

CORRESPONDENCE RELATIVE TO THE PROCUREMENT OF CERTAIN FISHERY IMPLEMENTS FOR THE GOVERNMENT OF NEW SOUTH WALES.

By CAPT. J. W. COLLINS.

[Letter to Prof. S. F. BAIRD.]

I have the honor to submit the following report of the correspondence relative to the procurement of fishery apparatus for the Government of New South Wales.

On the 5th of September, 1881, I received from Sir Saul Samuel, the agent-general of the New South Wales Government, the following letter, dated 5 Westminster Chambers, Victoria street, S. W., London, August 22, 1881:

"I have the honor to inform you that I am anxious to procure for my government the undermentioned, namely:

"A purse-seine, such as is used in the menhaden fishery on the Maine coast, North America.

"A bultow or set-line, such as is used by the French fishermen at Newfoundland.

"I learn from Mr. Spencer Walpole, the inspector of English fisheries, that I may possibly purchase them of you.

"Should you be able to furnish me with these articles, and will have the goodness to forward them to Messrs. R. W. Cameron & Co., 23 South William street, New York, properly packed for transmission to Sydney, I shall be much obliged to you.

"By this post I write to Messrs. Cameron & Co., directing them to receive the goods and to pay all charges that may be incurred by you.

"If you should be able to comply with this request, will you please render your account to Messrs. Cameron & Co. accordingly."

To this I replied from Washington, under date of September 7, 1881, as follows:

"Your favor of August 22, requesting me to obtain and transmit to your government, through your New York agents, a purse-seine and line-trawl, is at hand.

"I shall take pleasure in executing the commission you have honored me with, and the matter will receive my close attention.

"With the seine and line I shall send certain articles which are indispensable for their proper management, and which, I have no doubt, will be well appreciated by the people of New South Wales.

"Any future service you may require will be most cheerfully given."

On the 6th of September I received the following letter from R. W.

Cameron & Co., the New York agents of the New South Wales Government, and dated 23 South William street, New York, September 5, 1881:

"We are informed by Mr. Yardley, secretary of the New South Wales Government agency, London, that the fishery instruments mentioned below have been ordered from you for shipment to Sydney, New South Wales, through us. We are also instructed to pay for the same, and will be pleased to know when you can forward the goods, for the cost of which we will have pleasure in sending you our check.

"A purse-seine, such as is used in the menhaden fishery on the Maine coast.

"A bultow or set-line, such as is used by the French fishermen of Newfoundland."

I immediately corresponded with parties in Boston and Gloucester relative to the construction of the apparatus required, and had the satisfaction of engaging the well-known firm of H. & G. W. Lord, of Boston, to make the seine, and Capt. George Merchant, jr., an experienced fisherman, of Gloucester, to construct the trawl-line and prepare the necessary attachments.

Soon after this an attack of illness rendered it necessary for me to leave Washington and go to Gloucester, where I might profit by the cool sea air.

After reaching Gloucester I wrote, under date of September 13, 1881, the following letter to Messrs. R. W. Cameron & Co., the New York agents, relative to the procurement of certain articles not specified in the letter of the Agent-General of New South Wales, but which I thought indispensable:

"I think it quite important that a set of seine-boat fittings, such as those named in the inclosed list,† should be sent with the seine to Sydney, New South Wales. My opinion is fully indorsed by those having the widest knowledge of the American fisheries. All the articles marked with a (*) are indispensable for the management of a purse-seine, while the rowlocks and sockets, though not absolutely necessary, are nevertheless the result of many years' experiments, and will no doubt be valuable to those to whom the seine is sent. * * * The whole cost delivered in New York would scarcely exceed \$31.

"With the trawl I am also anxious to send a roller and nippers, all of which will cost only about \$3.50. They are exceedingly valuable, and not obtainable in any other country.

