THIRTY-FOURTH ANNUAL REPORT

OF THE

DEPARTMENT OF MARINE AND FISHERIES

1901

MARINE

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1902

[No. 21—1902.]

To His Excellency the Right Honourable Sir Gilbert John Elliot, Earl of Minto, *Governor General of Canada, etc., etc.*

May it please Your Excellency:

I have the honour to submit herewith, for the information of Your Excellency and the Legislature of Canada, the Thirty-Fourth Annual Report of the Department of Marine and Fisheries, Marine Branch.

I have the honour to be,
Your Excellency's most obedient servant,

JAMES SUTHERLAND,
Minister of Marine and Fisheries.

Department of Marine and Fisheries,
Ottawa, January, 1902.

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ERRATA.

In the General Summary of Expenditure for fiscal year ended June 30th. 1901, Appendix 1, Part II, the following corrections were made after the statement was printed :—

Maintenance and repairs to Dominion Steamers should read	$ 201,820 37
Total expenditure for Ocean & River Service, should read	233,161 98
Total Marine expenditure should read	1,036,260 96
Total Marine & Fisheries should read	1,527,830 53

PART I

THE REPORT OF THE DEPUTY MINISTER—THE REPORT OF THE CHIEF ENGINEER IN DETAIL RELATING TO CONSTRUCTION AND REPAIRS TO LIGHTHOUSES, HYDROGRAPHIC SURVEY AND TIDAL SURVEY.

REPORT OF THE DEPUTY MINISTER.

To the Honourable
JAMES SUTHERLAND,
Minister of Marine and Fisheries.

SIR,—I have the honour to report on the transactions of the Marine Branch of this department for the fiscal year ended June 30 last, and to give an account of a portion of the business up to date.

In Part I. of this report will be found the detailed report of the chief engineer on construction and maintenance of lighthouses and other aids to navigation, references to the reports of the chairman of the Board of Steamboat Inspection, chairman of the Board of Examiners of Masters and Mates, the inspectors of Live Stock Shipments, the director of the Meteorological and Magnetic Service, the inspector of Signal Service and the reports on Life-boat Stations and Rewards for Humane Service.

A short account of the work of the Dominion steamers is given and the expenditure in connection therewith, the buoyage of the coast, harbours and inland waters, the purchase of oil for the use of lighthouses, the marine hospitals in the Dominion, certificates to masters and mates, and wrecks and casualties.

In Part II. the reports from which the synopses have been made will be found in extenso, also statements of expenditure, revenue, sick mariners dues, wharfage, wrecks and casualties, steamboat inspection, and a list of light-keepers.

The amount expended on the various branches of the public service comprised in the Marine branch of this department, during the fiscal year ended June 30 last, was $967,484.01, the expenditure for the previous year was $919,616.94, not including expenditure for civil government. The expenditure for civil government for the fiscal year ended June 30 last, was $58,699.32, and for civil government contingencies, $10,077.63. It will thus be seen that the expenditure for the various branches of the Marine branch and for civil government was $1,036,260.96. The Fisheries expenditure amounted to $491,569.57, total $1,527,830.53.

The amount voted by Parliament for the different branches of the department of Marine and Fisheries, including Fisheries and the departmental salaries was $1,742,-771.40, it will thus be seen that the expenditure for the fiscal year was $214,940.87 less than the amount voted by Parliament.

The whole number of persons in the outside service of the Marine branch, including crews of fishery and marine steamers at the date of this report is 1,941.

During the past fiscal year the expenditure for maintenance of lights and coast service amounted to $505,436.08; construction, $73,376.08; total for maintenance and construction, $578,812 72; while for the previous year the expenditure for lighthouse and coast service, including construction was $516,494.40; showing an increase of expenditure for the year ending June 30 last, of $62,318.32.

The appropriation for this service was $713,310, the expenditure being $134,-497.28 less than the appropriation of Parliament for the fiscal year.

LIGHTHOUSE SERVICE.

The lighthouse service of the Dominion is divided as follows :—The Ontario division, embracing all lights from Montreal westward to the North-west Territories ; the Quebec division, extending below Montreal and including the river and gulf of St. Lawrence and Strait of Belle Isle ; the Nova Scotia division, including St. Paul's Island, Cape Breton, Sable Island and Cape Race, Newfoundland ; the New Brunswick division ; the Prince Edward Island division and the British Columbia division, each including lights within the provincial boundaries.

The total number of light stations, lightships and fog-alarm stations in the Dominion on June 30, 1900, was 705, and lights shown 886 ; the number of steam whistles, fog-horns, bells and guns, 90 ; the number of light-keepers and engineers of fog-alarms with masters of lightships was 708.

The report of the chief engineer relating to lighthouse construction, repairs, hydrographic surveys, &c., will be found in Part I. The principal repairs, changes and improvements at existing stations are referred to in his report, also new aids to navigation. The work done at fog-alarm stations in connection with steam whistles, compressed air horns and explosives, are dealt with under the proper headings. Information is also given respecting the extent of repairs and some account of the repairs in detail, under the head of the station.

CORRESPONDENCE.

About 18,741 letters, exclusive of telegrams, were received in the department during the fiscal year. The correspondence was carefully examined and replied to as far as necessary. About 13,000 letters were sent out during the same period. Forms, reports, circular letters, notices inviting tenders, are not included in the number of letters addressed to this department or sent out.

These forms, &c., are numerous and require special attention as the matters to which they refer are important.

In the Records Branch of the department the letters received are carefully examined, entered in the record book, placed on file, and the copy of the reply attached, so that the letters and the answers can readily be seen, and any subject easily followed up.

MERCHANT SHIPPING.

Reports relating to merchant shipping for the calendar year of 1901 have not been received from the registrars of shipping in various parts of the Dominion. The reports are made up to the end of the calendar year, as provided by the Canadian Shipping Act, and therefore, will not be received until some time after the month of January.

The statements showing the number of vessels in the registry books of the Dominion, December 31, 1901, will appear in Supplement No. 1 of this report. The number

of new vessels built and registered will also be shown, and also a comparative statement of the tonnage of new vessels built and registered from 1874 to 1901, both inclusive.

Mr. W. L. Magee, chief clerk, attends to all matters in connection with merchant shipping.

BUOYS AND BEACONS.

The extended coast line of Canada, and numerous bays, inlets, rivers, lakes, harbours, and other navigable waters require a large number of buoys, which are maintained at an average cost of $55,000 per annum. For the fiscal year ending June 30 last, the service cost $64,584.84. The cost of this service is materially increased in years when large contracts are made for steel signal and other coast buoys.

The department has been for some time past substituting steel coast buoys for wooden buoys, with favourable results. The districts now buoyed in all parts of the Dominion number about 330, and the buoys number over 3,150. A record of the names of shoals, dangers, reefs and various points in channels, harbours, &c., where the buoys are placed, is carefully maintained ; this enables the department to immediately locate the buoys when any reference is made to them in the correspondence.

The contract system has been found to work most economically and efficiently ; in the majority of instances the contracts are immediately under the supervision of departmental officers, whose duty it is to report to the department any neglect of work on the part of the contractors. There are now existing about 200 contracts, some of which will shortly expire, but new contracts will be entered into in the spring. The contractors are paid semi-annually upon the certificate of the superintending officer. There are, however, some districts not under contract ; the work is being attended to by the harbour masters. In these cases it has been found more advantagous to place the work immediately in the hands of these officers.

A large number of whistling, bell and other iron buoys are maintained along the coast of the several provinces by Dominion steamers, particularly the Nova Scotia, New Brunswick and British Columbia coast. The cost of this maintenance by the steamers is not charged directly to the buoy service but is included in the cost of maintenance of steamers which frequently perform the double duty of attending to lighthouses and the coast buoy service on the same trip.

The expenditure in connection with the buoy service for the year ended June 30, 1901, was as follows :—

For the province of Quebec including the port of Montreal	$27,156 58
Above Montreal including Ontario	8,342 82
Nova Scotia	13,621 02
New Brunswick	9,758 82
British Columbia	2,625 36
Prince Edward Island	3,080 24
Total	$64,584 84

In addition to the buoys for marking dangers there are eleven gas buoys below Quebec and one spare buoy, also gas works, supply tank, &c. Two gas buoys are maintained in Pelee Passage, Lake Erie, and three in Parry Sound, Ontario. All these assist vessels at night by their light.

The steam barge *Shamrock* was engaged in the buoy service in the ship channel between Montreal and Quebec, and was immediately under directions from the department in carrying out the work of buoying the channel. This service is referred to in the Chief Engineer's report.

Tenders were invited and contracts entered into for the following steel buoys during fiscal year, viz., nine whistling buoys, six bell buoys, seven conical bnoys, and twenty can buoys for the Nova Scotia agency; four automatic and eighteen conical buoys for the New Brunswick agency, and five conical, three can and three swift current buoys for the Quebec agency.

OIL FOR USE OF LIGHTHOUSES.

The contract for supplying lighthouse oil was carried out by the Imperial Oil Company of Sarnia, for the season of 1901.

The specification upon which tenders were invited, required the oil to weigh at 62° Fahr., not less than 7·85, nor more than 8·20 lbs. per gallon, and to withstand a flash test of 115° Fahr.

The quantity of oil supplied lights above Montreal during the season of 1901, was 22,539·77 gallons imperial measure, which cost $3,826.92; to the lights in the Quebec district, 26,524·18 gallons, which cost $4,435.91; to the lights in the Nova Scotia district, 31,296·18 gallons, which cost $6,650.44; to the New Brunswick district, 10,008 gallons, costing $2,158.50; to the Prince Edward Island district, 11,671 gallons, costing $2,467.73.

In addition to this the department purchased from the Standard Oil Company, of New York, 7,000 gallons of American oil for the Nova Scotia district, at a cost of 17½ cents a gallon in New York; for New Brunswick, 4,500 gallons, at 17½ cents a gallon; for the district above Montreal, 10,060 gallons at the same price in New York. The freight was paid by the department. In addition to this 7,000 gallons of American oil was purchased for the British Columbia district, at 21½ cents a gallon.

The list of prices according to contract is as follows:—

Delivered at	Per gall. in barrels.	Per gall. in case.
	Cts.	Cts.
Sarnia	14¼	19
Hamilton	15	19¾
Kingston	15¾	20¼
Montreal	16¼	20¾
Quebec	16½	21¼
St. John, N.B	16½	21¼
Pictou, N.S.	16¾	21½
Halifax, N.S.	16½	21¼
Charlottetown, P.E.I.	17¼	22

DOMINION STEAMERS.

'LANSDOWNE.'

The *Lansdowne* is a wooden steamer, commanded by Captain George W. J. Bissett, and has a crew of 34 men in all. Her dimensions are 188 feet in length, 32 feet in breadth, and 15 feet in depth; gross tonnage 680, and registered tonnage 463.

On July 1, this steamer was laid up in St. John Harbour for repairs. The crew were employed in getting supplies on board, and on July 6, she was put into commission and took up the lighthouse and coast service of the New Brunswick agency, in which she was employed until August 9. From that date until September 19, she was engaged in the New Brunswick buoy service.

On September 20, the steamer left St. John to go to the assistance of the *D. G. S. Newfield,* which, unfortunately, was wrecked on the same date off White Cove, Digby Neck. The *Lansdowne* was employed until September 30, landing materials, &c., from the wrecked steamer.

The *Lansdowne,* on October 1, took up the lighthouse and coast service of Nova Scotia, and was continued in this service until November 3, when she resumed work in the New Brunswick agency. She continued in this service until January 21, 1901. The steamer then returned to Halifax, and was employed in buoy service until the end of the fiscal year.

During the year the *Lansdowne* was painted and the machinery in the engine room thoroughly inspected, repairs were made to the steam steering gear, winches and windlass.

'ABERDEEN.'

The *Aberdeen* is an iron screw steamer 180 feet long, 31 feet broad, and 16 feet deep; her tonnage is 674 gross, and 266 net. Her captain is Sigismund Bélanger, and her crew consists of 36 all told.

The steamer *Aberdeen* is under the Quebec agency, and on July 1, after coaling at Pictou, she was employed in supplying lighthouses in the Quebec division. Between July 20 and the end of the month she took on board lighthouse supplies and resumed the lighthouse supply service. The trip extended to Belle Isle, the steamer calling at Cape Bauld, Cape Norman, and several other stations on the way. The steamer returned to Quebec on August 23, where she lay until October 7 undergoing repairs.

Repairs were made to the forecastle, and the vessel was thoroughly cleaned and painted anew. The supply service was again taken up and the steamer went to Newfoundland where she supplied the different Canadian stations in connection with the service there. She next went to Pictou, took in a supply of coal, and continued in supply service until December 13.

The *Aberdeen* was then placed under the Halifax agency and left Halifax on a trip to Sable Island on December 20, but owing to stormy weather did not land there until December 26. The vessel continued in the Nova Scotia lighthouse and buoy service until April 16, when she left this agency and returned to Quebec.

The steamer was then put into the regular lighthouse and buoy service of the Quebec agency and was engaged in this service until the end of the fiscal year.

'DRUID.'

The *Druid* is an iron screw steamer of 161 feet in length, 21 feet in breadth, and 9 feet in depth. Her tonnage is 239 tons gross, and 166 tons net. The vessel was commanded by Captain Charles Koenig, and had a crew of 20.

This steamer left Quebec on July 1, and proceeded down the river to visit and replenish some of the gas buoys and returned on July 4. She left Quebec with timber for Point aux Origneaux to repair the lighthouse at that place, and then proceeded to Cape Salmon with a mechanic to repair the fog alarm signal, and at which place she also left a supply of lumber and timber. She next went to Lévis and took on board timber for the Traverse pier.

The *Druid* made a trip to Crane Island where vessels had been reported touching bottom and took bearings. A special report to that effect has been made.

On July 17, the steamer proceeded to Upper Traverse with Hon. Mr. Dobell, Col. Anderson, Mr. Evans and others on board, who visited the new Traverse pier. The *Druid* was engaged for some time in the buoy service of North Channel, St. Lawrence River.

On August 13, the Chief Engineer, Captain Koenig and crew were employed in locating the place for the back range light at Point à Basil. The Chief Engineer also visited Ste. Croix range light, and at Cap Charles located a site for a lighthouse.

The *Druid*, with 100 citizens on board passed down the river August 24, and at St. Joseph Lévis met the R. M. steamer *Lake Ontario*, from which she took on board 117 invalid soldiers and landed them at Quebec. She afterwards made trips to Upper Traverse in connection with the construction of the pier and lighthouse at that place.

On September 1, the buoy service of the St. Lawrence was again taken up, and the steamer was principally employed in this service until late in December. A special trip was made on November 4, when the *Druid* took from the ss. *Cambroman* invalided soldiers from South Africa and landed them at Quebec.

On December 28, the *Druid* was placed on Russell Dock, Point Lévis. Captain McElhinney, nautical adviser, together with Jos. Samson, boiler and machinery inspector, and S. R. Hill, inspector of hulls and equipments, made a thorough inspection of the steamer and found it to be unseaworthy. Tenders were invited for the sale of the steamer. Eleven tenders were received by the Department, the highest being $2,150 and was accepted. The steamer was purchased by A. E. Pontbriand, Esq., Sorel, P.Q.

'CONTEST.'

Owing to the sale of the *Druid* December, 1900, the ss. *Contest* was chartered for the Quebec agency to take her place, and Captain Koenig, late of the *Druid*, was placed in charge. She entered upon the buoy service on May 16, and at the end of the fiscal year was still employed in that service.

'QUADRA.'

The *Quadra* is an iron steamer 174 feet long, 31·1 feet in breadth, and 13·6 feet in depth. Her gross tonnage is 573.30, and her registered tonnage 265·25. This steamer is commanded by Captain John T. Walbran, and has a crew of 21 all told.

The steamer *Quadra* is employed in the British Columbia agency, and on July 1, returned to Victoria after two weeks spent investigating the fisheries of the northern parts of the province. The work of constructing cabins to be used by His Excellency the Governor General of Canada, and suite, was then begun and completed August 3.

On Friday, August 4, His Exeellency, the Governor General, Lady Minto and suite, went on board the *Quadra* for Skagway. The steamer arrived there August 10 and remained until August 23, when the return trip began. She arrived at Victoria on August 31, and proceeded to Vancouver, landing there September 5. On the following day the Vice Regal party landed at New Westminster.

The *Quadra* entered on the lighthouse service on September 9, supplying coal, landing provisions, oils, &c., to the different stations as required. From October 27 to November 1, the steamer was employed in buoy and beacon service, but resumed work in the lighthouse supply service at which she was engaged until November 7. She was employed in the fisheries protection service from this dute until November 25.

From November 26, until the end of the year, the *Quadra* was at different times employed in the fisheries protection and buoy and lighthouse service. She was then put out of commission, and on January 2, the annual repairs to the steamer began and continued until March 1.

On March 6, the lighthouse and buoy service began and continued during April, May and June. Between June 19, to the end of the month, the *Quadra* made a trip to Lawyer Island, where materials were landed to build a lighthouse, the northern buoys were also relieved, and Rivers Inlet visited on fishery service.

'BRANT.'

The *Brant* is a wooden steamer 100 feet long over all, 19 feet in breadth, and 8 feet deep. Her tonnage is 141 gross and 57 net. She is commanded by Captain D. Mackinnon, and has a crew of 12 all told.

This steamer having been painted and engines and boilers inspected, went into commission on May 18, 1900, and began placing buoys in new positions in Summerside Harbour. She returned to Charlottetown on June 5, and prepared for the fisheries protection service.

The lighthouse supply service of the Prince Edward Island agency began on June 25, and was completed on July 18. The steamer was then handed over to the fisheries protection service and lobster protection, and continued in this service until September 12, when she was ordered to proceed to New London for the purpose of towing the dredge *Prince Edward* to Summerside. She arrived in Summerside September 27. On the following day the steamer left Summerside, for Charlottetown and on the way uprighted the Fitzroy Rock bell buoy which had been upset in a gale of wind and heavy sea, a new bell was also placed on this buoy.

On October 1, the fisheries protection service was resumed and continued until November 15. The steamer then went to Pictou for repairs and returned to Charlottetown, November 23. From that date until December 10, she was employed in various services. The steamer was then put into winter quarters, the harbour becoming full of ice. This steamer was overhauled during the winter months and prepared for the coming season.

The *Brant* resumed work April 10. The fisheries protection began and continued until April 30, when the lighthouse inspection and supply service was again taken up and the steamer was engaged in this service up to June 30.

The steamer *Brant* has been found exceedingly serviceable and has in many ways increased the efficiency of the service for which she was built.

'STANLEY.'

The *Stanley* is an iron steamer commanded by Captain Angus Brown, and has a crew of 36 in all. Her dimensions are: length 207 feet, breadth 32 feet, and depth of hold 19 feet, tonnage 914 gross, and 395 registered.

This steamer was employed by the Nova Scotia agency at the beginning of the fiscal year and was engaged in lighthouse and buoy service. On August 25 she returned to Charlottetown.

On September 13, after coaling at Pictou, she entered upon the fisheries protection service and continued in this service until November 2, when she returned to Charlottetown as an escort to the ss. *Princess*, this steamer having on board the returning South African contingent. She then proceeded to West Cape to lift automatic whistling buoys, and afterwards returned to Charlottetown to be put in readiness for winter service.

The *Stanley* left Charlottetown for Pictou on December 16, and remained there until the 22nd of the same month, during which time she took in a supply of coal. She left Pictou for Summerside to begin service between that port and Cape Tormentine, and on the 25th of December a round trip was made on the Summerside-Tormentine route.

On January 4, the *Stanley* left Summerside for Pictou, it having been found impossible to do work on account of no means of accommodation at Tormentine Pier to land or receive cargoes. Smallpox having broken out in the neighbourhood of Tormentine the passenger traffic was necessarily stopped. The *Stanley* made several round trips between Summerside and Tormentine.

The winter service between Charlottetown and Pictou began on January 7, the *Stanley* running in conjunction with the steamer *Minto*, each boat making bi-weekly trips. On February 5, the *Stanley* got caught in the ice off Pictou Harbour and remained in the ice until February 20, and did not arrive at Georgetown until February 21. She continued the Georgetown-Pictou route until April 3. The steamer then went to Summerside, and on April 8 she left that port with a cargo for Pictou. She was afterwards placed on the slip at Pictou.

The steamer on return to Charlottetown was put into buoy service, but subsequently was given in charge of the Charlottetown Steam Navigation Company to take the place of the ss. *Northumberland* and ss. *Princess* whilst those steamers were being repaired. The *Stanley* did mail, passenger and freight business for the Steam Navigation Company of Charlottetown until May 5.

It was decided to install an electric lighting plant on board this steamer, also a new donkey boiler, owing to the old boiler being unfit for use. Tenders were invited for the work, and Messrs. Bruce, Stewart & Co., of Charlottetown, to whom the work

was given, had the steamer placed at the Steam Navigation Company's wharf, when the work of construction of the new boiler was begun.

The earnings of the steamer amounted to $6,563. She carried 862 passengers and 65,305 packages of goods. The *Stanley* made 42 round trips whilst engaged in the winter service.

'MINTO.'

The *Minto* is an iron steamer 225 feet long, 32·6 feet in breadth, 20·6 feet in depth, gross tonnage 10,089, net tonnage 371; indicated horse power 2,900, and nominal horse power 216. The steamer is commanded by Captain Andrew Finlayson, and has a crew of 39 in all. The *Minto* continued in berth at Connelly's Estate wharf from June 30 until December 12, during which time the steamer was thoroughly renovated under the direction of Captain Finlayson. The work done to the engines and boilers was under the supervision of Engineer Ferguson and his staff. The *Minto* left Charlottetown for Pictou on her first trip December 13.

In consequence of the quantity of ice in Hillsboro' Bay and Strait it was decided to make tri-weekly trips to Charlottetown as long as possible in order to move heavy freight offering. This course was pursued until January 1, when, on account of the state of the ice, the steamer was transferred to Georgetown. Owing to the heavy ice in the harbour of Pictou between February 5 and 21, and also on account of the shoal water on the bar the steamer was unable to move out of Pictou Harbour until February 19. This matter was made more serious by the fact that the steamer *Stanley* was at the same time ice bound six miles out of Pictou Harbour. The *Minto* continued on the Georgetown-Pictou route until March 26, and from this date until April 6 the steamer continued on the Pictou-Charlottetown route, when the Steam Navigation Company began the mail service, and the *Minto* was laid up at Connolly's wharf.

On April 13 the *Minto* left Charlottetown for Pictou to go on the Marine slip, and returned on May 1. She then went on a trip to Halifax and Sable Island, returning to Charlottetown on June 7. The *Minto* on June 22 left Charlottetown on Governor General's cruise through the maritime provinces, visiting also Quebec and Montreal. The steamer was at Quebec at the end of the fiscal year.

'NEWFIELD.'

The *Newfield* was an iron steamer commanded by Capt. John H. Campbell and had a crew of thirty-three men. Her dimensions were: length, 206 feet; breadth, 29 feet; depth of hold, 16 feet; tonnage, 785 gross and 509 register.

The *Newfield* was prepared for cable work in which service she was engaged from June 29 up to August 24, 1900. From that date until September 22 the steamer was employed in general lighthouse work and buoy service.

On September 22 this steamer ran on a reef off White Cove, Digby Neck, and was totally wrecked. The chairman of the Marine Board, Capt. W. H. Smith, R. N. R., went to the scene of the wreck on September 25.

After a conference with Captains Campbell, of the *Newfield*, and Bissett of the *Lansdowne*, C. A. Hutchins, Superintendent of Lights, and the officers of the *Newfield*, the steamer was declared a hopeless wreck. The vessel was placed in charge of Mr. E. C.

Bowers, Receiver of Wrecks for the Digby district, and sold for the benefit of the department. Notices of sale were published in Halifax, St. John and Yarmouth papers.

The sale realized $255 for the hull, $88 for coal and $446.97 for lighthouse supplies, making a total of $789.97. The expenses incurred amounted to $264.90 as shown by account sales of Receiver of Wrecks, leaving the net receipts $525.07. The sum of $66.10 was paid for saving the articles and $60 for lodging the officers and crew.

A number of articles saved from the wreck were taken on board the *Lansdowne*, and a large portion of the stores utilized by that steamer.

Captain W. H. Smith, R. N. R., and Capt. Bloomfield Douglas, were appointed commissioners to investigate the circumstances attending the loss of the steamer. The court was held at Halifax and the evidence taken in the case and the decision were laid before the Minister of Marine and Fisheries who confirmed the decision.

The Board of Trade certificate of Capt. John Campbell was suspended for six months or until the Minister of Marine and Fisheries and Imperial Board of Trade should consider it proper to return the certificate. The certificate of the chief officer, J. U. Blakeney, was suspended for three months, and the certificate of second officer John Callaghan, was suspended for one month.

'SHAMROCK.'

The *Shamrock* is a steam barge 117 feet long, 25 feet in breadth and 9 feet 7 inches in depth. Her gross tonnage is 237 and her net tonnage 161. The *Shamrock* has a crew of 12 all told including Mr. U. P. Boucher, Buoy Engineer, who is in charge of the steamer and directs her movements.

This steamer is employed in the buoy service between Montreal and Quebec on the St. Lawrence River ; her captain is S. Savaugeau.

The buoy service of the season began about April 20 and continued until November 28. The principal buoys between Montreal and Sorel were placed previous to April 23, and the placing of buoys and beacons continued until May 26, when Mr. Boucher reported the completion of the system between Montreal and Quebec. Between May 26 and July 1, a number of important changes were made in the buoys which included additional buoys in the ship channel.

The *Shamrock* was sheathed with steel plates in November last to protect her from the action of the ice. The work was done at a cost of $282.

Requests were made by ship-owners to allow the principal buoys to remain in position until all ocean-going steamers cleared from Montreal. As a consequence of allowing the buoys to remain to accommodate the shipping interests all the buoys from Port St. Francis to Sorel and about twenty buoys between Montreal and Sorel were frozen in and many carried away by ice and totally lost. Heavy ice made and the *Shamrock* was unable to proceed under her own steam and a tug was sent to her assistance for the purpose of towing her to Sorel from Three Rivers to her usual winter quarters. The steamer was afterwards enabled during soft weather to remove the buoys between Montreal and Sorel, but a large number still remain frozen in between Sorel and Three Rivers, although an attempt was made by the *Shamrock* to save these buoys. The steamer being in the vicinity of Three Rivers when extreme cold weather set in was with difficulty placed in winter quarters.

'BAYFIELD.'

The *Bayfield* is a wooden steamer 110 feet long, 18 feet wide and 9 feet deep. Mr. W. J. Stewart is in charge of the Hydrographic Survey, and has as his assistants Messrs. F. Anderson and R. T. Tyrwhitt. Captain A. M. McGregor is the sailing master of the *Bayfield*, and the crew consists of 19 men in addition.

The steamer on April 27 went to the rescue of the tugs *Heather Belle* and *Shawanagha* who were in distress in the ice at Owen Sound. The *Bayfield* resumed the survey about May 5 and was employed in surveying the shores of Lake Huron during the whole of the season.

The steamer was placed in winter quarters on October 25.

NEW STEAMERS.

NEW STEAMER TO REPLACE THE "DRUID."

An Order in Council of March 5, 1901 authorized tenders to be invited for the construction of a new steamer to take the place of the *Druid*. Plans and specifications subjected to changes or approval were prepared by the Department for the performance of the work, and tenders invited and received up to June 1, 1901, the steamer to be built in Great Britain or Canada.

The dimensions of the new steamer are: length 160 feet; breadth, 30 feet; depth moulded, 13 feet; speed, 13 knots per hour under natural draught.

Six tenders in all were received: four from Great Britain to deliver the steamer at the home ports of the builders, and two tenders were received for building the steamer in Canada to be delivered at Quebec. The tenders are as follow:—

To be built in Great Britain.

Messrs. Fleming & Ferguson, Paisley, Scotland.....	$110,960 00
Sir W. Armstrong Whitworth & Co., Newcastle on Tyne	128,966 66
The Fairfield Ship Building Co., Govan, Glasgow	137,726 00
Messrs. Vickers Sons & Maxims, Barrow in Furness..	167,656 66

To be built in Canada.

The Collingwood Ship Building Co., Collingwood.....	$170,000 00
The Polson Iron Works, Toronto, Ont.....	173,000 00

The lowest tender is that of Messrs. Fleming & Ferguson and includes the hull, machinery, equipments and special fittings for ice, to be classed 100 A1 at Lloyds and is in accordance with the requirements of the specification sent out by the Minister of Marine and Fisheries, and was accepted. A contract was entered into which requires the steamer to be completed and ready for sea on or before May 25, 1902.

STEAMER TO REPLACE THE "NEWFIELD".

An order in council was issued on March 8, 1901, for the construction of a twin screw steel steamer to take the place of the *Newfield*. The plans and specifications were prepared by the Department and tenders invited for the work both in Great Britain and Canada and received up to May 15 following, the vessel to be built in Great Britain or Canada.

The dimensions of the new steamer with cable laying and picking up gear are as follows : length 210 feet, breadth 34 feet, depth, moulded 18 feet, speed 12 knots an hour at sea under natural draught, and capable of steaming 14 knots under forced draught.

Eleven tenders were received, nine in Great Britain and two in Canada, and are as follows :—

To be built in Great Britain.

Messrs. Fleming & Ferguson, Paisley, Scotland, including cable gear	$184,983 00
Messrs. Robert Reford & Co., Agents, Montreal, including cable gear	207,684 00
Messrs. Napier & Miller, Yoker Shipyard, Glasgow, including cable gear	209,266 00
Messrs. Gourley Bros., Dundee, Scotland, including cable gear	214,133 00
Sir W. G. Armstrong, Whitworth & Co., Newcastle on Tyne including cable gear	219,000 00
Fairfield Shipbuilding and Engineering Co., Govan, Glasgow, including cable gear	224,840 00
The Robert Reford Co., agents, Montreal, including cable gear	232,140 00
Messrs. Lewis Bros., Montreal, Representative of Vickers Son and Maxims, London, cable gear extra	242,359 00
Messrs. C. S. Swan & Hunter, Wallsend, Newcastle on Tyne, including cable gear	250,633 00

To be built in Canada.

The Collingwood Shipbuilding Co., Collingwood, Ont., including cable gear	$235,000 00
The Polson Iron Works, Toronto, Ont., including cable gear	298,900 00

The tender of Messrs. Fleming and Ferguson being the lowest was accepted and a contract entered into on June 3, 1901, to build, launch and complete the said steamer in accordance with the specification and in conformity with Lloyds Register for 100 A. I. classification. The contract required the completion of the steamer not later than June 15, 1902.

OTHER STEAMERS.

The *Acadia*, *Petrel*, *Curlew* and *La Canadienne*, are engaged in fisheries protection work and reports concerning them will be found in the Fisheries Report of this department.

STATEMENT showing cost of maintaining Dominion Steamers, Marine Branch, from 1884 to 1901.

Year.	Cost of Maintenance.	Year.	Cost of Maintenance.
	$ cts.		$ cts.
1883-84	122,816 25	1892-93	146,521 77
1884-85	148,864 26	1893-94	142,487 42
1885-86	130,759 83	1894-95	129,899 80
1886-87	141,424 42	1895-96	150,519 41
1887-88	150,659 19	1896-97	136,940 11
1888-89	126,629 33	1897-98	117,644 39
1889-90	114,959 20	1898-99	145,270 75
1890-91	111,437 03	1899-1900	180,975 45
1891-92	127,406 28	1900-1901	195,484 75

CERTIFICATES TO MASTERS AND MATES.

The report of Captain Bloomfield Douglas, R.N.R., Acting Chairman of the Board of Examiners of Masters and Mates, forms Appendix No. 13 of this report.

During the fiscal year the Board of Examiners of Masters and Mates held examinations at Halifax 11 times, at St. John 5 times, at Yarmouth 5 times, but held none at Quebec, making 21 times in all. There were also four examinations held at Victoria, B.C., the papers and problems were forwarded to the agent at that place and returned to Halifax for inspection of the chairman of the board.

At Halifax eight applications were made for foreign-going certificates of competency as master, and seven for coasting and inland; eight foreign-going and six coasting and inland masters received certificates: fourteen applications were made for foreign-going certificates of competency as mate, and six for coasting and inland; twelve foreign going and six mates received coasting certificates.

At St. John five applications were made for foreign-going certificates of competency as master, and three foreign-going masters received certificates; six applications were made for foreign-going certificates as mate, and four mates received certificates; twelve applications were made for coasting certificates as master and five as mate; eleven coasting masters received certificates, and four mates.

At Yarmouth one application was made for a foreign-going certificate as master and one foreign-going master received a certificate; five applications were made for foreign-going certificates as mate and one mate received a certificate.

At Victoria, B.C., three applications were made for foreign-going certificates as master, and one application was made for foreign-going certificate as mate; all received certificates.

In supplement No. 1 to this report will be found a list of all who have obtained certificates of competency and service, either as master or mate, during the year ended June 30, 1901.

INLAND AND COASTING CERTIFICATES.

During the twelve months ended June 30, 1901, the number of candidates in the Dominion who have passed and obtained masters' certificates of service was seven, and two mates certificates of service have been issued; the amount paid for these certificates was $64.

The number of certificates of competency as master was two hundred and twenty-six, as mate one hundred and seven, and the amount paid for these certificates was $3,847.00. The amount received for renewed certificates of competency and service was $155.50, making a total of $4,002.50, received for masters' and mates' inland and coasting certificates.

A list of certificates issued during the twelve months ended June 30, 1901, will be found in supplement No. 1 to this report.

The total amount of fees received on account of certificates of competency and service, sea-going inland and coasting during the fiscal year ended June 30, 1901, was $4,808.24, and the amount in detail expended on account of the service, as will be seen by reference to appendix No. 1, to this report, was $3,730.25, leaving a balance to the credit of this service of $1,077.99. The vote for this service was $5,000.00, and the sum expended to June 30, 1901, $3,730.25, leaving an unexpended balance of $1,269.75.

The following statement shows the total receipts and expenditure on account of masters and mates since 1871 :—

	Expenditure.	Receipts.		Expenditure.	Receipts.
	$ cts.	$ cts.		cts	$ cts.
For the fiscal year ended June 30, 1871.	1,410 45		For the fiscal year ended June 30, 1890.	4,117 83	2,186 00
" " 1872.	4,312 07	1,344 00	" " 1891.	4,255 24	2,586 00
" " 1873.	6,466 18	4,963 00	" " 1892.	4,363 88	2,194 00
" " 1874.	4,520 19	2,995 00	" " 1893.	4,116 99	2,484 00
" " 1875.	5,696 62	2,715 00	" " 1894.	3,721 33	2,907 04
" " 1876.	4,672 08	2,021 87	" " 1895.	3,758 29	3,974 50
" " 1877.	4,050 00	1,740 50	" " 1896.	4,062 82	2,307 50
" " 1878.	4,249 76	1,296 50	" " 1897.	3,536 29	3,754 00
" " 1879.	4 250 12	1,334 50	" " 1898.	3,335 40	4,800 00
" " 1880.	4,253 43	1,547 00	" " 1899.	3,568 26	4,486 50
" " 1881.	3,888 41	1,333 50	" " 1900.	3,750 69	4,221 50
" " 1882.	3,965 19	1,152 50	" " 1901.	3,720 25	4,808 24
" " 1883	4,021 20	1,314 00			
" " 1884.	3,900 59	9,437 50	Expenditure	129,849 97	86,547 95
" " 1885.	4,324 15	2,897 00	Receipts	86,547 95	
" " 1886.	5,245 28	2,152 00			
" " 1887.	4,855 98	2,172 00	Excess of expenditure over receipts	43,302 02	
" " 1888.	5,060 96	3,220 80			
" " 1889.	4,381 04	2,202 00			

WRECKS AND CASUALTIES.

The total number of casualties to British and Canadian sea-going vessels reported to the department, as having occurred in Canadian waters and to Canadian sea-going vessels in waters other than those of Canada, during the twelve months ended June 30, 1901, was 136, representing a tonnage of 47,181 tons register, and the amount of loss both partial and total, to vessels and cargoes as far as ascertained was $285,782. The number of casualties to inland vessels so far as have been reported were slight and unimportant.

The number of lives reported lost in connection with the casualties was 126. A statement of the wrecks and casualties will be found in supplement No. 1 to this report.

SICK AND DISTRESSED MARINERS

MARINE HOSPITALS.

Under the provisions of chapter 76, Revised Statutes, a duty of two cents per ton register is levied on every vessel arriving in any port in the provinces of Quebec, Nova Scotia, New Brunswick, Prince Edward Island and British Columbia, the money thus collected forming the Sick Mariners' Fund. Vessels of the burden of 100 tons and less pay the duty once in each calendar year, and vessels of more than 100 tons, three times in each year.

By an amendment of this Act passed at the session of Parliament in 1887, 50-51 Victoria, chapter 40, it is provided that no vessel, which is not registered in Canada and which is employed exclusively in fishing or on a fishing voyage, shall be subject to the payment of this duty.

The receipts for the fiscal year ended June 30 last, amounted to $59,838.89, being a decrease of $145.23 as compared with the preceding year. The increase and decrease in receipts for sick mariners' dues in the various provinces were as follows:—Nova Scotia, decrease $123.10; New Brunswick, increase $73.26; Quebec, decrease $1,572.43; Prince Edward Island, increase $179.04; British Columbia, increase $1,298.00.

The Sick Mariners Act does not apply to the province of Ontario and consequently no dues are collected from vessels in that province, although a small expenditure is incurred on account of sick seamen. An appropriation is made by Parliament to cover the expenditure at Kingston and St. Catharines, where general hospitals have been established and sick seamen are attended. During the fiscal year ended June 30 last, sick seamen were paid for at a per diem rate of 90 cents.

In the province of Quebec, the expenditure on account of sick seamen amounted to $7,431.33, being $83.48 less than the previous year. The total collections for the entire province amounted to $15,062.81, being $1,572.43 less than in the previous year.

At the port of Montreal, sick seamen are cared for at the General Hospital and at Notre Dame Hospital, under an arrangement made by the department, by which 90 cents per diem is paid for board and medical attendance of each seaman. The sick mariners' dues collected at the port of Montreal during the fiscal year ended June 30, amounted to $6,884.86.

At the port of Quebec sick seamen are cared for at the Jeffery Hale and the Hôtel Dieu hospitals, the sum of 90 cents per diem for each seaman is allowed in return for medical attendance and board. The sick mariners' dues collected at Quebec amounted to $5,639.98.

The expenditure on account of sick seamen in the province of New Brunswick for the fiscal year amounted to $5,595.69, being $886.39 less than the preceding year, and the collection of dues to $11,356.21, or $73.26 more than the previous year. Marine hospitals have been maintained at Miramichi, Richibucto and Bathurst.

In the province of Nova Scotia, marine hospitals are maintained at the ports of Yarmouth, Pictou, Sydney, Lunenburg and Point Tupper. The total expenditure on account of sick seamen in the province of Nova Scotia for the fiscal year amounted to $14,791.14 and the receipts to $22,502.05.

At Halifax provision is made for the care of sick seamen at the Victoria General Hospital, under arrangements made with the managers, by which the sum of 90 cents per diem is allowed for board and medical attendance to sick seamen.

In the province of Prince Edward Island the sum expended on account of sick and disabled seamen during the fiscal year was $1,694.71 and the receipts from sick mariners' dues were $541.80.

Sick seamen are cared for at the Charlottetown and Prince Edward Island hospitals under arrangements made with the managers of these institutions, at the same rate as is paid to the public hospitals in other parts of the Dominion.

In the province of British Columbia the sum of $5,299.07 was expended for sick and disabled seamen, while the receipts from the collection of sick mariners' dues amounted to $10,376.02.

The marine hospital at Victoria has in attendance a medical superintendent with a salary of $300 per annum, and a keeper whose salary is $500 per annum. He is also allowed a rate of $5.00 a week for board and attendance of each seaman. The keeper procures fuel, light, &c., at his own expense.

At ports where no hospitals are established in the province of Quebec, Nova Scotia, New Brunswick, British Columbia and Prince Edward Island, sick seamen are cared for under the chief officer of Customs, when the vessel to which the seamen belong have paid their dues according to law. A circular to collectors of Customs was issued February 7, 1891, permitting sick seamen to be attended to at the port of arrival of a vessel, provided that the regular dues were previously paid at some port.

During the fiscal year the sum of $1,064.72 was expended for shipwrecked and distressed seamen, under the provisions of the Sick and Distressed Mariners Act,

The total expenditure on account of sick and disabled seamen and marine hospitals amounted to $34,944.03, and the appropriation of parliament for this service was $35,000. The dues collected amounted to $59,783.34. It will be seen that the receipts exceeded the expenditure by $24,783.34.

The receipts and expenditure in connection with sick and distressed seamen from the year 1869 were as follows :—

	Receipts.	Expenditure.
	$ c.	$ c.
For the fiscal year ended June 30, 1869	31,353 78	26,987 64
" " 1870	31,410 46	37,029 34
" " 1871	29,683 41	28,971 22
" " 1872	34,911 64	34,947 60
" " 1873	37,136 10	41,016 43
" " 1874	41,500 16	59,778 90
" " 1875	37,801 46	50,684 76
" " 1876	41,287 66	48,828 49
" " 1877	43,739 21	51,647 94
" " 1878	44,665 07	43,780 90
" " 1879	37,779 57	42,729 36
" " 1880	42,523 20	42,160 91
" " 1881	49,779 72	40,667 52
" " 1882	45,951 47	39,359 11
" " 1883	45,573 42	36,249 65
" " 1884	48,667 07	39,553 58
" " 1885	39,068 39	44,501 57
" " 1886	40,848 05	50,377 62
" " 1887	42,334 92	37,447 35
" " 1888	41,669 64	36,447 85
" " 1889	39,306 29	41,320 59
" " 1890	47,881 75	41,729 11
" " 1891	43,829 68	35,155 12
" " 1892	45,381 92	33,498 83
" " 1893	46,190 69	35,052 37
" " 1894	49,105 40	38,403 94
" " 1895	42,815 74	38,332 55
" " 1896	45,751 61	36,683 36
" " 1897	54,358 10	35,931 19
" " 1898	54,552 81	34,526 83
" " 1899	57,365 79	37,353 29
" " 1900	59,971 84	32,743 30
" " 1901	59,783 34	34,944 03
Total	1,453,979 36	1,301,848 95

STEAMBOAT INSPECTION.

