-fishing of any kind. In view of the fact that the mackerel has been celebrated for its erratic habits; that there have been periods of scarcity and abundance ever since the settlement of the country; that the destruction of the species was apprehended in colonial times, long before the invention of the purse-seine, and re-

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\* It is practicable here to speak only of the seasons or calendar years, since the opening of the mackerel season, for vessel fishing, is limited by law to June 1 of each year, and it rarely happens that many fares are landed before June 30. For this reason the catch of the season of 1888—June 1 to November—is essentially the product of the fiscal year, at least so far as the landing of the vessels' catch is concerned.

strictive laws were then passed regulating the fishery, when the total catch did not exceed that which one vessel might make now in a reasonably prosperous season—it is easy to see that the present depletion of the species is simply a repetition of history, and any measures which are intended to remedy it should be carefully considered.

It is probable that nothing can be done which will entirely change the conditions resulting from the habits of the mackerel, though it is possible that the conditions may be materially affected and a reasonable abundance of the species be maintained continuously by artificial propagation. If millions of fry can be produced, and particularly if these can be protected and reared artificially through their earlier stages, when the greatest depletion is liable to occur under natural conditions, there is at least reason to hope that similar results will be secured as in the case of the shad.

*Artificial freezing of fish at Gloucester, Mass.*—An event fraught with great possibilities to the fisheries of New England is the adoption of the system of freezing fish at Gloucester, Mass., by artificial methods, such as have been in common use in the Great Lakes region for a number of years.

As long ago as 1878, when making his summer headquarters at Gloucester, Prof. Baird suggested the advisability of the adoption of freezers by the fishing interests of that city. However, this wise and timely advice was not heeded, and there seemed no disposition among the dealers to profit by it until ten years later, when Mr. William H. Jordan consulted with the writer as to the advisability of establishing a freezing plant on his premises at Gloucester.

It is gratifying to record that a freezer on the most approved plan has been put into operation during the present fiscal year, and Mr. Jordan has also applied this principle of artificial freezing to some of his vessels which were sent for cargoes of frozen herring to Newfoundland. The most gratifying results have been secured on the vessels thus supplied, since they succeeded in securing cargoes of frozen herring far in advance of those dependent on natural freezing, and since in consequence they reached home and a market at an earlier date, and were enabled to secure higher prices and much greater profit than otherwise could have been obtained. It seems safe to predict that, in view of the uncertainty of climate at Newfoundland, this method of freezing herring on board the vessels by artificial means will become a fixed factor in the trade, and will ultimately extend to considerable proportions.

#### PARTICIPATION IN THE CENTENNIAL EXPOSITION OF THE OHIO VALLEY AND CENTRAL STATES.

In my report for the last year, and in the preceding chapters of this report, allusion has been made to my connection with the exhibit of the Fish Commission at the Centennial Exposition of the Ohio Valley and

Central States, which was held at Cincinnati during the summer and autumn of 1888. Mention has also been made of the fact that some of the experienced clerks of the division of fisheries were detailed to duty in connection with the exposition. In a special report on this subject (which appears contemporaneously with this) detailed mention is made of all these matters. It may suffice to say here that my duties in connection with the exposition kept me at Cincinnati until November, 1888, and were not entirely discontinued, after my return to Washington, until late in the spring of 1889. In the settling up of the affairs of the exhibit, after the close of the exposition, much work was also required of several of those who had been connected with it, even after they had been reassigned to the Division of Fisheries. This made it necessary to do a large amount of work at night.

#### INQUIRY CONCERNING THE GRAMPUS.

The relations of the division to the schooner *Grampus* during the year have been very intimate and seem to deserve special mention. As soon as the Fish Commission exhibit was properly installed at Cincinnati and in good working order, I left that city on August 2, in compliance with orders from the Commissioner, and proceeded to Gloucester, Mass., where the *Grampus* was then lying. The vessel had been at Gloucester more than a month, the commanding officer being absent on sick leave. It was important that she should be put in order for service and that some one should be employed to take command of her temporarily, until such time as it was believed Capt. D. E. Collins might be able again to resume charge of the vessel.

Acting under the authority of the Commissioner, I had certain repairs made to the vessel and she was put in first-class order for sea service. I also engaged Capt. George H. Martin to take command of the *Grampus*, after which the vessel sailed for Wood's Holl. I went on her and made several trips from Wood's Holl, in order to familiarize Capt. Martin with the routine and general work prosecuted by the schooner. Early in September I left Wood's Holl and returned to Cincinnati via Washington, where I spent a few days to look after affairs in the office of the division.

Early in November, and shortly after my return to Washington from Cincinnati, I was ordered to Gloucester, Mass., on special duty. On November 16, 1888, the Commissioner telegraphed the information that the *Grampus* was ashore on Bass Rip, Nantucket Shoals, and directed me to take such measures as seemed necessary to rescue the vessel, etc.

It may be stated that the vessel went ashore on Bass Rip on the morning of November 15, and was abandoned that evening, the wind at the time blowing a moderate gale, with indications of the approach of a heavy storm. The vessel drifted off the shoal after being abandoned, and several days later was picked up and brought into Wood's Holl. Before her arrival I was directed by the Commissioner to make

an official investigation of all matters connected with her stranding and abandonment, and after her return I was ordered to continue the inquiry, including such testimony as could be obtained respecting her rescue, etc. I was also ordered to assume charge of the vessel for the time being and take her to Gloucester, Mass., and have such repairs made as seemed to be necessary; likewise to employ a captain to take charge of her when she was ready, and to enlist a crew.

This duty, which, as has been stated, began November 16, was not completed until after the middle of January, though the work was pushed with all possible vigor. I reported in Washington, January 21, 1889, and after my arrival there an exhaustive report was compiled, embracing all the testimony and other data relating to the stranding, abandonment, etc., of the vessel.

Circumstances over which the writer had no control prevented the preparation of the reports on the construction and equipment of the *Grampus* and on her work for the fiscal year ending June 30, 1888, until the latter part of the present year. As soon as it was feasible to do so, the compilation of these reports was undertaken and pushed forward as rapidly as possible. At the close of the year both were in an advanced stage of completion, though it is proper to say that the time and labor devoted to them have necessarily obstructed the expansion of the division work in some other directions.