"Before deciding fully to send these articles, I wish to consult you

† The following is the list referred to in the letter: * 1 pursing davit; * 1 davit guard and step; * 1 pair large pursing blocks; * 1 pair small pursing blocks; * 1 set of cleats; * 1 set of oar-holders; * 1 set (6) of eye-plates; 1 set of rowlocks and sockets; * steering rowlock and socket.

about the matter and get your opinion of what I ought to do. The seine and trawl are now in course of construction, and will probably be completed and ready for shipment in three weeks."

In reply the following, dated 23 South William street, New York, 16th September, 1881, was received :

"We are in receipt of your favor of the 13th instant, in regard to extra fittings for fishery apparatus ordered for the Government of New South Wales. As these extras are important, we authorize you to procure them, and beg to thank you for your interest in having everything in order. We note that you think the goods will be ready for shipment in three weeks."

This matter having been settled, another of even greater importance engaged my attention. This was the question of what should be applied to the purse-seine as a preservative. It is well known that our fishermen have their seines almost exclusively prepared with coal tar, but this method of preserving netting, though a most excellent one where the seine can be kept in brine, or thoroughly salted in the open air, would not answer for a net that was to be closely packed for months and stowed in a ship's hold for a long sea voyage across the tropics. Even if spontaneous combustion did not occur—and there was reason to fear that it might—the seine would soon become overheated and the twine impaired to such an extent as to render it utterly worthless. The other common method of preserving netting, that of barking or tanning, is not a good one for purse-seines, and is rarely resorted to by our fishermen. From conversations with Capt. George Merchant, jr., and other experienced seine fishermen, I learned that an application of tar and tan might obviate any difficulties likely to occur from using either one of these preservatives alone. I therefore wrote, under date of Gloucester, September 28, 1881, to the Messrs. Lord as follows :

"Some of the most experienced fishermen here say that a barked or tanned seine will not last more than one season at most. They think a net might first be lightly tarred and then tanned, and be transported with less risk than if either tar or tan was wholly used, providing the tar was thoroughly dried before the tan was applied. Such a method they think would preserve the seine as well or better than any other, and without much risk. Your long experience in the manufacture of nets and seines will enable you to judge as to the merits of these suggestions, which I submit for your consideration.

"I shall be pleased to hear how the seine is progressing, and also to have your opinion as to the method of preservation mentioned above."

To this letter I received the following reply, dated Boston, September 29, 1881:

"Your favor of yesterday received and contents noted. The seine-

web is completed and ready to color. We are aware that coloring is not the proper thing for a menhaden seine, and would not have proposed it except in case of emergency. We have prepared netting in the way you propose, and think it lessens the risk very much. We think the fishermen's experience is worth considering, and in giving your assent, as we understand you do, we have concluded to tar and tan in the manner suggested. In this process we shall endeavor to be particular and leave nothing undone towards preserving the seine, so that it will be a week or ten days before it is ready for shipment. We will notify you at Gloucester, unless otherwise ordered, when ready, or shortly before."

On the 4th of October I wrote to Messrs. Cameron & Co., New York, acquainting them with the progress that was being made in the preparation of the seine and trawl, and also informing them of the method of preparing the seine which I had decided to adopt. In reply, they wrote, under date of October 5, 1881, as follows:

"We duly received your favor of yesterday's date, the contents of which we have perused with much interest, and would again express our warm appreciation of the interest you are taking in the apparatus for the New South Wales Government.

"We regret to hear that your health is so poor, and sincerely trust it may improve, and so enable you to prepare the drawing you refer to, which the honorable the agent-general would certainly appreciate, and which would also greatly assist the folks in New South Wales."

The seine was completed and shipped to New York October 18. The acknowledgment of its receipt there is contained in the following words, transmitted under date of October 22, 1881:

"We have pleasure in advising you of the arrival here of two bales, containing the nets for New South Wales Government, and of their shipment on board the bark Ingleside, for Sydney.

"We hope your health has improved, and would be pleased to receive bill for cost of the apparatus, and also any suggestions you may think necessary as to its use."