The total number of steamboats reported in the several districts in the Dominion is 1,536, of this number 116 are new vessels, the gross tonnage being 255,573·72. Fees were collected for inspection amounting to $33,815.37; the fees from engineers for certificates amounted to $1,032, and fees for inspection of tow barges to $120, making the total receipts from steamboat inspection and engineer's certificates, $34,967.37, but out of this amount refunds were made amounting to $1,090.80, making the net receipts $32,876.57. The net receipts to the credit of the fund for the previous year amounted to $33,822.01.

The total expenditure in connection with inspection was $29,247.59, an increase of expenditure for the last fiscal year of $1,281.67.

The consolidated laws relating to steamboat inspection came into force on the 1st day of January, 1899.

The report of the chairman of the Board of Steamboat Inspection forms Appendix No. 11 to this report.

The following is a comparative statement of the receipts and expenditure in connection with steamboat inspection :—

	Receipts.	Expenditure.		Receipts.	Expenditure.
For the fiscal year ended	$ cts.	$ cts.	For the fiscal year ended	$ cts.	$ cts.
June 30, 1870	12,521 29	7,379 18	June 30, 1890	19,859 18	20,989 52
" 1871	10,369 96	8,321 00	" 1891	21,644 72	22,183 76
" 1872	11,710 43	8,500 00	" 1892	20,994 84	22,736 59
" 1873	15,412 75	11,205 54	" 1893	25,295 35	24,386 95
" 1874	15,603 19	10,291 58	" 1894	24,835 47	25,961 36
" 1875	15,011 90	12,199 81	" 1895	24,630 56	26,385 88
" 1876	13,811 24	13,081 86	" 1896	24,002 32	26,321 27
" 1877	15,858 42	12,073 01	" 1897	25,094 95	26,837 83
" 1878	12,431 25	13,228 28	" 1898	31,525 40	26,342 29
" 1879	12,331 16	13,076 46	" 1899	33,854 45	28,035 49
" 1880	15,424 02	11,854 34	" 1900	36,474 83	27,965 92
" 1881	16,905 49	12,211 65	" 1901	34,967 37	29,247 59
" 1882	15,277 78	14,835 97			
" 1883	12,577 36	16,209 02	Deduct receipts from	598,896 36	606,367 32
" 1884	15,371 79	21,893 28	expenditure.....		598,896 36
" 1885	13,343 66	23,235 04	Balance to debit of		
" 1886	14,087 76	21,775 57	funds.....		7,470 96
" 1887	12,701 20	22,837 80	Refund.....		1,090 80
" 1888	12,550 14	21,430 45			
" 1889	12,576 18	22,313 03			6,380 16

The following lists contains the names of the inspectors of boilers and machinery, and hulls and equipments of steamboats, viz. :—

Name.	Position.	Address.
Edward Adams	Chairman of Board of Steamboat Inspection	Ottawa.
M. P. McElhinney	Inspector of Hulls and Equipment	"
I. J. Olive	" "	St. John, N.B.
S. R. Hill	" "	Halifax, N.S.
William Evans	" "	Toronto, Ont.
M. R. Davis	" "	Kingston.
P. D. Brunelle	" "	Quebec.
R. Collister	" "	Victoria, B.C.
John Dodds	Inspectors of Boilers and Machinery	Toronto, Ont.
E. W. McKean	" "	"
T. P. Thompson	" "	Kingston, Ont.
Wm. Laurie	" "	Montreal, P.Q.
L. Arpin	" "	"
J. Samson	" "	Quebec, P.Q.
J. P. Esdaile	" "	Halifax, N.S.
W. L. Waring	" "	St. John, N.B.
J. A. Thomson	" "	Victoria, B.C.
G. P. Phillips	" "	Rat Portage, Ont.
Frank M. Richardson	" "	Vancouver.

OUTSIDE SERVICE, MARINE BRANCH.

The number of persons employed in the Outside Service on June 30, 1901, was as follows :—

Superintendent of lights and light-keepers, &c., in Ontario and above Montreal	184
Officers of agency in the city of Quebec and light-keepers, fog-whistle-keepers, crews of light-ships, &c., at or below Montreal, in the province of Quebec	189
Agent, clerk, messenger, superintendent of lights, light-keepers, fog-whistle-keepers, attendants at humane establishments, &c., in Nova Scotia	233
Agent, clerk, messenger, superintendent of lights, light-keepers, fog-whistle-keepers, &c., in New Brunswick	105
Agent, foreman of works, messenger and light-keepers, in Prince Edward Island	47
Agent and light-keepers in British Columbia	33
Officers and crews of Dominion steamers and vessels, including Fisheries Protection Service	411
Coxswains of life-boats	25
Inspectors of steamboats	23
" shipments of live stock	4
Examiners of masters and mates, and clerk to chairman of Board	16
Officers and servants in marine hospitals	20
Shipping masters	35
Harbour masters	218
Officers of observatories, meteorological observers, &c., receiving pay	163
Hydrographers and engineers at Ottawa	8
Receivers of wrecks	43
Wharfingers	184
Making a total of	1,941

For the previous year the number was 1,910. In addition to the 1,941 mentioned above, there are 71 registrars of shipping, who act under the direction and control of this department, but are, at the same time, collectors of customs at various ports of registration, and receive no salary or fee in their capacity of registrars. There are 95 measurers or surveyors of shipping throughout the Dominion who act as officers of this department, and are remunerated from their fees of office, although in addition to such office, many of them hold positions in the customs service. Also, in addition to the above, by Orders of Council of April 21, and December 2, 1874, the chief officer of customs at each port in the provinces of Quebec, Nova Scotia, New Brunswick, British Columbia and Prince Edward Island, where no separate shipping office has been established, is to be held and deemed a shipping master, is to receive the fees, make the yearly returns to the department, and act in that capacity under its directions.

LIVE STOCK SHIPMENTS.

In last year's report the statements furnished by Messrs. George Pope and E. B. Morgan, inspectors at Montreal, contained the total number of live stock shipped from the port of Montreal for the season of 1900. The returns show that the total number of cattle shipped from Montreal for European ports during the season of 1901 was 73,791, a decrease of 18,389 from 1900. The total number of sheep shipped during the same time was 54,538, an increase of 19,700 over the shipments of 1900. The number of horses shipped from Montreal during 1901 was 1,338, being 1,495 less than last year. From St. John, N.B., 11,836 cattle, 13,304 sheep and 229 horses were shipped during the past year. From Halifax, 59 cattle were shipped. The total number of United States cattle shipped from Canada was 7,317. In addition to this 6,048 horses were shipped from Canada to South Africa.

Total from all these ports for European ports, 85,686 cattle, 67,842 sheep and 7,615 horses, not including the United States cattle in bond.

The shipments in detail will be found in Appendix No. 6 to this report.

METEOROLOGICAL SERVICE.

Six new stations were established in British Columbia, three in the North-west Territories, three in Ontario, one in Quebec, one in Nova Scotia, one in the Yukon District, and one in Newfoundland.

There are now in the Dominion 312 stations using instruments which have been supplied by the Government; at 234 stations the observations are taken voluntarily.

The Departments of Agriculture in Ontario, Manitoba and British Columbia realize the importance of reliable meteorological data in connection with statistics of crops, acreage under cultivation, &c. Monthly charts containing notes on the leafing of trees and flowering of plants and other information are published.

In August, 1896, the publication of a daily weather chart was commenced, containing information gathered from meteorological observations taken each day at 8 a.m. This chart is displayed at Toronto at the Board of Trade, harbour master's office, and at some of the public schools. Private individuals obtain the chart, paying for it $4 per annum.

Forecasts for the various districts lying between Manitoba and the Maritime Provinces, for twenty-four hours, are sent by telegraph to all points where morning newspapers are published. A second forecast covering the current and following day is sent to all ports, both on the great lakes and on the seaboard, it also appears in most of the afternoon papers published in the Dominion.

Reports from stations in the Canadian North-west Territories and Manitoba are collected at Winnipeg and wired in one message to Victoria, B.C.; reports from Barkerville, Cariboo Country, Kamloops and New Westminster are sent to Victoria at the same time as to Toronto.

Dawson, in the Yukon District, has been equipped as a telegraph reporting station, and, it is hoped, ere long to have bi-daily reports telegraphed to Toronto and Victoria. This station together with Port Simpson on the British Columbia coast, will be invaluable

in forecasting for the North-west Territories, an extension of work which it is proposed to make as soon as possible.

The forecasts and storm warnings have been maintained during the year and 1,313 warnings were issued from Toronto, and of these 1,135 or 86·4 per cent were verified. The storm warnings are appreciated by mariners and the forecasts of weather have been considered valuable by forwarders.

Seismological observations have been made by keeping in operation the seismographs in Toronto and Victoria. The work in connection with the Magnetic Observatory at Toronto, as well as the other operations of the Meteorological Service, are recorded in detail in the report of Mr. R. F. Stupart, forming appendix No. 4 in Part II of this report.

SIGNAL SERVICE.

The reports of the Superintendent of the Signal Service at Quebec and Halifax, contain valuable information to mariners. Mr. J. U. Gregory is superintendent of this service at Quebec, and Lieut. R. M. McCrory of the Royal Engineers, at Halifax.

Arrangements have been completed between the government of Canada and the Society of Lloyd's, whereby the following signal stations, maintained by the Dominion of Canada, have been included in Lloyd's system of reporting stations. Orders forwarded to Lloyd's can be notified to vessels by means of these signal stations, on the same terms and conditions as observer at Lloyd's signal stations, and vessels signalling to these Canadian signal stations, will be reported to Lloyd's for insertion in the Lloyd's List and Shipping Gazette, and daily press, in the same manner as reports from Lloyd's signal stations.

LIST OF STATIONS.

Cape Ray, Newfoundland.	Southwest Point, Anticosti.
St. Paul's Island, Cape Breton.	West Point "
Cape St. Lawrence.	Cape Rosier, Gaspé coast.
Heath Point, Anticosti.	Fame Point "
Amherst Island, Magdalen Islands.	Cape Magdalen "
	South Point "

The Government telegraph system was during the past season extended along the north coast of the Gulf of St. Lawrence to the Strait of Belle Isle, and Belle Isle has been connected by cable with the shore telegraph system.

Lloyds have been in communication with this Department on the subject of establishing one of their reporting stations on Belle Isle, and have been offered the active assistance of this Department in doing so. They are also considering the feasibility of connecting Belle Isle with the mainland by a system of aerial telegraphy, so that communicatian would not be interrupted by a break in the cable.

Arrangements have been completed by the Department of Marine and Fisheries whereby all inward bound vessels showing their official numbers will be reported from marine signal stations in the River and Gulf of St. Lawrence immediately, and all reports will be promptly posted on the bulletin board of the Great North Western Telegraph Company's office in St. Peter street, Quebec, and on that of the Board of Trade in Montreal.

Weather and ice reports will be forwarded twice a day, as formerly, and similarly posted.

Arrangements have also been made for repeating all reports received to the pilot station at Father Point, so that pilots will be promptly advised of the locality of inward bound vessels.

REMOVAL OF OBSTRUCTIONS TO NAVIGATION.

The sum of $1,000 was appropriated by Parliament for the removal of obstructions to navigation. By reference to the statement of expenditure it will be seen that the sum of $1,000 was expended for the fiscal year. A statement in detail will be found in the report of the Chief Engineer of this Department, under the heading of Removal of Obstructions. The expenditure is given in detail for the amount that has been expended during the calendar year, and therefore includes payments which have been made since the end of the fiscal year.

COASTING TRADE OF CANADA.

By the provisions of chapter 83, Consolidated Statutes of Canada, being an Act respecting the Coasting Trade of Canada, no goods or passengers can be carried by water from one port in Canada to another except in British ships, but the Governor in Council may from time to time declare that the Act shall not apply to ships or vessels of any foreign country in which British ships are admitted to the coasting trade of such country, and to carry goods and passengers from one port or place to another in such country. The Parliament of Canada was empowered to pass the Act alluded to under the provisions of the Imperial Act 32 Vic., chap. 11, intituled: An Act for amending the Law relating to the Coasting Trade and Merchant Shipping in British Possessions, which came into operation in this country on its proclamation by the Governor General on October 23, 1869.

It was ascertained that the following countries, viz., Italy, Germany, the Netherlands, Sweden and Norway, Austro-Hungary, Denmark, Belgium and the Argentine Republic allowed British ships or vessels to participate in their coasting trade on the same footing as their own national vessels,—the ships of Italy by Order in Council of August 13, 1873; those of Germany by Order in Council of May 14, 1874; those of the Netherlands by Order in Council of September 9, 1874; those of Sweden and Norway by Order in Council of November 5, 1874; those of Austro-Hungary by Order in Council of June 1, 1876; those of Denmark by Order in Council of January 25, 1877; those of Belgium by Order in Council of September 30, 1879; and those of the Argentine Republic by Order in Council of May 18, 1881, were admitted to the coasting trade of Canada.

TREE PLANTING ON SABLE ISLAND.

It is a matter of common knowledge that the extent of Sable Island is rapidly becoming less, from the combined attacks of wind and waves, and it is expected that the ultimate fate of the island will be entire submergence. This would create an

invisible shoal which would be much more dangerous to navigation than the existing island with the long sand bars at each end of it.

The department has for many years considered the practicability of delaying or preventing the ultimate destruction of the island, and Professor Macoun of the Geological Survey Department, the chief engineer of this department and myself have all visited the island to consider what steps are possible to attain this much desired end.

The chief engineer reported that any system of protecting the coast by breakwaters was financially impracticable, in view of the immense extent of coast line to be protected, and while he was on the island in the autumn of 1899, he made a thorough resurvey of its whole extent, fixing reference points in several parts, so that future changes in the coast line could be accurately determined and the rate of waste established.

While I was on the island at the same time, I noticed that the surface was thoroughly covered with sand grass, which probably prevents shifting of the sands, wherever it has an opportunity of taking root, as effectively as any herbage possibly could do, and I also noted an entire absence of trees on the island.

While commissioner to the Paris Exhibition in 1900, I visited the coast of Brittany, in company with Professor Saunders, Director of the Experimental Farm, Ottawa, for the purpose of examining a section which had been redeemed from shifting sand and converted into a fine forest of about three square miles within twenty-five years. The conditions were so much like those existing on Sable Island that I recommended the experiment of establishing a plantation on the island, and with the valuable aid of Professor Saunders over fifty thousand young trees and shrubs of suitable kinds were purchased from P. Sebire et Fils, Grandes Pépinières, D'Ussy, France. The trees were selected under the supervision of Professor Saunders and shipped to Halifax.

The trees consist of many varieties, principally spruces, pines, willows, cotton wood, birch, dog-wood, thorn, and black walnut; a large variety of shrubs was included. In addition, fifty pounds of seed of *pinus pinaster* were purchased and shipped with the trees. This large shipment, which reached the island in perfect order, cost only $315.64, including the packages.

In company with Professor Saunders I visited Sable Island in May last, when the planting of all the trees was begun. The majority of them were planted in an inclosure about eight acres in extent, in the heart of the island.

In addition to this, trees have been planted in sheltered spots and gardens in the vicinity of the several stations, and the fifty pounds of seed of *pinus pinaster* were sown in the most promising localities.

The first inspection of the plantations was made on July 7 last by Colonel Anderson, who reported as follows:

July 8, 1901.

To the Deputy Minister of Marine,
Ottawa.

Sir,—I beg to report that yesterday I took the opportunity of inspecting the young trees planted under your directions on Sable Island in May and June, and append notes of the results, which I hope will be of interest both to you and to Professor Saunders.

I may say in general terms that the trees and shrubs are doing well. Mr. Boutillier estimated that 95 per cent, are alive, but I think that is somewhat too large a percentage. The pines look least promising, but I understand they were in pretty poor condition when taken out of the heeling trenches, *pinus strobus* especially looks sickly; the only ones apparently likely to survive are those planted in the turf and sheltered by the long grass.

All the *abies* look well, especially the white and Norway spruce. They have put on an abundance of new sprouts.

I was surprised to find the deciduous trees and shrubs doing so well. In a few instances leaves seem to be burnt on the edges by wind or salt air, but on the whole they look wonderfully well; even delicate varieties look promising. Of course nothing definite can be said until the experiment has gone through the ordeal of a winter, but certainly the plantation will be in good condition to meet the cold.

The main park looks very well. It is about eight acres in extent and is nicely fenced in. Here the few trees planted in sod seem to be doing if anything better than those planted on ploughed ground. Mr. Boutillier finished setting out the last of the young trees on June 17, and those last planted look almost as healthy and as far forward as the first set out.

The following notes show the present condition of the several plantations:—

In garden east of Sailors' Home.—Box elders all flourishing. *Clematis vitalba* looks backward but is sending out new shoots from roots.

In shelter belt, east of main building.—Spruces are all growing nicely.

In belt south of main building.—Pines look sickly, all old leaves dead. Spruces, firs and cedars look better, but are not very bright. This belt is high dry land and is exposed to wind from south, which apparently has dried the trees out.

In belt N. of main inclosure.—Pines look well. The grass here is long and has sheltered the young trees. The Riga pines look particularly well in the thickest grass.

In nursery garden W. of main station.—Pampas grass growing strong. Roses and currants very vigorous. Rhubarb immense both in leaf and stalk. *Pyrus pomifolia*, all thriving. Dwarf Juneberry, very feeble. Currants, many dead. Gooseberries, sickly or dead. *Acer schwedleri* growing strong in new shoots from root. Siberian crab, growing strong. Sand cherry, sprouting feebly, many dead. *Sambucus aurea*, growing well from the roots. *Spiræa prunifolia*, sprouting fairly, but does not look robust *Spiræa van Houten*, doing well. *Lonicera sempervirens*, dead. *Wigelia amabilis*, dead. *Syringa Rothamadensis*, nicely sprouted. *Syringa de Marly*, growing strong from roots. *Viburnum opulus*, sickly. *Hydrangea paniculata*, strong. *Wistaria magnifica*, strong. *Spiræa multiflora*, weak. *Crataegus oxyacantha*, looks blighted. *Caragana arborescens*, strong growth. *Eleaguns edulis*, vigorous. *Thuja occidentalis, globosa*, very healthy. *Negundo aceroides*, sprouting nicely. *Juniperus communis*, all red, looks feeble. *Pinus pinaster*, sprouting out new shoots. *Salix argentea*, very vigorous. *Populus balsamea*, leaves seem to be scalded. *Catalpus speciosa*, many sprouts. Norway spruce, full of new leaf tufts. Black spruce, looks too red for health. *Pinus montana*, doing well. *Populus pyramidilis*, sprouting strong. Honey locust, many sprouts, but weak looking. *Ulmus Americana*, sprouting strong. *Populus Canadensis*, vigorous. Golden arbor vitæ, looks well. *Retmospora plumosa*, looks healthy. Strawberry plants, very vigorous.

In large park.—Norway spruce, doing well. *Pinus strobus*, mostly dead. Maritime pines, turned out of heeling trenches in very poor condition. Austrian pine, vigorous. Honey locust, coming well from bottom. *Juglans nigra*, growing, but leaves blighted. Broom, just beginning to bud, many dead. Manitoba willow, growing well, especially in wettest location. Privet, touched on edges. Mountain pine, doing well. White pine, in the unbroken sod these are doing fairly, and a few look quite vigorous, but on the whole they have done the worst of all the pines, and the pines the worst of all the trees.

This does not pretend to be a complete report, the inspection was made in rain and was confined to the varieties that came most immediately under my notice.

WM. P. ANDERSON.

Mr. Hutchins, the Superintendent of Lights, reported in the same month that the spruces and pines were doing well with the exception of white pine. Mr. Boutillier, Superintendent of the Island, reported October 30, that the weather conditions were quite favourable up to the middle of July, but for some time after that everything growing on the island had suffered from drought and this was fatal to many deciduous trees, the full extent of the damage cannot, however, be told until next spring.

The bulk of the pines October 30 looked very promising, but especially so after the rains. The fifty pounds of seed sown made fine growth and there are many thousands of promising young trees from this seed. The spruce did not show the same vitality as the pines, in the dry season. Many trees planted in the nursery are most promising, particularly the several varieties of roses, beach plums, &c., &c., &c.

Notwithstanding the many previous unsuccessful attempts to grow trees on the island, I feel confident that a measure of success will attend this experiment because the young trees are so numerous that they will give mutual protection against the scalding salt winds that have been the real cause of previous failures. The existence of trees on the island will be of great value in arresting the movement of sand, in breaking the force of the wind and in inducing the growth of a deeply rooted vegetation, as well as affording fuel, shelter and vegetation for the staff and wild ponies.

LEGISLATION.

During the session of 1901 the following Acts were passed :—

An Act to amend the Acts of 1899 and 1900 respecting the Quebec Harbour Commissioners.

An Act to amend the Inland Waters Seamen's Act.

An Act to further amend the Act respecting the Safety of Ships.

An Act respecting Inquiries and Investigations into Shipping Casualties.

This Act was passed to enable the department to deal with the Imperial Board of Trade certificates to masters and mates in the case of investigations into wrecks and casualties in Canadian waters, in accordance with the Board of Trade rules.

F. GOURDEAU, Lt. Col.,
Deputy Minister of Marine and Fisheries.

DEPARTMENT OF MARINE AND FISHERIES,
OTTAWA, December, 1901.

ANNUAL REPORT OF THE CHIEF ENGINEER OF THE DEPARTMENT OF MARINE AND FISHERIES.

The Deputy Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to submit a report of the work done in the several services under the supervision of this office during the twelve months ended on November 30, 1901.

This embraces most of the technical work at departmental headquarters, including the construction and maintenance of lighthouses, light-ships, fog-alarms, buoys and beacons; the supervision of construction and repairs of lifeboats; the administration of the vote for the removal of wrecks and obstructions in navigable waters; the tidal and current surveys; hydrographic surveys, and the publication, examination and correction of hydrographic charts; construction of and repairs to fish hatcheries and refrigerators; engineering points in connection with the construction and maintenance of fish-passes; supervision of surveys of oyster beds; examination of applications for foreshore, wharf and water lots as they affect the interests of navigation; preparation and publication of notices to mariners and hydrographic notes, &c.

There are special staffs appointed for the tidal observation work and for the hydrographic survey work; the remainder of the work of the branch is attended to by the general staff of the office.

STAFF.

I have much pleasure in again reporting that my staff has worked to my entire satisfaction throughout the past year. My prolonged absence from the office threw a great deal of extra work on my assistants, and the number of new aids to navigation established, and improvements undertaken in existing aids, has greatly increased the office work. This has necessitated the staff working overtime practically throughout the whole year, and they have done so with the greatest cheerfulness and assiduity. The increase in the work may be judged by an inspection of the comparative statement of work done this year and last year tabulated hereunder.

Mr. W. C. Surtees, who has been trained in an architect's office, has been employed as a temporary draughtsman since April 25 last, with salary at the rate of $600 per annum, increased on July 1, 1901, to the rate of $650 per annum.

Mr. J. F. Murphy has been employed since June 5 last as a temporary draughtsman with salary at the rate of $600 per annum.

OFFICE WORK.

A large proportion of the work done by the general staff of the branch consists in the construction and maintenance of light buildings, fog-alarms, buoys, beacons and other aids to navigation. Full details of the work done in this connection last year are

contained in a separate report prepared by me, in my capacity of general superintendent of lighthouses, which is attached hereto. (Inclosure A.)

Plans and specifications for all important new buildings and repairs are made or approved in this office.

The following table indicates the work done in the draughting office during the twelve months ending November 30, 1901; also for comparison with that done during the previous eleven months:—

Description of work.	Plans designed.		Plans received.		Copies made.	
	1901.	1900.	1901.	1900.	1901.	1900.
Lighthouse towers and dwellings	14	23	1	6	43	70
Fog-alarm buildings	6	.....	3	.....	16	.....
Details	30	18	5	1	47	41
Wharfs, piers, &c.	2	3	2	4	5	8
Outbuildings	6	2	.....	.....	47	11
Buoys and apparatus	8	9	4	5	71	51
Machinery	9	.....	36	6	39	.....
Lanterns	.....	1	1	1	1	4
Fish hatcheries	.....	3	.....	.....	.....	16
Steamers	7	5	9	1	89	49
Land surveys	3	.....	32	24	41	44
Charts	1	.....	1	5	15	5
Charts under construction	1	1	.....	.....	.....	.....
Miscellaneous	16	15	70	57	145	85
Plans relating to foreshore	3	.....	159	88	26	.....
	106	80	323	198	585	392

	1901.	1900.
Total plans for twelve months from December 1, 1900, to November 30, 1901	1,014	670
Charts received and recorded	125	129
" " entered in chart book	48	32
Photographs received and recorded	216	149
Specifications written	38	31
Notices to mariners issued (comprising 354 subjects)	116	101 (230 subjects.)

I wish again to refer to the large quantity of routine work involved in examining applications for water lots in public harbours, which is always tedious, and very often intricate, and which, if anything, increased in quantity during the past year. This routine work interferes with the prompt dispatch of more purely engineering work, and, being of a strictly legal character, often involves obscure legal points, which it is necessary, under existing conditions, to refer to the Department of Justice. I again suggest that an official should be appointed in the department, with some special legal knowledge, to whom the investigation of titles, the legal status of conflicting interests, and other legal and notarial work in the department could be entrusted.

The work connected with the issuing of notices to mariners has, during the past year, been very heavy, and I have given special attention to the issuing of sailing directions and hydrographic notes that would be of use to masters and pilots in diminishing the number of regrettable casualties on our shores.

Arrangements have been made to change the form of notices to mariners to be issued during the coming year, making them more compact and concise, and also giving fuller references for the correction of official documents.

During the past twelve months foreign notices were issued covering twelve items, relating to Newfoundland and the French Islands in the Gulf; one item relating to the Atlantic, eighty-three to the inland, and nine to the Pacific waters of the United States; as well as eighteen notices referring to transatlantic and transpacific subjects.

The usual annual edition of the list of lights and fog signals on our coasts, corrected to April 1, 1901, was issued on July 1, 1901.

PERSONAL INSPECTIONS.

During the past year, a very large proportion of my time was occupied in inspecting lighthouses, particularly on the great routes of navigation, including the Belle Isle and Cape Race routes to Montreal, the routes to Sydney and Louisbourg, and the routes to St. John, N.B. In each case my purpose was to ascertain what improvements could be made in existing aids to navigation, and what additions were required to bring the whole system up to modern requirements.

Appended are four special reports on the principal trips above mentioned, showing work recently done, now in progress, or in contemplation in the immediate future, looking to the improvements of our aids.

OTTAWA, July 24, 1901.

The Deputy Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to report that, in accordance with instructions, I proceeded to Halifax and joined the chartered steamer *Newfoundland* at that port on the 4th instant, for the purpose of inspecting aids to navigation between Canso and Bras d'Or lake, with a view of ascertaining what improvements are required, particularly in connection with the large traffic that has sprung up at the ports of Louisburg and Sydney.

I was accompanied on this inspection by Mr. C. A. Hutchins, superintendent of lights for the province of Nova Scotia, and Mr. Douglas Stevens, inspector of fog-alarm machinery.

I have submitted separate reports of my inspections of the several stations visited.

I beg herewith to submit merely a summarized report of improvements lately made to aids to navigation, or now in contemplation, on the route between Halifax and Marble mountain, via Canso and Bras d'Or :—

1. It has been decided to keep the conical buoy maintained at Brig rock and the whistling buoy maintained of Egg island in position all the year round, instead of removing them for the winter as heretofore.

2. *Liscombe.*—Two new buoys have been established in the approach to the harbour.

3. *Port Bickerton.*—A harbour light has been established.

4. *Charlo.*—Two range lights to lead into the cove have been established.

5. *Whitehead.*—The buoy marking South-west Bull rock has been changed from a wooden spar to an iron can, and an automatic whistling buoy has been established in the fairway to the harbour.

6. *Gannet Shoal* has been marked by an iron can buoy to guide through Andrew passage and into little Dover.

7. *Canso.*—I made a survey in this harbour, and, as a result of it, issued a notice to mariners, correcting sailing directions for entering the harbour. Arrangements are being made for the erection of range lights to guide into the south entrance of this fine harbour.

8. *Guysborough.*—A survey was made, so that the position of buoys and beacon could be placed on Admiralty charts and sailing directions.

9. *Point Tupper.*—At this point I recommended that a 7th order dioptric apparatus be substituted for the small reflector lamps now in use there.

10. *Jerseyman Island.*—The six lamps now in use here are to be replaced by a 7th order dioptric apparatus, which has been ordered from England.

11. *Petit de Grat.*—A Chance 7th order dioptric apparatus is recommended for this station to replace the old fashioned catoptric light now maintained.

12. *Ile Ronde.*—A 5th order modern quick flashing light has been ordered from Chance Brothers for this station to replace the fixed light heretofore exhibited. This should be a powerful and distinctive light, and a great improvement on existing conditions.

13. *Bourgeois Inlet.*—A site was surveyed for a new small harbour light projected for this point.

14. *Ile Ouetique.*—A 7th order dioptric illuminating apparatus was ordered from England for this station to replace the old catoptric lamps and reflectors now used.

15. *Poulamon.*—The new lighthouse just established on Hawk islet was inspected, and the keeper installed.

16. *Louisbourg.*—Arrangements were completed here for the erection and installation of a first class fog siren. The building is being erected by days' work, under the supervision of the agent. The machinery, built by Messrs. Northey, in Toronto, is being put in position, and it is hoped that this station will be in operation early in the new year.

With the range lights established by the Government on the east shore of the harbour, and the electric range lights maintained by the Dominion Iron and Steel Company near their wharves, the entrance to this fine harbour should now be perfectly easy and safe in any weather.

17. *Mainadieu.*—The keeper at this station is a very old man, and his replacement by a younger man and more vigorous man is recommended. The installation of a 5th order dioptric apparatus is also recommended here.

18. *Scattari.*—The light here revolves in $4\frac{1}{2}$ minutes, giving a flash every minute and a half. Until a modern dioptric light can be supplied to this station, the present

apparatus should be made to revolve more quickly. A duplicate boiler is being placed in the fog alarm building to prevent any chance of a break-down in the fog alarm.

19. *Lingan.*—The light here can be strengthened by changing the arrangement of the apparatus, and directions to carry this out will be given.

The keeper here is a very old man, and should be replaced by a younger and more vigorous keeper.

20. *Low Point.*—The light here is a fixed white light, but is an exceedingly strong one. It should be replaced by a modern quick flashing dioptric light.

I located a site for the proposed steam fog whistle, and took all steps necessary for preparing plans and specifications.

21. *Point Aconi.*—The light here was located to indicate the entrance to Little Bras d'Or. Since Little Bras d'Or has been spanned by a bridge, traffic by that route has almost entirely fallen off. The light would be much more serviceable if removed to the extremity of the point, and this is recommended.

22. *Point Aconi Can Buoy.*—The large steamers now entering Bras d'Or have asked that this buoy be moved to a point well outside the extremity of the shoal, to indicate their turning point. This can easily be done. I consider that it would be desirable to replace this buoy by a bell buoy or a whistling buoy.

23. *Duffus Point.*—Sites were selected for range lights here, to guide between the shoals at the entrance to Great Bras d'Or. When these lights are established, the lights at Black Rock point and Careys beach will be of little use.

24. *Grand Narrows.*—Steamers of the Dominion Coal Company carrying limestone from Marble mountain through Grand Narrows, complain of the difficulty of passing through the opening in the swing bridge, in consequence of the absence of guard piers or rubbing booms. It would be well that this point should be discussed between the Department of Railways and Canals, this department, and representatives of the Coal company.

25. *Marble Mountain.*—Range lights have been promised to guide into Clarkes harbour or Marble mountain, one to be put on the north point of Cameron island, the other on the hillside in the harbour.

Respectfully submitted,

WM. P. ANDERSON,
Chief Engineer.

OTTAWA, September 20, 1901.

The Deputy Minister of Marine & Fisheries,
Ottawa.

SIR,—I have the honour to report that, in accordance with instructions, I made an inspection of the lighthouse system between the strait of Belle Isle and Quebec, and also between Cape Race and Quebec, in accordance with a promise made to the Canadian Shipping interests last winter, with a view to ascertaining what improvements in the service could immediately be made.

I have submitted separate reports on each station, but, as requested, beg now to give a summarized list of improvements lately made to aids to navigation, or to be immediately carried out on these routes :—

1. *Belle Isle, north-east end.*—I surveyed a site here for a new lighthouse and fog alarm, and propose to erect an iron lighthouse with a keeper's wooden dwelling next year, to be followed by a steam fog alarm in the succeeding year. As it is very difficult to land supplies and procure water, this work will be tedious and expensive. Until a steam fog alarm can be established, explosive bombs can be used. These can be put in operation as soon as workmen reach the station.

2. *Belle Isle, south end.*—I made a survey of the whole end of the island for the use of Lloyds', who wish to establish a signal station at this point, and arranged with the keeper for maintaining such a station, when Lloyds' are ready to proceed with it. I found the sirens operated by air, compressed from a waterfall on the island, working in very good order. I have arranged for the extension of the water supply pipe to a lake above the dam from which it is now led. This will economize the consumption of water.

I am considering the possibility of installing an electric light plant here, to be run by the same engine which operates the compressed air plant. If this can be put in it will increase the power of the light and enable me to instal an occulting light instead of the fixed light now maintained.

3. *Point Amour.*—Made a survey of the station and of a lake behind the lighthouse, to ascertain if sufficient water power could be obtained to operate an electric light plant. I fear the supply will not be sufficient, but the light can be changed from fixed to occulting, without removing the existing illuminating apparatus.

4. In consequence of inclement weather, it was impossible for me to land on the east end of Anticosti, and I was obliged to postpone the location of a proposed additional lighthouse in this neigbourhood.

5. *Cape Rosier.*—At this station I found the fog whistle interrupted by the position of the smoke stack, and arranged to have the whole boiler turned end for end, so that nothing would interrupt the sound to seaward.

The illuminating apparatus here is a large French dioptric apparatus, showing a fixed light. It is too good to condemn, but the light certainly should have a distinctive characteristic, and I shall arrange with Messrs. Chance Brothers to supply an occulting screen, so as to change the character of the light ; at the same time its intensity will be increased.

6. *Fame Point.*—I located the proposed fog alarm building here and started work on the foundations. It is hoped that early next season a Hamilton-Foster fog siren will be in operation at this station.

7. *Matane.*—I have recommended the installation of a fog alarm at this station, and made the necessary inspection for the placing of a building. I also gathered information with reference to strandings that had occurred in the vicinity, and shall prepare a notice to mariners, warning them of the strength of the current on this coast, want of allowance for which seems to have been the cause of the accidents.

8. *Metis.*—This station was inspected with a view to locating a fog alarm, but the surroundings are so unfavourable that I am compelled to recommend that no fog alarm

be built here. It will also be difficult to improve the light at this station without building a new lighthouse to contain it.

9. *Father Point.*—The long promised siren machinery has been supplied for this station, and the construction of the necessary fog alarm building will be proceeded with as soon as the weather will permit it in the spring.

10. *Red Islet lightship.*—This vessel will be moved closer to the ship channel at the solicitation of the pilots.

11. *Cape Salmon.*—The fog alarm machinery at this station has been overhauled, and a stronger blast secured.

12. *Lower Traverse.*—The lightship marking the lower end of the Traverse of St. Roch has been moved to the point of St. Roch shoal, and the can buoy previously maintained there has been discontinued. The red buoy opposite the lightship has been changed from can to conical and enlarged.

The red buoy at the upper end of the Traverse has been replaced by a gas buoy.

It is proposed next season to begin work on the construction of a permanent lighthouse on a pier to replace the Lower Traverse lightship.

13. *Upper Traverse.*—The light shown from the permanent lighthouse at this station, will, on the opening of navigation, next spring, be changed from a fixed light to an occulting gas light.

13. *Bellechasse.*—An occulting light will be established at this station.

14. *Ste. Irénée.*—A light has been established on the Government wharf at this point on the north shore.

15. *Ste. Petronille.*—The long promised light at the west end of the island of Orleans was established this year. It is an occulting Pintsch gas light, and will be increased in intensity next spring.

16. *Quebec Range Lights.*—These red lights have been rearranged, because, in consequence of the erection of a new elevator, the back light in its old position was hidden.

17. *Orleans Channel.*—In the channel north of the island of Orleans two additional buoys were placed last season.

In entering the St. Lawrence by the route south of Newfoundland, the following work was done :—

18. *Cape Race.*—The blast of the fog whistle will be changed to render it more distinctive, and notes were taken for the ultimate improvement of the light, though the light now in operation should be visible to the horizon in any kind of clear weather.

19. *Cape Ray.*—A thorough inspection of the fog signal at this station was made, and an overhauling of the existing machinery has been recommended.

20. *Grand Etang.*—A harbour light has been established at this cove, on the west shore of Cape Breton.

21. *Bird Rocks.*—It is proposed to change the light at this station from a fixed light to an occulting light and to increase its intensity.

22. *Grand Entry.*—A harbour light was established here and the channel into the harbour buoyed.

I made a survey of the channel, and the change in the channel will be issued as a new edition of the plan by the Admiralty.

23. *Gulf explosive fog-alarms.*—Arrangements were completed for increasing the frequency with which the bombs were fired, from 20 minutes to 15 minutes, with instructions to the keepers to fire every five minutes whenever a vessel is heard in the vicinity of the station. This is about as frequently as it is safe to fire explosive signals.

The whole respectfully submitted,

WM. P. ANDERSON,
Chief Engineer.

OTTAWA, December 5, 1901.

The Deputy Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to report that during the present season I made several inspections of the ship channel between Quebec and Montreal, on some occasions being accompanied by Mr. F. W. Cowie, engineer for the Department of Public Works, and at other times being assisted by Mr. Boucher and Captain Koenig.

I am pleased to say that a great deal of work has been done in the way of improving aids to navigation in this channel, and that further important improvements are in progress or in contemplation at an early date.

I have submitted separate reports of several of these changes, but, in accordance with instructions, beg herewith to submit a synopsis thereof :—

1. Seven miles above Quebec a railway bridge is now in course of construction, the false work of which somewhat narrows the channel. This false work is kept lit by the bridge contractor, and at present is rather an aid than an impediment to navigation.

2. *Pointe à Basile.*—The range lights here were completed and put in operation. They are so far apart that they work very quickly, and form an admirable guide all the way up to Trembles shoal, marking a very favourable passage across St. Augustin shoal.

3. *St. Augustin shoal buoys.*—In consequence of the marking of the passage of St. Augustin shoal by the above range lights, and because pilots considered the turning marked too sharp, three or four can buoys, marking the best water over St. Augustin shoal, were removed, and were utilized to replace spar buoys at Point Aubin, Pouiller Paget and Platon point.

4. Trembles shoal gas buoy was, as usual, complained of by the pilots, and during the season two changes in the buoy were made in an endeavour to secure a steadier light, but without any great degree of success.

5. The light at Point St. Antoine was again raised 12 feet, to enable it to show over the trees down stream, but pilots keep complaining of its unsatisfactory nature.

6. To remedy difficulties encountered in this neighbourhood, the construction of three new lighthouses has been undertaken ; two of them ranging down stream, to lead past the position of the Trembles shoal gas buoy, and one ef these, with the third build-

ing, ranging up channel, leading clear of Pouiller Paget. These three new lighthouses will be ready for the opening of navigation next spring, and when they are put in operation the old light at St. Antoine point could be discontinued.

7. *Ste. Croix.*—It is proposed to make the existing light at Ste. Croix the front light of a range leading up from the point where the alignment will intersect that of the upper range at St. Antoine. A new lighthouse on the hill above Ste. Croix will be required to complete this lead.

8. *Barre à Boulard range lights.*—On the opening of navigation next spring it is proposed to change the colour of these lights from red to white, and to discontinue the old Platon lights and Richelieu islet light.

9. *Batture Simon.*—It is proposed to mark this by a gas buoy, which, used in conjunction with the Barre à Boulard range lights and with Cape Charles lower range should lead safely through this stretch.

10. *Ste. Emélie.*—The sector of the back light at this station was enlarged, so that the light might be utilized for vessels using the market wharf at that point.

11. *Cape Charles.*—The day beacon, which in one with the front light, led through Dos de Cheval cut, was replaced last year by a high steel lighthouse, and this new range of lights put in operation.

12. *Grondines Point.*—It is proposed next season to replace the day beacon by a lighthouse tower, but to do this, expensive pier foundations will be required to prevent damage to the buildings by ice.

13. *Grondines upper lights.*—To complete the system of lighting here it will be necessary to remove the present Grondines lights to the positions now occupied by the upper beacons.

14. *Batiscan.*—The trees obstructing the front light will be cut down ; to do this it has been necessary to expropriate the land.

15. *Bécancour.*—The day beacon leading through Bécancour traverse has been rebuilt and made more conspicuous.

16. The Department of Public Works has nearly completed an improved channel between Cap St. Michel and Contrecœur, which will be 450 feet in least width, by 30 feet deep at extreme low water.

In this 12 miles of channel, where formerly there were twelve different courses, the improved channel is in three straight courses. For the proper marking of the completed channel, six new lighthouses, disposed as three pairs of range lights, and two pairs of day beacons, all on high foundations to carry them above flood level, are required, and one old light can be discontinued. The lighthouses and beacons referred to are at present under construction and will be ready for the opening of navigation in the spring of 1902.

In the same strip twelve of the existing buoys will require to be rearranged and four new buoys provided. These buoys will be placed in their new positions on the opening of navigation in the spring of 1902 if the improved channel will then be ready for navigation.

17. *Pointe aux Trembles.*—A new skeleton steel tower was erected here in the autumn of 1900, to replace the old tower burnt down. Amongst other changes proposed by the Department of Public Works is a change in the axis of the channel marked by these range lights. If the contemplated improvement is carried out it will be necessary to discontinue the range lights at Pointe aux Trembles, and to establish a new range at the lower end of the cut, the back tower of which will be in Varennes village, and the front tower on Ile à l'Aigle.

18. In consequence of the loss in the ice of ship channel buoys last autumn, it will be necessary during the present winter to practically renew our supply of ship channel buoys.

The whole respectfully submitted,

WM. P. ANDERSON,
Chief Engineer.

DECEMBER 5, 1901.

The Deputy Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to report that, in accordance with instructions, I joined the steamer *Lansdowne* in St. John on October 24, 1901, and, accompanied by Mr. Harding, the agent of this Department at St. John, Mr. Kelly, the inspector of lights for New Brunswick, and Mr. Douglas Stevens, inspector of fog alarm boilers and machinery, I made a pretty general inspection of all aids to navigation in the Bay of Fundy.

This work was deemed necessary and important, in view of the increase in the use of St. John as a winter port, and also in view of the very great amount of traffic on both sides of the Bay of Fundy,

I have made special reports of my inspection of each lighthouse and fog alarm station, and would merely submit here a synopsis of improvements in aids to navigation that have been recently completed, or that are in contemplation to be carried out at an early date.

Beginning at the International boundary line between Maine and Canada, I shall follow the coast line of the Bay of Fundy :—

Cherry island.—Removal to this important turning point of the lighthouse heretofore maintained on Mulholland point, Lubeck narrows. This lighthouse has been found to be of little use where it now stands, since the narrow channel has been straightened and improved by the United States government. It is intended to supplement the lighthouse, when established on Cherry island, by a fog bell.

St. Andrews.—It is proposed to build a new lighthouse with pier on the shoal extending out from Navy island, and to use this instead of the lighthouse on the north sand bar, which does not now mark the dangerous point at the turn into the port of St. Andrews.

Navy Island.—The establishment of a can buoy, to mark the shoal off the eastern end, has been authorized.

Bliss Island.—The light at this station will be greatly improved by changing it in colour from red to white.

Letete.—A lighthouse will be built to be maintained at the existing fog alarm station at this point.

Dipper Harbour.—A bell buoy for the use of fishermen was established this year off Dipper harbour.

Musquash.—A similar bell buoy was, at the same time, established off Musquash harbour.

Partridge Island.—It is proposed to change the fog alarm by making the blasts given from it more frequent. The ship reporting station at this island has been improved by building a new lookout and flagstaff in a position where closer attention can be given to the work.

Anderson Hollow.—Some survey work was done between this and Grindstone island, having in view the correction of details on Admiralty chart No. 353.

Apple River.—A dioptric illuminating apparatus will be provided at this station, making the light of more uniform intensity in all directions.

Lurcher Shoal.—Plans are being prepared for the construction of a modern lightship to mark this danger. In consequence of its exposed position and the heavy seas which prevail, a very staunch vessel with special equipment for mooring will be required. The ship will be provided with auxiliary power, modern lights, and first class fog alarm.

Peters Island.—The two lanterns have been reglazed with large plate glass, to remove interference with the light by sash bars.

Brier Island.—A group flashing light will be installed in this lighthouse instead of the fixed light now maintained.

Seal Island.—The fog alarm building will be moved to the south point of the island where it ought to have a much more extended range than in its present position. The machinery for this alarm will also be improved.

Baccaro.—An English quick flashing light has been ordered for this station to replace the fixed red light complained of.

Respectfully submitted,

WM. P. ANDERSON,
Chief Engineer.

Besides the tours of inspection on which I made the special reports above reproduced, I was absent from the office on the following work :—

In January, located new range lights in Big Bras d'Or, N.S. ; and tested Louisburg fog siren machinery at the Northey Co.'s shop, Toronto.

In March, attended Exchequer Court trial, respecting grounding of ss. *Arabia*, in the interests of the department.

In April, attended test of sub-marine fog bell in Boston harbour, and surveyed site for Louisburg fog siren building.

In May, surveyed south-east shoal and middle ground, Lake Erie, and on June 1, sank lighthouse caisson on middle ground (three trips).

In August, inspected the ship channel in company with Mr. Boucher and Mr. Cowie, to arrange for improved aids to navigation.

In October, inspected middle ground lighthouse foundation, and lighthouse and fog alarm machinery exhibit at Pan-American exhibition. Inspected and accepted Fame point fog alarm machinery in New York.

In December, attended trial of Pilot Gourdeau before Quebec Harbour Commissioners.

REMOVAL OF OBSTRUCTIONS.

The small vote of $1,000 for this service was exhausted by the removal of the brig *George* from Rivière du Loup; the owner being in indigent circumstances, the whole cost fell on the department. As before, every effort has been made to compel owners of wrecks to remove them without entailing expense on the public.

In the case of the steamer *Princess of Wales*, purchased from the Prince Edward Island Steam Navigation Co., by Mr. James V. Lantalum, of St. John, N.B., and partly broken up in Charlottetown harbour by him; the bottom, which was left on the beach, was carried by ice in 1897 into the dredged channel made for ferry steamers, and formed an obstruction to navigation.

As Mr. Lantalum did not remove the wreck when called upon, the harbour master had the work done, at a cost of $611.82, and Mr. Lantalum was called upon to pay the amount, but objected to the cost. A settlement was arrived at by Mr. Lantalum paying $348.74.

The following statement shows work done on wrecks, so far as it has come under the official notice of the department :—

Locality.	Obstruction.	Work done, &c.	Cost to Government
			$ cts.
St. John Harbour, N.B.	Spars of schooner, sunk	Towed out by Str. *Neptune*	20 00
St. John River, N.B.	Logs and snags in channel	Removed by tow boat *Quoddy*	75 00
Grand Lake, N.B.	Snags	" Capt. Brannen	23 00
Advocate Harbour, N.S.	Schr. *Amherst*, stranded	" Messrs. A. C. & C. W. Elderkin.	6 00
Apple River, N.S.	Rock	Removed by R. Field	17 11
Petitdegrat, N.S.	Old schooner, sunk	" James Sampson	350 00
Charlottetown, P.E.I.	Schr. *Janie M.*, beached	" owners	None.
Miramichi River, N.B.	Snag	" Str. *Rustler*	10 00
New Richmond, P.Q.	Schr. *Mayflower*, beached	Raised and repaired by owner	None.
Rivière du Loup, P.Q.	Brig *George*, sunk	Removed by days' work	1,354 41
Three Rivers, P.Q.	Sloop *St. Génevez*, sunk	" Antoine St Pierre	175 00
Sorel, P.Q.	Str. *Napierville*, beached	" Sincennes Mc-Naughton line	None.
"	Scow, beached	Removed by Sincennes Mc-Naughton line	"
Walkerville, Ontario	Schr. *Richards*, stranded	Removed by owners	"
St. Clair River, Ont.	Schr. *Fontana*, sunk	" U. S. Government	"
Collingwood, Ont.	SS. *Pacific*, beached	Towed out of harbour and beached	"
" "	SS. *City of Parry Sound*, beached	" "	"

CLOSE OF NAVIGATION.

Last year I drew attention to the desire on the part of shippers that we should leave out our aids to navigation, in the River St. Lawrence, so late that it was difficult to provide for their safety, after the last ship had passed.

This past season again the same demands were made, and the department was subject to much censure because some of the aids to navigation were removed from their stations earlier than shippers thought was necessary. Possibly in a few instances buoys or light vessels might have been left out a few days later, because after a very cold snap an unexpected week of soft weather intervened before the rivers finally froze up. However, in most cases aids were left out too late this year, and much loss to the public has resulted therefrom, and it will be extremely difficult to have the buoy service between Montreal and Quebec properly reorganized for the opening of navigation this year. All the buoys between Sorel and Three Rivers have been frozen into the ice, and will probably be lost. An effort will be made to save the steel buoys by sinking them at their moorings, but, undoubtedly the loss will be heavy, and all the spar buoys will be so damaged by ice as to be useless for further service.

The lightships in Lake St. Louis were frozen in, and a channel had to be sawn through the ice to bring them into Lachine.

I, therefore, repeat the recommendation I made last year, that it is necessary that the department should take in the buoys earlier than was done this season, and that it should be impressed upon shippers that it is impossible to maintain an efficient buoy service after ice begins to form on our coast, and if the necessities of commerce compel vessels to navigate later, they ought to so time their departures that they can get through critical points in daylight, without the help of buoys.

BUOYAGE.

The buoy service of the Dominion has been steadily improved from year to year by increasing the number of buoys, by replacing old buoys by new ones of larger size or better build, and by carefully checking the localities. Applications from mariners and others have received attention, many districts formerly buoyed have received additional buoys and in some cases districts have been buoyed for the first time, during the past year.

There are now about 350 districts, including harbours, bays, rivers and lakes, buoyed with over 3,100 buoys.

The Montreal ship channel buoy service was begun at an early date in 1901, and all the important buoys between Montreal and Quebec were in position on May 20. Necessary changes were made at many points with a view of improvement, and the placing of the buoys was satisfactorily completed, including additional buoys and changes, by June 20.

The *Shamrock* was kept constantly employed under the direction of Mr. U. P. Boucher, engineer in charge of the service, and means were employed by which the department was advised of any displacement of the buoys. The replacing of the buoys was promptly attended to by the crew of the *Shamrock*.

The lifting of the buoys in the fall could not be satisfactorily done in all parts of the channel, owing to the desire of the department to meet the wishes of owners and agents of ocean going steamers, who requested that the important buoys be allowed to remain in position until the last steamer left Montreal.

The ice made so rapidly that the *Shamrock* was frozen in at Three Rivers, while all the buoys above that point were still out. The buoys above Sorel were later lifted by hired tugs, but those on Lake St. Peter remain in the ice. An attempt will be made to recover the steel buoys by sinking them at their moorings, to prevent the ice in the spring from carrying them away. They can be grappled and lifted at the opening of navigation and replaced. This desire to accommodate shipping will entail very heavy expenditure in the spring, as the whole equipment practically requires renewing, and has already cost the department the sum of $1,225 for tug hire.

All the large buoys on the more exposed portions of the coast and all the gas buoys in Quebec, whistling buoys, bell buoys and a large number of can and conical buoys are maintained by this department by utilizing government steamers as buoy tenders.

In Quebec, about 170 wooden and iron buoys and eleven gas buoys are so maintained ; in Nova Scotia, twenty-two whistling buoys, 18 bell and 127 can and conical buoys ; in New Brunswick, nine bell buoys, seven whistling, one bell boat and five can and conical buoys. Some of the signal buoys in the Yarmouth district are maintained by the New Brunswick agency and are included in the number above. In Prince Edward Island there are three signal buoys, and in British Columbia about sixty buoys are attended to by the department's steamer and twenty by the snag boat *Samson*. In Ontario four bell buoys and five gas buoys are maintained.

During the season of 1900, the steamer *Newfield* was wrecked, and consequently the department found it necessary to charter a steamer for lighthouse and buoy service in Nova Scotia, but owing to lack of equipment necessary for lifting and placing buoys on board of the chartered steamer, the service was not as satisfactorily done as by the *Newfield*. The large number of automatic and other steel buoys which mark dangers on the coast require large and more powerful steamers for this work. It is expected that additional steamers will be employed next year.

In some districts the harbour masters attend to the buoyage ; in others the buoys are under the control of local harbour boards. In remaining cases a very large number of buoys are maintained under the contract system, the contractors undertaking to maintain the buoys according to a strict specification for a bulk sum per annum. The contracts usually run for a period of three years. There are now about two hundred contracts in force, some of which will terminate next spring. The office work in connection with the maintenance of the buoys, preparation of contracts, examination of accounts and other work is attended to by Mr. W. W. Stumbles. This involves an immense amount of detail.

Appended (inclosure B) is a list of the buoys in the Dominion under departmental control.

In addition to the buoys there are a large number of unlighted day beacons on our coasts, a list of which has not yet been prepared.

INTERNATIONAL CODE OF SIGNALS.

All signal stations in the Dominion of Canada, as well as Canadian government vessels, have been supplied with the revised code of signals and the British code list of vessels, and have been equipped with the additional flags that have been necessitated by this new code, and arrangements have been completed for adopting it, as follows :—

During the year 1901, either the new edition or the old was to be used, but on and after January 1, 1902, the new edition only is to be used.

To prevent any misunderstanding during the year 1901, as to whether the old or new code is being used, when signals are made by the new code, the code pennant is to be doubled, that is, the fly of the pennant, as well as the tack, is to be made fast to the halyards, and hoisted below a black ball or shape. On and after January 1, 1902, the code pennant will be hoisted in the ordinary way, without the black ball.

Signals for a pilot could be made during 1901 either by the old or new code, but in the event of using the later, the pennant must be hoisted, as notified above.

GEOGRAPHIC NAMES.

The annual report of the Geographic Board, with a list of all decisions, is published as a supplement to the annual report of this department. Two reports have already appeared, and a third is in preparation, which will contain a very large addition to the list of decisions.

The following decisions affecting lighthouses or points on shipping routes were embodied in notices to mariners :—

The orthography of the name of an island in northern waters of British Columbia was changed from 'Negai' to 'Nigei.'

The orthography of the large bay on the west coast of Vancouver was changed from 'Barclay' to 'Barkley.'

A reef off Lawyer islands, Chatham Sound, was named 'Client reef.'

Name of Crow harbour changed to 'Queensport.'

The orthography of 'Poulament' changed to 'Poulamon.'

The application of the names 'Active pass' and 'Plumper passage' corrected.

HYDROGRAPHY.

The hydrographic survey of the Canadian shores of the Great lakes has made fair progress during the past season. Mr. Stewart, assisted by Messrs. F. Anderson and R. E. Tyrwhitt, on the steamer *Bayfield*, continued the survey of the east shore of Lake Huron from Clark point to Cape Ipperwash, this completing the survey of Lake Huron. The steamer underwent slight repairs last spring. The boiler and hull now require attention, but for survey work she has been superseded by the twin screw schooner tug *Lord Stanley*, of Quebec, purchased from Messrs. Davie & Co., which will be fitted out during the coming winter.

Last winter two fair sheets of the work done between Cove island and Southampton, Ontario, were prepared and sent to the hydrographer of the Admiralty for engraving. This work has been engraved upon new editions of the charts of Lake Huron and Georgian bay.

In April last, the Admiralty issued two new coast charts, covering the work done in 1897, 1898 and 1899, between Cove island and False Detour channel.

On June 17, Mr. Stewart handed over the Lake Huron work to Mr. F. Anderson and proceeded to Lake Winnipeg, and began a hydrographic survey of it. He chartered the tug *Frank Benton* and completed an examination of the channel from Big island to Berens river, a distance of 80 nautical miles. To save delay and expense the map of the lake issued by the Geological Survey is being used as a basis for the new chart.

There yet remain to be surveyed the north and south wider portions of the lake. The north portion embraces an area of 5,000 and the south an area of 1,100 square miles. Two good seasons should suffice to make a very fair survey of these two parts.

Before laying up the *Bayfield*, Parry Sound was visited, and the rock struck by the *Arthur Orr*, in May last, found and buoyed. It is a small uncharted pinnacle lying dangerously near the Jones island range.

During the past year special attention has been paid to the publication in notices to mariners of all available information respecting hydrography, and several special notices have been prepared, indicating to masters and pilots the possibility of adopting courses and taking precautions, that would minimize danger of shipwreck.

Amongst the hydrographic information published may be mentioned the following:—

Atlantic coast.—Halifax harbour.—Warning respecting danger of crossing Army Rifle Range, issued by Chief Staff Officer. Uncharted rock, reported by Lieut. R. Stapleton-Cotton, R.N.

Lunenburg bay.—Hydrographic notes and particulars of voyage, by Captain A. Galloway, R.N.

Yarmouth harbour.—Hydrographic note by Captain A. Galloway, R.N.

Digby.—Hydrographic note by Captain R. Galloway, R.N.

Canso harbour.—Hydrographic notes from survey by undersigned.

Sydney harbour.—Hydrographic notes from survey by undersigned.

Cape Race.—Height of tower and light, corrected from survey by undersigned. Special warning respecting currents.

Gulf and River St. Lawrence.—Georgetown harbour.—Hydrographic notes, including positions of buoys in the harbour from report by Captain F. L. Campbell, R.N.

Cascumpeque.—Change in sailing directions, to suit changed channel, and re-arrangement of range lights, from information supplied by the provincial agent.

North point.—Wreck of small schooner adrift 40 miles distant, reported by the Collector of Customs at Gaspé.

Gulf Telegraph Service.—Two notices describing the extension of the line to Baie des Moutons and the completion of the line from Baie des Moutons to Chateau Bay,

also the successful installation of a cable to Belle Isle ligh station, from information from the Government Telegraph Service.

Belle isle.—The establishment of the light station as a marine signal station and as a Lloyds' station.

Amour point.—Correction of geographical position of lighthouse.

Greenly island.—Correction of geographical position of lighthouse.

Mingan channel.—Rock reported by master of steamship *Wacouta*.

St. Pancras coves.—Shoal reported by Mr. N. A. Comeau, and located and described by Commander W. Wakeham.

Matane.—Derelict reported by the hydrographer, London.

Beaujeu bank.—Regulations prohibiting anchorage reprinted.

Le Sault pass.—Particulars of false work of Quebec bridge, by Mr. M. P. Davis, contractor.

Lake St. Peter.—Two notices respecting depth and width of ship channel, and dredging in progress by Department of Public Works.

Inland—Macnair island.—Uncharted shoal located in river below Brockville, from information supplied from U.S. Hydrographer's office.

St. Lawrence river—Temporary survey buoys placed by Public Works, between Prescott and Kingston.

Toronto harbour—Hydrographic notes, from the Harbour Commissioners.

Port Maitland—Hydrographic notes, from an inspection by undersigned.

Rondeau harbour—Description of lights corrected by undersigned.

Pelee passage—Two warnings, respecting wreck of *Specular*, from information obtained from Captain Dunn. Telegraph cable relaid, from information from Mr. John F. Richardson, Government Telegraph Service.

Detroit river entrance—Rock reported by the Hydrographer, U.S. Navy.

Limekiln crossing—Water signals described by Hydrographer, U.S. Navy.

Off Bar point—Obstruction reported by Captain Peter Full.

River St. Clair—Wreck of *Fontana*; and buoys and piles marking her position removed.

Goderich—Hydrographic notes, from information supplied by Mr. Wm. J. Stewart.

Parry Sound approach—Shoal off Black rock reported, located and buoyed, from survey of officers of this department.

Battle island—Position of lighthouse on charts corrected.

Black bay—Position of wreck of steamer *St. Andrew*, located from information supplied by Captain Marin.

Victoria island—Position of lighthouse corrected, from information supplied by U.S. Hydrographic office.

Fort William—Hydrographic note, from information collected by undersigned.

Port Arthur—Hydrographic note, from information collected by undersigned.

Pacific coast—Esperanza inlet—Admiralty chart corrected by Captain C. Keppels, R.N.

Barkley sound—Uncharted rock described, and hydrographic notes made by the Hydrographer, London.

William head.—Mooring buoy removed from quarantine station, from information obtained from Captain Walbran.

Esquimalt harbour.—Rock reported by Captain Simpson, R.N. Dolphin in Constance cove destroyed, reported by Captain Keppels, R.N.

Johnstone reef.—Amended description, by Captain Simpson, R.N.

Saanich inlet.—Tozier rock located by Captain Kilgore, U.S.R. Cutter *Rush*.

Ganges harbour. Uncharted shoal, located by Captain Walbran.

Active pass.—Correction of 'Pilot' respecting the arc of visibility of light. Correction of 'List of lights' respecting periodicity of fog-alarm.

Portier pass.—Rock struck by steamer *Boscowitz*.

Vancouver harbour.—Time gun established by Meteorological Service. Change in magnetic variation, reported by Captain W. Hay, R.M.S. *Aorangi*.

Nanaimo harbour.—Depth between Beacon rock and Carpenter rock. Position of middle bank pile beacon, and of No. 9 buoy, corrected by Captain Simpson, R.N. Uncharted rocks, south of Protection island, reported by Captain Walbran.

Beaver creek—Hydrographic notes, by Captain Walbran.

Ballinac islands.—Height of light, corrected on information from Captain Walbran.

Ballinac channel.—Dorcas rock, located by Captain Walbran.

Port Augusta.—Change in position of range flagstaff, and beacon, reported by Captain C. Keppels, R.N. This beacon was later replaced in its old position.

Discovery passage.—Correction of information respecting natives contained in 'British Columbia Pilot' by the undersigned.

Discovery passage.—Rocky patch, described by the hydrographer, London.

Broughton strait.—Hydrographic notes of, including description of rocks, by Captain Simpson, R.N.

Dryad point.—Description of the light buildings.

Penphrase passage.—Uncharted rock, reported by Captain Walbran.

Lawyer islands.—Hydrographic notes, and rocks, from a survey by Captain Walbran.

Skeena river.—Sailing directions for Middle passage to the mouth, compiled from a survey by Captain Walbran.

Skidegate inlet.—Sailing directions, amended by Captain Walbran.

Port Canaveral.—Uncharted rock, described by Captain Walbran.

SURVEY OF TIDES AND CURRENTS IN CANADIAN WATERS.

The report of Mr. W. B. Dawson on the progress of this survey is issued as a supplement to the annual report of this department.

It contains the complete results of the observations made in the season of 1900 throughout the Lower St. Lawrence. In accordance with the character of the tide as now ascertained, the tidal estuary of the St. Lawrence is divided into two regions, the upper part from Three River to the Traverse being referred to Quebec, and the lower part from the Traverse to Point de Monts, together with Chaleurs bay, being referred to Father Point. An abstract of the results obtained was issued as a Notice to Mariners in April, 1901, at the opening of navigation. Full information is now published in the tide tables for 1902, which include tide tables especially calculated for Father Point for reference. The relations between the current and the tide which are noted on the charts of the St. Lawrence, become practically available for the first time, now that the time of the tide itself has been ascertained; and the turn of the current at the principal points on the St. Lawrence can now be found by referring to the tide tables.

The tide levels on the Lower St. Lawrence and around the head of the Bay of Fundy are also given in this report, with reference to bench marks, which determine the low water datum of the charts. Another Notice to Mariners was issued in November, explaining the nature of the currents in the vicinity of Cape Race, Newfoundland. It was based upon personal inquiry made by the undersigned, and on information collected by the Tidal Survey in that region. Both these notices to mariners gave rise to correspondence and discussion, and their value to navigation is admitted and appreciated.

The principal tidal stations have been maintained in continuous operation during the year. These are situated at Quebec, Father Point, Belle Isle strait, St. Paul island in Cabot strait, Halifax, Yarmouth, and St. John, N.B. There are also two tidal stations on the Pacific coast; at Sand heads, a central point in the Strait of Georgia, and at Esquimalt in the Strait of Fuca. Observations of the tide have also been begun at Vancouver, and of the turn of the current in the First narrows at the entrance to that harbour. I am anxious to increase the number of stations on the Pacific coast from which simultaneous tidal records are obtained, so as to extend and improve the tables of tidal differences, but this cannot be done until the vote for the service is largely increased. It is evident that current observations are also desirable, for evidence sent us from various quarters shows that the currents reported in the British Columbia pilot are erroneous, and wrecks have possibly resulted from miscalculation thereof.

During the past season further tidal observations have been secured at Charlottetown, Pictou and Summerside, in Northumberland strait; and the turn of the current in that strait was observed at Pictou island, to bring the current into relation with the tide. Observations have also been obtained in Sydney harbour, Cape Breton island; and on the two sides of Cabot strait, near Cape North and Cape Ray, where the tidal undulation first enters the gulf area from the ocean. These observations are important, as it is this undulation which gives rise to all the tides in the gulf area and along the St. Lawrence.

The tide tables now issued by this survey are in three sets. (1) For Quebec, Father Point, Halifax and St. John, N.B., accompanied by information regarding the

tides and currents of the St. Lawrence, and tidal differences for the Bay of Fundy and the Atlantic coast of Nova Scotia. (2) For Charlottetown, Pictou and St. Paul island, with tidal differences for Northumberland strait and the south-west coast of the Gulf of St. Lawrence. These are now calculated for the whole year, for the benefit of winter navigation. (3) For Victoria, B.C., and the port of reference in the Strait of Georgia, with tidal differences for Esquimalt, Vancouver, New Westminster and other ports. These tide tables for British Columbia were first issued for 1901, and the greater part of the information in the new tables for 1902 is based upon further observations; the results being worked out promptly to be in time for them. These tide tables have met with much appreciation, and they fill a long felt want in the opinion of persons on the west coast who are qualified to judge. The issue has now been doubled, as the 500 copies printed last year were insufficient to meet the demand.

Considerable work has been done in improving the accuracy of the tide tables issued, by the analysis of further tidal record. Improvement is thus obtained for Quebec, St. Paul island and St. John, N.B.; with benefit to the regions which depend upon these, as ports of reference.

The total expenditure on this survey during the financial year 1900-1901, has been $7,060.20. Of this amount, $2,140.70 was expended on the analysis of new record, as above noted, which benefits the tide tables for all future years, and may thus be regarded as a permanent investment.

The whole respectfully submitted.

WM. P. ANDERSON,
Chief Engineer.

January 1, 1902.

[INCLOSURE A.]

DETAILED REPORT OF THE GENERAL SUPERINTENDENT OF LIGHT-HOUSES ON CONSTRUCTION AND MAINTENANCE OF LIGHT-HOUSES AND OTHER AIDS TO NAVIGATION UP TO NOVEMBER 30, 1901.

To the Deputy Minister
of Marine and Fisheries.

SIR,—I have the honour to submit the usual annual report of work done in the construction and maintenance of aids to navigation for the year ended November 30, 1901.

Lighthouses, fog alarms, buoys, beacons, and other aids to navigation throughout the Dominion of Canada are administered by the Department of Marine and Fisheries. The construction of new buildings and the more important repairs are under my direct supervision, the maintenance of existing stations is controlled by the several agents of the department, and the periodical inspection of the stations is made by inspectors resident in the different provinces, the agents in Prince Edward Island and British Columbia fulfilling the double duties. Much of the information contained herein is compiled from the annual reports of these officers.

The numbers and distribution of the several aids to navigation throughout the Dominion are shown in the following table :—

District.	Light-stations.	Lights.	Keepers.	Fog-whistles and sirens.	Fog-horns.	Fog-bells.	Fog-guns or bombs.	Whistling buoys.	Bell-buoys.	Gas-buoys.
	*									
Province of Ontario	203	267	187	2	12	4	....	....	5	5
Light ships	3	3	....	....	....	....	....	....	....	....
Province of Quebec	126	176	149	4	8	1	8	....	....	12
Light ships	7	7	....	3	....	....	....	....	....	(4 with bells).
Province of Nova Scotia	189	203	200	10	6	2	1	22	18	....
Fog alarms	3	....	....	....	....	....	....	....	....	....
Light ships	1	1	....	....	....	....	....	....	....	....
Province of New Brunswick	99	126	95	4	8	1	1	5	6	....
Fog alarms	3	....	....	....	....	....	....	....	....	....
Light ships	2	2	....	....	....	1	....	....	....	....
Province of Prince Edward Island	39	66	45	....	1	....	....	3	1	....
" British Columbia	30	35	32	1	6	6	....	....	1	....
	705	886	708	24	41	15	10	30	31	17

* Lightships and fog alarms where there are no lights are in this column included in the total number of light stations in the Dominion.

Supplies for the lighthouse services are purchased in bulk, under contract, except in the case of articles of which only small quantities are required, in which case they are purchased locally in the open market. These supplies are distributed from the stores at each district headquarters, usually under the personal supervision of the inspectors of lights, who inspect the stations when delivering the supplies. They also arrange for all small ordinary repairs and periodical painting of the buildings. These routine duties are not alluded to in describing the repairs executed at the several stations.

Work of construction and extensive repairs are usually executed under contract; minor repairs are done under the lightkeepers' supervision, or by foremen employed in the several districts.

It has been usual to enumerate in this report most of the repairs undertaken at light stations, but details of repairs are herein omitted. Ordinary small repairs such as are required for the proper upkeep of the stations, have been made, usually under the supervision of the keepers, on authority from the several provincial agents.

Estimates for any unusual repairs, or items involving considerable expense, are submitted to the undersigned, and are authorized by the department from Ottawa before the work is undertaken. Full particulars respecting the cost of all repairs is contained in the Auditor General's report.

Light-keepers and fog alarm engineers are expected to make any small repairs that can be reasonably expected of unskilled workmen, without charge, and are also called upon to do all painting required at the stations, being allowed some assistance when the buildings are so high as to require hanging scaffolds.

ONTARIO LIGHTHOUSE DIVISION.

This division includes the lighthouses and other aids to navigation, in that part of the province of Quebec lying west of Montreal, all those in the province of Ontario, and those on Lake Winnipeg, in the province of Manitoba. It is under the direct management of the headquarters staff at Ottawa.

The number of lighthouses, lighted beacons and lightships maintained by the Dominion in the Ontario division, as above described, is 267, located at 203 different stations.

The number of lightkeepers in this division paid directly by the government is 187, but in several cases assistants are employed by keepers and paid by them out of the allowance made by the government for that purpose.

There are in Ontario two fog whistles, twelve steam fog-horns and four fog-bells, operated by machinery, all located at light-stations, as well as five bell-buoys and five gas-buoys.

Besides the lights maintained by this department as above described, there are in Ontario the following aids to navigation: three lights on swing bridges; a system of lights on the Murray canal, maintained by the Department of Railways and Canals, five pairs of range lights on the Detroit and St. Clair rivers and one lightship with steam fog-alarm in Lake Erie, maintained by the American vessel owners principally interested, thirteen wharf lights maintained by the municipalities or corporations to which the wharfs belong, and two range lights maintained by local interests at Pine Tree harbour.

Six of these last described stations are aided by this department to the extent of being furnished with the necessary oil for their maintenance.

A steamer is chartered yearly for the supply of the light-stations on the River St. Lawrence and the great lakes, between Montreal and the head of Lake Superior, and the lighthouses are supplied and the stations inspected on this trip, which occupies about seven weeks, by Mr. Patrick Harty, Superintendent of Lights. Mr. Harty also inspected the lights on the Ottawa river, but a few small lights on isolated waters including Lake Temiskaming, Lake Nipissing, Lake Simcoe and the Bay of Quinté, were not inspected. Mr. M. Kyle, local agent of this department at Rat Portage, having left the district, has been replaced as agent by Mr. John Nash, who has inspected the lights in Lake of the Woods from time to time, and who generally attends to the interests of this department throughout Rainy river district.

NEW AIDS TO NAVIGATION.

Rondeau.—A hand fog-horn was supplied, to answer the signals of vessels whenever heard from the station.

South-east shoal.—This danger, lying southeastward from Pelee spit, has been greatly dreaded by heavy draught American ships, especially since the dummy light was burnt, and although it was marked by the Canadian government by a gas buoy, they asked for a more conspicuous mark. Consequently I was instructed to proceed there with Mr. W. J. Stewart, our hydrographic surveyor; and on the 11th to 14th May, 1901, examined the shoal with a view to changing the site of the lighthouse designed for the middle ground to southeast shoal, if a suitable bottom could be found. A careful survey indicated nothing but a firm, fine sand bottom; no signs of rocky ground, as marked on United States government charts could be found; and there was evidence that the bottom was a shifting one. It was, therefore, manifest that the foundation prepared for the solid rock bottom of the middle ground would not answer for southeast shoal, and that it would be a very difficult and expensive undertaking to place a permanent light there. For this reason it was decided to complete the erection of the lighthouse on the middle ground as originally contemplated, and to discontinue the temporary light shown from the dummy from July 1, 1901.

The Lake Carriers' Association thereupon determined to establish and maintain a private lightship on southeast shoal, and in July, 1901, moored a vessel in 38 feet water, one mile southeastwardly from the southern extremity of the shoal. This vessel was on August 7 destroyed by fire; communicated, it is thought, from the boiler of the fog whistle, only a temporary installation on the improvised lightship.

In October, the association replaced the burnt vessel by the *Kewaunee*, a schooner rigged steamer, 107 feet long, adapted for use as a lightship by exhibiting a fixed white light from a cluster of three fifth-order lens lanterns hoisted around a high mast, and by sounding by hand, as a fog alarm, blasts of 20 seconds' duration every two minutes from the modoc or wildcat steam whistle of the boat. This vessel remained on the station until the close of navigation. The Lake Carriers' Association have asked the

United States government to undertake the maintenance of this aid to navigation, and as it is required wholly in the interests of American vessels, the United States government have asked the Canadian government to allow them to maintain a lightship in Canadian waters at this point.

The establishment of a lightship here rendered the continued maintenance of a gas buoy unnecessary, and it was, therefore, decided to utilize the gas buoy heretofore maintained on the southeast shoal at the southeast extremity of the Bar point dredged cut.

Pelee passage.—The work on this lighthouse, referred to last year, made fair progress, though the completion of the work was prevented by the prolonged strike in the iron trade, by the impossibility of securing prompt delivery of the steel tower, as well as by unavoidable delay in placing it consequent upon the necessity for examination of southeast shoal, as above described.

The foundation was successfully sunk in 13 feet of water on the north end of the Middle ground, January 1, 1901. It consists of a steel caisson in the form of a frustum of a cone, filled with concrete, surrounded by a polygonal timber cribwork rising 5 feet above the water. The concrete walls have been carried to their full height, 18 feet above water, and the erection of a steel tower on this foundation has been begun. It is intended to make this station fireproof throughout, and to make the light and fog alarm in all respects superior to anything on the lakes. To protect it against ice and waves the foundation will ultimately be surrounded by a submerged breakwater.

The work was, as before, done under the supervision of Mr. W. H. Noble, and an expenditure of $26,362.85 was incurred, making total expenditure to date $36,792.64.

During construction two temporary, fixed, white lights are shown from lens lanterns hoisted to the top of the work, and distant 40 feet N. 72° E., and S. 72° W., from each other. As the work progresses the lights are raised so that they always show over the completed portion.

Pelee passage buoys.—For the purpose of accurately defining the north edge of the Middle ground, three black spar buoys were in June, 1901, moored in 23 feet water, in an effort to induce vessels to change the course which they had been accustomed to take, and pass closer to the Middle ground than formerly.

These buoys, as well as the gas buoy, were maintained throughout the season of navigation. It is thought that, with the good light now shown from Pelee passage pier, it will be no longer necessary to maintain the gas buoy on that station.

Bar point cut gas buoy.—On October 15, 1901, the gas bouy theretofore maintained on southeast shoal was moved to the east or starboard side of the south end of the dredged channel off Bar point, at the mouth of Detroit river, a short distance southwardly from the most southerly of the red spar buoys marking that dredged channel.

The buoy is a cylindrical buoy painted red, surmounted by a red lantern from which a fixed white light is shown at an elevation of 9 feet above the water.

When the buoy was placed, mariners were requested to give it a good berth, as it was feared that from its position on the side of a narrow dredged channel thronged with shipping, there would be danger of collision, especially from towed barges. This fear was realized, as the buoy was run into three times between the date that it was put out and the close of navigation, and was finally removed for the winter with the whole of the lantern and upper work destroyed. It is doubtful if it will ever be possible to maintain a reliable gas buoy at that point.

Saugeen river.—A fixed green light has for one or two years past been maintained by the local fishermen upon the north bank of the river, north of the town of Southampton. It is situated E. $\frac{3}{4}$ S., 700 feet from the government light upon the pier at the entrance to the same river.

The light is 45 feet above the water and is hoisted on a mast 15 feet high, surmounting a white slatwork beacon 10 feet high.

The two lights in line, E. $\frac{3}{4}$ S., lead through the narrow dredged channel, in 8 feet most water, up to the end of the pier, which vessels must leave on the port hand when entering, and gradually steer for the south bank of the river to the wharfs. This private light is exhibited only during the fishing season, and the government assumes no responsibility for its maintenance.

Thornbury.—The light maintained on the outer end of the west breakwater pier, shown from a lantern on a mast, was removed to the east side of the pier, to form the front light of a range.

This light is fixed white, shown from a 7th order dioptric lens lantern hoisted on a mast, and elevated 32 feet above high water mark. It should be visible 7 miles from all points of approach by water.

A new light, to serve as the back light of a range, was established in July, 1901. It is shown from a pressed lens lantern, hoisted on a mast standing on the government reserve for harbour purposes, on the west side of Beaver river, in the town, at a point 376 feet S. by W. ½ W. from the front range light above described.

The fixed white light is elevated 36 feet above the level of the bay, and should be visible 7 miles in the line of range. The mast has a wooden shed, painted drab, at its base, and is 29 feet high from the ground to the top of the mast.

The two lights in one bearing S. by W. ½ W. lead in through the centre of the dredged channel to the entrance between the breakwater piers.

The post and shed for this back light were erected by Mr. Edward Rorke, at a cost of $275.

Midland range.—Two range lights were put in operation on the 21st November, 1901, in the town of Midland.

The lights are fixed red incandescent electric lights shown from lamps on electric light poles, on the hill in the southwest part of the town.

The front light is elevated 30 feet above the ground, and 150 feet above the water level of the harbour. The front pole stands on the hillside, 100 feet north of Ottawa street, between Seventh and Eighth streets.

The back range light stands on Ottawa street, 1,320 feet S. 56° W. from the front light. The light is elevated 30 feet above the ground, and 190 feet above the water level of the harbour. The two lights in one, bearing S. 56° W., lead in from Midland point up to the wharfs in the harbour, clear to the southeastward of Midland Bay shoal.

An agreement with the Midland Electric Company to erect poles and put up the wires for $150 was made and carried out. The cost of the electric light will be $50 for the season of navigation.

Thessalon.—A hand fog horn has been supplied to this light station.

Gargantua.—A hand fog horn has been supplied to this light station.

Battle island.—A hand fog horn has been supplied to this light station.

Pie island.—A hand fog horn has been supplied to this light station.

CHANGES AND PRINCIPAL IMPROVEMENTS AT EXISTING STATIONS.

Lachine.—The use of a hand fog horn at this station has been discontinued.

Snake island.—The circular steel pier supporting the lighthouse tower at Snake island shoal, near Kingston, Lake Ontario, has had a timber work protection breakwater, 75 feet long, built around it. It has a pointed nose on the west side, and stands four feet above the water. A small boathouse stands on it at the side of the tower.

This work was done by day's labour, under the supervision of Mr. W. B. Lindsay, and under the foremanship of Mr. P. Asselstine, and cost $4,919.34.

Salmon point.—The use of a hand fog horn at this station has been discontinued.

Toronto.—The front range lighthouse, maintained by the Harbour Commissioners on the Queen's wharf, was moved 40 feet from its former position to the extreme northwestern corner of the wharf, and is now situated 215 feet S. W. by S. from the back or red light. The new line of range leads into the channel between the breakwaters through the axis of the buoyed channel, which is 200 feet wide.

A breakwater, 20 feet wide and 1,535 feet long, and not shown on the charts, exists on the northern edge of the shoal running from the island towards Queen's

wharf. It is parallel to and distant 354 feet from the wharf, of which the channel face is 902 feet long.

Port Dalhousie.—On 1st June, 1901, the light shown from the back range tower was changed from fixed red to occulting white, showing a bright light for 30 seconds, and eclipsed for five seconds alternately. The illuminating apparatus is catoptric, and the illuminant electricity. In the event of the electric power at any time failing temporarily, a fixed red light will be shown until the occulting light can again be put in operation.

At the same time the illuminating apparatus in the front tower was changed in character from catoptric to dioptric of the seventh order, and the illuminant from oil to electricity.

Port Colborne.—The inner range tower was in October, 1901, moved to a new position on the west side of the canal, 300 feet N.W. by W. $\frac{1}{2}$ W. from its former position on the east side of the harbour and now stands on a cribwork block 8 feet high, 2,090 feet N. by E. $\frac{1}{2}$ E. from the outer range tower on the old west pier head.

The light shown from the tower is fixed red, and should be visible 7 miles in the line of range. The illuminating apparatus is catoptric.

The new range leads into the harbour over the deepest water 110 feet clear of the new breakwater now under construction by the Department of Public Works, Canada. Lights should be left on port hand.

The work was done by the contractors for the harbour improvements, Messrs. Hogan & MacDonnell, under the supervision of Mr. L. Coste, resident engineer, Public Works Department, and cost $608.

Mohawk island.—The use of a hand fog horn at this lightstation has been discontinued.

Rondeau.—To permit of repair to the outer end of the east breakwater pier at the entrance to the harbour, the front range lighthouse was temporarily moved landward 100 feet, and when the repairs were completed was replaced in its old position on 1st August last. This work was done by the Public Works Department.

Middle island.—The use of a hand fog-horn has been discontinued.