Although the state of my health was such that I was confined indoors, I was nevertheless able to write quite a long letter to the Messrs. Cameron & Co.; a copy of which I neglected to keep. Replying to me and acknowledging the receipt of the articles from Gloucester, they wrote October 28, 1881, as follows:

"We duly received your esteemed favor of the 24th instant, copy of which we forward to-day to the agent-general for New South Wales, in

London, informing him at the same time that you would send to him a more detailed account, with diagram, &c.

"The two cases from Gloucester arrived here yesterday, and were this morning shipped on board of our Sydney vessel. * * * We were much pleased to hear that your health is improving, and again thank you for your attention to the interests of the New South Wales Government."

On the 5th of November I wrote to the Sir Saul Samuel, agent-general for New South Wales, in London, sending him at the same time a rough diagram and some published illustrations of a seine-boat, in order that the use (as well as the position they should occupy) of the seine-boat fittings might be more easily understood. The following is the language used November 5, 1881:

"I have the honor to inform you that the purse-seine and set-line you desired to purchase of me, in your letter of August 22, have been completed and forwarded to R. W. Cameron & Co., New York, according to your instructions.

"Being fully aware of the possible advantage to be derived by the people of New South Wales from the introduction of these improved forms of fishing apparatus, I have felt that it was very important that each article should be constructed in accordance with the most recent and approved methods. Nothing that experience could suggest has been omitted to insure the completeness of the apparatus.

"Much care has also been taken in packing the goods in water-proof coverings to insure, so far as possible, their safety during transportation.

"As brief descriptions of the seine and line may be of interest, I will give them here, together with some suggestions as to the use, care, &c., of the apparatus, which I hope may be of service.

"The purse-seine which has been sent to Sydney, New South Wales, a rough diagram of which is inclosed, is of the same size as those most generally used in the menhaden fisheries, namely, 185 fathoms long and about $8\frac{1}{2}$ —600 meshes—deep when hung. The size of the mesh is $2\frac{3}{8}$ inches in the wings, and $2\frac{1}{2}$ inches for the remainder of the net. The plan, though incorrect so far as the relative proportions of the net are concerned, will serve to give an idea of the several sections and their position. The dimensions of the divisions, each of which is made of different-sized twine, the two wings having the smallest, the bunt the largest, while intermediate sizes are used for other sections, and has a technical name, are more clearly shown by the following figures: Wings, each 3,150 meshes long, 600 meshes deep; bunt, 500 meshes long, 300 meshes deep; top of bunt, 300 meshes long, 30 meshes deep; sides, each 100 meshes long, 300 meshes deep; under, 700 meshes long, 300 meshes deep.

"The loops, and line passing across their ends, represent the bridles

and purse rope, which are attached to the bottom of the seine, and by means of which it is drawn into a purse or bag. In this place I will remark that, on account of its bulk, it was found necessary to pack the seine in two bales. One bale contains one wing of the net, five-eighths of the purse rope, &c., while the other holds the remainder of the seine and rope. Both parts of the apparatus are hung, and one at all familiar with netting will find no difficulty in joining the two sections together; suitable kinds of twine have been packed in the bales for this purpose.

“Though it was easy enough to decide upon the size and other general details of construction, the kind of preservative to be applied to the seine was in this case an important matter, demanding the most careful consideration. If a mistake should be made in this particular the implement might be ruined before it reached its destination. On the other hand, an inferior method of preparation would not protect the net from decay when in use even if it arrived safely in Sydney. Coal tar, heated by steam, is almost universally applied to seines which are to be used here, though it is well known that when so prepared they can be transported only short distances, the heat of the tar causing the net to rot. The manufacturers suggested tanning with catechu in this case. I was not sure but what this method would have to be adopted, although seines so prepared will not usually last more than one season of six months, while those that are tarred will wear three or four summers. I learned, however, from one of the most experienced seine fishermen of this port, one who is also an expert in the preparation of netting, that by first tarring lightly and then tanning the net it might pass without injury through the heat of the tropics, the long sea voyage, and still retain the strength and wearing qualities that seines have here. I was shown a bundle of netting which had been prepared in a similar manner in 1876, and which still retains its strength notwithstanding it has been lying in a compact mass ever since in a place where it has been exposed to a high degree of heat in summer. The evidence of the superiority of this method of preparing netting which must be transported long distances appearing indisputable, I wrote to the manufacturers in regard to it. They replied as follows:

“‘We are aware that coloring (tanning) is not the proper thing for a menhaden seine, and would not have proposed it except in case of emergency. We have prepared netting in the way you propose and think it lessens the risk very much. We think the fisherman’s experience is worth considering, and in giving your assent, as we understand you do, we have concluded to tar and tan in the manner suggested. In this process we shall endeavor to be particular and leave nothing undone towards preserving the seine.’