Kingsville.—The fixed red light shown from the outer end of the east breakwater pier, which was temporarily discontinued on the 17th October, 1900, on account of repairs to the pier, was again put in operation on the 22nd July, 1901. The light is, as heretofore, shown from a lens lantern hoisted on a pole on the outer end of the pier.

Pelee spit.—The temporary light shown from the 'Dummy' was discontinued on 1st July, 1901.

Stag Island shoal.—The pole and shed standing on piles on the south end of this shoal, in the River St. Clair, from which a light was shown, were carried away by ice in the spring of 1901. Until a new permanent structure could be placed, a temporary light was shown from a lantern suspended 5 feet above the water on poles driven into the shoal about 50 feet north of the position of the mast. On the 12th July, 1901, this was replaced by a stronger light shown from a more permanent structure.

The light is shown from a presssed glass lens lantern hoisted on a mast, with a small shed at its base, the mast and shed painted white; they stand upon a platform built on a pile foundation. The platform is elevated 4 feet above the summer level of the river, and the mast is 11 feet high.

At the upstream end of the platform from which the light is exhibited a pile work icebreaker has been built, which it is hoped will protect the platform against further ice shoves.

The light is fixed white, elevated 14 feet above the level of the river. It should be visible 4 miles in every direction, except where obstructed by the mast.

The work was done by Mr J. N. Gibb, of Wallaceburg, at a cost of $275.

Chantry island.—The use of a hand fog horn at the light station has been discontinued.

Hilton.—The use of a hand fog horn by the wharfinger has been discontinued.

Southampton range.—The back lighthouse of the range leading into Southampton harbour has been moved 1,800 feet S.W. from its old position, and now stands on a low

gravel ridge on the east or main shore of the harbour. The range lights in line, bearing S. 4° 30′ W., now lead to the opening into the breakwater with nowhere less than 16 feet on the alignment.

This change was made as a result of Mr. Stewart's hydrographic survey of Lake Huron, he having found a better channel than that marked by the alignment before the change was made. The removal cost $139.

Wiarton.—The light shown from the outer end of the breakwater, at the head of Colpoy bay, was increased in power, by substituting for the pressed glass lens lantern heretofore used an anchor lens lantern showing a fixed red seventh order dioptric light.

Western islands.—It was necessary to greatly reinforce the buildings to withstand damage by waves. This work was done by day labour, under the foremanship of Mr. G. Dobson, and cost $961.44.

Footes dock.—The lantern with a pressed lens, from which a fixed red light has heretofore been shown at this station, in Algoma park, River St. Mary, has been replaced by a larger and stronger lantern, showing a fixed red light from a dioptric apparatus of the 7th order.

Port Arthur.—On the night of October 15, 1901, the light shown from the light-house on the breakwater at the entrance to the inner harbour of Port Arthur, Thunder bay, was changed in colour from white to red, and will hereafter be maintained as a fixed red light, in order that it may readily be distinguished from the town lights.

Fort William.—For the same reason the range lights at the mouth of the Kaministiquia river were, August 1, 1901, changed in colour from white to red.

BUOYS AND BEACONS.

St. Lawrence survey buoys.—A number of temporary white spar buoys were placed in 1901, by the Department of Public Works of Canada, at various points in the St. Lawrence river, between Prescott and Kingston for the use of the engineers engaged in surveying that portion of the river.

A notice was issued explaining that these buoys were for survey purposes only, and were not intended as a guide to vessels, and mariners were requested not to interfere with them in any way.

Goderich buoys.—Outside the two breakwater piers protecting the channel leading into Goderich harbour, Lake Huron, a channel has been dredged 20 feet deep and 125 feet wide. This channel extends beyond the outer end of the breakwater piers to deep water, a distance of about 900 feet. To mark the sides of this dredged channel, spar buoys were established in April, 1901, two red buoys on the starboard side, and two black buoys on the port side of the channel. The middle of the dredged channel is a prolongation of a line drawn midway between the two breakwater piers.

When a notice to mariners describing these buoys was issued, extensive hydrographic notes respecting Goderich harbour, supplied by Mr. W. J. Stewart, who was then engaged on a hydrographic survey of Lake Huron, were also published.

Lone Rock.—The bell buoy disappeared late in September, 1901. No trace of it has been found, and it is probable that it was sunk at its moorings by a raft of logs which was driven ashore in the vicinity at that time.

Seguin bank gas buoy.—This was, on the opening of navigation in 1901, replaced with new moorings, and changed from conical to can in character by modifying the shape of the slatwork superstructure. The buoy with its cage is as heretofore painted black, and is surmounted by a red lantern, showing a white light occulted every six seconds. As has happened in previous years, the superstructure was carried away by ice and storm about the middle of November, 1901, and it is useless to attempt its maintenance in future after the ice begins to form.

Black Rock beacon.—This beacon, in the entrance to Parry Sound, was blown down by a gale in September, 1901. A contract has been let for the construction of a new beacon to replace it.

Black Rock Shoal buoy.—On May 3, 1901, the ss. *Arthur Orr* struck on a shoal

while entering Parry Sound, on the Jones island range. An examination of the locality, made by Mr. B. H. Fraser, of my office, disclosed the existence of a small patch with 16½ feet water on it, situated 1,150 feet S.W. by S. from Black rock, and he moored a black spar buoy 75 feet W.S.W. of this patch, in 5 fathoms. The neighbourhood was re-examined by Mr. W. J. Stewart, in charge of the Canadian Hydrographic Survey, and a small pinnacle rock with 16 feet water on it discovered. The rock lies S. 8° 30' W., 2,500 feet from Black Rock beacon, and 450 feet N.E. of Jones island range. The master of the ss. *Arthur Orr* is satisfied that this is the rock on which he struck.

The black buoy established by Mr. Fraser was moved to mark the newly discovered rock, as it was much nearer the alignment of the range lights.

Masters of vessels using this channel should keep the lights exactly in line, and reduce their speed between Red rock and Carling rock.

QUEBEC LIGHTHOUSE DIVISION.

This district extends from the entrance of the Strait of Belle Isle to Montreal, a distance of over 1,200 miles, and includes aids to navigation in the Richelieu river and Lake Memphremagog, as well as in the River St. Lawrence, Saguenay river, Chaleur bay, Gulf of St. Lawrence, Strait of Belle Isle, north and west coasts of Newfoundland and Labrador.

This division is under the control of Mr. J. U. Gregory, agent of the Department of Marine and Fisheries, at Quebec, who is also shipping master, attends to the requirements of the British Board of Trade in matters of shipwrecked and distressed seamen and casualties at sea, is receiver of wrecks, supervisor of wharfs, a fisheries officer for the province of Quebec, and superintendent of the signal service.

The agent's staff consists of Mr. L. A. Blanchet, chief clerk and accountant, and deputy shipping master; Mr. George D. O'Farrell, lighthouse inspector; Mr. Alphonse Hamel, clerk; and Mr. L. L. Dubé, storekeeper and wharfinger.

The workshops with a large stock of models of various kinds needed for the service are under Mr. Ernest Roy, master carpenter, and Mr. Narcisse Dufour, master-ship-smith. The gas works are under Mr. G. Bélanger.

The steamers at the disposal of this agency during the past year were the *Contest* which attended to gas and other buoys, as well as beacon service below Quebec as far as Father Point, and the steamer *Aberdeen* which supplied the lights in the River and Gulf of St. Lawrence, Strait of Belle Isle and Chaleur bay. The lights above Quebec are supplied by passenger steamers or by rail as proves most economical and convenient.

The buoys between Platon and Montreal are under the supervision of Mr. U. P. Boucher, as engineer, who has the steamer *Shamrock* allotted to him for this service.

There are in this division 176 lights, at 126 stations, 7 lightships, 3 of which are supplied with powerful steam fog whistles, one powerful first order siren blown by compressed air, 8 explosive bomb signal stations in connection with lights, 4 steam fog whistles and 8 steam fog horns; 12 gas buoys, 4 of which are supplied with bells, 170 wooden and iron buoys and 59 beacons.

NEW AIDS TO NAVIGATION.

Grand Entry.—A pole light was established last autumn at the entrance to this harbour, in the Magdalen islands. It stands on the north-west extremity of the sand spit, running northerly from the west extremity of Coffin island. The white pole is thirty feet high, and has a white shed with red roof at its base.

The light is a fixed red light, elevated twenty-nine feet above high water mark, and should be visible 4 miles in the approach to the channel; it is shown from a square lantern with a reflector.

The work was performed by Mr. C. W. Tidmarsh, at a cost of $31.

Ste. Irénée.—A light was put in operation on July 10, 1901, on the outer end of the government wharf here, in the county of Charlevoix, on the north shore of the River St. Lawrence below Quebec.

The light is a fixed light, showing red to the eastward or down stream, and white to the southward and westward. It is elevated 32 feet above highwater mark, and should be visible seven miles. The illuminating apparatus consists of a small pressed glass lens.

The light is shown from a small square lantern, built on the apex of the roof of the freight shed, on the outer end of the wharf. The freight shed is a wooden building painted drab, with a brown roof. The height, from the deck of the wharf to the ventilator on the lantern, is 31 feet.

The lantern was completed and the light installed by Mr. Ed Gauthier of Ste. Irenée, at a cost of $89.27.

Ste. Petronille.—A lighthouse was put in operation October 1, 1901, on the west extremity of la pointe de l'anse du Fort, in the parish of Ste. Petronille, west end of the island of Orleans, River St. Lawrence, below Quebec, a short distance east of the Quebec and Orleans ferry wharf.

The lighthouse is a square wooden building with sloping sides, surmounted by a square wooden lantern, and is 34 feet high from its base to the vane on the lantern. It is painted in shades of light green.

The light is a Pintsch gaslight, occulted at short intervals and strengthened by a dioptric lens of the seventh order. It is elevated 33 feet above high water mark, and should be visible three miles from all points of approach by water.

The building was erected by days' labour by workmen employed in the shops of the agency at Quebec, under the foremanship of E. Roy and the total expenditure on the station to date has been $860.40.

Pointe à Basile.—The two range light buildings at this station, on the south shore of the River St. Lawrence above Quebec, referred to in last year's report, have been completed and permanent lights put in operation.

The front range tower, standing on the high ground of Pointe à Basile, 260 feet east from the extremity of the point, is a square wooden building with sloping sides, painted white, and surmounted by an octagonal iron lantern, painted red. The tower is 49 feet high from its base to the top of the ventilator on the lantern.

The light is a fixed white light, elevated 93 feet above high water mark, and should be visible for 15 miles from all points of approach by water. The illuminating apparatus is catoptric.

The back range buildings is a square wooden shed, 11 feet high, painted white, erected under a day beacon, and stands on a high hill 4,100 feet E. ½ S. from the front range tower. The day beacon is rectangular, slatted, 14 feet wide by 18 feet high, supported on two posts standing 30 feet above ground. It is painted white.

The light, shown from a window in the face of the building, is a fixed white light, elevated at an estimated height of 200 feet above high water mark, and should be visible 20 miles in the line of range. The illuminating apparatus is catoptric.

Cape Charles.—The day beacon at this point, which, in one with the front range lighthouse marks the axis of the ship channel through Batture Dos de Cheval (Horseback bar), was taken down and replaced by a lighthouse tower.

The tower is square in plan, with sloping sides, and consists of a skeleton steel frame surmounted by an inclosed wooden watchroom, and a square wooden lantern. The steel frame is painted red, and the woodwork white. The building is sixty one feet high from the ground to the vane on the lantern.

The tower stands on the ground formerly occupied by the day beacon at the top of the steep cape, 1,250 feet S. 69° W. (S. 53° W. true) from the front range lighthouse.

The light is a fixed white catoptric light, elevated 145 feet above high water mark, which should be visible eighteen miles in, and over a small arc on each side of, the line of range.

The new light was put in operation for the first time August 1, 1901. This light in one with the front light of the old range, bearing S. 69° W., leads through the axis of

the dredged ship channel, from below black can buoy No. 73 Q, to the intersection of the alignment of these two lights with the alignment of the Ste. Emélie range lights.

The three lights at Cape Charles will be known as the front light, the lower back light, and this new light as the upper back light, respectively.

The steel work was provided by the Goold, Shapley & Muir Company, of Brantford, Ont., whose contract price was $581. It was erected, and the building completed, under the supervision of Mr. E. Roy, foreman of works for the agency, at a cost of $466.22.

CHANGES AND IMPROVEMENTS IN EXISTING AIDS.

Explosive signals increased in frequency.—From July 1, 1901, the cotton powder cartridges exploded as fog signals at the following light stations in the Gulf of St. Lawrence, provided therewith, viz.:—at *Bird rocks*; *Heath point, Anticosti*; *West point, Anticosti*; *Cape Gaspé*; *Pointe de Monts*; *Cape Chatte*; and *Father point* have been fired every 15 minutes, instead of every 20 minutes as theretofore, and in the event of a vessel's fog signal being heard by the man in charge of any station, in dangerous proximity to shore, an additional shot is immediately fired, and the firing continued at intervals of 5 minutes, until the vessel has passed the station. These are the same intervals as were adopted for Green island, so that at all the eight stations in this agency, where bombs are used, the regulations are identical.

River Caribou.—This front range tower, which was destroyed by fire on July 7, 1900, was rebuilt and put in operation.

The tower is similar in every respect to the old one.

The back tower at this station was blown down on September 3, 1900, and is replaced by a light shown from a pole, with a diamond shaped day beacon attached.

The light is fixed white, elevated 32 feet above high water mark. The pole stands on the site of the destroyed tower.

The work of rebuilding this tower and of erecting the pole light, was performed by John Savard and Wm. Warren at a cost of $127.27.

Red islet lightship was, on October 10, 1901, removed from her old position off the tail of Red island bank, to a new station about a mile southward, on the line of 20 fathoms on the south edge of the bank. It is claimed by St. Lawrence pilots that in this new position she will be of more service to heavy draught vessels coming up the river in foggy weather.

Lower Traverse lightship was, in 1901, moved up stream about ½ mile in a southwesterly direction, to a point a little below the station of the black can buoy, marking the narrowest point in the Traverse, and known as the Point of St. Roch buoy. This buoy was withdrawn when the lightship was moved. This change was made at the solicitation of the pilots.

Quebec harbour.—A large elevator has been erected on the west side of the Princess Louise basin, and a marine tower, in connection therewith, has been erected on the cross wall, between the wet dock and the tidal basin. This marine tower intercepted the light from the two fixed red lights maintained on the Battery, at the foot of Ste. Famille street, which formed the back light of the Quebec harbour range. It was consequently necessary to discontinue, in November, 1900, the maintenance of these two fixed red electric arc lights and to establish a fixed red electric arc light on the east face of the above described marine tower, in their place.

This light is shown from an electric arc lamp suspended from brackets at a height of 103 feet above high water mark. The marine tower is 113 feet high from the top of the cross wall to the top of the roof. It is a wooden building, not painted, covered with galvanized iron.

The new back light is distant 1,690 feet W.S.W. from the front light on the N.E. corner of Princess Louise embankment, which has not been changed.

The two lights in one, bearing W.S.W., lead up the harbour to the Commissioners' wharf clear of Beauport bank on the starboard and Point Lévis shoal on the port hand.

St. Antoine.—The upper light, shown from an anchor lens lantern, hoisted on a pole above the permanent light to clear trees down stream, has been raised and is now 32 feet higher than the light shown from the tower, and 128 feet above high water mark.

Ste. Emélie.—The light shown from the back tower of this range, which previously was only visible in the line of range, has now been changed so as to show from all points of approach in the channel. This change has been made for the convenience of coasting steamers calling at Ste. Emélie wharf, in the mouth of Great Chêne river.

Pointe aux Trembles.—The back range lighthouse at this station, which was burnt down in October, 1899, was replaced last autumn by a new tower, erected on the site of the burnt one, 1,800 feet S. 48° W. (S. 34° 5′ W., true) from the front range lighthouse, and the temporary light shown from a lantern hoisted on a pole, was discontinued, and the pole removed.

The light is a fixed, white catoptric light, elevated 68 feet above high water mark, and should be visible 14 miles in, and over a small arc on each side of, the line of range.

The tower is square in plan, with sloping sides, and consists of a skeleton steel frame, surmounted by an inclosed wooden watch room and a square wooden lantern. The steel frame is painted red, and the woodwork white. The building is 61 feet high, from the ground to the vane on the lantern.

The two lights in one, bearing S. 48° W., lead through the dredged channel between Ile aux Vaches and Ile à l'Aigle to the intersection of the alignment of Ile Ste. Thérèse upper range lights, which show the middle of the dredged channel past Pointe aux Trembles. The alignment of the Pointe aux Trembles lights is somewhat to the northwestward of the present axis of the channel which they mark, as the Department of Public Works proposes to widen the channel on its northwest edge. Both edges of the channel are conspicuously marked by buoys.

The lighthouse was erected by the department, under the supervision of Mr. E. Roy, at a cost of $1,294.66.

Witch Shoal.—The lighthouse standing on a pier on this shoal in Lake Memphremagog, which was carried away by the ice in the spring of 1900, was replaced by a new building during the same summer.

The tower stands on the deck of the pier, which is five feet above the ordinary level of the lake. It is a square wooden building with sloping sides, surmounted by a square wooden lantern, and is painted white throughout. It is 23 feet high from the deck of the pier to the ventilator on the lantern.

The light is fixed white, elevated 22 feet above the ordinary level of the lake, and should be visible nine miles from all points of approach, except from the westward. The illuminating apparatus is dioptric, of the 7th order.

The building was erected by Mr. D. Mullins, of Magog, the contract price being $420.

BUOYS AND BEACONS.

Grand Entry.—The entrance to the harbour is marked by thirteen buoys, placed under arrangement with the harbour master. These buoys were located and the channel through the bar surveyed by the undersigned, and a new edition of the admiralty plan, based thereon, was issued.

St. Roch Point.—On account of the change in position of the Lower Traverse lightship, the black buoy, which was moored on the northwest edge of St. Roch shoals off St. Roch Point has been removed and will be discontinued.

Traverse Middle Ground.—An iron swift current conical buoy, painted red, has been placed on the centre of the southeastern edge of the middle ground, South Traverse, to replace a small wooden can buoy previously moored there.

Upper Traverse Gas Buoy.—On July 23, 1901, a cylindrical gas buoy was moored on the southwest end of the Middle ground, at the upper end of the Traverse of St. Roch, replacing the red cylindrical iron buoy which has heretofore marked the northwest side of the deep water channel at that point.

This buoy is moored in 28 feet of water, $4\frac{1}{2}$ cables N.W $\frac{3}{4}$ W. from Upper Traverse lighthouse. It is painted red, and the bright gas light, elevated 10 feet above the water, is automatically occulted at frequent intervals.

Mariners were warned that in consequence of the velocity of the current in this channel it is not expected that the gas light will be effective. It is impossible to show a steady light from a buoy that is continually being careened and swung by a 7-knot current.

North Channel, Orleans.—A red wooden can buoy has been established in $2\frac{1}{2}$ fathoms on the east end of Batture des Islets, and a black wooden can buoy, in $2\frac{3}{4}$ fathoms, off Ste. Anne river, on the north edge of the shoal, $1\frac{1}{6}$ miles west of the black buoy previously maintained on the same shoal. Both these new buoys are in the channel north of the Island of Orleans.

St. Augustin Shoal.—The three can buoys numbered 17 Q. 19 Q and 20 Q, marking a natural channel at the eastern end of St. Augustin shoal were discontinued on September 2, 1901. The straight channel, recently marked by the Pointe à Basile range, gives a good straight safe course, with ample depth except for $1\frac{1}{2}$ hours at extreme low tide. At the present time the clear depth over the St. Augustin shoal is 27 fe t in the new range at extreme low tide. Vessels of heavy draught should not attempt to pass St. Augustin shoal at extreme low water.

Point Aubin.—A black can buoy was substituted for black spar 21Q moored off this point.

Trembles Shoal Gas Buoy.—On the opening of navigation in the spring of 1901, a large cylindrical gas buoy with a conical superstructure in slatwork was placed on this station instead of the smaller spherical buoy, maintained on that station last year, but as it gave no more satisfaction to pilots than the other forms of buoys previously used, a spherical gas buoy, with an unusually high superstructure, holding the lantern 14 feet above the water, was on July 11, 1901, substituted for it. No gas buoy has given satisfaction here, as the strong current careens them so that the light cannot be seen at a distance.

Poullier Paget.—A black can buoy was substituted for black spar 47 Q, moored on this shoal.

Platon Point.—A black can buoy was substituted for black spar 49 Q, moored off this point.

Bécancour beacon.—This beacon, erected in 1899, was blown down, and has been replaced by a diamond shaped beacon of lattice work, ten feet long on each side, supported on a mast 50 feet high. The whole of the lattice work and the mast are painted black. This beacon stands 14,100 feet N. 64° 15′ E. from Ste. Angèle church.

The beacon in line with the spire of Ste. Angèle church shows the middle of the channel between Isle Bagot and Bécancour point.

Vessels going up the river should bring the beacon and church in one before reaching black spar buoy No. 23 C, and should keep them in one, bearing N. 64° 15′ E. until they near Bécancour bend red iron buoy No. 30 C. The work was done by the crew of the *Shamrock*, under Mr. Boucher's supervision.

Ile au Bœuf.—Black spar buoy 79 M, marking the south edge of the ship channel south of this island, has been temporarily moved 600 feet down stream, to permit of widening the dredged cut where it was previously moored. On the completion of the widening, the buoy will be again moved up stream to the south edge of the widened cut.

Ship channel buoys.—Several corrections were made in the published list of these buoys, embodying improvements carried out during the last two or three seasons.

NOVA SCOTIA LIGHTHOUSE DIVISION

This division, in charge of Mr. J. Parsons, agent of the department in this province, comprises 202 lighthouses, exhibiting 213 lights, 1 light vessel, 16 steam fog-alarms, 1 explosive fog-alarm station, 30 hand fog-horn stations, 2 fog-bells, 22 automatic whistling buoys, 18 automatic bell buoys, 127 iron or steel buoys, about 800 spar and

other small buoys, 10 stationary beacons, 17 life-saving stations, 3 humane establishments, 4 signal stations and 1 steamship.

The stations have been inspected by Mr. C. A. Hutchins, superintendent of lights, the boilers and machinery at the fog-alarm stations by Mr. D. Stevens, inspector of government steamboats, and the life-saving stations by Capt. B. Douglas, R.N.R., naval assistant.

All the automatic buoys (bell and whistling) have been placed and cared for by the *Newfoundland* and during part of the winter by the Dominion government steamer *Lansdowne*. About 50 of the spar buoys and 75 iron cans are placed and replaced directly by us; the others in the different harbours are cared for and kept in position by persons holding three year contracts obtained by public competition.

NEW AIDS TO NAVIGATION.

Victoria beach.—A lighthouse at this point, on the eastern side of Digby gut, was put in operation on July 8, 1901, to serve as a guide through the gut, as well as for the benefit of small vessels seeking a landing on the beach.

The building is a square wooden tower, with sloping sides, surmounted by a square wooden lantern, the whole painted white. The tower is 28 feet high from base to top of ventilator on lantern. It stands 100 feet back from the water's edge, in an easterly direction, on land 30 feet above high water mark.

The light is fixed white, elevated 52 feet above high water, and should be visible 12 miles from all points of approach by water. The illuminating apparatus is dioptric. The work was doneunder contract by Mr. John Roney, his contract price being $497.

Grand passage.—A lighthouse was put in operation onJanuary 12, 1901, on the north point of Brier island, to indicate the north entrance to Grand passage.

The light is a fixed red light elevated 62 feet above high water mark, and should be visible for 8 miles from all points of approach by water. The illuminating apparatus is dioptric, of the seventh order.

The lighthouse is a square, wooden building with sloping sides, painted white, surmounted by an octagonal iron lantern, painted red. It is 34 feet high from its base to the vane on the lantern. It was erected under contract by Mr. Frank H. Piper, of Westport, his price being $897.50.

Baccaro, Sand spit, Shelburne, Carter island, Fort point, Liverpool.— Hand fog horns have been supplied these stations, to answer the fog signals of vessels, whenever heard in proximity.

Indian harbour.—A lighthouse was put in operation on May 20, 1901, on the south-eastern extremity of Paddys head island, entrance to Indian harbour, on the eastern side of St. Margaret bay, county of Halifax, as a guide to small vessels seeking an entrance into Indian harbour through the channel between the southern extremity of Paddys head island and Wreck island.

The building is a square, wooden tower, with sloping sides, surmounted by a square, wooden lantern, the whole painted white. The tower is 33 feet high from its base to the top of the ventilator on the lantern, and is situated 95 feet back in a north-westerly direction from the S.E. extremity of the island on land 10 feet above high water mark.

The light is a fixed white light, elevated 36 feet above high water mark, and should be visible 7 miles from all points of approach by water. The illuminating apparatus consists of a pressed glass lens.

This building was erected by the department by days' labour, under the supervision of Mr. Amos McLennan, as foreman of works, and cost $728.24.

Port Bickerton.—A small harbour light was put in operation on October 10, 1901.

The building is a square wooden tower, with sloping sides, surmounted by a square wooden lantern, the whole painted white. The tower is 23 feet high from base to top of ventilator on lantern. It is erected near the western extremity of Barachois point, 100 feet back from the water's edge in a north-easterly direction, on land 25 feet above high water mark.

The light is fixed white, elevated 43 feet above high water mark, and should be visible 7 miles from all points of approach by water. The illuminating apparatus consists of a small, pressed glass lens.

The lighthouse was built by Mr. Emery Taylor, of Stillwater, N.S., whose contract price was $500.

Charlo.—Two range lights were put in operation on October 10, 1901, at Charlo harbour, on the north-western side of Tor bay.

Each building is a square wooden tower, with sloping sides, surmounted by a square wooden lantern, the whole painted white, and each tower is 23 feet high from its base to the top of the ventilator on the lantern.

The front tower stands on ground 11 feet above high water mark, 50 feet back from the water's edge, on the extremity of the point on the west side of the harbour.

The light is a fixed white light, elevated 28 feet above high water mark, and should be visible 3 miles in, and over a small arc on each side of, the line of range. The illuminating apparatus is catoptric.

The back tower stands 742 feet N.W. ½ W. from the front tower.

The light is a fixed white light, elevated 51 feet above high water mark, and should be visible 3 miles in, and over a small arc on each side of, the line of range. The illuminating apparatus is catoptric.

Vessels bound for Charlo harbour should keep Cole harbour red range lights in one until the alignment is intersected by that of the Charlo harbour range lights. From that point a course N.W. ½ W. in the alignment of the Charlo harbour range lights will lead in clear of the reefs off Forsters island.

The buildings were erected by the department under the supervision of Mr. A. McLellan, at a cost of $814.29.

Poulamon.—A lighthouse was put in operation on August 6, 1901, on Hawk islet, at the entrance to Poulamon bay, as a guide into the bay and through Lennox passage.

The lighthouse is a square wooden building, surmounted by a square wooden lantern rising from the middle of the cottage roof. The building and lantern are painted white. The lighthouse is 30 feet high from the base to the top of the ventilator on the lantern, and is located on the summit of the islet, on land ten feet above high water mark.

The light is a fixed white light, elevated 34 feet above high water mark, and should be visible seven miles from all points of approach by water. The illuminating apparatus is dioptric of the seventh order.

The work was done under contract by Mr. Peter McLean, of Cannes, and cost $1,109.

Grand Etang.—A lighthouse was put in operation on July 15, 1901, at Grand Etang, on the western coast of the county of Inverness, Cape Breton. This is the harbour named Squirrel pond on the Admiralty charts.

The lighthouse stands on the breakwater on the southern side of the channel leading into the harbour, near its outer end.

The building is a square wooden tower, with sloping sides, surmounted by a square, wooden lantern, and is painted white, with the iron railings red. It is 23 feet high from the deck of the pier to the vane on the lantern. The pier rises 7 feet above high water mark.

The light is fixed red, elevated 24 feet above high water mark, and should be visible six miles from all points seaward. The illuminating apparatus is dioptric of the seventh order.

The lighthouse was built by Mr. James D. McDonnell, of Margaree, the contract price was $291.

Margaree harbour.—The fixed white light with red sector, shown from the tower standing on the breakwater pier at the entrance to the harbour, was permanently discontinued on May 4, 1901, and the tower removed.

To replace the above discontinued light, two range lights were established on the south side of the harbour, and on the west side of the mouth of Margaree river, which in one, bearing S. by W., (S. 14° 20′ E. true) lead into the harbour, at the mouth of the river, clear of the breakwater on the S.W. side of the mouth.

The front light is a fixed red light, elevated 75 feet above high water mark, and should be visible ten miles in, and over a small arc on each side of, the line of range. The illuminating apparatus is catoptric.

It is shown from a wooden tower, square in plan, with sloping sides, which stands 169 feet back from high water mark on the bank facing the entrance to the channel. The tower is 22 feet high from its base to the vane on the lantern, and is painted white.

The back range light is a fixed red catoptric light, elevated 105 feet above high water mark. It should be visible ten miles in, and over a small arc on each side of, the line of range. It is shown from a wooden tower, square in plan, with sloping sides, erected 215 feet, S. by W. (S. 14° 20′ E. true) from the front tower. It is 33 feet high from its base to the vane of the lantern, and is painted white.

The buildings were erected by the department under the supervision of Mr. A. McLellan, at a cost of $1,062.95.

IMPROVEMENTS AT EXISTING STATIONS.

Kingsport.—The lighthouse was temporarily moved off the wharf to permit of repairs, and a temporary pole light substituted for it.

Abbot harbour.—The light will in future be kept in operation all the year round, and not extinguished in winter, as heretofore.

Port Maitland (Green Cove).—The fixed red light shown from the outer end of the westerly breakwater, will hereafter be kept lit until December 31, each year, instead of being extinguished on November 15.

Cross island.—On June 15, 1901, the upper occulting light and lower fixed light, formerly shown from Cross island lighthouse, were replaced by a group-flashing revolving light.

The light is a white light, showing three bright flashes, with intervals of 15 seconds between their points of greatest brilliancy, followed by an eclipse of about 20 seconds' duration, the whole system completing a revolution in one minute. It is shown from a lantern surmounting the lighthouse tower, is elevated 100 feet above high water mark, and should be visible 15 miles from all points of approach by water. The illuminating apparatus is catoptric.

The new apparatus was constructed in the department's workshops in Ottawa, and was installed by the keeper, and cost $600.

Cape Race.—On December 1, 1901, the fog whistle at this light-station was changed to give blasts of five seconds with intervals alternately of 15 and 35 seconds between them.

The height of the lighthouse tower, and of the light above the water, was checked and corrected by the undersigned.

Meagher Beach.—The light has been improved by replacing an old worn out lantern by a modern octagonal iron lantern, and by replacing the reflectors hitherto used by a fifth-order lens, which shows a more intense light than the old light, and a light of equal intensity all around the horizon. The lantern was made by the Victoria Foundry Co., of Ottawa, at a cost of $300, and was erected under the foremanship of Mr. Amos McLellan.

BUOYS AND BEACONS.

Canning beacons.—Six day beacons have been established on the sides of the channel of Canard creek to indicate the best water in the approach to Canning, Kings county. Each beacon consists of three piles driven in a cluster and chained together at the top; they extend 10 feet above the surface of high water spring tides. There are two beacons on the port hand entering and four beacons on the starboard hand: the uppermost 5 feet of each beacon is painted; starboard beacons red; port beacons black; below the paint all the beacons are whitewashed.

The outermost beacon is a port beacon established at a sharp bend in the channel north eastwardly from Porter point; this beacon is surmounted by a barrel painted black.

The other beacons mark turns in the tortuous channel between the above described point and the wharfs in the village.

Avon river mooring buoy.—An iron can buoy was established in the spring of 1901, in mid-channel of the Avon River, Mines basin, to indicate the best channel, and also to serve as a mooring buoy for vessels.

The buoy is painted in alternate black and white vertical stripes, and is moored in about 7 fathoms of water, with a span and bridle, with two anchors placed athwart channel about 60 fathoms apart. From the buoy Horton bluff lighthouse bears S. by W., distant 1 mile.

Old Man ledge buoy.—The iron can buoy marking this ledge, east of the Tusket islands, at the entrance to the Bay of Fundy, has been moved, and in its present position is moored in 5 fathoms water $\frac{1}{8}$ mile E. by S. from the rock.

The buoy is painted black, with 'Old Man' marked on it in white letters.

From the buoy Peases island light bears N.W. by N. $\frac{3}{4}$ N., $1\frac{5}{8}$ miles; and Whitehead island (Argyle) light, E. by N., $6\frac{5}{8}$ miles.

St. Johns ledge bell buoy.—On February 1, 1901, the maintenance of this buoy was discontinued, as previously indicated.

Pubnico whistling buoy.—On February 1, 1901, a whistling buoy was established in position in 15 fathoms water, 6 miles S. W. by W. from Pubnico harbour light.

Bon Portage bell buoy—On February 16, 1901, a bell buoy was established $1\frac{1}{2}$ miles S. 17° 15′ W. from Bon Portage light.

Lunenberg bay buoys.—These were accurately located and described in August, 1901, by Captain A. Galloway, R.N., H.M.S. *Tribune.*

Mahone bay buoys.—Five black and three red spar buoys, about 20 feet long, showing about 6 feet above water, have been established in Mahone bay. These buoys were placed by Mr. Keith Hudson, of Chester, at his own expense, but have been taken over by this department. They are now in charge of the harbour master at Chester, who has agreed to maintain them at a cost of $20 per annum.

Brig rock buoy.—For many years past this buoy has appeared on the Admiralty charts as a bell buoy, although it has been replaced by a conical buoy. The necessary corrections have been made. In future an effort will be made to maintain this buoy on its station throughout the year.

Egg island whistling buoy.—Hereafter this buoy will be kept in position all the year round. It may possibly be necessary to remove it for a few weeks in the early spring every year, if it is threatened by the presence of drifting ice in the vicinity.

Liscomb buoys.—Two new buoys were, in 1901, established to mark shoals in the approach to Liscomb harbour, southeastern coast of Nova Scotia, viz.: An iron can buoy, painted black, moored in 10 fathoms off the eastern extremity of Liscomb shoal, three-quarters of a mile from the extremity of Liscomb point, which should be left on the port hand in entering; and an iron conical buoy, painted red moored in 8 fathoms, off the western extremity of Mackerel shoal. This buoy which should be left on the starboard hand in entering, replaces a wooden spar buoy heretofore maintained, but which has now been discontinued.

Southwest Bull buoy.—The wooden spar buoy, heretofore marking the southwest Bull Rock, which lies about three-fifths of a mile southwesterly from Whitehead island light, was replaced in the spring of 1901 by an iron can buoy. The buoy is painted black with S.W. Bull in white letters on the top, and is moored in ten fathoms of water, 1 cable S.E from the rock.

Whitehead whistling buoy.—An automatic whistling buoy, on the Courtnay principle was established in June, 1901, off Whitehead Island light, in the county of Guysborough, as a fairway buoy for the guidance of vessels proceeding along the coast, or seeking an entrance into Whitehaven. The buoy is painted in alternate black and white vertical stripes, with Whitehead in black and white letters on the side, and is moored in about 30 fathoms water, $2\frac{1}{2}$ miles S. by W. from Whitehead Island lighthouse. The course in to Whitehaven will be N. five-eighth E. from the buoy; this will lead about $2\frac{1}{2}$ cables to the eastward of southwest Bull Rock buoy, last described.

Gannet shoal buoy.—An iron can buoy, painted black, was on June 26, 1901, established off Gannet shoal, on the southeastern coast of Nova Scotia. This buoy is

moored in 19 fathoms water, one quarter S.E. from the centre of the three fathom outer shoal, and is intended for the guidance of vessels bound through Andrew passage, or into little Dover. It will be maintained each year during the season of navigation, and taken up for the winter in December, and replaced again on the disappearance of ice on the coast in the spring.

Guysborough.—The beacon and buoys entering this harbour were properly located.

Neil cove South point buoy. — A wooden spar buoy, painted black has been maintained since September, 1899, on the eastern end of the shoal extending eastward from South point, southerly from Neil cove, on the northeastern coast of Cape Breton. The buoy is moored in 7½ fathoms water, and is taken up on the close of navigation every winter, and replaced again in the spring.

NEW BRUNSWICK LIGHTHOUSE DIVISION.

The New Brunswick division comprises all the lighthouses and other aids to navigation within the boundaries of the province, both on the Bay of Fundy and on the Gulf of St. Lawrence coast. The large buoys maintained by the government on the Nova Scotia coast of the Bay of Fundy are attended to by the steamer *Lansdowne*, under the direction of the New Brunswick agent, but are otherwise under the control of the Nova Scotia agent.

This division is under the charge of Mr. F. J. Harding, agent of the department at St. John, N.B.

The lights and other aids to navigation were inspected by Mr. John Kelly, inspector of lights.

There are in this agency 126 lighthouses, 2 lightships and 12 steam fog-alarms.

The number of keepers and engineers in connection with the lighthouses and fog-alarms, is as follows: 98 light-keepers, light-keepers and engineers of fog-alarms.

The method of supplying the lights varied in accordance with locations. The supplies for the St. John river, Grand lake and Washademoak lake lights were shipped by regular local steamers and a separate bill of lading furnished for each station.

The supplies for the Miramichi river lights were sent by the bay lightship and by regular lines of steamers or schooners trading to the different points.

The Bay of Fundy lights were supplied by the steamer *Lansdowne*, and those in the Chaleur bay district were supplied by rail. In all cases the supplies have been delivered in the most convenient and economical way.

IMPROVEMENTS AND CHANGES IN EXISTING AIDS.

Machias Seal island.—As a result of an inspection by the undersigned in October, 1901, it was found that the particulars respecting the lights and fog-alarms at this station, published in the list of lights, &c., were erroneous and might mislead. A notice to mariners giving correct information was therefore issued. A thorough overhauling of the station was made.

Gannet rock.—To admit of repairs to the revolving mechanism, it was found necessary to show a fixed white light from this station between September 1, 1901, and October 1, 1901, when the repairs were satisfactorily completed, and the light now shows as heretofore as a fixed white light varied by white flashes.

From July 1, 1901, the cotton powder fog signals are fired every fifteen minutes instead of every twenty minutes as previously, and in the event of a vessel's fog signal being heard by the keeper in dangerous proximity, an additional shot will immediately be fired, and the firing continued at intervals of five minutes until the vessel has passed.

Bliss island.—The light will be changed on January 15, 1902, from fixed red to fixed white, greatly increasing its range and usefulness.

Partridge island.—Arrangements have been completed for changing the present fog-alarm of one blast of 10 seconds in every minute to one blast of five seconds, with

alternate intervals of 20 and 30 seconds. The change will take effect on February 1, 1902.

Sand point.—On the opening of navigation in 1901, the entire superstructure above the iron framework, including the lantern of this lighthouse on the St. John river, was painted white, so as to make it a more conspicuous daymark against the background of dark fir trees than it was previously.

Williams landing.—The mast on the public wharf, from which a lantern light was shown was carried away by ice in the spring of 1901. Temporarily the light is shown from a lantern hoisted on a tree, standing on shore near the inner end of the wharf.

A new wharf is being built about a mile above Williams landing and it is in contemplation to remove the light to a new site near the wharf.

Gagetown.—On April 10, 1901, this fine new lighthouse, on the west shore of the River St. John, was carried away by the spring freshet.

A temporary fixed white light was shown from a lens lantern suspended from an elm tree standing within 20 feet of the site of the lighthouse. Later the lighthouse was replaced in position and the permanent light was again exhibited on June 22, 1901. The work of rebuilding the foundation, replacing and repairing the tower was executed by days' labour under the superintendence of the inspector of lighthouses, at a cost of $268.73.

Zephyr rock lightship, was placed on her station in Shediac harbour during the autumn of 1900, and again, on October 1, 1901, and was maintained thereon until the close of navigation in 1901.

The lightship is moored in 19 feet water, 2 cables N.N.E. from Zephyr rock. She is a schooner with two masts and is painted blue with black bulwarks. Between the masts two white lights are exhibited with a perpendicular distance of 4 feet between them. The height of the lower light above the water is 21 feet, and the lights should be visible 8 miles.

In foggy weather a hand horn on deck answers signals from vessels.

This lightship is temporarily maintained during the dark nights of late autumn only principally to facilitate the entrance to Shediac of the mail steamer from Prince Edward Island.

Richibucto beach.—To make the range lights lead through the channels as at present existing through the bars outside the mouth of the river it has been necessary to rearrange them. On August 1, 1901, two new pole lights were established on the south beach.

The lights are fixed white, shown from pressed lens lanterns hoisted on poles, and should be visible three miles from all points of approach.

The front light is elevated 34 feet above high water mark. The mast is 26 feet high, and stands 112 feet back from the water, at a point 2,858 feet southeastwardly from the front light of the old range.

The back light is elevated 37 feet above high water mark. The mast is 37 high and stands 263 feet S. $\frac{1}{2}$ W. from the front one.

The two lights in one, bearing S. $\frac{1}{2}$ W., lead to the black can buoy in $4\frac{1}{2}$ fathoms that marks the southern limit of the anchorage outside the bar. They also lead between the buoys marking the channel over the bar which carries 12 feet water, to the red can buoy which marks the sharp turn of the channel to the westward inside the bar. After passing the turning buoy the course up the shore between the north and south beaches is N.W. by W. $\frac{3}{4}$ W. From this point up to the town the somewhat tortuous channel is marked by buoys.

At the same time that these range lights were established the red back light of the old Richibucto harbour range, on the same south beach, was discontinued, as that alignment gave only 2 feet water over the bar, but the front white light was maintained to guide up from the turn above described.

On October 8, two other range lights were established on the south beach to lead through the channel between the south beach and the sand bar extending eastward from the north beach.

The alignment of this new range leads from its intersection with that of the range lights established on August 1, 1901, for a distance of one mile, to a point where a turn is marked by a black spar buoy.

The front white light of the old range, which was retained in operation when the back light was put out, on August 1, was at the same time extinguished, so that the two pairs of ranges established in 1901 are alone in operation.

These changes were carried out under the supervision of Mr. John Kelly, inspector of lighthouses, by day labour, at a cost of $90.46.

Miramichi bay lightship which was blown from her moorings on October 11, 1900, as mentioned in last year's report was replaced on her station only on May 25, 1901.

A bell operated by hand has been placed on the above lightship, and during fog will be rung rapidly for three seconds, and after a silent interval of one second will again be rung rapidly for three seconds, followed by a silent interval of one minute, thus giving a double ringing at minute intervals.

North Tracadie.—The channel at this gully, which has always given much trouble from its sudden and great changes, has shifted so far south from the alignment marked by the range lights, and is now so crooked, that it was found impossible to utilize the range lights to enter the gully. The front range light was consequently discontinued on September 16, 1901, until further notice. The back, or main light, is still continued in operation as a coast light, to indicate the position of the gully.

Miscou gully.—The mast from which the light is shown has been increased 9 feet in height.

The light shown from this mast has, since July 31, 1901, been increased in intensity by replacing the lantern with a pressed glass lens by a lantern with a dioptric lens of the seventh order.

The fixed white light is now elevated 54 feet above high water mark, and should be visible 11 miles from all points of approach to the entrance.

BUOYS AND BEACONS.

Woodward cove beacon.—A beacon was erected on November 15, 1900, on Big Round rock, Woodward cove, on the east shore of Grand Manan island. It consists of a spindle surmounted by an iron cage, is 27 feet high, and is painted black. The distance from high water mark on the shore of the main island out to the beacon is 984 feet.

Vessels entering Woodward cove, intending to take the channel between the beacon and the bar on the north side of the cove, should give the beacon a berth of 126 feet, leaving it on the port hand.

Big Duck island ledge buoy was changed from can to conical to conform to the regulations adopted by the International conference respecting the shapes of buoys.

Net rocks buoy was similarly changed.

Catherine cove beacon.—A beacon was erected on December 24, 1900, on the north extremity of the ledge on the south side of the entrance to Catherine cove, Letête passage.

The beacon consists of a wooden spindle, surmounted by a rectangular wooden top mark, the whole painted red. The spindle is 30 feet high, from base to top. It stands on the ledge, 8 feet back from high water mark, and should be given a berth of 36 feet by vessels passing up the channel to Catherine cove, which is the indentation on the main land between Mathew cove and Oak island.

Beaver harbour shoal buoy was changed from can to conical.

Bliss island reef buoy was similarly changed.

Dipper harbour.—A bell buoy of the United States Government pattern was established off this harbour, on September 18, 1901. The buoy is black, with 'Dipper Har.' in white letters on the deck.

Musquash harbour.—A similar bell buoy was at the same time placed in the mouth of this harbour. It is painted in alternate black and white vertical stripes.

Quaco buoys.—Hereafter the bell buoys marking Quaco ledge and Quaco reef, and the can buoy marking Quaco shoal, in the Bay of Fundy, will, if ice permits, be kept in position all the year round, instead of being removed for the winter as heretofore.

Heron island buoyage.—A black can buoy was, in June, 1901, established in 4 fathoms water off the eastern end of this island in Chaleur bay.

From the buoy Heron island lighthouse in one with Maguacha point bears N. 35° W., distant 2 miles, and the extremity of Black point bears S. 42° W.

A red spar buoy was also established in 3 fathoms water, off the western end of the same island.

From the buoy Heron island light in one with the west point of the island bears S. 50° E., distant 3·2 miles.

PRINCE EDWARD ISLAND LIGHTHOUSE DIVISION.

The division is under the charge of Mr. Artemas Lord, who is agent of the department at Charlottetown, and also acts as inspector of lights for the district which embraces the whole province. The general routine of the office work has been, as formerly, performed by the agent, assisted by Mr. H. W. Mutch, as clerk and messenger. The work of building new lighthouses and superintending the more extensive repairs at existing stations has been done under the personal superintendence of Mr. M. Walsh, as foreman of works. Under the agent's instructions, Mr. Walsh is also warehouseman for the lighthouse stores in Charlottetown.

There are in the division 66 lights at 39 stations, and one fog horn, under the charge of 45 keepers. There are three automatic whistling buoys and one bell buoy. The majority of lights are situated on headlands and serve the general purposes of navigation, the remainder being harbour lights intended particularly for the benefit of fishermen. There are thirty harbours buoyed under the system of three year contracts, and seven in which buoys are maintained by the department under the local harbour masters.

All the stations on the island were inspected by the agent on the annual supply trip last summer which was made on the D.G.S. *Brant*.

IMPROVEMENTS AND CHANGES AT EXISTING STATIONS.

Annandale.—The back range tower at this station, on Grand river, which was blown down by a gale on October 11, 1900, has been replaced by a new tower, situated 96 feet nearer the front range tower than the old one, on the same line of range. It stands upon the east side of a point locally know as Juniper point, N.W. by N. 4,244 feet from the front range tower.

It is an open framed, wooden, square tower with sloping sides, surmounted by an inclosed square wooden lantern. The side of the tower facing the channel is slatted. Both the tower and lantern are painted white. The height of the tower from the base to the vane on the lantern is 65 feet.

The light shown is a fixed white light, elevated 78 feet above high water mark, and should be visible 14 miles in the line of range. The illuminating apparatus is catoptric.

On the top of the front range tower (located in the village, 220 feet north from the shore of the river, and 312 feet N. 70° E. from the head of the public wharf) there has been erected a small slatted beacon 5½ feet high and 4 feet wide, on which is painted a white diamond 5½ feet by 4 feet, the remainder of the face of the beacon being painted red.

In consequence of the back range tower being moved eastwardly, the fixed red light, heretofore shown from a lantern on a mast on the north-west corner of Annandale wharf, has been discontinued; as the line of range of this light and the back range light would have been obstructed by buildings on the wharf.

This work, done under the supervision of Mr. Walsh, cost $464.87.

Haszard point.—On January 1, 1902, the range lights will be changed from fixed red to fixed white catoptric lights.

The front light is elevated 45 feet above high water mark, and will be visible 12 miles in, and over a small arc on each side of the line of range.

The back light is elevated 125 feet above high water mark, and should be visible 17 miles in, and over a small arc on each side of, the line of range.

Leards range back light.—On October 23, 1901, the light shown from a dormer window of the house of the late Mr. Leard, in Crapaud harbour, was permanently discontinued, and the day beacon, which showed above the ridge of the house was taken down.

On the same date a new back range light was shown from a tower erected 200 feet behind or north of the above mentioned house, in the same line of range.

This light is fixed white, elevated 95 feet above high water mark, and should be visible 8 miles in, and over a small arc on each side of, the line of range. The illuminating apparatus is catoptric.

The tower is a square, pyramidal, wooden, open skeleton frame, having the front face covered with slats so as to form a day beacon, and is painted white. It is surmounted by an inclosed square wooden lantern painted white, and is 46 feet high from its base to the top of the ventilator on the lantern.

This change was made under Mr. Walsh's foremanship, and cost $272.54.

Cascumpeque.—In consequence of a serious change in the position of the channel over the bar at the mouth of this harbour, caused by last winter's storms, it was found necessary in May, 1901, to discontinue the exhibition of the range lights maintained on the south sand hills, outside the main lighthouse.

Later the buildings were removed to Sandy island, on the north side of the entrance to the harbour, where they were put in operation on July 11, 1901, and will be known as the Sandy island range lights.

The front range tower now stands on the eastern edge of the island, a short distance back from high water mark.

It is a white, square, wooden tower, with inclosed sloping sides and is 22 feet high from its base to the ventilator on the lantern.

The fixed white catoptric light is elevated 20 feet above high water mark, and should be visible nine miles in, and over a small arc on each side of, the line of range.

The back range tower stands 364 feet W. by N. $\frac{1}{2}$ N. from the front range tower, and 125 feet northwardly from where the main light stood when on Sandy island. It is a building similar to the front one, and is 26 feet high. The fixed white catoptric light is elevated 24 feet above high water mark, and should be visible ten miles in the line of range.

To enter Cascumpeque harbour vessels should bring the main, or sea light, on the south sandhills, to bear W. $\frac{1}{2}$ N., and run in until the range lights on Sandy island above described are in one. They should keep this range in one until the red lights at Northport are in one, but care must be taken not to overrun the alignment of the red lights, as the intersection of the two alignments is very close to the shoal off Kildare point. This course will give 11 feet water over the bar, and 14 feet at the intersection of the two alignments.

The removal of the range lights was carried out under the foremanship of Mr. M. Walsh, at a cost of $66.06.

BRITISH COLUMBIA LIGHTHOUSE DIVISION.

This division comprises all Canadian waters on the Pacific coast and the inland navigation systems of British Columbia, and is under the charge of Captain James Gaudin, agent of the department at Victoria, who also acts as inspector of lights.

There are in this province thirty light-stations, at six of which are steam fog-alarms, and at six others bells are rung by machinery. There are three beacon lights in Victoria harbour, and one similar light in Nanaimo harbour.

The lights are in charge of thirty-two light-keepers, some of whom supply assistance out of the salaries allowed.

The lights are supplied by the Dominion steamer *Quadra*, Capt. J. T. Walbran, master, and the fog-alarm machinery at the several stations was periodically inspected by the engineers of the *Quadra*.

NEW AIDS TO NAVIGATION.

Brotchy ledge.—On March 19, 1901, the light shown from this beacon, at the entrance to Victoria harbour, was changed from fixed white to occulting white, visible for 40 seconds and eclipsed for 20 seconds, alternately. The light is shown from a group of incandescent electric lamps.

On the same date a fog horn, worked by the same electric current that operates the lamps, was established on the beacon. It stands in the inclosure below the light. In thick weather it will be sounded for 20 seconds, with silent intervals of 40 seconds, alternately, the horn sounding while the light is occulted and the horn being silent while the light is bright. On Sunday it will be impossible to sound the horn between sunrise and sunset owing to the electricity being shut off for overhauling purposes.

Lawyer islands.—A lighthouse was put in operation on November 28, 1901, on the northernmost island of the Lawyer group, on the eastern side of Malacca passage, southern entrance to Chatham sound.

The lighthouse stands on a site 10 feet above high water mark, on the western side of the island, 780 feet from its north-west end. It consists of a square wooden tower, rising from the western corner of a square wooden dwelling, surmounted by a polygonal iron lantern. The tower is 48 feet high from its sills to the vane on the lantern, and the whole building is painted white with the roof and lantern red.

The light is a fixed white light, elevated 55 feet above high water mark, and should be visible 13 miles, over an arc of 231° between the bearings of N. 73° W., through north and east to S. 22° E. Between the bearings of N. 73° W. and N. 65° W. the light will be obscured at intervals by trees. The illuminating apparatus is dioptric, of the fifth order.

While the *Quadra* was at this station installing the light, Captain Walbran had the opportunity of surveying the neighbouring rocks and channels. The result of his work was embodied in a notice to mariners, and is alluded to elsewhere.

The light buildings were erected by the department by day labour, under the foremanship of Mr. Joseph Dixon, with materials purchased in Vancouver and taken to the site by the *Quadra*. The total cost of establishing this important station was $6,892.00.

Nanaimo.—The fixed red light, heretofore shown from the south extremity of the mine refuse dumps on Gallows point, was on December 31, 1901, to be discontinued, and a fixed red light established on the north edge of the mud flats, on the southern side of the channel opposite Gallows point.

The new light is elevated 18 feet above high water, and should be visible 3 miles from all points of approach by water. The illuminating apparatus is a pressed glass lens.

The light is shown from a small square wooden tower, 8 feet high, erected on a platform supported by piles. The tower is painted white and the remainder of the structure black. The piles on which the tower stands are in 6 feet at an ordinary low water.

From the light the spire of the Wesleyan church bears S. 57° W., distant 5,030 feet; and the westerly extreme of Protection island coal wharf and west tangent of Protection island (cliff about 10 feet high) in line bear N. 50° W.

The work of removal was done by the crew of the *Quadra*, under the supervision of Captain Walbran.

Hand fog horns established.—On September 15, 1901, there were established at the following lightstations on the Pacific coast, hand foghorns, which are used in answer to the fog signals of vessels whenever they are heard from the station:—

Ballinac islands.
Egg island.
Pointer island.
Dryad point.
Ivory island.

BUOYS AND BEACONS.

Darcy island shoal buoy.—A steel can buoy, painted black, has been established to mark the more easterly of the two shoals westward of Darcy island, in the south entrance to Sidney channel, Haro strait.

The buoy is moored in thirty-six feet water on the east edge of the shoal, in the position occupied by the black spar formerly maintained on the shoal, and discontinued in 1898.

The buoy is liable to displacement by light draught local coasting steamers.

Sidney channel buoys.—The black spar buoy hitherto maintained on the more south-easterly of the two rocky patches off the north-west shore of Sidney island, in Sidney channel, has been replaced by a steel can buoy painted black. It is moored on the eastern edge of the shoal in twenty-four feet water.

A steel conical buoy painted red was at the same time substituted for the can buoy heretofore marking the north-western patch. It is moored in thirteen fathoms water close westward of the shoal and is $3\frac{3}{4}$ cables W. by S. from the black buoy.

The passage between these two buoys is not safe.

Sidney shoal buoys discontinued.—The maintenance of two red spar buoys, marking the outer edge of the shoal ground off the town of Sidney, on the east coast of Vancouver island, was discontinued.

Celia reef buoy.—A steel conical buoy, painted red, was last spring substituted for the can buoy theretofore marking this reef in Shute passage. The buoy is moored in nine fathoms water, 250 feet S. $\frac{1}{2}$ E. from the reef.

Gauges harbour.—The shoal on which the ss. *Horda* struck in May, 1901, in this harbour, was promptly examined by Capt. Walbran, and its eastern end marked temporarily by a small black buoy. In August, 1901, this temporary buoy was replaced by a steel can buoy, painted black.

Grappler reef buoy.—The red spar buoy marking this reef, in Houston passage, between Admiral and Kuper islands, has been replaced by a red can buoy, moored in seven fathoms on the S.W. extreme of the reef. As the ebb stream sets to the northward through this passage, the buoy at a future date will be changed in colour to black.

Portier pass buoyage.—A large steel can buoy surmounted by a lattice-work drum was in November, 1901, established as a fairway buoy off the east entrance to Portier pass, strait of Georgia coast of Vancouver island.

The buoy is painted white and black in vertical stripes, and is moored in twenty-two fathoms water.

From the buoy, Race point and the next point southward of Race point are in line; and Native point and the point eastward of Native point are in line.

The black can buoy heretofore moored off the south end of Canoe islet reef has been withdrawn.

A spar buoy, painted black, has been established on the northerly edge of Romulus rock, at the west entrance of the pass. The buoy is moored in four fathoms water.

Dorcas rock buoy.—In June, 1901, Captain Walbran located the rock off Dorcas point, Ballinac channel, on which the ss. *City of Nanaimo* grazed, and marked it by a black spar buoy, moored in 24 feet on its northern edge.

Grassy point beacon.—In August, 1901, Captain C. Keppels, R.N., H.M.S. *Warspite*, reported that the beacon formerly N. 47° E. $3\frac{1}{10}$ cables from Grassy point, Barnes sound, had been moved to the south-eastward, and is now situated S. $89\frac{1}{2}$° E. 5 cables from the northern extremity of the point. This beacon has since been replaced in its old position, and now bears N. 47° E. distant $3\frac{1}{10}$ cables, from the northern extremity of the point.

The beacon consists of a single pile surmounted by a lattice work drum 6 feet in diameter by 6 feet high, the whole painted black and showing 12 feet above high water.

White islet beacon.—A wooden beacon, 30 feet in height has been erected on the western White islet, situated off Mission point, strait of Georgia. The beacon, surmounted by a lattice work drum 10 feet in diameter, is painted black with the exception of the seaward face of the drum which is painted white, the whole showing 45 feet above high water.

Hazel point buoy.—As a result of an examination of the locality by Captain Walbran, a red spar buoy was moored by him in five fathoms, 2½ cables S.W. from the south point, now named Hazel point, of Smith island, Middle channel, mouth of Skeena, to mark the north-east limit of the Base sand. The buoy should not be passed to the westward, as the water shoals quickly in that direction.

The whole respectfully submitted.

WM. P. ANDERSON,
General Superintendent of Lighthouses.

January 1, 1902.

[Inclosure B.]

LIST OF BUOYS MAINTAINED BY THE DEPARTMENT OF MARINE AND FISHERIES IN CANADIAN WATERS IN 1901

ONTARIO.

	No. of buoys.		No. of buoys.
Amherstburg, including Bois Blanc	44	Niagara, bell buoy	1
Bay of Quinté (three contracts)	32	Orillia	6
Bears Rump	1	Pancake Shoal, bell buoy	1
Burlington Bay	1	Parry Sound	24
Byng Inlet	7	" gas buoys	3
Collingwood	14	Pembroke	20
Fiddlers Elbow	1	Point au Baril, 15 beacons and	4
Gananoque Narrows	5	Penetanguishene	10
Georgian Bay	11	Point Pelee, gas buoys	2
Goderich	4	Port Arthur	1
Green Shoal	1	Port Rowan	10
Grecian Shoal	1	Rainy River, 11 pairs beacons and	14
Grosse Point	6	Red Horse Rock	1
Kaministiquia	19	River Thames	7
Kingston	19	Rondeau	6
Little Current	6	St. Joseph Channel	4
Lake Nipissing	32	Sault Ste. Marie	20
Lake of the Woods, including bell buoy	145	" " canal approaches	25
Lake Simcoe	1	Seine River and Grassy Lake, 30 piles and	10
Lake Superior, including bell buoy	7	South Baymouth	4
Lone Rock, bell buoy	1	Stokes Bay	6
Midland	7	Surprise Shoal, bell buoy	1
Murray Canal and Presqu'ile Bay	23	Tin Cap Shoal	2
North Sisters Rock, Ont	4	Trenton	11
Napanee	14	Waubashene	33

QUEBEC.

	No. of buoys.		No. of buoys
Amherst Harbour	8	Matane	3
Bersimis and Outard Bay	10	New Richmond	4
Bonaventure	1	North Channel, Island of Orleans	10
Cap Chatte	1	Paspebiac	1
Cape Cove	1	Percé	2
Carleton Point	1	Richelieu Rapids, bushes	
Chicoutimi	13	Richelieu River (two contracts)	47
Cock Point	1	Rivière des Prairies	10
Eschourie Rock	2	St. Adelaide de Pabos	1
Fox River	1	St. Ann River	1
Gaspé	5	St. Placide, stakes	40 or 50
Grand Entry	5	St. Thomas	8
House Harbour, Magdalen Islands	6	St. Lawrence River between Montreal and Quebec	258
Lachine and Lake St. Louis	23	Maintained by Agency, gas buoys	11
Lake St. Francis	36	" " smaller buoys	40
Little River West	1		

List of Buoys maintained by the Department of Marine and Fisheries, &c.—*Continued.*

NOVA SCOTIA.

	No. of buoys.
Advocate Harbour	5
Apple River	8
Arichat	16
Argyle River and Sound	10
Avon River	6
Barrington	35
Bear River	12
Beaver Harbour	2
Blandford	5
Bridgewater	10
Canso and St. Andrew's Passage	28
Cape Negro or North east Harbour	14
Cariboo	6
Chester, Martin Point	3
Chetic amp	12
Chezzetcook and Petpiswick	6
Christmas Island and Barra Strait	11
Clarks Cove, West Bay	3
Clarks Harbour	17
Cockerwit pass and Wood's Harbour	15
Cooks Cove, Toby Cove	4
Crow Harbour	3
Canning or Habitant Rr	(6 dolphins)
D'Escousse	8
Chester	5
Digby and Annapolis	7
Dover	4
Dipper Harbour	3
East Bay, Bras d'Or	2
Great Bras d'Or	7
Gillis Point, Boulaceet	1
Guysborough	3
Hay Cove	8
Harbour au Bouche	(6 stakes)
Ingonish, South Bay	4
Isaacs Harbour	8
Janvrin	1
Jeddore	4
Judique	11
Ketch Harbour	1
L'Ardoise	13
La Have	2
Lennox Passage	8
Little Narrows	17
Liverpool	10
Lockeport	3
Lunenburg	6
Lunenburg, Back Cove	9
Lunenburg, Middle South	9
Louisbourg	16
Mabou	7
Mahone Bay and Chester	12
Main à Dieu	12
Margaree Harbour	6
Martins Brook	9
Merigomish	6
Marie Joseph	6
Montsellier	5
McKinnon's Harbour	10
Musquodoboit	4
Northport	7
North Sydney	12
Parrsboro	5
Petit de Grat	7
Pictou	10
Popes Harbour	3
Port Felix	3
Port Hood	7
Port Le Tour	7
Port Medway	11
Port Morien	9
Pubnico	2
Pugwash	16
Prospect, Lower	8
River John	10
Roseway	3
St. Anns	3
St. Mary's River	2
St. Peters Bay	8
St. Peters Inlet	16
Smith's Island	11
Ship Rock	1
Sydney	1
Shulee	2
Sambro	8
Shag Harbour	9
Sheet Harbour	12
Shelburne	9
Ship Harbour	10
Tangier	9
Tatmagouche	4
Terrence Bay	18
Tor Bay	3
Three Fathom Harbour	19
Tidnish	5
Tusket	5
Upper Prospect	(3 spindles) 23
Wallace	4
West Bay	5
Westport	3
Weymouth	3
Whitehead	13
West Dublin and Crooked Channel	9
Yarmouth	13
Maintained by Agency	50
" "	(whistling buoys) 22
" "	(bell buoys) 18
" "	(conical and can buoys) 127

List of Buoys maintained by the Department of Marine and Fisheries, &c.—*Continued.*

NEW BRUNSWICK.

	No. of buoys.
Bathurst	26
Bay Verte	36
Beaver and Black's Harbour	9
Bay du Vin	4
Buctouche River	18
Black Brook, Miramichi River	3
Black Land Gully	12
Buctouche	16
Campobello	10
Caraquet	20
Cocagne, stakes, 50	11
Dalhousie and Restigouche	10
Digdequash	5
Dipper Harbour	3
Dorchester	3
Grande Anse	4
Grand Lake and Salmon River	73
Grand Manan	30
Great Shemogue	7
Harvey	7
Letète and Back Bay	21
Lepreaux	3
Little Shemogue	6
Little Shippegan	12
Magaguadavic	13
Maquapit and French Lakes	24
Marsh Point	1
Miramichi	18
Musquash	7
Neguac	19
Neil's Harbour	1
Napan River, 24 stakes	3
North-west Arm, Miramichi	6
Oak Bay and Restigouche	6
Oromocto	7
Petit Rocher	
Pisarinco	2
Pokemouche	5
Quaco	3
Richibucto and Albion	28
Richibucto, Kingston and Brown's Yard	30
Shediac	11
Shippegan	19
St. Andrews	15
St. Croix Ledge	11
St. John River	68
Tabusintac	17
Tracadie	19
Tynemouth Creek	3
Washadamoak	2
West Isles (4 spindles)	23
Maintained by Agency, signal buoys	16
" can and conical buoys	10

PRINCE EDWARD ISLAND.

	No. of buoys.
Bay Fortune	8
Beach Point	3
Bedeque	11
Brae Harbour	5
Cardigan, Lower	5
" Upper	11
Cascumpec	14
Charlottetown	42
Cove Head	2
Crapaud	6
East River (Hillsboro')	17
Egmont Bay	10
Egmont Bay, south, 8 stakes and	2
Georgetown	13
Goose Harbour	2
Grand River	12
Grand River, lot 14	8
Indian Rocks	1
Malpeque	16
Miminegash	3
Little Channel	3
Montague	6
Murray Harbour	33
New London	11
Orwell and Vernon River	6
Pinette	5
Port Hill	9
Pownal	7
Rollo Bay	3
Rustico	5
Savage Harbour	2
Souris	4
St. Peters Harbour	8
Summerside	11
Tracadie	3
West Point	1
Wood Island	1
Maintained by Agency, signal buoys	3

SESSIONAL PAPER No. 21

List of Buoys maintained by the Department of Marine and Fisheries, &c.—*Continued.*

BRITISH COLUMBIA.

	Description.	No. of Buoys		Description.	No. of Buoys
Benmohr Rock	Platform and cage	1	Village Point, Baynes Sd	Spar	1
Gossip Reef	Wooden can	1	Victoria Harbour	Wooden cage	2
False Reef	Iron can	1	" "	Spar	1
Lighthouse Island	Conical	1	Esquimalt Harbour	"	2
Point Grey	Iron can	1	" "	Conical	1
Six Fathom Patch	"	1	Nanaimo	Platform wooden cage	8
Hodgson Reef	"	1	Sand Heads, Fraser River	Bell 1, iron, 13	14
Horsewell Reef	Conical	1	Black Rock	Spar buoy	1
Reef Point, M.I	"	1	Rosdale Reef	L'ge steel buoy	1
Clarke Rock	Wooden can	1	Johnson Reef	Small "	1
Ledge Point	Wooden spar	1	Celia Reef	Steel buoy	1
Burnaby Reef	"	1	Virago Rock, Portier Pass	Spar buoy	1
Dall Patch	Cage	1	Indian Island	Can buoy	1
Alford Reef	Can	1	First Narrows	Spar buoy	1
Houston	"	1	West Rock	Large can	1
Clayoquot Sd	Small can	2	"	Spar	1
Cortez Isd	Can	1	Canoe Islet	Can	1
Entrance Pt	Spar	1	" Pass	Spar	13
Miami Reef	Can with cage	1	Rosenfelt Reef	Can	1
Sparrowhawk Rock	Spar	1	Pt. Saturna	Conical	1
Kelp Point, Baynes Sound	Conical	2	Kootenay Lake	Platform	11

SURVEY OF TIDES AND CURRENTS IN CANADIAN WATERS.

Ottawa, December 6, 1901.

W. P. Anderson, Esq., C.E.,
Chief Engineer, Department of Marine and Fisheries.

Sir,—I have the honour to submit the following Report on the progress of this Survey. The principal tidal stations have been maintained in continuous operation throughout the year, and considerable progress has been made in the reduction of the results, and in the use made of them to improve the tide tables now regularly issued. The most important step in advance as regards the tide tables, has been the issue of the new tables for British Columbia, which have been received with the highest expressions of appreciation. These were issued as soon as the increased appropriations of last year made it possible to do so. During the season, tidal observations have been taken at Vancouver, and observations of the current at the First Narrows, forming the entrance to that harbour. The results have been worked out promptly for issue with the tide tables for 1902; as well as additional information from other sources, in those regions. The further information thus embodied in the tide tables will be of much service to navigation on our West Coast.

The tidal observations secured last season on the Lower St. Lawrence have been fully worked up; and the outcome is given in the present Report. To make the information immediately available to navigators it was issued in a preliminary form as a 'Notice to Mariners' in April last, before the opening of navigation on the St. Lawrence. These observations were so carried out as to make practically available for the first time the relations between tide and current previously determined during the progress of the Admiralty surveys of 1885 to 1889.

During this season, additional tidal observations have been taken in Northumberland Strait and in Cabot Strait. The observations in Northumberland Strait at Pictou, Charlottetown and Summerside, supplement those of 1896 and 1897; and will serve to extend the basis from which the tide tables for this region are calculated; and also to secure better tidal data for Summerside harbour. The tidal observations in Cabot Strait were taken with the object of obtaining the best tidal relation between St. Paul Island, and one or other side of the strait; because of the severe exposure at that station, and the difficulty of maintaining the gauge there. These relations with the two sides of the strait will also serve to define more correctly the nature of the oceanic tidal undulation at its entrance into the Gulf of St. Lawrence; as it is this undulation which gives rise to the whole of the tides in the Gulf area and throughout the St. Lawrence river.

Extended levels were taken in September around the head of Cumberland Basin, on the Bay of Fundy, with the object of reducing to the same basis of comparison a number of valuable observations of the extreme height of the tide which have been recorded at different points there in different years. The result of this work is given in the present report; and it is of the first importance with relation to the protection of the extensive dyked marshes in this region.

A considerable amount of tabulation from the tidal record already secured, has been done during the year; as noted below. This will be submitted to analysis as the means to do so will allow; in order to extend the basis from which the tide tables are calculated, which will be of permanent benefit in improving the accuracy of the tide tables in all future years. In the office work of this Survey, and in the erection of the summer tidal stations, I have had the assistance of Mr. R. Angus and Mr. S. C. Hayden.

The total expenditure on this Survey during the fiscal year from June 30, 1900, to June 31, 1901, was $7,060.20. This total expenditure is classified as follows:—

(1.) General expenses: maintenance of the seven principal tidal stations, with repairs, heating and supplies; salaries of observers and assistants; office work and travelling expenses; $2,910.35.

(2.) Summer tidal stations; on the Lower St. Lawrence in 1900, and in Northumberland Strait in the early part of the season (up to June 30), 1901; erection of gauges, salaries of observers, and inspection, $1,503.25.

(3.) Tide tables; calculations and printing; analysis of further tidal record to improve their accuracy, which is of permanent benefit for all future years, $2,646.60.

THE PRINCIPAL TIDAL STATIONS.

The seven principal stations in Eastern Canada, established by this Survey, are at Quebec, Father Point, Belle Isle Strait, St. Paul Island in Cabot Strait, Halifax, Yarmouth, N.S., and St. John, N.B. These have all been maintained in continuous operation throughout the past year, with some minor interruptions. The stations inspected this season by myself, were St. Paul Island, Halifax, Yarmouth and St. John, N.B. At all these stations, careful instrumental levels were taken to insure the continuity of the datum to which the height of the tide is referred; and at all four, auxiliary Bench marks were established for future reference. The detailed levels it is unnecessary to give at present; their eventual use being the determination of the low water datum, and mean sea level at these localities. Several adjustments and improvements were also made; to insure correct time for the observations; and for the barographs or self-recording barometers there used. The cribwork at Forteau Bay in Belle Isle Strait, also required repair, by a heavy sheating of hardwood. The chief trouble has occurred at St. Paul Island from threatened chokage of the inlet to the tide pipes. This station was visited by Captain Douglas, R.N.R., early in the spring, to make sure that everything was in good working order before the comparative observations in Northumberland Strait were begun. This autumn, special inlet fittings have been made, in the hope of averting this chokage in future.

It was expected that the tidal gauge at Father Point could be moved this season onto the new wharf there, as a better site for it; but no further work was done this year in extending this wharf, which does not yet reach to low water mark.

REDUCTION AND TABULATION OF TIDAL RECORD.

In order to utilize the tidal record for the calculation of tide tables by the modern method of harmonic analysis, it is necessary that it should be tabulated in hourly ordinates, which give the height of the tide at each hour throughout the year. With this object in view, it is of primary importance to secure an uninterrupted record, day and night, during the course of the year. Every endeavour in the way of foresight and vigilance, is made to ensure this. The number of hourly ordinates throughout the course of a year is 8,760; and these must be reduced to a uniform datum and freed from time errors. The steps accordingly necessary to prepare the tidal record for analysis are as follows:—(1) Reduction to datum by comparison with a scale of feet or sight gauge, and with reference to the Bench-mark; and the ruling-in of the datum line on the tide-diagrams. (2.) Correction of the hour lines for the want of fit of the tide diagram around the cylinder, due to lap or shrinkage of the paper. This sometimes varies with the season. (3) Correction of time error due to the error and rate of the driving clock. (4.) Interpolation of any breaks in the tide curves. If these do not exceed a day in duration, they can be filled in with advantage on the tide-diagrams themselves, rather than by calculation in making the analysis. (5.) Examination of the record for storm-tides, or anything exceptional which should not be included in the analysis.

The tabulation of this character done during the twelve-month since last report, and the year from which the tide tables will be benefited thereby, may be stated concisely as follows:—

Victoria, B.C.—One year's tidal record, from May 1, 1896, to April 30, 1897; extending the basis of these tide tables from one to two years and benefiting them from 1902 onwards.

St. John, N.B.—Two years' tidal record, from May 15, 1896, to May 31, 1898; extending the basis of these tide tables from two to four years; and thus improving their accuracy from 1903 onwards; and benefitting the whole Bay of Fundy region which depends on them.

Quebec.—Two further years of tidal record from March 1, 1898, to March 15, 1900; extending the basis of calculation from four to six years, and thus benefitting the tide tables for Quebec and Father Point from 1903 onwards, as well as the whole tidal estuary of the Lower St. Lawrence, which depends indirectly upon these.

Halifax.—Three years, from December 14, 1896, to January 15, 1900, extending the basis from which these tide tables are calculated from one to four years of recent observations. This, together with four years of old observations, obtained between 1851 and 1861, will give a total basis of eight years observations for these tide tables, and thus benefit all the ports on the Atlantic coast of Nova Scotia which depend upon them.

St. Paul Island.—Two years, from May 20, 1899, to May 31, 1901; which will benefit the tide tables for the ports in Northumberland Strait, and the south-west side of the Gulf of St. Lawrence, which depend directly or indirectly on St. Paul Island.

The tabulation for these last two places has not yet been submitted to analysis; but this will be done as soon as the finances of the Survey will admit of it.

When these analyses are made, the tide tables for our three principal tidal harbours, Quebec, Halifax and St. John, will be based upon a longer period of observation than any other harbours in North America, with the exception of New York, where a tidal record of eleven years in all has been obtained, either at Sandy Hook or Governor's Island. It is highly desirable that the record be extended however: as the irregularities due to storm disturbance can only be got rid of by a long series of observations which eliminates them eventually by a process similar to averaging. There are also long-period elements in the tide itself, which require to be determined; the longest, which is also of much importance, having a period of nineteen years. The periods of observation on which the tide tables for India are based, range from six to twenty-seven years.

PUBLICATION OF TIDE TABLES AND OTHER INFORMATION.

The publications of this Survey during the past year, have been reviewed in British and foreign periodicals, which is of service in making them widely known; and the new tide tables for British Columbia, issued for the first time for the year 1901, have been much appreciated.

Currents in the Gulf of St. Lawrence, including the Anticosti region, and Belle Isle and Cabot Straits.—The pamphlet with this title which was issued in June, 1900, gives in a condensed form, adapted for reference, the information derived from the investigations in the Gulf of St. Lawrence made by this Survey during the seasons of 1894, 1895 and 1896. It has now been reviewed in the following periodicals:—The *Geographical Journal*, London, December, 1900, gives a notice of it, half a page in length. The *Annalen der Hydrographie*, by Dr. Schott, Hamburg, gives an extensive summary occupying seven pages. It is noticed in the *Fortschritte der Ozeanographie*, by Dr. Krummel, Kiel. The *Annales de Géographie*, Paris, gives a concise review. Also, two articles of three columns each, based upon this pamphlet, were prepared by me by request, and published in *Nature*, London and New York, January 24 and April 18, 1901.

Tide Tables for British Columbia.—These comprise complete tide tables for Victoria, B.C., and for Sand Heads in the Strait of Georgia, a locality centrally situated in that strait, and well suited as a reference station for the ports around it. Tidal differences for Vancouver, New Westminster and Nanaimo are given with these tables. They have met with so much appreciation that the demand for them has been greater than could be supplied, from an edition of 500 copies.

The Provincial Engineer for British Columbia, referring to the original erection by the Public Works Department of the tidal gauges at Victoria and in the Strait of Georgia, says: 'It is very gratifying to find that previous efforts are at last bearing fruit.' The Agent of this department at Victoria says: 'The publication of tide tables for this province has been a long-felt want.' The Resident Engineer of Public Works at New Westminster also remarks that they will fill a long-felt want, and asks for twenty-five or fifty copies; a request which could be only partially met. Mr. F. N. Denison, who is continuing the tidal observations at Victoria, writes: 'Your Victoria tidal predictions are almost perfect, as proved by plotting them upon the actual records; and are greatly admired and appreciated by those who have seen the comparison.' These tide tables have been reprinted one month at a time, by the *Times* and the *Colonist* of Victoria. The editor of the *Daily Province* of Vancouver, speaks of them as invaluable.

Improvements have been secured during the year by working out the relation of the tide at Esquimalt to Victoria, and also of New Westminster to Sand Heads, from simultaneous observations at those places. A similar relation was worked out for Baynes Sound, from six months of tidal record obtained there; which is of value in affording some knowledge of the run of the tide throughout the length of the Strait of Georgia; as this Sound is 80 miles from Sand Heads, and nearly as far north as the southern tide runs before meeting the contrary tide from the other direction. Observations have also been obtained for some months at Vancouver; and simultaneously with these, the turn of the current in First Narrows at the entrance to that harbour. The results of these observations have been worked out promptly, in time to issue with those above mentioned, to accompany the tide tables for 1902.

Quebec, Father Point, Halifax and St. John, N.B.—In this set, the accuracy of the tide tables for Quebec has been improved by extending the basis from which they are calculated for 1902, from two to four years of observation. This is an important improvement, in view of the full information now issued with these, for the whole of the tidal portion of the St. Lawrence, from Three Rivers to Gaspé. Accurate tide tables for Father Point have also been prepared, and issued for 1902 for the first time. These are calculated from the Quebec tide tables by the method described further on. Tidal differences are also given with these tables for the whole of the Bay of Fundy, based upon observations in that region, and for the Atlantic coast of Nova Scotia.

These tide tables were again supplied to the leading Canadian and British almanacs willing to publish them in whole or in part. An edition of 600 copies, reprinted from

Greenwood's Almanac and now including the Father Point tables, has been widely distributed. The various newspapers have also done something in the way of re-publishing these tide tables, or in giving the time of high water daily, much in the same way as in former years.

Charlottetown, Pictou and St. Paul Island.—These tide tables are of the same character as last year, and they again include the whole twelve months. An improvement in them will be obtained, when the observations taken in Northumberland Strait during this season, are worked out. The tidal relation of Charlottetown to Pictou, and of Pictou to St. Paul Island, will thus be more accurately determined; and also when the tabulation of the tidal record from St. Paul Island itself, is submitted to analysis, the improvement secured will benefit this set of tables which are dependent upon it as a principal station.

The time of high water for Charlottetown, taken from these tables, has been published a month at a time by the *Patriot*, the *Examiner* and the *Guardian*. The tide tables for Pictou have also been published in full by the *Advocate* one month at a time, and accompanied by the tidal differences for the dependent places in Northumberland Strait.

Ste. Croix bar.—Tide tables were again computed for this locality, and with them the difference in time for St. Augustin Bar is given. These tide tables are published in company with the tide tables for Quebec, by the Montreal Harbour Commissioners, in the publication they prepare annually for the information of the St. Lawrence pilots. The new information regarding the tides and currents of the Lower St. Lawrence, was also supplied in a condensed form for this publication.

Tadousac, Cacouna and Little Métis.—Tide tables for the months of July, August and September were again computed for these seaside resorts to meet the demand of the summer residents and tourists. This was done by a little extra work, without expense; as the tide tables were prepared in manuscript only, and posted at the leading hotels.

THE TIDAL ST. LAWRENCE AND ESTUARY.

In the season of 1900 an important series of simultaneous observations was secured, from Quebec to Point de Monts, 260 miles below; this being properly to be considered as the mouth of the St. Lawrence estuary. The tidal stations established and the record secured were :—

Quebec	Continuous record
Grosse Isle	May 4 to Oct. 15
L'Islet	" 12 to " 15
Orignaux Pt	June 22 to Sept. 11
Rivière du Loup	" 30 to Oct. 17
Tadousac	July 6 to Sept. 15
Father Point	Continuous record
Cape Chatte	July 17 to Oct. 1

The two principal tidal stations in this region are Quebec and Father Point, and the first endeavour in reducing the observations was to find in what part of this region the tides could best be referred to Quebec, and in what part to Father Point. To ascertain this, trial comparisons were made for L'Islet and Orignaux Point, the time of the tide at these places being compared with Quebec on the one hand, and Father Point on the other. Without giving the resulting differences in detail, it was found that the upper part of the estuary as far as L'Islet could best be referred to Quebec, and that Orignaux Point and the Traverse and all points below, to the mouth of the estuary, could be referred to Father Point with greater accuracy than to Quebec. This corresponds with the natural features of the estuary; as the deep-water channel, which is 100 fathoms off Father Point, extends uninterruptedly to Orignaux Point, where it still has a depth of 20 fathoms. Above this the river becomes relatively shallower.

The tidal observations secured in 1896 at Carleton in Chaleurs Bay, and in 1897 at Chicoutimi at the head of the Saguenay, were also compared with Quebe and Father Point, to ascertain with which of these stations there was least variation in the difference of the time of the tide. The result showed that Carleton, and with it probably the whole of Chaleurs Bay, can better be referred to Father Point than to Quebec. On the other hand, Chicoutimi can best be referred to Quebec; this being probably due to the character of the tide, its form or type at the head of the long Saguenay estuary being more nearly similar to the tide at Quebec.

The results arrived at, from the reduction of all the observations, are given below; the localities above Quebec being still referred to it as before. The data for some additional localities are secured by a careful comparison with the values of the 'Establishments' in the Admiralty list. A further improvement in accuracy results from the extension of the basis for the Quebec tide tables themselves to a period of four years of continuous observation at that port. The value for South-west Point, Anticosti, is based upon a long series of simultaneous observations with Father Point.

Tidal Differences throughout the tidal estuary of the St. Lawrence; and for Chaleurs Bay.—These differences, when applied to the tide tables for Quebec and Father Point, give the time of high and low water at the places named, in Eastern Standard time, for the 75th meridian west of Greenwich.