“This method of preparation delayed the completion of the net for about two weeks. I hope, however, that it may arrive in good condition in Sydney, and that the extra care, time, and labor may not have been misspent.

"Mention has been made that the average length of time a tarred seine can be used is about three or four years. Much, however, depends on the care observed, any neglect on the fishermen's part soon resulting in ruined apparatus. The bunt of a seine will rarely last more than one season, it being exposed to much more wear than the other sections of the net.

"Since the proper care of a seine is a matter of some importance in a pecuniary sense, it may not be out of place to mention here the methods most commonly employed by the American fishermen. During the fishing season, which continues from March or April to November, the seines are kept constantly damp except when they are taken on shore for repairs. Whether they are stowed in the boat or on the vessel's deck, they are *always* salted during the process of stowing except they are to be used immediately. The salting is done soon after the seine is taken from the water. The quantity of salt used varies from one-half to two barrels, more, of course, being required for a dirty net than for one comparatively clean. Strong brine is also put on in addition to the salt if necessary. Seines are occasionally salted to keep over winter, but the ordinary method is to wash and dry them thoroughly, after which they are taken to repairing lofts, mended, and then stowed away until the following spring.

"As a rule seines are tarred anew at the beginning of the second season, and again about the middle of the third summer. The tar is heated by jets of steam which issue from a perforated pipe. This pipe extends diagonally across the bottom of the kettle or tank containing the tar. For a new seine the liquid is heated to about 110° or 120° F. As the net grows older a greater degree of heat is required. After being immersed in the steaming tar the twine is passed between two large rubber rollers which remove all superfluous tar, while at the same time spreading it evenly on the net, which is then dried on a field.

"With the seine, but in a separate package, has been sent a set of seine-boat fittings; these include the pursing gear, without which a purse seine cannot be managed. Knowing how important it was that these articles should be sent with the seine, I sought the advice of Prof. Spencer F. Baird, Commissioner of Fisheries, and of Prof. G. Brown Goode, about the matter. They both thought it would be much to the advantage of the people of New South Wales to send the things. I therefore sought and obtained permission from Messrs. R. W. Cameron & Co. to purchase the articles, each piece of which has its name attached, while the position it should occupy in the boat is shown on the rough diagram, and the accompanying plate, which I send with this. The diagram and plate will give a very fair idea of the shape and relative proportions of the seine boat, the largest of which are 36 feet long, though those of 35 feet in length are most generally preferred, and are well adapted for any kind of purse-seine fishing. Indeed, it may be said without exaggeration that much of the success of the American purse-

seine fishery, especially that for mackerel, is due to the excellence of these boats, which are justly celebrated for their many good qualities.

"The capture of fish with a purse seine has been so fully discussed in the 'History of the American Menhaden' by Prof. G. Brown Goode, that it will not be necessary for me to speak of it here, since, without doubt, the Government of New South Wales is in possession of several copies of the above work.

"The set-line or bultow which has been sent to Sydney is the same in size and general construction as those which are used on the first-class American schooners engaged in the cod fisheries. Two men manage a line of this kind, though it is divided into sections for greater convenience in handling, and, if desirable, two or more set-lines may be made of it. In regard to the apparatus used by the French at Newfoundland, it is, perhaps only necessary to say that for several years past they have adopted the same kind as is employed by the Americans, though, as a rule, the former are not so particular in rigging their gear as the latter, so far as neatness and completeness are concerned. The set-line has been constructed of the best materials and in the most thorough manner. It comprises the following parts, namely: Ground line, nearly 11,150 feet long; 2,000 hooks attached to the ground line by small lines called gangings*, each 3 feet long (the hooks are placed 5½ feet apart); two small anchors, two keg buoys to mark the position of the line, two buoy lines, each 100 fathoms long, two flags for the buoys, and a 'trawl roller' and two pairs of 'nippers.'