Localities referred to Quebec.	Difference to be applied to Quebec Tables.		Rise of Tide.	
	For High Water.	For Low Water.	Springs.	Neaps.
	H. M.	H. M.	Feet.	Feet.
Three Rivers	Add 4 45	Add 6 15	1	..
Champlain	" 4 12	" 5 33	3	2
Batiscan	" 3 41	" 4 51	3½	2
Cape Roche	" 2 44	" 3 50	6	4
Grondines	" 2 20	" 3 19	9	6
Point Platon	" 1 41	" 2 11	14½	9½
Ste. Croix	" 1 31	" 2 00	15	10
St. Augustin	" 0 46	" 0 52	16½	11
St. Nicholas	" 0 35	" 0 35	17	11½
Quebec	" 0 00	" 0 00	17½	12
St. Laurent	Sub. 0 16	Sub. 0 24	17½	14½
Berthier	" 0 40	" 1 00	17½	14
Grosse Isle	" 0 57	" 1 19	19	13
Beaujeu Channel	" 0 55	" 1 44	18¼	13
L'Islet	" 1 15	" 2 05	18	13
Coudres Island	" 2 16	" 3 10	18	13
Murray Bay	" 2 52	" 3 50	17	12
Chicoutimi, at head of Saguenay	" 3 31	" 3 18	12	8

Localities referred to Father Point.	Differences to be applied to Father Point Tables.		Rise of Tide.	
	For High Water.	For Low Water.	Springs.	Neaps.
	H. M.	H. M.	Feet.	Feet.
Orignaux Point	Add 1 35	Add 1 48	17½	13
Rivière du Loup	" 0 56	" 0 59	16	10½
Brandy Pots	" 0 46	" 0 49	17	10
Tadousac	" 0 32	" 0 36	17	10
Green Island	" 0 35	" 0 39	16	9½
Bic Island	" 0 05	" 0 08	14	8½
Father Point	" 0 00	" 0 00	14	8½
Little Metis	Sub. 0 03	Sub. 0 03	13	8
Matane	" 0 05	" 0 05	11	7
Point de Monts	" 0 08	" 0 10	12	6
Cape Chatte	" 0 08	" 0 10	13	8
Gaspé Basin	" 0 03	.....	5	3
South-west Point, Anticosti Island	" 1 04	" 1 02	6	4
Carleton Point, Chaleurs Bay	Add 0 22	Add 0 16	8	5
Dalhousie "	" 0 33	" 0 27	9	6
Campbellton "	" 1 25	.....	10	7

Tide Tables for Father Point.—It is evident from this that it is necessary to have tide tables for Father Point itself, in order to be able to apply these differences. Heretofore, tide tables have been prepared in manuscript and posted at the lighthouse for the information of the pilots; but these tables were computed merely by means of constant differences of time with Quebec, for high water and low water respectively, as determined by the observations secured. There was, however, a considerable variation in these differences from their average value during the course of the month; especially in the time of low water which usually varies most in estuaries. This variation is shown in the following table, in which the results are all in Standard or absolute time. The method by which the limiting values of these differences is found, to eliminate exceptional values and make them truly comparative, has been explained in a paper communicated to the Royal Society of Canada, and need not here be given as it might be considered technical.

See *Character and Progress of the Tides in the Gulf and River St. Lawrence*—Transactions of the Royal Society of Canada, vol. III, 1897.

Father Point to Quebec.	Variation in the difference for High Water.	Range in the Difference.
	H. M. H. M.	H. M.
One year.—1894, December 17, to 1896, January 31—601 simultaneous observations	3 45 to 4 43	0 58
One year.—1896, February 1, to 1897, January 31—649 simultaneous observations	3 44 " 4 41	0 57
	Low Water.	
One year.—1896, February 1, to 1897, January 31—627 simultaneous observations	4 38 to 5 57	1 19
One year.—1897, February 1, to 1898, January 31—653 simultaneous observations	4 33 " 5 58	1 25

In the endeavour to obtain tidal differences for Father Point with less variation than the above, trial comparisons for a period of one month in the year 1900 were made with Wilhelmshaven, in Germany ; Harwich, on the North Sea, and Portsmouth, on the English Channel. The tide at these harbours is similar to Father Point, in having nearly the same range ; and it might, therefore, be expected that one of these differences might prove to be more nearly constant than the difference with Quebec. But this did not prove to be the case, which makes it unnecessary to give the results of these trials.

On making a close examination of the whole series of differences in the time of the tide at Father Point and Quebec, as observed during two complete years, it appeared that in the case of low water a double variation in the difference of time occurred ; firstly, in the period of the synodic month with the moon's phases, and secondly, in the period of the anomalistic month with the moon's distance. The amount of these variations in the difference was ascertained by four series of analyses, in the periods of each of these months, and for high and low water, respectively.

In the case of High Water, the variation with the moon's phases is not great, and the variation with the moon's distance is only 2 minutes more or less than the mean value, and may be neglected. The time of high water can, therefore, be found from the Quebec tides by the following simple rule:—

Time of high water at Father Point, from high water at Quebec—

About the time of new or full moon, substract ..... 4h. 22m.
" " the moon's quarters " ..... 4h. 18m.

In the case of Low Water, the variation in the difference is large, and the outcome of the analyses which were made, is given in the table opposite, which is used for the calculation of the tide tables.

The following synopsis shows the proportion of the range in the difference for high water and for low water, which can be reduced to law, and which is allowed for by the use of this table. The greatest outstanding error which can occur at any time is *half* of the remainder unaccounted for, which includes weather disturbance, and the diurnal inequality occurring for a few days at the moon's maximum declination :—

	High Water.	Low W
Father Point and Quebec—		
Range in the difference in the synodic month	5 m.	32 m.
" " anomalistic month	4 m.	25 m.
Diurnal inequality in the difference	14 m.	14 m.
Remainder unaccounted for (weather, &c)	34 m.	11 m.
Total range in the difference (average as above)	57 m.	82 m.

TIME OF LOW WATER AT FATHER POINT, FROM LOW WATER AT QUEBEC.

TABLE OF DIFFERENCES IN TIME.

Synodic Month.

Moon's Phases.	No. of tide	Difference for Low Water.	Moon's Phases.	No. of tide	Difference for Low Water.
		H. M.			H. M.
Full Moon			New Moon	0	5 41
	28	5 41		1	5 42
	27	5 42		2	5 43
	26	5 43		3	5 43
	25	5 45		4	5 42
	24	5 42		5	5 41
	23	5 41		6	5 40
	22	5 40		7	5 38
	21	5 38		8	5 35
	20	5 35		9	5 32
	19	5 32		10	5 29
	18	5 29		11	5 26
	17	5 26		12	5 22
	16	5 22		13	5 19
	15	5 18		14	5 16
	14	5 15		15	5 14
	13	5 12		16	5 12
	12	5 11		17	5 11
	11	5 11		18	5 11
	10	5 12		19	5 12
	9	5 15		20	5 15
	8	5 18		21	5 18
	7	5 22		22	5 22
	6	5 26		23	5 26
	5	5 29		24	5 29
	4	5 32		25	5 32
	3	5 35		26	5 35
	2	5 38		27	5 38
	1	5 40		28	5 40
New Moon	0	5 41	Full Moon		

Total length of Synodic month = 57·06 tide-intervals.

Anomalistic Month.

Moon's Distance.	No. of tide	Correction in Minutes.	Moon's Distance.	No. of tide	Correction in Minutes.
Apogee			Perigee	0	+14
	26	−08		1	+16
	25	−08		2	+17
	24	−08		3	+17
	23	−08		4	+17
	22	−08		5	+16
	21	−08		6	+14
	20	−07		7	+12
	19	−07		8	+10
	18	−06		9	+09
	17	−06		10	+07
	16	−05		11	+06
	15	−05		12	+04
	14	−04		13	+03
	13	−03		14	+02
	12	−02		15	+01
	11	−01		16	0
	10	0		17	−01
	9	+01		18	−02
	8	+02		19	−03
	7	+03		20	−04
	6	+04		21	−05
	5	+06		22	−05
	4	+07		23	−06
	3	+09		24	−06
	2	+10		25	−07
	1	+12		26	07
Perigee	0	+14	Apogee		

Total length of Anomalistic month = 53·24 tide-intervals.

In using this table, the new moon is taken as the central point of the month, and the tide falling nearest to it in time is marked 0. The tides are then numbered successively from this in each direction; and the full moon will always fall between two numbers as indicated, since the number of tide-intervals in the synodic month is odd. In the same way, the moon's perigee is taken as the central point of the anomalistic month, and the numbering is carried both ways from it. For greater convenience in calculation a combined table was prepared from these two; by making the perigee fall successively upon each lunar day throughout the synodic month. In this way, a series of twenty-five 'types of month' were obtained, which covers all cases possible, with sufficient accuracy for practical purposes. These types are designated by the letters of the alphabet for reference. It is this combined table which is used in the Survey office for the calculation of the tides at Father Point from the Quebec tide tables; but it is not necessary to publish this here.

It is to be noted however, that a closer degree of accuracy has now been secured for the whole series of St. Lawrence tides; as the basis from which the Quebec tide tables themselves are calculated, has now been extended to four years of tidal observations. These observations afford 35,064 individual heights of the tide hour by hour; the whole of these being reduced to one uniform datum throughout, and corrected for all errors in time which occurred, from variation in the driving clock of the recording instrument.

The current in the Traverse.—A very good series of observations of the turn of the current in the Upper and Lower Traverse, were obtained in the season of 1900. This may be considered as the crucial point on the Lower St. Lawrence; as the currents there attain their greatest strength. Care was taken to secure correct time for the observations, by the use of a chronometer at the Pier in the Upper Traverse, and a time signal thence to the lightship in the Lower Traverse, in the manner described in last Report. There is no slack water at the turn of the current; but it veers completely round in turning. The time of the turn of the current was therefore taken as the moment at which the current in veering runs directly across its directions at flood or ebb, in the general line of the channel. The observations extended from May 16 to September 15. They were taken during daylight only, in the Upper Traverse; but in the Lower Traverse the swing of the lightship enabled both the day and night tides to be noted. The swing of the buoys at the opposite side of the channel was also observed; and from the double observations, the true time of the turn of the current in mid-channel was deduced.

On the Admiralty chart of the Traverse, the turn of the current is referred to the time of the tide at Orignaux Point; which was itself unknown however, until the present observations were taken by this Survey. Accordingly, a comparison was first made with Orignaux Point; but the observations there were of shorter duration then elsewhere, as they only extended from June 23 to September 11. Further, the time of the tide at Orignaux Point itself is referred to Father Point; and it was found that the difference in the time of the tide between these two places, was unusually free from variation, on account of the continuous deep channel which runs from the one to the other. The time of the turn of the current in the Traverse was therefore referred directly to the tide at Father Point; for which tide tables are now available. A similar comparison was also made with Quebec in the other direction; but the reference to Father Point was found much the better of the two. The Lower Traverse was selected for the comparison, because both day and night observations were obtained there. The great constancy in the monthly averages of the difference in time, appears from the following summary.

*See map of Lower St. Lawrence, Plate I.

Lower Traverse and Father Point. Observations for 3½ months.

Ebb Stream in Lower Traverse begins, after H. W. at Father Point :—

June 1 to 30.—56 observations.	Turn of current	3h.	35m.	after H.	W.
July 1 to 31.—50	" " "	3h.	32m.	"	"
Aug. 1 to 31.—58	" " "	3h.	34m.	"	"
Sept. 1 to 15.—29	" " "	3h.	34m.	"	"
	General average	3h.	34m.	"	"

Flood Stream in Lower Traverse begins, after L. W. at Father Point :—

June 1 to 30.—53 observations.	Turn of Current	3h.	52m.	after L.	W.
July 1 to 31.—52	" " "	3h.	58m.	"	"
Aug. 1 to 31.—56	" " "	3h.	59m.	"	"
Sept. 1 to 15.—29	" " "	3h.	53m.	"	"
	General average	3h.	56m.	"	"

The method of comparison with Father Point being established, an extensive series of observations of the turn of the current in the Upper Traverse was taken in hand for reduction. These had been made in former years, by Mr. E. Lebel, the light keeper of the lightship ; and they have been preserved at the Quebec Agency. The time of the turn of the current is noted to the nearest quarter of an hour during the seasons of navigation from April to October in each year. On working these out, with reference to the tidal record at Father Point, for the two years 1896 and 1897, the following result was obtained for the turn of the current in mid-channel :—

From 684 observations in the two years. Ebb Stream in the Upper Traverse begins 3h. 13m. after High Water at Father Point.

From 679 observations in the two years. Flood Stream in the Upper Traverse begins 3h. 55m. after Low Water at Father Point.

When the difference in the time of the turn, in the Upper and Lower Traverse is allowed for, these observations corroborate those of 1900 as closely as can be expected from the way they were taken. This difference as found in 1900, is given below ; and it is to be noted that the result is exact and independent of any small time error ; as by the method of time signals the time was the same at both places, whether it was in accord with the absolute standard or not.

Upper and Lower Traverse.—Difference in time of turn of Current.

At High Water ; from 149 observations. Ebb Stream begins in the Lower Traverse 22 minutes later than in the Upper Traverse.

At Low Water ; from 135 observations ; Flood Stream begins in the Lower Traverse 10 minutes later than in the Upper Traverse.

The current at L'Islet.—The observations taken here, are at the nearest locality to the point at which there is the least depth at low water throughout the whole Lower St. Lawrence between the ocean and Quebec. This is in the Beaujeu channel, seven miles above L'Islet. The observations were taken at the head of the long pier at L'Islet, by noting the time of the swing of a buoy anchored off its end. The turn of the current at the centre of the ship channel was found to be 15 minutes later than at the head of the pier, as nearly as this could be ascertained from shore observations. With this allowance, the turn of the current in the offing of L'Islet is as follows, in relation to the tide at Quebec, as observed simultaneously :—

From the average of 116 observations, the Ebb Stream in the offing of L'Islet, begins 57 minutes before High Water at Quebec.

From the average of 120 observations, the Flood Stream begins 1 hr. 19 min. before Low Water at Quebec.

Resulting relations between the turn of the current and the time of the tide.—When the latest Admiralty surveys of the St. Lawrence were made in 1885 to 1889 by Staff Commander W. F. Maxwell, the turn of the current was ascertained at a number of points with reference to the time of high and low water. The results of these determinations are given on the charts. But unfortunately the time of the tide itself was not known ; as there were then no tide tables for the St. Lawrence to refer to, or any data by which it could be ascertained. It was not until the present tidal observations of 1900 were obtained and reduced, that data for the tide itself were secured. These observations therefore make the previous Admiralty determinations practically available to mariners for the first time. The localities for the tidal observations were carefully chosen with this object in view.

The division of the region into two parts in which the tides are referred to Quebec and Father Point respectively, has the further advantage of reducing the variation in the differences during the course of the month, to the least possible amount ; which makes the constant differences now published, more closely accurate ; because the variation is allowed for, by the method already described, in the calculation of the tide tables for Father Point itself A further improvement will only be secured when an analysis of the tidal record at Father Point is made, and tide tables calculated independently and directly therefrom. The tidal relations with Father Point as now established, have in either case a permanent value, however.

The relations between current and tide as given on the charts, have been already published in a tabular form in the last Report, and need not be repeated. The final results are given in the table below ; which to sum up, is based on the following information :—(1.) On time of the tide throughout the Lower St. Lawrence as ascertained by the the simultaneous observations above referred to. (2.) On the relations between the currents and the tide as given on the Admiralty charts. The turn of the currents at L'Islet and in the Traverse however are based on observations by the Tidal Survey in 1900, as above explained. All results obtained by the use of this table, are in Eastern standard time, for the 75th meridian west of Greenwich.

Tidal Streams in offing of localities given.	Flood Stream begins after or before L.W.	Ebb Steam begins after or before H.W.	Duration of Flood stream.	Duration of Ebb stream.
After or before Low Water or High Water at Quebec:—	h. m.	h. m.	h. m.	h. m.
Quebec Harbour	1 10 after.	1 05 after.	5 00	7 30
St. Laurent	0 31 "	0 54 "	5 00	7 25
Berthier	0 10 "	0 25 "	5 05	7 20
Grosse Isle	0 19 before.	0 08 "	5 10	7 10
L'Islet	1 19 "	0 57 before.	5 30	6 50
After Low Water or High Water at Father Point:—				
In Upper Traverse	3 52 after.	3 13 after.	5 25	7 00
In Lower Traverse	3 57 "	3 35 "	5 45	6 45
Orignaux Point	2 18 "	2 45 "	5 55	6 30
In Brandy Pot Channel	2 04 "	1 46 "	6 05	6 20
Tadousac			6 08	6 15
Green Island			6 00	6 24
Bic Island			5 50	6 34

Gaspé Basin.—The relation of the tide in Gaspé Basin to South-west Point, Anticosti, was found in 1897 from observations during six days, September 10 to 16. The moon being full on September 10, these include the spring tides. The observations were direct readings on a scale of feet, taken by myself; the water in the Basin being very smooth. The readings were at intervals of 5 or 10 minutes, to accord with the secondary undulation which was pronounced; they were taken for an hour or more at high and low water; and afterwards plotted as tide curves. The resulting comparison with the simultaneous record at South-west Point, is as follows in standard time :—

From the six most concordant values, High Water in Gaspé Basin, 58 minutes later than at South-west Point; and Low Water, 43 minutes later.

Range of tide at Gaspé Basin, from 0·77 to 0·83 of the range at South-west Point. Average of eight values obtained, 0·81.

TIDE LEVELS AND BENCH MARKS ON THE LOWER ST. LAWRENCE.

The soundings shown on charts are always reduced to the level of Low Water at ordinary spring tides; and accordingly this level of the water is usually termed the Admiralty datum. In the more recent Admiralty surveys of the Lower St. Lawrence, from Quebec to the Saguenay, care has been taken to fix or establish this datum level, by referring it to a permanent Bench-mark. In this Survey also, the tide levels in our principal harbours as well as at the more important summer stations, are referred to permanent Bench-marks.

It may be excusable to emphasize the primary importance of Bench-marks in maritime matters, as well as for reference in the construction of harbour works; as this does not seem to be as fully appreciated by mariners and ship owners as it deserves to be. This will be best understood by considering the difficulty of re-determining the low water datum when it is not so recorded; and the uncertainty at best, in the result arrived at. But when the level of Low Water, as originally decided upon for the soundings on the chart, is once fixed with reference to a Bench-mark, it is always possible to ascertain whether exceptional tides fall below this datum level, and so reduce the soundings given. Questions relating to the grounding of vessels at low tide can thus be satisfactorily investigated. Any changes in the depths on shoals, or in their position and extent, can be correctly followed. Tidal observations taken at any later date can be reduced to the datum level of the chart itself, and the rise of the tide as given in a tide table will then show the draught available for vessels in addition to the chart soundings.

In placing wharf scales for the tide gauges erected last season, instrumental levels were taken to determine the height of the zero of the scale with relation to the Admiralty Bench mark and datum. These levels were always taken in two series, the one as a check upon the other, and the accuracy of the result was always within 0·01 of a foot in height.

If there were continuous levels along the St. Lawrence to connect these different Bench-marks, the tide levels could all be referred to one uniform datum. This would be of special interest in so large an estuary, which may fairly be considered as extending to Point de Monts, and thus to have a total length of 230 miles. It would then be possible to follow satisfactorily the actual levels of high and low water in their progress up the estuary, and the effect of storms in raising or lowering them.

The geodetic levels taken by Mr. Steckel, C.E., of the Department of Public Works, when they are worked out, will furnish a basis from which to obtain this result, and the tidal records now secured will then have additional interest from a physical point of view.

For the present we have adopted for the tide levels, an arbitary vertical scale with its zero at 100·00 feet below the Bench-mark in each locality. This method avoids negative values, and this gives in the most convenient manner the true relative heights of all tide levels, including the datum itself.

It is to be noted that the storms which occurred during the season did not lower the low waters below their normal level, as their effect was to raise the water level as

a whole. The lowest low waters recorded are thus unaffected by them, and may be taken as normal in the sense of being due to astronomical conditions only, while on the other hand some of the high waters are exceptionally raised.

Quebec.—The low water datum at Quebec is thus defined by a note on the chart of Quebec harbour:—'The soundings are reduced to the mean level of low water ordinary spring tides, or 28 feet below a Bench-mark cut in the stonework on the east side of the principal gateway to the Marine and Fisheries Department.'

The tide-levels of the recording gauge at the dry dock at Lévis, have been referred from the beginning to the Admiralty datum, as explained in previous reports. At the dry dock there are two scales of feet cut on the masonry, one outside and the other inside of the dock gate, which are intended to show the height of the water above the masonry sill of the dock. The level of the zero of the outside scale was re-determined with care in May last, and was found to be 7·78 feet below the Admiralty datum. The actual level of the sill of the dock is a fraction of an inch higher than this, as explained in Tidal Survey report of November, 1897.

The levels of the tides at Quebec, from May to October 15, 1900, are given below for comparison with the other tidal stations of that season.

Description.	Elevation. (Feet.)
Bench-mark at the Marine and Fisheries building in Quebec, as above described	100·00
Coping of the dry dock at Lévis; average level near the dock gate	96·78
Bench mark No. LXXIV, on the masonry of the dry dock, west side	94·58
Exceptional High Water, or storm tide, during a gale on September 12	92·30
Highest level of High Water which was undisturbed by storms, during the season from May 1 to October 15, 1900; on July 13	91·10
Admiralty datum, or low water at ordinary spring tides; 28 feet below the Admiralty bench-mark	72·00
Lowest level of Low Water recorded during the season of 1900, on September 9	71·85
Zero of the scale of feet cut on the masonry outside of the dock gate, 7·78 feet below Admiralty datum. Corresponding elevation	64·22

On the Admiralty chart of 'The Traverse,' the soundings are reduced to the level of low water at ordinary spring tides, the level being referred to two Bench-marks, one at Grosse Isle and the other at L'Islet. These Bench-marks are described below. Also the soundings in the West Narrows, Beaujeu Channel, are reduced to the level of low water ordinary springs, at 25 feet 4 inches below the base of the Crane Island light house. (See note on Admiralty Chart No. 318.)

Grosse Isle.—At Grosse Isle there are two wharfs on the side of the island facing the channel of the river. The Admiralty Bench-mark is a ring bolt, let into the rock at high water mark, situated 200 feet west of the West Wharf. The level of low water at ordinary spring tides, to which the soundings on the chart of the Traverse are reduced, is at 21 feet 10 inches below this Bench-mark.

In using this ring bolt as a Bench-mark, the point taken for reference was the top of the eye through which the ring passes.

As the maximum range of the tide on the whole length of the St. Lawrence river occurs at Grosse Isle, the levels for extreme high and low water are given below. The longest tidal record was also obtained here, extending from May 4 to October 15.

Description.	Elevation. (Feet.)
Top of cap at outer end of West Wharf	103·38
Highest known High Water at the spring tides of February, 1894, as marked at the time and pointed out by Captain Langlois, who resides on the island. The more trustworthy marks give the level of this high water as 102·85 or 103·33. Best mean value	103·01
Bench-mark—Top of eye of ring bolt, as above described. Elevation adopted	100·00
Highest level of High Water recorded during the season of 1900, on September 12	99·90
Highest level of High Water undisturbed by storms during the season of 1900	98·95
Admiralty Low Water datum, at 21 feet 10 inches below the ring bolt	78·17
Lowest level of Low Water recorded during the season of 1900, on September 9	77·80
Zero of Wharf Scale of tide gauge, at 23·78 feet below the ring bolt	76·22
Extreme Low Water, said to lay bare the surface of the mud at site of tide gauge near end of wharf. Corresponding elevation	72·90

The greatest known rise of the tide, in February, 1894, is thus 24·84 feet above Admiralty datum. This is of interest, as the tide here attains its maximum range on the St. Lawrence.

L'Islet.—The Admiralty Bench-mark is a 'broad arrow' cut into the face of a vertical rock, at 30 feet east of the inner end of the pier at L'Islet. The level of low water at ordinary spring tides, to which the soundings on the chart of the Traverse are reduced, is at 34 feet below this Bench-mark.

On the face of the same rock, a little lower down and to the westward, a copper bolt is let in horizontally, and is marked G.B.M. (Government Bench-mark) No. CLIV.

The levels at L'Islet are as follows:—

Description.	Elevation. (Feet.)
Admiralty Bench-mark, as above. Elevation adopted	100·00
Copper bolt above described, cross-line at the centre	98·28
Highest level of High Water recorded during the season of 1900, on September 12	86 10
Highest level of High Water undisturbed by storms during the season of 1900	84·70
Admiralty Low Water datum, at 34 feet 0 inches below their bench-mark	66·00
Lowest level of Low Water recorded during the season of 1900, on September 11	65·60
Zero of Wharf Scale of tide gauge	63·81

During the whole season, from May 12 to October 15, there were seven tides which fell to the level of the Admiralty datum, or went below it. None of these were more than 0·40 of a foot below datum, this being the lowest point reached, as shown above. This indicates the amount by which the chart soundings in the Traverse may be reduced at times.

Orignaux Point.—The Admiralty Bench-mark at this point, is a 'broad arrow' cut on a small vertical face of rock, facing the east; at a distance of $37\frac{1}{2}$ feet west of

the inner end of the wharf. It is noted on Chart No. 314, entitled 'Orignaux Point to Goose Island,' that the datum to which the soundings are reduced is 27 feet 11.5 inches below this Bench-mark. As our tidal observations showed Low Water at spring tides to be several feet above this, the attention of the Admiralty was drawn to the discrepancy; and they furnished the corrected value of 23 feet 1½ inches, in May last. It is to be noted that this does not affect the accuracy of the chart soundings themselves; but only the level of the Bench-mark to which they are referred for record. The level of Low Water for this chart is also referred to a Bench-mark at St. Jean Port Joli, as there mentioned.

Description.	Elevation. (Feet.)
Top of cap at the head of the wharf at Orignaux Point	105.37
Bench-mark as above. Elevation adopted	100.00
Extreme High Water; said to reach the top of sheet piling protection, about nine feet below top of cap. Corresponding elevation	96.00
Highest level of High Water recorded during the season of 1900, on July 15 and August 11	95.70
Admiralty Low Water datum; at 23 feet 1½ inches below the bench-mark	76.88
Extreme Low Water; said to lay bare the mud at inside angle of wharf behind the head. Corresponding elevation	74.90
Lowest level of Low Water recorded during the season of 1900, on September 10	74.80
Zero of Wharf Scale of tide gauge	69.97

Rivière du Loup.—The Admiralty Bench-mark is a 'broad arrow' cut into a vertical face of rock, facing north; at 100 feet westward of the centre of the flag pole which stands on the highest ground of Rivière du Loup Point, near the wharf.

On Admiralty chart No. 313, entitled 'Saguenay river to Orignaux Point,' the level of low water at ordinary spring tides is at 24 feet 2 inches below this Bench-mark.

Description.	Elevation. (Feet.)
Bench-mark as above. Elevation adopted	100·00
Exceptional level of High Water during the gale of September 12	93·50
Highest level of High Water, undisturbed by storms, during the season of 1900, on July 14	92·25
Admiralty Low Water datum, at 24 feet 2 inches below the bench-mark	75·84
Lowest level of Low Water recorded during the season of 1900, on September 10	73·70
Zero of Wharf Scale of tide gauge	71·43

Father Point.—The Bench-mark established here by this Survey for reference in the tidal observations, is the head of a copper bolt, let into a level surface of solid rock at 43 feet to the east of the lighthouse. A constant datum level is maintained with reference to this Bench-mark, for the reduction of the tidal observations. For comparison, during this season, we need only give at present the levels of the highest and lowest tides observed, between May 1 and October 15.

Description.	Elevation. (Feet.)
Tidal Survey Bench-mark, as above	100·00
Exceptional level of High Water, during the gale of September 12	96·00
Highest level of High Water, undisturbed by storms, during the season of 1900	94·45
Low water datum, as adopted by this Survey, for the tidal observations	78·95
Lowest level of Low Water during the season of 1900, on September 10	78·50
Zero of Sight-gauge scale	77·19

Tadousac.—As there is no Bench-mark here it will be best to give the height of the tide on the wharf scale itself, to compare its range with the other stations.

Description.	Elevation. (Feet.)
Level of High Water during the gale of September 12	32·75
Highest level of High Water, undisturbed by storms, as recorded during the season of 1900, on September 11	21·60
Lowest level of Low Water during the season, on Sept. 10	2·70
Zero of Wharf Scale of tide gauge	0·00

Cape Chatte.—The height of the tide on the Wharf Scale itself, was as follows :—

Description.	Elevation. (Feet.)
Level of High Water during the gale of September 12	14·05
Highest level of High Water, undisturbed by storms, as recorded during the season of 1900, on August 11	13·45
Lowest level of Low Water during the season, on Sept. 10	0·50
Zero of Wharf Scale of tide gauge	0·00

The value for Low Water is approximate ; the gauge being situated at the mouth of Cape Chatte river which is surrounded by bars which begin to show at low tide. The water near low tide does not therefore fall to its true level. The difference between the level at the gauge and the open water was found from several sets of observations from which a series of corrections at the lower levels of the tides, were deduced. The greatest difference at the lowest tides is five inches. A corresponding correction has therefore been made in the height here given to allow for this.

It may be of interest for comparison to give the greatest observed range during the season at these successive stations along the St. Lawrence. It is to be noted, however, that these do not give the progress of the same tidal undulation throughout the estuary. The ranges as shown below, are the differences between the lowest and the highest levels of the tide at each station, taken from the figures already given ; with the omission of tides disturbed by storms.

	Feet.
Cape Chatte—Greatest observed range ; season of 1900	12·95
Father Point " "	15·95
Tadousac " "	18·90
Rivière du Loup " "	18·55
Orignaux Point " "	20·90
L'Islet " "	19·10
Grosse Isle " "	21·15
Quebec " "	19·25

As there are usually several high and low tides at nearly the same level during the season, a more rigorous comparison would only alter these values by a small fraction. The apparent irregularity at the three upper stations next to Quebec is due to the division of the river into two channels above Orignaux Point, and to the greater depth of the north channel which extends nearly to Grosse Isle. This explains also the relatively earlier arrival of the tide at Grosse Isle, as shown in the tidal differences.

TIDE LEVELS AT THE HEAD OF THE BAY OF FUNDY.

In order to compare the extreme tide levels at the head of the Bay of Fundy, it is first of all necessary to have a continuous datum plane for reference; as observations have been obtained around the head of Cumberland Basin, near Amherst, at Aulac, and at Sackville. In this district also, there occur the most extensive 'dyked marshes' in Nova Scotia, which cover many square miles; and the level of extreme tides is of the first importance for their protection.

An excellent datum for reference has been determined in this region by the Engineers of the Chignecto Marine Transport Railway, which still lies uncompleted. The line of this railway extends from the Fort Lawrence dock on Cumberland Basin, across the isthmus of Chignecto to Baie Verte, and its datum brings into relation the tide levels in the Bay of Fundy and the Gulf of St. Lawrence. The comparative levels resulting from the observations of these Engineers have already been published in the Tidal Survey Report of December, 1898, pages 29 to 32. To extend this datum around the head of Cumberland Basin from Amherst to Sackville, it was hoped that the Intercolonial railway levels could be made use of. These railway levels were originally taken with care, but unfortunately no permanent marks were placed to record them; and the original structures have all been altered since, or the grade on them has been raised. The only available method of re-determining the original datum, was to make use of the 'grade points' at the ends of cuttings. With this object, levels were run for about a mile along the Intercolonial from the Marine Railway, in October 1898; but after the most careful reduction and averaging, the result was still uncertain within the limits of fifteen inches, which was too wide a margin to be of any value.

It was accordingly decided this season, to run instrumental levels especially for the purpose, from the Bench-marks which still exist on the Chignecto Marine Railway, around the head of Cumberland Basin to Sackville. The only time that could be had for this, amid the press of the work proper to the season which had a prior claim, proved to be very windy; which in so flat a country greatly increased the difficulty. The Bench-marks referred to are on masonry culverts, but the stone is of a soft description and has now become so much weathered that they are difficult to find, even with a good description which was noted on the ground in 1898. A new Bench-mark was therefore cut on the engine-house at the Fort Lawrence dock, which was connected in elevation with the existing Bench-marks, and thus affords a good permanent mark as a record of the valuable tide levels of the Marine Railway.

The distance from this to Sackville is nine miles. This distance was subdivided into two lengths at Aulac, and on each sub-division the levels were run in the two directions to secure a check upon them. The limiting total errors on the subdivisions, were 0·03 and 0·02 of a foot from the mean values, and as these balanced one against the other the outstanding error on the whole distance was 0·01 of a foot, from the mean. The Bench-marks established by these levels are given below, with reference to the well-established datum of the Marine Railway.

The elevations of the Bench marks on the Marine Railway were found from a personal examination of the original profiles on which they are marked. They are within half a mile of each other; and the difference of elevation on the profile is 3·44 feet. But in September 1898, the true difference of level was found to be 3·41 feet; and in September 1901, from levels run three times from the one to the other, the difference at present is 3·39 feet. The discrepancy, now amounting to 0·05 of a foot, is apparently due to the cracking and settlement of the masonry of the culverts on which they are cut. Values are accordingly adopted for them which average this discrepancy; and

the averaged value thus obtained is used in establishing the new Bench-mark, and as a starting point for the extended levels around Cumberland Basin.

Bench-marks around Cumberland Basin, as established in 1901.—New Bench-mark on north end of engine house at Fort Lawrence dock, Chignecto Marine Railway. Cut on the string-course of yellow sandstone, at the foot of one of the brick pilasters. Elevation above the Marine Railway datum, 101·42.

Original Bench-mark at the west end of a masonry box culvert on the Marine Railway, at 2,120 feet south of the crossing of the Intercolonial railway. The bench-mark was made by dressing a small square on the top of the coping at the south-west corner. Elevation above the Marine Railway datum as shown on the original profile, 97·42. Elevation adopted, to average the discrepancy as explained above, 97·45.

Original Bench-mark on a masonry box culvert, on the north side of the Intercolonial railway track. This culvert is one of a pair at each side of the track, where the Marine Railway crosses it, to carry the water in the side ditches. A small square as above, on the south-west corner of the coping at the west end of the culvert. Elevation as shown on the original profile, 100·86. Elevation adopted, to average the discrepancy as explained above, 100·84.

On the masonry abutments of the Missiquash River railway bridge. East bridge seat, under the centre of the track ; elevation 99·16.

Ditto :—West bridge-seat ; elevation 99·28.

Bench-mark at Aulac. Head of a railway spike, in the top of an old cedar telegraph pole, cut short ; in swamp behind west end of platform, Aulac railway station; at 65 feet from west side of station building, and 35 feet from the front of station platform. Elevation, 91·65.

On the masonry abutments of the Tantramar River railway bridge. East bridge-seat at the centre of the track ; elevation, 102·45.

Ditto :—West bridge-seat, elevation, 102·38.

Bench-marks at Sackville. Broad arrow cut on the masonry foundation at the south end of a white wooden house occupied by William Hicks. The house is north of the Sackville railway station, and is at 160 feet from the corner of the station road. Elevation of bench-mark, 99·86.

In Sackville station yard. Head of a railway spike in the top of an old cedar telegraph pole cut short ; which is beside fence on south side of station yard, at 190 feet east of railway station building, and nearly opposite east end of station platform. Elevation, 93·89.

Extreme levels of High Water and Low Water at the head of the Bay of Fundy.—As observed in Cumberland Basin at the Fort Lawrence dock at the south end of the Chignecto Marine Railway, and at Sackville ; and now reduced to the uniform datum of the Marine Railway for comparison.

The level of extreme High Water is of the first importance with reference to the dyked marshes, and last spring this was further emphasized by wash-outs on the Intercolonial railway, occasioned by the dykes being overflowed. It is chiefly important to know the highest level which it is possible for the tide to reach, when not affected by storm disturbance ; as this will recur periodically under conditions which admit of its prediction. Last autumn and this spring such tides have occurred. The highest levels reached were marked at Sackville, and also at the end of the Marine Railway on Cumberland Basin, when this locality was visited by me early in June. The wash of the recent high tides was then still visible, and the points reached by the water were shown to me by Mr. F. S. Hanford, who is in charge of the unfinished works of the Marine Railway, and resides there. These points were marked, and their elevation determined when the extended levels were taken in September.

A continuous series of observations of the heights of high and low water was made by the Engineers of the Marine Railway at Fort Lawrence dock, at the mouth of the Missiquash river, which extended from August to December, the year being probably 1893. These have already been published in the Tidal Survey Report of December, 1898, and are given in a diagram in Plate III therewith. The extreme values of high and low water then observed are now given again for comparison; and it is to be noted that these extreme tides always occur in the autumn, which is included in the period

of these observations. In the following summary, such other observations as have been secured by this Survey are also noted, to make an embodiment of all the information extant. The extremes here given may be taken as limiting values for natural or astronomical tides, when unaffected by storm disturbance.

Levels of extreme High and Low Tides in Cumberland Basin, Head of Bay of Fundy.	Elevation above Marine Railway datum.
	Feet.
Saxby tide of October 5, 1869, which flooded the country during a heavy storm. Elevation reached. (The datum of the Chignecto Marine Railway is taken as 100 feet below this level.)	100·00
Highest High Water observed at Fort Lawrence dock by the Engineers of the Marine Railway, during five months, August to December, probably in 1893. Occurred October 25	96·00
Exceptional High Water of October 8, 1896, which overflowed the dykes at many places between Amherst and Sackville, and along the Petitcodiac River. Elevation at Fort Lawrence dock	96·13
Exceptional High Water of November 7, 1900, day tide. During a period of light east wind which does not affect height. As marked at the time by Captain Chase at the wharf at Sackville, on the Tantramar River near its mouth	96·68
The High Water of October 9, 1900, also rose within two inches of this. Corresponding elevation	96·52
High waters of April 20 and May 18, 1901; about equal in height. Midnight tides; which in May overflowed the dykes in places, causing a wash-out on the Intercolonial railway. Wind northerly and north-easterly at these dates, which does not affect height.	
(1.) At Fort Lawrence dock. Two independent points in this vicinity, marked by myself. Elevations of the tide at these points, 96·15 and 95·85, Mean	96·00
(2.) At the wharf at Sackville, on the Tantramar River near its mouth. Two points marked at the time by Captain Chase. Elevations, 96·00 and 95·96, Mean	95·98
Extreme High Water at Aulac, as indicated in September, 1901, by wash at Aulac River batardeau, at the crossing of the Intercolonial railway	95·33
From the continuous observations during four and a half months, at Fort Lawrence dock: Mean level of High Water throughout the month	89·00
From the continuous observations during four and a half months, at Fort Lawrence dock: MEAN SEA LEVEL. (See Report of Dec., 1898, p. 30.)	70·76
From the continuous observations during four and a half months, at Fort Lawrence dock: Mean level of Low Water throughout the month	52·59
Reference level, taken as extreme Low Water, to which the Marine Railway soundings are reduced	47·20
Lowest Low Water observed at Fort Lawrence dock by the Engineers of the Marine Railway, during the five months, August to December. Occurred October 25 and November 24	47·00

Range of the Tide in the Bay of Fundy.—It is evident from the above figures, that although the range of the tide in the Bay of Fundy is remarkably great, it has been much exaggerated. The greatest ranges in the whole extent of the bay, occur in Cobequid Bay at the head of Minas Basin and in Cumberland Basin. The extreme end of Cobequid Bay, however, is cut off at low water by sand bars. The water is thus ponded in, and does not fall to the true level of low water; but remains at a level which is eighteen feet above this, according to the chart. Accordingly, the highest range that can be measured at any one point, is at Noel Bay. The range at spring tides and the rise at neap tides in these localities, as given in the Admiraly list, are as follows:—Noel Bay: springs 50½, neaps 43½ feet; Horton Bluff: springs 48, neaps 40 feet; Cumberland basin at Sackville: springs 45¼, neaps 38 feet.

The observations in Cumberland Basin are more detailed, and they now include the levels of extreme High Waters in recent years, as above given. From all the material thus available, we obtain the following results :—

From the lowest level of Low Water which occurred during the four months of continuous observation, to the level of the highest tide ever known, which flooded the country in October, 1869, during a severe storm; the extreme difference of level is fifty-three feet.

Maximum range at spring tides apart from storm disturbance; from the lowest observed Low Water, to the highest undisturbed High Water, in different years, 49·68 feet.

From the continuous observations from August to December, above referred to. It is probable that this series of observations include the day tides only; but at this season these are higher than the night tides. These tides are therefore the highest in the course of the year; and the moon's perigee and apogee then corresponded closely with full and change. Average range of the tides during four consecutive months :—

Range of Spring Tides, near the time of the moon's perigee..	47·58 feet
" " moon's apogee...	37·20 "
Range of Neap tides; general average in the above period..	31·00 "

Level of the Top of the Dykes.—These dykes are built to reclaim the extensive 'marshes' or hay lands between Amherst and Sackville, on Cumberland Basin, Bay of Fundy. The elevation given in each case is the average level of several points on the dyke. The relation of the dyke level to extreme High Water will be seen on comparing these levels with the table already given.

Description of the Dykes.	Elevation above Marine Railway datum.
	Feet.
Dyke on east side of Missiquash River, at its mouth	97·26
" west side of Missiquash River, at crossing of Intercolonial Railway	97·14
" east side of Aulac River, at Aulac Station, Intercolonial Railway	97·13
Crest of batardeau on which Intercolonial Railway crosses Aulac River	97·33
Dyke on west side of Aulac River, at same locality	97·11
" north side of Aulac River, about 1,000 yards from Intercolonial Railway track	97·35
" north side of Tantramar River, half a mile east of railway bridge	97·64
" at same locality, protecting railway track (about nine inches higher than other dykes)	(98·38)
Dykes in same vicinity, general level to horizon	97·82
Dyke on north side Tantramar River, at crossing of Intercolonial Railway	97·56
Dykes on Tantramar River, opposite Sackville, general level to horizon	97·44
General average level of top of dykes (omitting the special dyke along railway)	97·38

We may note with regard to these dykes the great uniformity in level throughout the stretch of nine miles in extent. This can only have been arrived at from the level of the water itself when standing at high tide. The level as now determined will be valuable for future reference, and also in establishing the relation of the dyke level to extreme High Water.

As a check on the accuracy of the levels themselves as now taken, we may note the close correspondence of the elevation of the exceptional high water of last spring, at Fort Lawrence Dock and Sackville; as it comes out within $\frac{1}{4}$ inch of the same elevation at these two extremes of the line which was run.

OBSERVATIONS OF TIDES AND CURRENTS IN THE SUMMER SEASON OF 1901.

Summer stations in Northumberland Strait and Cabot Strait.—It has already been ascertained, that the tides in Northumberland Strait can best be calculated from the principal tidal station on St. Paul Island; and that for the Strait itself, Pictou is the best harbour of reference. The method adopted is therefore first to compute tide tables for Pictou by means of two series of variable differences from St. Paul Island, the series for high and low water being distinct from each other; and the variation being in accordance with the moon's declination, in the period of the draconitic or declination-month. (See Report of Tidal Survey, Dec. 1898, page 9.) From the Pictou tide tables, those for Charlottetown are next calulated by means of a constant difference of time; and tidal differences from Pictou are also given for other ports throughout the Strait.

The data for the main calculation for Pictou were obtained in 1896 and 1897, when the moon's declination had its maximum range. A further analysis of the differences in terms of the degree of declination was made, to allow for the diminished range in succeeding years; but the result was not sufficiently definite to be trustworthy. The present year was eminently suited however to obtain the supplementary observations required for the purpose; as the range of the moon's declination is now at its minimum, having arrived at exactly the opposite extreme since 1896. Better comparative data between Charlottetown and Pictou will also be secured by this season's observations.

The observations at Pictou were begun as early in the season as possible, the first record being secured on May 20. The gauge at Charlottetown was erected a few days later; and observations at Summerside, in Bedeque Bay, were begun on June 12. These last are intended to secure accurate tidal data for that port; as tide tables have already been published locally by the newspapers there, which are far from accurate. To meet the need, a preliminary result from one month of observations has been worked out immediately, in time to issue with the tide tables for 1902.

To show also the immediate advantage often resulting from tidal observations, it may be mentioned that the Engineers of the Hillsborough bridge now under construction, were taking special observations on a tide scale to ascertain the extreme range of the tide. When they found that the complete tide curves were being secured by this Survey on a self registering gauge, these special readings were discontinued, and the desired values were supplied during the season by this Survey. The saving thus affected to the advantage of the bridge work, would amount to a large proportion of the outlay made by this Survey for the tidal observations secured at Charlottetown this season.

The object of the tidal observations in Cabot Strait was to obtain comparisons with St. Paul Island in case of any accident to that station, which is always possible because of its extremely exposed position. With this object, registering gauges were placed in Sydney harbour and at Port aux Basques, at the corner of Newfoundland near Cape Ray. It was found, however, that the character of the tide at Sydney was so exceptional, that it was not comparable with St. Paul Island; and accordingly, after one complete month of record had been secured there, the gauge was removed to Neil's Harbour; a point on the Atlantic side of Cape Breton Island, as near as practicable to its northern extremity.

The record secured in Sydney harbour will be valuable in determining a tidal difference for that port; and thus, also, in affording a check upon the tidal differences along the Atlantic coast of Nova Scotia eastward from Halifax. The City datum at Sydney was carried onward by instrumental levels, as far as the site of the gauge; which was placed at the Intercolonial Railway wharf, at Battery Point in the South Arm, and this will furnish the value of low water and mean sea level with reference to the City datum itself.

The two gauges at Neil's Harbour and Port aux Basques have afforded a comparison during several months which is simultaneous with the record at St. Paul Island. Port aux Basques is fairly well sheltered, but Neil's Harbour is only a harbour in name, as it has practically no protection from the open Atlantic; and much trouble was experienced in consequence from wave motion, notwithstanding the precautions taken to prevent this from complicating the recorded tide curves. It is proposed, however, to construct a breakwater there during the coming season, which will make it a more suitable locality for

future observations, should these be indicated as desirable by this season's work. The distances of these localities each way from St. Paul Island are 35 miles westward and 68 miles eastward ; the clear width of Cabot Strait itself being 75 miles.

A well established relation with one or other side of Cabot Strait will thus practically afford additional security to this principal station. These relations will also serve better to define the character of the main tidal undulation which here enters the Gulf area from the ocean. This in itself is of much importance, as it is this undulation which gives rise to all the tides throughout the Gulf area, as well as on the St. Lawrence, as far up as tidal influence is felt. This influence extends to a distance of 760 miles from its original entrance through Cabot Strait from the ocean.

The amount of tidal record secured this season for the purposes explained, at these ocalities, was as follows :—

St. Paul Island, permanent station, Cabot Strait...Continuous record.					
Pictou, N.S., in Northumberland Strait	May	20	to	Nov.	15
Charlottetown, P.E.I. "	"	30		"	15
Summerside, P.E.I. "	June	12		"	15
Sydney, Cape Breton (one month only)..	July	4	to	Aug.	6
Neil's Harbour, C.B., Cabot Strait.....	Aug.	9	"	Oct.	30
Port aux Basques, Nfld. "	July	9		"	30

These stations were all equipped with self-registering tide gauges, with modifications to secure a scale adapted to the ranges of tide in these localities, and special details in their construction to meet local requirements which need not here be more fully described. Greater trouble also occurred from minor difficulties and accidents than in previous seasons ; which necessitated much additional travel in the supervision of the stations. This also made it more difficult to find time for the extended levels in the Amherst region, and the inspection of the four principal tidal stations, which formed part of this season's programme.

Time.—At Pictou, Charlottetown and Summerside, correct time for the observations was obtained by means of the railway signals sent daily along the lines. On the Prince Edward Island railway however, it has been the custom to use time signals merely to insure uniformity throughout the Island in running the trains. Arrangements were therefore made to have this signal agree truly with standard time, as this was essential for accuracy in the tidal observations. Special time signals were secured when necessary ; and time comparisons made as a check when the stations were visited.

At Sydney, the railway time signals could be depended upon ; but at Neil's Harbour and Port aux Basques, special arrangements had to be made. The observer at Neil's Harbour was provided with a well-regulated watch belonging to the Survey, which was kept true by a telegraph signal every week from North Sydney. The observer at Port aux Basques was furnished with a chronometer catefully rated in advance ; and the rate was further checked at the beginning and end of the season, by exchange of time with the St. John observatory.

Levels.—At Charlottetown and Pictou, Bench-marks were placed on permanent buildings and connected in level with those used during the observations of 1896, which establishes continuity in the datum for both series of observations. The Bench-mark at Charlottetown was also connected by the Engineers of the Hillsborough bridge, with their datum. At Summerside, the Admiralty Bench-mark recently established, was used ; and as it is only fastened to timber piling, instrumental levels were carried to a block of buildings in the town, built of masonry and brickwork, on which a Bench-mark was established for greater security in future reference.

At Sydney, a new Bench-mark was cut on the Court-house, the nearest permanent building to the gauge site, at about half a mile distant. This Bench-mark was connected by instrumental levels with the scale of the tide gauge in the one direction, and the City datum in the other. At Neil's Harbour there was nothing of a permanent character which could be made use of, for reference levels. At Port aux Basques, a ring bolt let into the rock, at the head of the Government wharf, was made use of as a Bench-mark.

Careful attention was also given to ascertain the levels of extreme high water in previous years at the more important localities; good values for extreme low water being obtained during this season itself. When these levels are fully worked out, much information of permanent value will result.

Observations of Currents.—Observations of the more important currents were secured in the regions in which the tidal observations were taken. In Northumberland Strait the current was observed on the north side of Pictou Island during three months, by noting the turn of a spar buoy anchored $\frac{1}{4}$ mile from shore in four fathoms of water. This will give the time of the turn of this current in the open Strait with relation to the tide at Pictou, the port of reference.

The turn of the current in First Narrows, Vancouver, was observed during $6\frac{1}{2}$ months by the lightkeeper at Prospect Point; which will serve to make known the time of slack water by referring to the tide tables now issued. A preliminary result from one month's observations, was worked out in time for publication in the tide tables for 1902.

I have, Sir, the honour to remain,
Your obedient servant,

W BELL DAWSON,
In charge of Tidal Survey.

PART II

STATEMENT OF EXPENDITURE—STATEMENT OF REVENUE—METEOROLOGICAL SERVICE—MAGNETIC OBSERVATORIES—SIGNAL SERVICE—BOARD OF EXAMINERS OF MASTERS AND MATES—LIVE STOCK SHIPMENTS—STATEMENT OF WHARFS—LIFE-BOAT STATIONS—STATEMENT OF SICK MARINERS DUES—REWARDS FOR HUMANE SERVICE—STEAMBOAT INSPECTION—LIST OF LIGHT-KEEPERS AND LIGHT STATIONS.

APPENDIX No. 1.

GENERAL SUMMARY of Expenditure for Fiscal Year ended June 30, 1901.

Service.	Amount.	Total.
	$ cts.	$ cts.
Ocean and River—		
Maintenance and repairs to Dominion steamers	195,484 75	
Examination of masters and mates	3,730 25	
Rewards for saving life, &c	8,519 92	
Investigations into wrecks	1,022 65	
Registry of shipping	546 60	
Tidal service	7,060 20	
Removal of obstructions in navigable waters	1,000 00	
Winter mail service	2,093 93	
Marine biological stations	1,990 58	
Export cattle trade	2,746 84	
Unforeseen expenses	2,630 62	
		226,826 34
Lighthouse and Coast—		
Salaries and allowance of lightkeepers	213,396 67	
Agencies, rents and contingencies	15,732 00	
Maintenance and repairs to lights	264,304 28	
Construction of lights	48,401 92	
Construction of middle ground light, Pelee Passage	24,974 16	
Signal service	8,950 17	
Repairs to wharfs	1,261 06	
Salaries of extra employees	1,559 14	
Preparing Parliamentary returns	133 32	
		578,812 72
Scientific Institutions—		
Observatory, Toronto	2,438 90	
Meteorological service	71,643 86	
Hydrographic surveys	16,170 20	
		90,252 96
Marine Hospitals—		
Treatment of sick and disabled seamen	34,944 03	
Shipwrecked and distressed seamen	1,064 73	
		36,008 76
Steamboat inspection		29,247 59
Civil government salaries	58,699 32	
" " contingencies	10,077 63	
		68,776 95
Total Marine		1,029,925 32
FISHERIES.		
Salaries and disbursements of fisheries overseers, &c	111,760 67	
Fish-breeding	68,961 40	
Fisheries protection service	124,211 21	
Miscellaneous	27,833 79	
Fishing bounty	158,802 50	
		491,569 57
Total Marine and Fisheries		1,521,494 89

A. W. OWEN,
Accountant.

F. GOURDEAU,
Deputy Minister of Marine and Fisheries.

APPENDIX No. 2.

STATEMENT of Revenue of Marine and Fisheries Department for Fiscal Year ended June 30, 1901.

Service.	—	Refunds.	Amount.
	$ cts.	$ cts.	$ cts.
Harbours, piers and wharfs	11,521 77	81 69	11,440 08
Dominion steamers	19,476 31	45 63	19,430 68
Winter mail service	105 60	9 00	96 60
Examinations, masters and mates	4,828 24	20 00	4,808 24
Fines and forfeitures	525 00	250 50	274 50
Cattle inspection			1,907 87
Steamboat inspection fund	33,815 37	1,090 80	32,724 57
" engineers' certificates			1,032 00
" inspection of barges			120 00
Sick mariners' fund	59,838 89	55 55	59,783 34
Marine registry searches			52 96
Signal station service			2,793 66
Shipping forms			117 92
Casual revenue, sundries			10,336 32
			144,918 74
FISHERIES.			
Ontario			717 35
Quebec			4,738 92
Nova Scotia	6,595 94	6 00	6,589 94
New Brunswick	10,150 40	9 20	10,141 20
Prince Edward Island			1,525 30
Manitoba	1,103 00	32 00	1,071 00
North-west Territories			816 55
British Columbia			52,960 35
Yukon Territory			406 00
			78,966 61
Licenses to United States fishing vessels			9,178 50
			88,145 11

RECAPITULATION.

Marine revenue	$ 144,918 74
Fisheries revenue	88,145 11
	$ 233,063 85

A. W. OWEN,
Accountant.

F. GOURDEAU,
Deputy Minister of Marine and Fisheries.

APPENDIX No. 3.

STATEMENT of Steamboat Inspection Dues collected during the Fiscal Year ended June 30, 1901.

—	Amount.
Ontario.	$ cts.
Amherstburg	31 80
Belleville	41 04
Brockville	110 60
Chatham	172 88
Collingwood	863 12
Cornwall	67 32
Deseronto	182 04
Fort Erie	50 96
Fort William	27 00
Goderich	218 64
Hamilton	301 78
Kingston	1,666 20
Lindsay	189 14
Midland	131 08
Morrisburg	166 18
Napanee	9 64
Niagara Falls	5 64
Ottawa	1,102 72
Owen Sound	1,018 95
Parry Sound	79 48
Peterboro'	150 52
Picton	273 24
Port Arthur	369 93
Prescott	147 12
Rat Portage	342 68
St. Catharines	293 49
St. Thomas	57 20
Sarnia	490 40
Sault Ste. Marie	612 86
Simcoe	36 76
Stratford	81 20
Toronto	2,013 68
Wallaceburg	77 20
Windsor	889 56
	12,272 05
Quebec.	
Cookshire	24 56
Montreal	3,622 68
Quebec	1,439 32
St. Johns	53 72
Sorel	163 16
Stanstead	62 04
Three Rivers	115 08
	5,480 56
New Brunswick.	
Bathurst	20 72
Chatham	206 84
Dalhousie	164 96
Fredericton	34 08
Moncton	6 20
Newcastle	62 44
Sackville	7 00
St. John	1,488 60
St. Stephen	91 48
	2,082 32

—	Amount.
Nova Scotia.	$ cts.
Amherst	30 24
Annapolis	23 76
Arichat	10 28
Baddeck	33 68
Barrington	5 96
Canso	28 56
Digby	19 60
Halifax	2,915 40
Kentville	500 40
Liverpool	16 88
Lockeport	6 20
Lunenburg	22 44
New Glasgow	10 04
North Sydney	241 28
Parrsboro'	7 08
Picton	71 00
Port Hawkesbury	63 36
Sydney	62 84
Windsor	39 74
Yarmouth	434 80
	4,523 54
Manitoba.	
Winnipeg	467 36
British Columbia.	
Kaslo	176 04
Nanaimo	34 86
Nelson	728 12
New Westminster	508 36
Vancouver	931 00
Victoria	3,955 72
	6,334 10
Prince Edward Island.	
Charlottetown	345 64
Summerside	15 52
	361 16
North-west Territories.	
Calgary	17 92
Dawson	2,276 36
	2,294 28
Total	33,815 37
Less—refunds	1,090 80
Grand total	32,724 57

APPENDIX No. 4.

METEOROLOGICAL SERVICE.

METEOROLOGICAL OFFICE,
TORONTO, November 8, 1901.

Lt.-Col. F. GOURDEAU,
Deputy Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to submit the thirtieth annual report of the Meteorological Service of Canada, this report being for the fiscal year July 1, 1900, to June 30, 1901, with Appendices A and B, reports of the Quebec and St. John observatories.

The number of persons in receipt of pay from the Meteorological Service on June 30, for various duties performed in connection therewith was 163. Of this number twenty are employed in the central office, and with a few others at outside stations devote their whole time to the work. Others are occupied in observing during only a portion of each day and a third portion is employed only to attend to the display of storm signals when notified.

Since the issue of my last annual report the following stations have been opened.

BRITISH COLUMBIA.

Class II.—Cranbrook, James Gill.
" II.—Nanaimo, Henry Good.
" II.—Duncan, E. F. Clark.
" II.—Saturna, Id., James Mair.
" II.—Kaslo, W. R. Smith (resumed).
" III.—Coquitlam, R. D. Irvine.

YUKON.

Class I.—Dawson, T. A. Stewart.

NORTH-WEST TERRITORIES.

Class II.—Calgary Exp. Station, P. T. Bone.
" III.—Big Hill Springs, W. J. B. Brown.
" III.—Northern, P. B. Anderson.

MANITOBA.

Class II.—Swan River, James Davies.

ONTARIO.

Class II.—Rocklyn, A. L. Dauard.
" III.—Westport, W. McNight (resumed).
" III.—Cayuga, James A. Nelles.

QUEBEC.

Class II.—Sherbrooke, Congregation de Notre Dame.

NOVA SCOTIA.

Class II.—Bridgetown, H. S. Davison (resumed).

NEWFOUNDLAND.

Class II.—N. W. River, Stuart Cotter.

The following stations have from various reasons ceased to report :—British Columbia—Revelstoke, Griffin Lake, Donald and Rossland. North-west Territories—Calgary (Walter Moodie). Manitoba—Portage la Prairie. Ontario—Renfrew, St. Anns, Bognor, Bancroft, Collingwood, Milbrook, Mattawa. Prince Edward Island—Murray River.

There have been no changes in the personnel of the staff at the central office. The work of the office, however, continues to increase. The storm signal stations are increasing year by year—the forecast bulletins issued during the past year have been more extensive and have covered a wider territory than ever before. This has meant more work for the forecast officials and more clerical work for those who tabulate results. The telephonic inquiries during the autumn and winter are now very numerous ; vessel masters inquiring as to probable weather and advisability of leaving port and shippers of perishable goods, &c., as to the expediency of shipping.

Hitherto two telegraph operators have been regularly employed, one for day duty and one for night duty ; any further increase in dissemination of the forecasts will necessitate having two men at work during the forenoon.

So well and faithfully have the majority of the members of the staff worked that considerable progress has been made towards bringing the publication of the annual reports nearer to date. That for 1898 has been issued, that for 1899 will soon be out of the printer's hands, and the manuscript for 1900 will be ready very shortly. Among the pressing needs of the central office are, increased office accommodation, two more assistants and higher pay to the majority of those employed.

That the character and extent of the work performed at the central office may be the better understood, it may be well to give a brief synopsis of the

GENERAL WORKING OF THE SERVICE.

There are now in the Dominion 312 meteorological stations using instruments which have been supplied by the government. The observers at 234 of these stations take the observations voluntarily, sending regular monthly returns to the central office, and to these persons is due the hearty thanks of the service. At 40 stations, lying chiefly in the far northern territories of Canada, and at lighthouses in the Gulf of St. Lawrence small gratuities are allowed observers. At 38 stations, distributed at nearly equal intervals throughout the Dominion, three or more observations are taken daily, and as the observers are paid salaries, promptness and careful attention to duty is insisted upon. From 34 of these stations two reports are daily telegraphed to Toronto to be used in the preparation of the daily weather chart. The telegraphic reports comprise the barometer readings reduced to sea level, the readings of the wet and dry thermometers, the direction and velocity of the wind, and state of the weather, the precipitation (if any), and with the morning report the minimum temperature of the preceding twelve hours, and with the evening report the maximum of the preceding twelve hours. Almost invariably all reports from stations between Lake Superior and Cape Breton are received in the Central Office by 8.30 a.m. and p.m., and are then forwarded with-

out delay to the United States Weather Bureau, at Washington, via Buffalo, N.Y., from which place some sixty United States Stations are in return sent to Toronto, together with the Canadian reports from Manitoba westward to British Columbia, which are turned over to the United States bureau at St. Paul, Minnesota. All reports are usually received shortly after 9.30, and the working chart is ready for the forecasting official by 9.45, and by 10 o'clock the isobars have been drawn and some of the forecasts telegraphed to their destination. The bulletin issued at night comprises a short synopsis of the weather during the past day and a general description of the existing meteorological conditions, then a list of the highest and lowest temperatures reported from about a dozen stations, followed by the forecasts for the various districts lying between Manitoba and the maritime provinces. These forecasts are for the 24 hours beginning the following 8 a.m., unless it be expressly stated that they cover a longer period. The same evening the telegraph company sends the bulletin to all points where are published morning newspapers, in which it is printed generally at the head of the column of local news, and then in the morning on the opening of the various telegraph offices throughout the Dominion the first message which goes over the wires is the daily forecast, which is posted up in a conspicuous place in every telegraph office. Up to the summer of 1894, the forecast based on the 8 p.m. chart was practically the only one issued, but since that time a second forecast covering the current and following day has been issued at 10 a.m. This is sent to nearly all ports both on the great lakes and on the seaboard, and it also appears in most of the afternoon papers published in the Dominion.

There are in the Dominion 73 stations at which cautionary and storm signals are displayed, 31 on the lakes, 40 in the maritime provinces, and 2 in British Columbia. The signals used are drums and cones—the cone alone being hoisted when but a moderate gale is expected, and both drum and cone together when it is thought that the storm will be heavy, the apex of the cone downwards indicates southerly and easterly directions, and upwards, northerly and westerly.

Each morning some 85 copies of the Weather Chart are made by means of a duplicating machine, the mimeograph, and supplied to the Toronto newspapers, to the Board of Trade, and to such business people who will engage to post them where they will be seen by the public.

Early last winter arrangements were made with the G.N.W. Telegraph Company whereby a more comprehensive weather bulletin than is issued to the majority of places should be published each forenoon simultaneously at Quebec, Montreal, Ottawa, Hamilton and London, containing the same information as had for some time previously been published in Toronto, St. John and Halifax. This bulletin in my opinion fills all actual requirements as regards supplying such meteorological information as is possible in the present state of the science of meteorology. Local weather maps are published fairly generally in the larger cities of the United States, but experience in Toronto indicates that but few persons take any real interest in the maps. The public, generally, desire simply the forecasts, which they are satisfied to accept from the trained official, realizing that he can almost invariably read the indications of the chart better than the amateur. It is very questionable whether the large cost entailed by publication of local weather maps, other than at the central office, would be warranted by their usefulness.

The Pacific division of this service inaugurated in 1898 continues under the local supervision of Mr. E. Baynes Reed. Reports from stations in the Canadian North-west Territories and Manitoba are, when collected at Winnipeg, wired in one message to Victoria, and in addition to these reports some eighteen reports are received from United States stations near the Pacific Coast. Reports from Barkerville, Kamloops and New Westminster are wired to Victoria at the same time as to Toronto.

Forecasts are issued at Victoria for the lower portion of Vancouver Island and the lower mainland of British Columbia, and I am pleased to be able to report that a fair degree of success has been achieved.

Dawson, Yukon, has been equipped as a telegraph reporting station, and it is hoped ere long to have bi-daily reports telegraphed to Toronto and Victoria. This station,

together with Port Simpson on the British Columbia coast, will be invaluable in forecasting for the North-west Territories, an extension of work which it is proposed to make as soon as possible.

FORECASTS AND STORM WARNINGS.

During the past year the number of heavy gales has not been excessive, but many of those which did occur were of unusual violence, noticeably those of September 11 and 15, October 1, November 10, 21 and 27, and December 5. Ample warning was given of the approach of these great storms, and no doubt many lives and much valuable property were thereby saved.

The storm of September 11 was the West India hurricane, which had, prior to this date, devastated Galveston, Texas. It was very severely felt from Ontario to the maritime provinces, but at points on the Bay of Chaleur and on the Gaspé coast, the warning was unfortunately not received owing to delay in transmission. The storm of September 15 was very heavy over the lakes, and on Lake Superior it is reported that mariners greatly esteemed the warning. The gale of October 11 was extremely heavy throughout the greater portion of eastern Canada. At Grand River, the C. R. Company did not heed the warning and neglected to remove a large consignment of fish, valued at several hundreds of dollars, from the wharf, and this was all washed away by the heavy seas and lost. On November 10, the *City of Monticello* went out in the face of the storm warning and was lost, thirty-one persons perishing. The gale of November 21 and 22 was very heavy from the lakes to the maritime provinces. It was in this storm that ss. *St. Olaf* was wrecked off Seven Islands and all on board perished.

During the year 1,313 warnings were issued from Toronto, and of these 1,135, or 86·4 per cent were verified.

Towards the close of last winter certain merchants and shippers of perishable goods in Toronto, who made a constant practice of telephoning to the Central Office for information as to probable temperature changes, were requested to report as to the use they made of the forecasts, and the following are some of the replies received :—

TORONTO, February 7, 1901.

R. F. STUPART,
Director Meteorological Service.

DEAR SIR,—We wish to tender our thanks to you and staff for the valuable services your office has rendered us by giving us a forecast of the weather, particularly in the winter season. By your timely warning, you have enabled us to hold over shipping orders, which would have proved an absolute loss had we forwarded goods.

Yours truly,

(Sgd.) COPELAND BREWING CO.,
THOS. B. TAYLOR, prop.

TORONTO, February 7, 1901.

R. F. STUPART,
Director Meteorological Service,
Toronto.

DEAR SIR,—We are, as you know, large handlers of apples, which each week we ship for export to Great Britain and have found the reports furnished by you to us of great value, as, of course, temperature and storms must be taken into account by us when we ship, as if we ship in extremely cold weather our apples are liable to freeze, or

should a heavy snowstorm take place in passage, they might be detained and greatly damaged. We are pleased to state that your information has aided us greatly, and we shall take the liberty from time to time to get your advice as to the probabilities to aid us in our business.

Yours very truly,

(Sgd.) M. H. PETERSON & CO.

TORONTO, February 7, 1901.

MR. R. F. STUPART,
City.

DEAR SIR,—*Re* facilities offered to us through the courtesy of the employees of the Observatory, I have found their services of great value. In regard to the information which we have received from them we have been able to rush cars of fruit through from New York, whereas without that information we would have stood to lose hundreds of dollars.

Yours respectfully,

(Sgd.) CHARLES KIMPTON.

TORONTO, February 7, 1901.

MR. R. F. STUPART,
Director of the Meteorological Department,
Toronto.

DEAR SIR,—Please accept our thanks for the prompt way in which you have answered our many inquiries as to the "probs."

As you are aware it is indispensable in our line of business to know when and where to ship green fruits in the winter season.

Your information, given readily and courteously, has been valuable to us and we take this opportunity of thanking you.

Yours very truly,

(Sgd.) HUSBAND BROS. & CO.

TORONTO, February 8, 1901.

R. F. STUPART, ESQ.,
Meteorological Department,
Toronto.

DEAR SIR,—Your advice from time to time as to weather probabilities has been invaluable to us in our importations and shipments of perishable products. We thank you very much for past favours and shall be glad to be able to get your advice in the future.

Yours very truly,

(Sgd.) F. SIMPSON & SONS.

Toronto, February 7, 1901.

Mr. R. F. Stupart,
The Observatory,
Toronto.

Dear Sir,—We wish to express our appreciation of the kindly manner in which your staff have answered our many inquiries. We have found reports of considerable value to us in making shipments, owing to the perishable nature of our goods. The fact of your being situated in Toronto enables us to act promptly Awaiting your further valued favours, we remain,

Yours, truly,

(Sgd.) CLEMES BROS.

Toronto, February 7, 1901.

Mr. R. F. Stupart,
Director Meteorological Service,
Toronto.

Dear Sir,—We much appreciate the service rendered us by the Observatory officials here, in giving us the accurate temperature in different parts of the province and country. We are heavy importers and exporters of fruit and we have found the information given us, almost daily, of vast benefit in shipping. In fact we consider it extremely necessary to have this information in order to carry on our business satisfactorily during the winter season.

Yours respectfully,

(Sgd.) WHITE & CO.

Toronto, February 7, 1901.

R. F. Stupart, Esq.,
Director Meteorological Office,
Toronto.

Dear Sir,—We beg to acknowledge the services your office have rendered us during the present and past seasons. Handling perishable goods in large quantities the value of which runs into considerable money, it is of vital importance to us to be posted as to what we may expect the weather to be, so as to guide us in making shipments to points in our own province, also in loading apples for export. In acknowledging the courtesy of your office in giving us information asked for, we would be pleased if you could arrange a service by which the merchants could be notified of any radical change likely to take place in the temperature, the same as merchants in New York in our line of business enjoy.

Yours truly,

(Sgd.) McWILLIAM & EVERIST.

In March a circular letter was addressed to some forty harbour masters in the Maritime Provinces requesting a report as to the usefulness of the storm warnings to the shipping. All who received letters replied, and all replies were satisfactory, and many of them highly so, and contained most flattering commendation of the work of the service. The following were among the replies :—

St. John, N.B., March 21, 1901.

'As to the storm warnings, in my opinion they are very useful and should be maintained as all ship-owners are greatly led by them and masters of small vessels are guided by them greatly.'

'I would suggest that there be more of them placed on the headlines and at all light stations for the benefit of our fishermen as the benefit to life and property would more than repay the cost of service and telephone. I would particularly suggest Cape Spencer and Musquash Head.'

(Sgd.) THOS. TRAYNOR,
Pilot.

Quarantine Station, St. John, N.B., March 18, 1901.

'Your efficient officer here, Mr. Hutchinson, has furnished me with a copy of your daily forecast for the past two years. They have been of such value to me that should they be withdrawn I would enter a very earnest protest against such proceeding, in fact I consider them invaluable and this in spite of the fact that you sometimes 'miss it.' As I live on an island at the entrance of St. John harbour the weather is a subject of very lively interest and my favourable opinion of your warnings and forecasts is the legitimate outgrowth of observation impelled by environment.

'I am also in a position to state to you the fact that the shipmasters ready for sea always consult your reports, and I have known ocean steamers and many coasting vessels to remain in port because the warning for a heavy gale was swinging from the yard arm of your signal pole at the custom house. There is no doubt in my mind that this has resulted in the saving of much property and many lives. I gratefully acknowledge the benefits which I have reaped from your service and sincerely wish you every success.'

(Sgd.) J. E. MARCH, M.D.

Canso, N.S., March 20, 1901.

'The daily forecasts are universally sought after by all sorts and conditions of people the year round, and this fact would seem to indicate their general usefulness,

'In regard to the storm warnings, up to the middle of January they are carefully watched more particularly by the local fishermen, who generally regulate the mooring and securing of their boats by the warnings. I have heard of several local fishermen saying that if they had not heeded the storm warning they would have lost their boats.'

(Sgd.) J. K. YOUNG.

International Steamship Company, St. John, N.B., March 20, 1901.

'We find your weather reports of the greatest benefit to us and do not know how we ever did without them. We are not able to specify any particular instance in which lives or property have been saved in consequence of your reports but have little doubt we should have been put to many an expense and detention to say nothing of disaster had we been deprived of the weather reports from Toronto and Washington.'

(Sgd.) WILLIAM G. LEE.

Fader & Co., Wholesale Fish Dealers, Halifax, N.S., March, 1901.

'Your weather reports are very beneficial to the people on the coasts, especially to sailing vessels. There is no question but that much property and life is saved by the warnings of approaching storms.

'It also gives us an idea when to hold a stock of fish. In stormy weather or boats can't catch fish, and when we see that stormy weather is indicated we hold back a stock which we would not hold if the weather was fine. We have to keep a steady supply of fish; and we can assure you that we find the weather indications most beneficial to us. It is the first thing the writer reads on receiving the newspaper. We hope that you may continue to favour us in this part of the country with your weather reports.'

(Sgd.) FADER & CO.

Little Glace Bay, N.S., February 29, 1901.

'In regard to the storm warnings they are very much sought for in the spring and fall by the fishermen. I have not seen any lives saved but know a good lot of fishing gear, such as lobster traps and net saved.'

(Sgd.) STEPHEN TURNER.

Royal Danish Consulate, Swedish and Norwegian Vice-Consulate, Imperial Russian Vice-Consulate, Halifax, N.S., February 22, 1901.

'The storm warnings and daily forecasts issued by your service have been found most useful in my experience here. I have frequently to consult Mr. Allison and received from him most valuable information for masters of vessels intending to proceed to sea.'

(Sgd.) ISAAC H. MATHERS,
Royal Danish Consul and Vice-Consul for Sweden and Norway.

S. Cunard & Co., Halifax, N.S., February 23, 1901.

'While we cannot give you any instances of where the storm warnings and daily forecasts issued by you have been the means of saving life and property which is hardly to be expected in the case of large steamers, we find the daily forecasts very useful and they are constantly referred to by vessel men and others.'

(Sgd.) S. CUNARD & Co.

Liscomb, N.S., March 6, 1901.

'I have been a pilot for eighteen years for this port and have heard the captains of ships and vessels of all kinds express themselves as very favourable to this service, I know they have now become a great advantage to seafaring men and have known vessels to turn back when they saw the warning and thus escape heavy storms at sea. The forecasts for the past year have been so accurate, that fishermen as well as captains are almost governed by them, I believe it is a good service and trust it will be continued.'

LEWIS WILSON,
Harbour Master.

Tignish, P.E.I., March 1, 1901.

'Storm warnings and daily probabilities of weather are very much looked for by captains of schooners and fishermen, also by firms interested in shipping who say they consider the service a great benefit.

'In regard to saving life, one case to my knowledge occurred on September 6 and 7, 1899, when storm drum was hoisted for a strong north-west gale, a large fleet of small fishing schooners were outside and on seeing the signal the most of them made for the harbour, and those that remained out had a very hard time of it, one was lost with all hands, and I have no doubt but for the signal others would have shared the same fate, as when the signal was hoisted, the weather had the appearance of fine, rather than a gale.'

(Sgd.) ANGO. J. GAUDET,
Signal Agent.

Port Hood, N.S., February 28, 1901.

'The storm warnings and daily forecasts issued by your service are very useful and I may say much sought after by captains of coasters and fishing vessels, and also by our own fishermen who have to go off some miles to the banks. I am aware of several instances where fishermen would have gone out to the banks fishing and perished in the storm only that they saw the storm signal up. In view of the fact that the Port Hood Coal Company intend shipping coal in large vessels from this port next summer, I think that storm warnings and daily forecasts will be more than ever sought after by captains.'

(Sgd.) GEORGE WATTS.

Parrsboro', N.S., February 26, 1901.

'The storm warnings and daily forecasts issued from your service are greatly sought after and are of great service to vessel men and others.

'There have been several vessels at different times loaded and ready for sea and on account of the storm warning did not leave for two or three days and by so doing missed a severe storm.

'There was a big storm on November 27, about two years ago and had it not been for the storm warnings and forecasts there is no doubt but several schooners would have been lost or badly wrecked and quite probable all hands perished and I am certain they are a great service to our port.'

(Sgd.) E. W. BEATTY,
Harbour Master.

METEOROLOGICAL SERVICE—Table showing the number of forecasts and percentage of fulfilment in each district, in each month and in the year July, 1900, to June, 1901, inclusive.

Month.	Manitoba.					Lake Superior.					Georgian Bay.					Lower Lake Region.					Ottawa Valley.				
	Number of Forecasts.	Verified.				Number of Forecasts.	Verified.				Number of Forecasts.	Verified.				Number of Forecasts.	Verified.				Number of Forecasts.	Verified.			
		Number fully.	Number partly.	Number not.	Percentage.		Number fully.	Number partly.	Number not.	Percentage.		Number fully.	Number partly.	Number not.	Percentage.		Number fully.	Number partly.	Number not.	Percentage.		Number fully.	Number partly.	Number not.	Percentage.
1900.																									
July	87	66	6	15	79·3	107	83	13	11	83·6	111	96	5	10	88·7	114	101	6	7	91·2	100	84	3	13	85·5
August	85	70	4	11	84·7	106	85	14	7	86·8	107	93	4	10	88·8	106	90	5	11	87·3	99	89	2	8	90·9
September	83	60	13	10	80·1	104	84	12	8	86·5	115	99	7	9	89·1	115	98	10	7	89·6	104	87	8	9	87·5
October	89	75	8	6	88·8	108	98	7	3	94·0	127	113	6	8	91·3	128	113	9	6	91·8	119	103	14	2	92·4
November	100	76	13	11	82·5	107	79	15	13	80·8	115	97	12	6	89·6	118	93	18	7	86·4	108	93	11	4	91·2
December	88	74	8	6	88·6	100	81	11	8	86·5	117	96	13	8	87·6	117	97	14	6	88·9	104	82	12	10	84·6
1901.																									
January	91	68	11	12	80·8	102	76	12	14	92·2	111	70	25	16	74·3	112	81	22	9	82·1	104	81	12	11	83·7
February	78	58	16	4	84·6	90	70	12	8	84·4	111	81	17	13	80·6	113	87	14	12	83·2	97	81	10	6	88·7
March	81	66	8	7	86·4	91	72	7	12	83·0	114	95	7	12	86·4	114	97	8	9	88·6	108	84	14	10	84·3
April	82	70	8	4	90·2	88	75	5	8	88·1	94	76	10	8	86·2	94	73	10	11	83·0	95	76	7	12	83·7
May	92	69	13	10	82·1	105	80	13	12	82·4	119	98	15	6	88·7	119	94	21	4	87·9	109	89	15	5	88·5
June	84	56	21	7	79·2	101	77	18	6	85·1	109	88	14	7	87·2	111	82	21	8	83·3	100	84	10	6	89·0
Totals	1,040	808	129	103	83·9	1,209	960	139	110	85·2	1,350	1102	135	113	86·6	1,361	1106	158	97	87·1	1,247	1,033	118	96	87·6

METEOROLOGICAL SERVICE—Number of forecasts and percentage of fulfilment in each district, in each month, and in the year July, 1900, to June 1901, inclusive.—*Continued.*

MONTH.	UPPER ST. LAWRENCE VALLEY.					LOWER ST. LAWRENCE VALLEY.					GULF.					MARITIME.					TOTAL.				
	Number of forecasts.	Verified.				Number of forecasts.	Verified.				Number of forecasts.	Verified.				Number of forecasts.	Verified.				Number of forecasts.	Verified.			
		Number fully.	Number partly.	Number not.	Percentage.		Number fully.	Number partly.	Number not.	Percentage.		Number fully.	Number partly.	Number not.	Percentage.		Number fully.	Number partly.	Number not.	Percentage.		Number fully.	Number partly.	Number not.	Percentage.
1900.																									
July	100	81	9	10	85·5	97	75	8	14	81·4	92	71	10	11	82·6	107	83	11	13	82·7	915	740	71	104	84·8
August	99	82	4	13	84·8	113	93	9	11	86·3	113	95	10	8	88·5	115	94	14	7	87·8	943	791	66	86	87·4
September	104	89	8	7	89·4	114	93	10	11	86·0	121	98	14	9	86·8	121	98	13	10	86·4	981	806	95	80	87·0
October	118	101	11	6	90·3	107	85	10	12	84·1	113	95	8	10	87·6	125	108	12	5	91·2	1,034	891	85	58	90·3
November	110	89	17	4	88·6	102	86	12	4	90·2	106	86	15	5	88·2	110	84	13	13	82·3	976	783	126	67	86·7
December	103	81	16	6	86·4	94	80	9	5	89·9	98	82	5	11	86·2	121	99	12	10	86·8	942	772	100	70	87·3
1901.																									
January	104	82	13	9	85·1	104	85	15	4	88·9	106	88	10	8	87·7	117	88	18	11	82·9	951	719	138	94	82·8
February	97	76	13	8	85·1	107	84	13	10	84·6	106	81	14	11	83·0	115	86	17	12	82·2	914	704	126	84	83·9
March	109	85	18	6	86·2	105	80	6	19	79·1	108	83	6	19	79·6	124	91	15	18	79·4	954	753	89	112	83·6
April	95	74	12	9	84·2	82	66	12	4	87·8	80	65	8	7	86·3	96	73	16	7	84·4	806	648	88	70	85·9
May	109	86	17	6	86·7	106	82	15	9	84·4	105	78	18	9	82·9	106	68	24	14	75·5	970	744	151	75	84·5
June	98	82	10	6	88·8	97	71	18	8	82·5	96	68	20	8	81·3	122	85	27	10	80·7	918	693	159	66	84·2
Total	1,246	1,008	148	90	86·8	1,228	980	137	111	85·4	1,244	990	138	116	85·1	1,379	1,057	192	130	83·6	11,304	9,044	1,294	966	85.7

Library.

The number of publications received during the year was 383, being for the most part annual, quarterly, monthly, weekly and daily reports and periodicals from the principal astronomical, meteorological and magnetical observations of the world.

Publications.

Eight hundred and sixty copies of the Annual Report, eight hundred and fifty copies of the Monthly Weather Review and eight hundred and fifty copies of the Toronto General Meteorological Register were distributed to all parts of the world. Five hundred and fifty copies of the Monthly Weather Chart were distributed to persons in Canada and the United States each month with eighty-five copies of the Daily Weather Chart were distributed each day.

United States Weather Bureau.

The Chief of the United States Weather Bureau has continued to interchange reports with this office and I desire to express my warm appreciation of the uniform courtesy that characterized all communications from that office.

Inspection of Stations.