"The set-line itself, with its several parts of anchors, buoys, &c., is so well understood by the fishermen of most countries that I will not presume to say anything here of it or of its use. Of the trawl roller and woolen nippers, articles which are not well known to any but American fishermen, I will speak more at length. These, like the seine-boat fittings, are 'extras,' but since they are considered indispensable by our fishermen, and the cost is trifling, I sent them with the bultow. The latter can be handled much quicker and with far more ease with the assistance of these articles than it could possibly be otherwise. The trawl roller is secured to the gunwale of the boat, near the bow, in such a manner that the line passes over it as the bultow is pulled in by the fishermen. The woolen nippers are held on the hands of the fisherman (one on each hand), who is thus enabled to grasp the line firmly and to pull with all his strength, an impossible feat for a bare-handed person. Herr von Behr, President of the *Deutsche Fischerei Verein*, assured me that, though simple in contrivance, and comparatively insignificant in appearance, the woolen line-nippers, in his opinion, deserved to rank among the most important of the American exhibits at Berlin.

"My interest in the success of the attempt to introduce the purse-seine and set-line into the fisheries of New South Wales is my only excuse for incurring the additional expense necessary to guard against

* The second "g" is pronounced soft like "j"; thus gän-gings.

failure, and no better apology can I give for the liberty I have taken in writing you this long letter. I humbly hope that my action in this matter may meet with your approval, as well as that of the government.

"Assuring you that I shall be happy to render you any future service, I have the honor to be, your obedient servant, &c."

The reply to the foregoing was dated 5 Westminster Chambers, Victoria street, S. W., London, December 1, 1881, as follows:

"I have the honor to thank you for your interesting letter of the 5th November last in reference to the purse-seine and set-line which you have been good enough to procure for transmission to Sydney, through Messrs. R. W. Cameron & Co., of New York.

"I shall have pleasure in sending a copy of your letter to my government for their information, and I tender you my best thanks for the trouble and attention you have been pleased to bestow on this matter."

About the middle of June, 1882, I received the following letter, dated New South Wales Government, 5 Westminster Chambers, Victoria street, southwest, June 1, 1882, and inclosing a copy of one from the Colonial Secretary of New South Wales:

"I have much pleasure in forwarding herewith a copy of a dispatch received by me from the Colonial Secretary of New South Wales, requesting me to convey to you the thanks of the Commissioners of Fisheries of New South Wales for your courtesy and the trouble you have taken in regard to certain fishery implements asked for by them."

NEW SOUTH WALES,
COLONIAL SECRETARY'S OFFICE,
Sydney, March 31, 1882.

SIR: Referring to your letters, dated respectively the 18th November and 2d December last, regarding the transmission of certain fishery implements by Captain Collins, of the United States Fishery Commission, and Herr Wallem, of Bergen, Norway, I have the honor to request that you will be so good as to convey to the above-named gentlemen the thanks of the Commissioners of Fisheries for New South Wales for their courtesy and the trouble they have taken in the matter.

I have the honor to be, sir, your most obedient servant,

JOHN ROBERTSON.

The AGENT-GENERAL FOR NEW SOUTH WALES, *London.*

I have been unable to learn anything of the condition in which the apparatus reached Sydney, a matter in which, for reasons already explained, I felt much interest.

Replying to a letter of mine asking for information relative to this subject, Mr. S. Yardley, secretary for the New South Wales Government agency, writes under date of November 10, 1882, as follows:

"Sir Saul Samuel has not received any communication from the government in regard to the fishery implements that you were kind enough to collect and transmit to Sydney, and he fears that possibly they have all been destroyed in the disastrous fire at the Garden Palace."