Early in the spring I received an invitation from the International Meteorological Committee to be present at the sessions of a magnetical and meteorological congress to be convened in Paris in September. The Honourable the Minister having been pleased by letter dated March 21 to accord me permission to attend this congress, I sailed from Canada on August 11 and arrived in England on the 20th. A large portion of the following ten days was spent at the British Meteorological Office and at Kew Magnetic Observatory, at both of which institutions I was afforded every opportunity of studying the methods employed, and at the latter institution especially was able to acquire information which will be of use to me at our Magnetic Observatory at Agincourt. During the first few days of September a visit was paid to the Royal Meteorological Institute of the Netherlands at Utrecht in connection with which there is, what is thought by magneticians of to-day to be, the nearest approach to a perfect magnetical observatory building in existence. It has been erected within the last two years at a large expenditure. The chief of that observatory is one of the greatest authorities on magnetism and my visit was both instructive and pleasant. The opening meeting of the Meteorological Congress was held on September 10 at the rooms of the Société d'Encouragement, 44 Rue des Rennes. More than thirty countries were represented at the Congress, and more than one hundred persons of various nationalities attended its sittings. There were delegates present from, I think, nearly all the European Countries ; also from India, Australia, the Argentine Republic, Mexico, Philippine Islands, Japan, Egypt, the Azores, United States, &c. Professor Rüker, the president-elect of the British Association, presided over the Commission on Terrestrial Magnetism, which had presented to it the work being done by magnetic observatories throughout the world. The writer had the privilege of describing what had been done at Toronto, and showed magnetic records which indicated to the commission that the Agincourt Observatory is doing good work and is amply distant from the electric tramway lines. Toronto Magnetic Observatory was the first in the world to suffer from the tramway currents, but several of the most important observatories in Europe have since succumbed and others will doubtless follow. A more detailed account of the proceedings of the Congress have been furnished to the Department under date of February 8. I returned to Canada via St. John's, Newfoundland, and Halifax in order to inspect the meteorological stations at these places and also visited the stations at St. John, N.B., Chatham and Quebec.

Forty-two stations were inspected by Mr. B. C. Webber.

At Fort Simpson the exposure of the instruments is poor, and seemingly little interest is given to the work, the remuneration being considered altogether too small for the duties required. The chief station of British Columbia at Victoria is in thorough order and the work appears to be faithfully and zealously attended to. At Banff the spare barometer was placed in a suitable position convenient for the use of travellers, there being a constant demand for barometric comparisons at this station. Sulphur Mountain was ascended to the summit with a view of placing instruments there. The spot was considered suitable as a mountain station, but not accessible unless a trail be made, and it is possible under the circumstances that the National Park authorities may be successfully approached on the subject. At Regina, in view of the fact that the observers at the barracks are being so often changed, it is recommended that the work be handed over to the Department of Agriculture of the Northwest Territories, which department is actively engaged in the promotion of meteorological work in the Territories. At Fort William the signal station was in a disgraceful condition—the mast was almost heaved out of the ground, drum house broken to pieces, and signals green from exposure to the weather. Furthermore the agent had been deceased for many months, and the family considered it unnecessary to notify the central office of the fact. At Beatrice the barometer was repaired and adjusted. At Bissette, through the kind permission of the Canadian Pacific Railway authorities an electrical anemometer was placed on the roof of the railway station, a very fair exposure. The barometer was also cleaned. At Mattawa the agent of the Canadian Pacific Railway was instructed in the duties of observer, and a new rain gauge was supplied, but I think it highly improbable that he will attend to the duties gratuitously. At St. Andrews the mast will require a fresh coat of paint and the drum house will be repaired. At Grand Manan a new platform was found to be necessary to replace the one which had become rotten, and a stronger anemometer was required, the one in use being too fragile for such a windy point. The barometers were cleaned. The exposure for the thermometers is most indifferent. At St. John the work is conscientiously and well done as heretofore. Complaints are to hand that the new red storm lantern cannot be seen two miles away. Electrictity should be substituted for coal oil at this and many other stations. At Pointe le Preaux all was in good order. At Digby the mast and drum house both needed repairing and the agent was told to attend more carefully to the storm reports. At Yarmouth the barometer was cleaned and a new drum and cone were supplied. At Halifax the red-light storm lantern cannot be used as on the code of signals, one red light means vessel in distress off the harbour, and a red and white light arrival of the Irish mail steamer, consequently Halifax and Camperdown will still use the old night storm signal lamps, namely, two white lights. The barometer was cleaned and an error in the minimum thermometer rectified. At Cheticamp the mast and drum house are to be painted and the stays tightened. At Port Hood the drum house is to be repaired and repainted. At Port Hastings a thin down haul rope is to be used for the lanterns. At Canso the mast was rotten, there was no drum house and no halliards and the drum and cone were both broken, furthermore the agent has been living in the United States during the last eighteen months and the work was farmed out. Matters could not have been in a much more unsatisfactory state. As this is one of the large shipping ports in the Maritime provinces, and where the storm signals are much appreciated, existing conditions were much to be deplored. The station will now be put in first class order and an agent appointed. At Port Morien it was found necessary to remove the mast as the bank on which it was placed was falling away. The drum house was likewise broken to pieces. A commanding position overlooking the harbour has been secured, everything will be put in first class order and in future the lanterns will be used. Glace Bay—a new mast was necessary at this place as the old one was rotten. The new site leased is not of the best, however there is little or no shipping at this point. Louisburg—The telephone placed in the agent's house greatly facilitated the work at this station. At North Sydney the mast required some slight repairs. Low Point needed a stronger anemometer, also the wires restrung. There is a fine exposure for wind here, the telegraph facilities are good and in many respects this would be a more desirable place for an observing station than Sydney. Sydney wind

exposure is useless owing to environments. All else in good shape and duties are faithfully attended to. At Pictou the painting of the mast can remain over till another season. At Charlottetown the instruments are now at the observer's residence, a position as good as heretofore. The wind vane was found faulty, also the anemograph; the mast and drum box also needed repairs. Georgetown—The new agent lives alongside the mast and everything is in good order. I instructed the agent fully in his duties. Souris—All in good order here. At Summerside the town council generously granted a site on the town wharf for the signal mast, the old position being most unsuitable; the cribwork on which the mast was placed was seriously damaged each spring by the action of the ice and was eventually destroyed. At Tignish the mast will be further strengthened, when it should last for some years. Point du Chene mast was in bad shape and will be repaired. Chatham—Instruments are still in same wretched exposure. The mast will stand moving, the best location being on the town wharf. Point Escuminac—The stand carrying the wind gauge required some little repairs, otherwise all was in first class order. Bathurst—A good mast replaces the one recently worn out. The observations have been no better attended to than heretofore, but more attention is promised to the work in future in view of the fact that maximum and minimum thermometer readings and precipitation only, are to be taken. There is little or no shipping at this place. Paspebiac—The mast is to be repainted, the drum house repaired, stays tightened and a new cone furnished. Grand River—The telegraph operator kindly attends to the clerical work at this station as our agent can neither read, write, or speak English; complaints were also received that the agent at times had refused to report for night duty but this he denies. The mast is to be repainted as it is much in need of it. Cape Despair—All fishing vessels bound to the banks have to pass this point. The position also commands the fishing villages of Cape Cove and Little Cape Cove; under these conditions I am favourable to the establishment of a storm signal station at Cape Despair. Perce—The stays of mast required some attention otherwise all was in very good order. Fox River—Instructed the new appointee in duties of storm signal agent. The premises are situated about two hundred yards farther down the slope nearer the seashore, a less desirable position than the one the mast is now in, consequently as there is no government land at Fox River and the agent has free access to the mast as it is placed there can be no object in its removal elsewhere. Gaspé—The red storm signal lamp cannot be used at this place as it would interfere with the red range light and when displayed be liable to cause vessels entering the harbour to run agronnd. The mast and drum house have been very well constructed and all is in good order. Dalhousie—All in good order at this station, the lamps however have a very new appearance considering they are supposed to have been in use for some years.

Mr. H. V. Payne inspected four stations.

An angle steel mast has been placed in position at Port Colborne, but at first some trouble was experienced from the stays not being strong enough and a collapse resulted, but the defect has been remedied and the structure is now safe and most satisfactory. A steel tower has also been erected at Midland, on a site overlooking the town and bay, the county deeding the land free to the service. The observations and signal work at this station are well attended to. On September 24 Amherstburg was visited; the agent was away and the signal work obviously is not properly attended to. The signals were in a dirty condition and partially unfit for use. On inquiry, it was discovered that the forecast bulletin was seldom posted at the wharf, and that vessel men had generally to go up to the town to the telegraph office for information as to the coming weather. The meteorological station at Pelee Island light house was inspected on September 26. The new observer here was evidently trying to do his best, but required instruction as to observing and keeping instruments in order. The signal mast and signals were in good order. There has been some idea of moving this signal station, as it was so far from the sailing course. This was partially correct when the 'Dummy Light' was in use, but being informed that it is the intention of the department to place the guiding light further south-east towards the 'middle ground,' making the sailing course much nearer the signal station, it is recommended that the present station be continued. Mr. Kingsford visited Parry Sound and the Algonquin Park. At the

former station the instruments were found to be in good order, and at the latter a promise was made by the chief ranger of the park that observations should be continued. The instruments were brought away from Burk's Falls, observations having been discontinued some time previously.

SEISMOLOGICAL OBSERVATIONS.

The Milne seismographs in Toronto and Victoria have been kept in operation throughout the year and have given satisfactory results. On an average, there are recorded about eleven quakes per month, large and small. The most important quakes of the year were recorded on October 9 and 29. The seat of the disturbance of the former was in Alaska and was felt there as a severe earthquake, much damage being done to property, the earth being in a constant tremor for six hours. On the 29th, the seat of disturbance was near Caracas, Venezuela ; the city was greatly damaged, several churches were wrecked and the American and British legations suffered severely. Fifteen persons were killed. The records of Toronto and Victoria seismographs for the 7th, during the quake, show the amplitude of the pendulum swing to have been over 27 millimetres. The vibrations were so large that the pendulum swung off the recording paper. At Victoria the first appearance of the quake occurred at 12 h., 32·8 m., Greenwich mean time, and at Toronto the time was 12 h , 47·4 m., Greenwich mean time. The amplitude of the movements for the quake of the 29th for Toronto was 15·5 millimetres, and at Victoria the swing exceeded the width of the photographic paper over 27 millimetres. A detailed list of the disturbances registered for the year at both stations have been forwarded to Professor Milne for the report of the British Association for 1901. The principal disturbances recorded both at Victoria and Toronto were as follows : July 15 and 29 ; September 1, 8 and 15 ; October 9, 17 and 29 ; November 9 ; December 25 ; January 7 (originated at Ecuador) ; January 18 ; March 5 ; April 5 ; May 25 (originated in Java), and June 21.

Time Service.

During the year ending June 30, 1901, seventy-seven meridian observations for time were made with the transit instrument and six solar observations were taken. The position of the stars used were those given in the ' Berliner Jahrbuch.'

The collimation error of the transit instrument has been determined frequently, principally by micrometrical measurements on the collimating telescope. The azimuth, level and collimation errors have varied very little during the year.

Sunspot observations have been continued throughout the year with the equitorial telescope ; maps of the sun's surface, four inches in diameter, showing the spots and faculæ markings, were made on 156 days, and of these, 100 days of no spots were recorded. The longest continuous period during which the sun's surface was clear of spots occurred from March 12 to May 15, 1901, inclusive. The most prominent periods of spots were from October 17 to 27, 1900, and from May 19 to 30, 1901.

The time exchanges with Montreal, Quebec and St. John have all been registered on the chronograph at Toronto. The errors of the Toronto clock and of the timepieces used by the different observatories elsewhere, are computed from the latest observations.

The mean time clock of the Toronto Observatory has continued to show absolute standard time of the 75th meridian. The method of keeping it to this adjustment has been described in the annual report for 1899.

The different electrical attachments to this clock and the sidereal clock continue to give great satisfaction.

Time has been given weekly to the magnetical observatory at Agincourt.

The time service under control of the meteorological service comprises in addition to the striking of the fire alarm bells in Toronto at 11.55 a.m. daily, comparisons with Montreal, the dropping of the time balls at Quebec and St. John, and the firing of a gun at Vancouver.

SESSIONAL PAPER No. 21

The following table shows the difference between the time by 'Standard Observer' and that given at the various exchanges—the sign + indicates that the time, as sent from the various observatories, is faster than that by the 'Standard Observer.'

The time of 'standard observer' is obtained by taking the arithmetical mean of the times as determined at Toronto and Montreal.

	Toronto.	Montreal.	Quebec.	Sr. John.
1900.	secs.	secs.	secs.	secs.
July 6	+0·07	—0·07	+0·11	
" 20	+0·26	—0·26	—0·28	+0·27
August 3	—0·22	+0·22	+0·26	—0·55
" 24	—0·09	+0·09	+0·67	+1·13
September 14	+0·07	—0·07	—0·13	+0·24
" 28	+0·04	—0·04	+0·35	—0·09
October 12	—0·23	+0·23	+0·18	
" 26	+0·08	—0·08	+0·82	+1·28
November 16	—0·24	+0·24	+0·40	+0·73
" 30	+0·54	—0·54	+1·19	+1·03
December 31	+0·29	—0·29	—1·50	+0·32
1901.				
January 18	+0·19	—0·19	+0·74	+0·03
February 8	—0·25	+0·25	+0·42	+0·17
March 22	+0·18	—0·18	+0·86	+0·32
April 12	—0·04	+0·04	+0·22	+0·72
" 29	—0·03	+0·03	—0·35	+0·96
May 17	—0·20	+0·20	—0·05	+0·90
" 31	—0·31	+0·31	—2·54	+1·08
June 14	—0·03	+0·03	+0·56	+0·77

All of which is respectfully submitted.

I have the honor to be, sir,
Your obedient servant,

R. T. STUPART,
Director.

APPENDIX A.

QUEBEC OBSERVATORY,
QUEBEC, July 30, 1901.

The Director,
Meteorological Service,
Toronto.

SIR,—I have the honour to transmit my annual report for the fiscal year ending June 30, 1901.

My duties at the observatory were the same as in past years.

All the meteorological observations were taken daily as heretofore.

The time was determined by means of the transit of standard stars every fine night, and also by the sun.

The time ball on the Citadel is in good working order, having been thoroughly repaired during the summer of 1900, and the same is now dropped by me from the top of the observatory.

Inquiries at the observatory respecting the conditions of the weather are continually increasing, and the weather bulletins received from the Central Office, Toronto, are very much appreciated by the public. They are posted at the principal places of the city and published in all the newspapers.

I have the honour to be, sir,
Your obedient servant,

(Sgd.) ARTHUR SMITH,
Director.

APPENDIX B.

ST. JOHN OBSERVATORY,
ST. JOHN, N.B., October 31, 1901.

R. F. STUPART, Esq.,
Director Dominion Meteorological Service,
Toronto, Ont.

SIR,—I have the honour to present my annual report on the St. John Observatory for the fiscal year ending June 30, 1901.

During the past year facilities of this observatory for transmitting time signals have been extended. A time signal is now sent every week day morning at 9 o'clock standard time of the 75th meridian over the wires of the Western Union Telegraph Co., and is used by the railways and others in the Maritime Provinces.

The transmitting clock was last year fitted with a break circuit attachment, which by reversing the points of the local relay transmits makes. The signals sent out by this clock are wholly automatic, and consist of a series of makes or dots and pauses in an open telegraphic circuit. Special signals have also, by request, been sent to the Royal Navy at Halifax, to North Sydney and Halifax for the British and French cable ships, to MR. W. Bell Dawson, for the use of the Tidal Survey, and to others.

Observations of stars with the transmit instrument are made as often as possible, to obtain the errors and rates of the Standard Sidereal clock. The Standard Mean Time clock is compared daily with the Sidereal, and where necessary brought to time by the adjustment of small weights on the pendulum bob.

The time ball has been dropped every week day throughout the year in the same manner as formerly reported.

The meteorological observations have been continued without change from my former report.

To meet urgent requests, steps are being taken to increase the issue of the forenoon weather bulletin. The information contained in this bulletin has proved of great value to mariners, shippers of perishable goods and others interested in weather conditions.

The bulletin is issued as promptly as practicable after receipt of the telegraphic reports, forecasts and conditions from Toronto, and is publicly posted that all interested may avail themselves of the latest information and probabilities of the near future, postal facilities are made use of in distributing the bulletin to adjacent places. It is also published in full by our evening papers, with the addition of a brief summary of the local meteorological conditions. Upon request special telephone messages are sent when important business demands immediate information before the bulletin can be issued.

The forenoon forecasts and all storm warnings are promptly telephoned to St. Martin, and I have been informed they are of great benefit to the mariners and

residents of that port. The storm signals are displayed at Quaco light house near St. Martin.

Inquiries are frequently made for reports from the office records to settle demurrage claims and claims from damage to the shipments of perishable goods.

I have the honour to be, sir,
Your obedient servant,

D. L. HUTCHINSON,
Director, St. John Observatory.

THE MAGNETIC OBSERVATORY.

Toronto, November 8, 1901.

Lt.-Colonel F. Gourdeau,
Deputy Minister of Marine and Fisheries,
Ottawa.

Sir,—I have the honour to report as follows upon the work of the magnetic observatory at Agincourt.

The building and site have proved admirably adapted for magnetic observations; it is now perfectly evident that the instruments have been removed far enough from electric tramways. Mr. Menzies continues to reside in the village of Agincourt, and besides keeping the photographic lights burning, winding the clocks, &c., makes weekly determinations of the dip and absolute declination; the absolute determinations of the horizontal component are made by myself.

Continuous photographic records of declination and horizontal force have been maintained throughout the year. The vertical force curves were continued until February 11, at which date the vertical force instrument was dismounted to make provision for the substitution of a Bifilar inclinometer. Hourly measurements of the values of these curves have been made and monthly abstracts of the same, wherein hourly, daily and monthly means are computed, and the daily maxima and minima with times of occurrence tabulated. Check observations are daily made by comparison with auxiliary eye reading scales attached to the magnetometers and readings of the daily maximum and minimum temperature of magnetic basement are made, together with daily comparisons of the clock which marks hourly divisions on the curves.

The observations for determining the absolute declination have been regularly carried on, simultaneous comparisons being made with the differential instrument. The usual determinations of the absolute horizontal force have been made and bifilar values deduced. Weekly observations of inclination have been taken with the new dip circle (No. 130, Dover) recently purchased, it being an exceptionally good instrument.

Continuous electrical anemograph records of the velocity and direction of the wind have been kept throughout the year. Daily minimum and maximum and incidental temperatures have been recorded as also the state of the weather and amount of rain and snowfall.

A weekly time exchange is made with Toronto and a record kept of the rates and errors of the clocks and chronometers.

There have been remarkably few disturbances of any magnitude during the time covered by this report. During the months of August, September, November, December and April the magnets were particularly quiet, the curves closely following the daily normal. The only noticeable exception to this was a sharp increase of force just before 16 o'clock of August 13, followed by an abrupt return to about normal. July, February, March and May show occasional disturbances, but none of sufficient amplitude to

call for remark. The largest disturbance of the year was almost continuous from the 24th to the 27th of October, the amplitude being about 28′ for declination and a change of 0·000945 C.G.S. in horizontal force. A disturbance from the 22nd to 23rd January, showed an amplitude of 25′ and ·000720, and one on June 13, 22′ and ·000810 C.G.S. respectively for declination and bifilar.

The mean daily range of declination deduced from maximum and minimum hourly readings has been 8′, and the mean daily range of horizontal force 0·000270 C.G.S. The months of October and June show the greatest proportion of disturbed days, irrespective of magnitude.

The magnetometer for determining the absolute declination has been remodeled and remounted at one end of a slate slab 6 feet long, 18 inches wide and $1\frac{1}{8}$ inches thick; the azimuth instrument for reading the collimating magnet being placed at the other extreme. The slate rests on and unites the two stone piers, which heretofore carried the magnetometer box and azimuth instrument respectively and is adjustable for level, also in azimuth to the extent of 4°. This arrangement insures greater stability and prevents possible small relative changes; it has so far given good results apparently reducing the slight discordance hitherto observed.

The bifilar inclinometer previously alluded to has been completed, being mounted on a slate slab resting on mural stone brackets, provided at the time the observatory was built. The instrument is ready for final adjustment and when so adjusted will give continous photographic records similar to the other magnetometers.

The various optical parts formerly used to record vertical force movements have been adopted in the construction of a themograph, which will give a continuous photographic record of the magnetic basement temperatures under the same conditions as those existing in magnetometer boxes. This instrument is so arranged in scale value that the results of four days can be recorded on one paper. A series of comparisons has already been made with a standard thermometer to determine an accurate scale value. When these determinations are made it will furnish an accurate and continuous temperature correction for force instruments. The designing and all possible mechanical work on these instruments has been done at the observatory.

I have the honour to be, sir,
Your obedient servant,

R. L. STUPART,
Director.

APPENDIX No. 5.

SIGNAL SERVICE.

QUEBEC, December 3, 1901.

As in preceding seasons, reports have been received from the stations in the lower part of the river and gulf, recording the weather, wind, condition, location and movement of the ice during the winter and spring months, and during the season of navigation all inward and outward bound vessels as signalled when passing each station.

From the 1st to the 20th of April, three reports were obtained and forwarded to the Boards of Trade, Montreal, St. John, N.B., and Quebec, and to the Chamber of Commerce, Halifax, N.S., also to the press of Montreal and Quebec, to the agent of the department, Quebec, to the Custom House and Immigration Agent, to the agents of steamship lines, tug owners, to the pilots for below and above Quebec, also to Messrs. Henry Fry & Co., Lloyds' agents, Quebec.

From April 21 reports were received daily and forwarded as above.

The Chief Superintendent of the quarantine station at Grosse Isle is also supplied with full information as to the weather, wind and the incoming of all transatlantic or foreign vessels.

Information was supplied from the bureau here as in past seasons, to the agents at Anticosti, Magdalen Islands, Meat Cove, C.B., Cape Ray and Cape Race, Newfoundland, from April 13, as to weather, wind, movement and condition of the ice in the Gulf and River St. Lawrence up to Montreal, for the guidance of any vessel calling for information.

The quarantine doctor at Rimouski is also supplied with a report of the incoming mail steamers, name of station and hour of passing being given when vessel was first signalled.

Information as to wind, weather and ice in the vicinity of Anticosti, Magdalen Islands, Meat Cove, St. Pauls Island and Cape Ray, Newfoundland, is also sent to Pointe aux Esquimaux in March for the guidance of the sealing fleet.

Grosse Isle quarantine station reported all transatlantic vessels, which has proved very satisfactory to the shipping interests.

These reports are free to the department, being transmitted over the government telegraph line to Quebec.

All reports received of inward bound vessels were repeated to the pilot station at Father Point, so that pilots could be promptly advised of the locality of inward bound vessels.

LABRADOR AND STRAITS OF BELLE ISLE.

The first message I received from Belle Isle was dated August 21, this new section will prove a great boon to navigation and almost all the signal service system in this district, and is very highly appreciated by the shipping and others interested.

NAVIGATION.

LAST OUTWARD BOUND VESSELS—1900.

November 28.—The last Royal Mail steamer, the ss. *Lake Champlain* sailed on this date.

December 1.—The ss. *Loughrigg Holme* sailed on this date, also the *Bengore Head.*

December 2.—The ss. *Bray Head* sailed on this date.

December 3.—The ss. *Peliki* sailed on this date, last steamer to leave.

FIRST INWARD BOUND VESSELS—1901.

April 20.—The ss. *Jacona* arrived on this date ; first steamer to arrive.
April 21.—The ss. *Tiverton* arrived on this date.
April 25.—The ss. *Manchester Trader* arrived on this date.
April 27.—The Royal Mail steamer *Parisian* arrived on this date ; first mail steamer to arrive.

I have the honour to be, sir,
Your obedient servant,

JOHN U. GREGORY,
Agent, Department of Marine and Fisheries.

APPENDIX A.

Report on ice, &c., in the Straits of Belle Isle and Coast of Newfoundland, as noted by the agents of the department at Belle Isle, Cape Bauld, Cape Norman, Point Amour and Bird Rocks.

BELLE ISLE.

December 12, 1901.—First slab ice made its appearance from the west of the island. Very little ice appeared and vessels could have navigated the Straits very easily during this month. North-east and north-west winds mostly prevailing. About two icebergs seen daily.

January, 1801.—The first two weeks of this month was very cold, thick slab and large sheets of ice formed. It would have been difficult for any vessels to have passed through. North and north-west winds prevailing. The latter part of the month was mild with much rain. South and south-east winds prevailing. Ice all broken up. About 5 icebergs seen daily.

February, 1901.—This month was exceptionally mild, the thermometer averaging about 30 degrees. The ice all broke up and disappeared, bature ice all melted. Very heavy rain fell and the snow went away ; south and south-east winds prevailed. Vessels could have passed through the Straits as in summer. About fifteen icebergs seen daily.

March, 1901.—The straits were clear until about the 20th of the month and after that date, heavy ice came in and the straits were blocked with ice for the rest of the month. It would have been impossible for any vessel to have passed through. Variable winds prevailed. Many immense icebergs were sighted. About 40 icebergs seen daily.

April, 1901.—The straits were blocked with very heavy northern ice and icebergs to the west all this month, it would have been impossible to have passed through. There was open water to the east all month, north and north-west winds mostly prevailed. About 90 icebergs seen daily.

May, 1901.—The straits were clear several times during this month. There was considerable ice outside. The ice seemed very light to the south of Cape Bauld. Variable winds prevailed. On the 26th the steamer *Diana*, Capt. Blanford, arrived to land crew ; he reported hardly any ice outside to the south, but plenty along shore and all the bays blocked. About 130 icebergs seen daily.

June, 1901.—There would have been very little difficulty in passing through the straits this month although there were many scattered pieces of ice, heavy pans and many icebergs. A schooner that arrived here reported a great deal of ice along the south shore, after the 15th of the month, there was very little ice to be seen. About 160 icebergs seen daily.

CAPE BAULD, NEWFOUNDLAND.

As stated in previous reports, the distance from Belle Isle being but 14 miles, the observations as to wind, weather, &c., vary but little with the latter place.—

December 8, 1900.—First light slab ice made its appearance. Snow fell on several occasions.

February, 1901.—A large quantity of seals were seen in the water this month.

May, 1901.—On the 25th one steamer was seen crossing over to Belle Isle. On the 27th the steamer *Nimrod* passed in. On the 31st a schooner crossed over to Labrador.

June, 1901.—On the 8th, twenty schooners crossed over to Labrador.

CAPE NORMAN, NEWFOUNDLAND.

October, 1900.—First snow fell on the 4th instant. Snow fell on four occasions this month. Eleven icebergs were sighted.

November, 1900.—Snow fell on eight occasions and about four icebergs were seen daily.

December, 1900.—Snow fell on several occasions and north-east wind prevailed.

February, 1901.—Fourteen icebergs were sighted this month.

March, 1901.—About four icebergs were seen daily.

April, 1901.—About eighteen icebergs seen daily.

May, 1901.—About forty icebergs seen daily.

June, 1901.—About seventy-five icebergs seen daily.

POINT AMOUR.

December, 1900.—The first ice made its appearance on the 6th, along the shore. On the 19th a small string of slab ice was seen.

January, 1901.—From the 1st to the 25th of this month the strait was full of large heavy sheet ice, as far as could be seen. From the 25th to the 31st large lakes of water made their appearance.

February, 1901.—There was very little ice in the strait this month and what little there was seen was all broken up, the weather was very mild.

March, 1901.—There was very little ice to be seen until about the 24th, and then the strait filled up with very heavy ice, as far as could be seen.

April, 1901.—The strait was full of very heavy ice until about the 22nd, when the ice nearly all disappeared.

May, 1901.—There was much ice to be seen east of this station during the month. Strait was full of heavy field ice, as far as could be seen. On the 26th the steamer *Diana* went into Blanc Sablon.

June, 1901.—From the 1st to about the 12th, large strings of ice were seen, and numerous icebergs. For the rest of the month, scattered ice and a large quantity of icebergs were to be seen.

BIRD ROCKS.

January, 1901.—First ice made its appearance on the 29th, but there was very little to be seen this month.

February, 1901.—From the first to the 14th there was no ice to be seen anywhere. The keeper states that navigation was practicable until the end of this month as no heavy ice made its appearance.

March, 1901.—First heavy ice made its appearance on the 2nd, piles of ice gathered around the rock to an extent of about a quarter of a mile. During the whole of this month, heavy open ice was to be seen everywhere until the 30th, when it all disappeared. On the 11th two Newfoundland steamers were sighted working north through the ice. On the 13th two schooners and two steamers were sighted. On the 14th the steamer *Panther* called here from Newfoundland. On the 16th the steamers *Harlaw* and *Hope* were seen nine miles off.

APPENDIX B.

THERMOMETER Readings at Belle Isle, from December, 1900, to May, 1901

December, 1900.				January, 1901.				February, 1901.				March, 1901.				April, 1901.				June, 1901.			
1	16	20	10	1	10	12	15	1	34	38	32	1	15	10	8	1	32	37	30	1	27	35	31
2	27	25	25	2	18	14	14	2	33	36	31	2	14	3	3	2	30	29	31	2	31	37	32
3	29	29	24	3	19	16	15	3	30	32	30	3	10	15	20	3	30	34	29	3	33	38	34
4	18	18	18	4	16	10	10	4	30	33	32	4	20	24	26	4	25	34	31	4	55	39	33
5	17	21	20	5	10	5	5	5	32	34	36	5	34	33	30	5	34	40	36	5	36	44	35
6	19	25	20	6	10	5	.....	6	34	38	36	6	5	5	4	6	30	37	31	6	32	31	33
7	22	23	26	7	8	12	10	7	35	37	32	7	5	9	13	7	31	36	33	7	32	34	29
8	24	22	20	8	10	15	21	8	32	35	37	8	15	22	10	8	30	34	31	8	30	32	31
9	18	22	20	9	1	.....	4	9	32	36	31	9	5	7	.....	9	32	30	27	9	31	37	32
10	19	25	16	10	4	8	4	10	32	34	30	10	4	3	5	10	19	27	25	10	31	40	35
11	18	26	20	11	5	10	6	11	32	34	36	11	10	25	15	11	20	30	25	11	37	42	35
12	14	23	9	12	.....	5	4	12	34	33	33	12	20	26	29	12	26	34	30	12	34	42	40
13	.....	5	3	13	8	10	10	13	32	34	30	13	25	32	30	13	28	37	30	13	36	45	39
14	15	26	20	14	9	5	1	14	31	33	31	14	28	33	30	14	30	34	31	14	37	45	39
15	15	20	14	15	4	5	5	15	30	33	32	15	26	29	24	15	30	37	32	15	34	41	35
16	10	16	9	16	15	20	29	16	31	33	31	16	24	32	31	16	28	37	30	16	39	46	40
17	5	8	5	17	23	28	32	17	30	32	31	17	30	34	31	17	29	37	31	17	40	43	35
18	.....	5	10	18	20	10	5	18	30	32	31	18	27	30	26	18	32	41	35	18	34	46	42
19	15	18	14	19	18	16	15	19	31	34	32	19	15	10	10	19	34	30	30	19	36	40	36
20	16	22	18	20	12	.....	10	20	31	29	27	20	10	15	18	20	32	30	31	20	34	43	37
21	16	24	10	21	10	1	5	21	30	33	24	21	10	15	22	21	30	35	31	21	36	44	37
22	10	10	10	22	10	5	5	22	26	20	10	22	18	26	25	22	32	39	34	22	32	37	35
23	1	12	10	23	10	15	20	23	10	15	20	23	20	32	31	23	31	34	30	23	34	40	37
24	8	12	10	24	38	36	30	24	15	20	15	24	30	34	31	24	30	37	32	24	31	35	34
25	13	24	20	25	24	26	26	25	15	20	13	25	31	33	30	25	24	30	30	25	35	42	38
26	12	16	15	26	35	37	35	26	15	14	10	26	31	38	30	26	25	34	33	26	31	43	40
27	16	21	13	27	36	34	34	27	5	10	12	27	34	36	32	27	34	42	37	27	32	39	35
28	10	14	8	28	36	38	34	28	5	10	10	28	34	38	34	28	30	37	30	28	34	46	41
29	10	10	1	29	34	36	32					29	33	36	34	29	30	38	31	29	37	45	43
30	2	.....	16	30	29	25	24					30	31	37	35	30	20	34	31	30	40	46	42
31	12	12	14	31	26	30	34					31	31	36	32					31	35	46	42

I have the honour to be, sir, Your obedient servant,

J. U. GREGORY, *Agent Department of Marine and Fisheries.*

SIGNAL STATION, CITADEL.

HALIFAX, N.S.

J. PARSONS,
Agent Marine and Fisheries,
Halifax, N.S.

SIR,—I have the honour to forward herewith a return of the number of vessels reported at this station during the twelve months ending June 30, 1901.

The service has been carried out satisfactorily on the whole, considering the frequent changes of personnel of the signal staff, which cannot be avoided owing to regimental requirements.

My recommendation for a civilian to be employed at Camperdown as a permanent hand has not yet been acted on, and I again urge the necessity of this provision being made as it would undoubtedly improve the efficiency of the signal service.

I am, sir,
Yours faithfully,

(Sgd.) R. M. MACRORY,
Lieut. R. E., S. O. S.

PORT OF HALIFAX, N.S.,

PARTICULARS of Vessels Signalling during

YEAR AND MONTH.	ENGLISH MEN-OF-WAR AND TROOPERS.			FOREIGN MEN-OF-WAR.			STEAMERS, 1ST CLASS.			STEAMERS, 2ND CLASS.		
	Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.
1900.												
July	2	2	0	0	0	0	35	22	13	83	83	0
August	3	3	0	0	0	0	25	18	7	90	84	6
September	3	3	0	0	0	0	24	16	8	69	66	3
October	3	3	0	0	0	0	22	19	3	66	66	0
November	3	3	0	0	0	0	34	23	11	69	66	3
December	0	0	0	0	0	0	48	42	6	51	48	3
1901.												
January	1	1	0	0	0	0	40	33	7	58	47	11
February	0	0	0	0	0	0	44	38	6	37	24	3
March	2	2	0	0	0	0	34	26	8	54	45	9
April	3	3	0	0	0	0	33	30	3	37	30	7
May	1	1	0	0	0	0	33	26	7	50	40	10
June	4	4	0	0	0	0	17	14	3	65	62	3
Totals	25	25	0	0	0	0	389	307	82	729	671	58

SIGNAL SERVICE.

the Year ending June 30, 1901.

Ships.			Barques.			Barquentines.			Brigs.			Brigantines.			Schooners, 3-masted or wearing private signals.			Monthly Totals.		
Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.	Reported.	Arrived.	Passed.
0	0	0	5	5	0	2	2	0	0	0	0	3	3	0	5	4	1	135	121	14
0	0	0	7	7	0	1	1	0	0	0	0	3	3	0	7	7	0	136	123	13
1	0	1	6	4	2	1	0	1	0	0	0	0	0	0	2	2	0	106	91	15
0	0	0	4	3	1	3	3	0	0	0	0	0	0	0	8	6	2	106	100	6
0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	3	2	1	111	96	15
0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4	4	0	104	95	9
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	1	104	85	19
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81	72	9
0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3	2	1	94	75	19
0	0	0	1	1	0	1	1	0	0	0	0	1	1	0	3	3	0	79	69	10
0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	2	2	0	92	75	17
0	0	0	6	5	1	3	3	0	3	3	0	3	3	0	7	7	0	104	97	7
1	0	1	39	35	4	11	10	1	3	3	0	10	10	0	49	43	6	1252	1099	153

R. M. MACRORY, Lieut. R. E.,
Superintendent of Signals.

APPENDIX No. 6.

LIVE STOCK SHIPMENTS.

RECORD of Live Stock shipped from Port of Montreal during Month of May, 1901.

Number.	Date.	Steamer.	Destination.	Sheep.		Cattle.				Fees Collected.	*Horses.		Swine.		Hay for Feed.	Grain for Feed.	Number of Men.
				Shipped.	Lost.	Fat.	Stockers.	Total.	Lost.		Shipped.	Lost.	Shipped.	Lost.			
	1901.									8 cts.					Lbs.	Lbs.	
1	May 3.	Manchester Trader	Manchester					397		5 96							16
2	" 3.	Lake Champlain	Liverpool					476		7 24	2						19
3	" 4.	Brazilian	London					274		4 81	14						12
4	" 7.	Montmegro	"					368		4 02							11
5	" 7.	Alcides	Liverpool					600		9 00							24
6	" 9.	Amarynthia	Glasgow					364		7 41	39						18
7	" 10.	Jacona	Newcastle					255		3 83							10
8	" 10.	Degama	Bristol					304		4 56							12
9	" 11.	Manchester Commerce	Manchester					400		6 00							16
10	" 11.	Corinthian	Liverpool	321				442		10 83	52						21
11	" 14.	Buenos Ayrean	Glasgow					144		2 16							6
12	" 15.	Kastalia	"	983				400		12 32	28						22
13	" 16.	Ontarian	"					256		5 64	36						13
14	" 17.	Lycia	Bristol					303		4 55							12
15	" 17.	Hurona	London	1,463				401		13 34							32
16	" 17.	Rosarian	"					226		3 39							9
17	" 17.	Bellona	Newcastle					262		3 93							11
18	" 19.	Fremona	London	958				337		9 84							18
19	" 19.	Manchester Shipper	Manchester	702				413		9 71							19
20	" 20.	Lake Superior	Liverpool					436		6 54							18
21	" 21.	Rathlin Head	Belfast					436		0 70	14						1
22	" 22.	Tribona	Glasgow	1·002				400		13 06	41						23
23	" 23.	Sarmatian	"					400		8 15	43						18
24	" 24.	Lake Ontario	Liverpool					414		6 21							17
25	" 24.	Montcalm	Bristol					352		5 28							14
26	" 24.	Escalona	Newcastle					230		3 45							9
27	" 25.	Numidian	Liverpool							0 80	16						1
28	" 26.	Indiana	"	1,703				324		13 38							21

29	"	26..	Manchester Corporation...	Manchester.	320	..	.....	.....	357	....	6	96	.....	...	... ...	....	....	.....	16
30	"	26..	Devona	London.....	.....	...	.....	.....	564	....	8	46	.....	...	.....	....	.....	.....	22
31	"	28..	Sylviana.....	Antwerp ...	.....	...	.....	.....	.....	....	0	35	7	....	....	....	... ...	.....	1
32	"	29..	Lord Iveagh.....	Cardiff	.....	...	.....	.....	300	...	4	50	.....	....	....	....	.. ....	.....	12
33	"	29..	Arcadian.....	Glasgow...	.....	..	....	....	345	....	5	17	. .....	....	.....	....	.....	.....	14
34	"	29..	Montauk	London.....	.....	...	.....	.....	230	...	3	45	.....	....	.....	....	.. ....	....	9
35	"	29..	Lakonia.	Glasgow....	1,002	...	.....	.....	382	....	10	74	.....	....	.....	....	.....	... .	19
36	"	29..	Montevidian.....	London.....	.....	....	.....	. ..	76	....	1	14	.....	....	....	....	....	....	3
			Total for the Month		8,454	....	.....	.....	11,332	...	226	88	292	....	.....	...	3,262,304	1,057,520	499
31	.....	.....	Same date, 1900.....		2,314	....	.....	.....	11,426	....	219	35	727	...	.....	....	.....	.....	....
36	.....	.....	" 1899.....		3,365	....	.....	.....	12,983	.....	.....		674	....	.....	...	....	. . ...	.... .
46	.....	.....	" 1898.....		309	....	.....	.....	15,563	.....	.....		1,669	....	.....	....	.....	.....	.....
39	.....	.....	" 1897.....		2,736	....	.....	.....	18,073	....	...	...	1,530	...	.....	....	.....	.....	... .

*750 for Imperial Goverment to Cape Town.

MONTREAL, May 31, 1901.

POPE & MORGAN,
Inspectors.

Record of Live Stock shipped from Port of Montreal during Month of June, 1901.

Number.	Date.	Steamer.	Destination.	Sheep.		Cattle.				Fees Collected.	Horses.		Swine.		Hay for Feed.	Grain for Feed.	Number of Men.	Cattle in bond for United States.	Horses for South Africa.
				Shipped.	Lost.	Fat.	Stockers.	Total.	Lost.		Shipped.	Lost.	Shipped.	Lost.					
	1901.									$ cts.					Lbs.	Lbs.			
37	June 2.	Manr. City	Manchester	476				390		8 23							18		
38	" 2.	Monteagle	Bristol					350		5 25							14		
39	" 2.	Goncordia	Glasgow					540		8 10							32		
40	" 5.	Livonian	"					384		6 36	12						17		
41	" 6.	Marina	"	1,009				380		11 70	19						21		3
42	" 6.	Boliviana	London	661				372		8 89							17		
43	" 7.	Memnon	Bristol					303		4 55							12		
44	" 7.	Lake Champlain	Liverpool					433		6 54	1						19		
45	" 7.	Kildona	London					304		4 56							12		
46	" 9.	Lord Charlemont	Cardiff	159				264		4 75							11		
47	" 9.	Alcides	Liverpool					492		7 38							20		
48	" 11.	Manr. Trader	Manchester	192				412		7 14							17		
49	" 12.	Norwegian	Glasgow					352		7 18	38						16		
50	" 12.	Amarynthia	"	1,008				391		11 81	18						21		
51	" 13.	Brazilian	London					85		1 32	1						4		
52	" 14.	Cervona	"	345				519		10 46	19						23		
53	" 15.	Corinthian	Liverpool					557		8 35							22		
54	" 16.	Deganna	Bristol					289		4 34							12		
55	" 19.	Ontarian	Glasgow					400		6 00							16		
56	" 20.	Kastalia	"	994				394		10 88							21		
57	" 21.	Cebriana	"					334		5 01							14		
58	" 21.	Lake Superior	Liverpool					264		4 81	17						12		
59	" 21.	Montcalm	Bristol					350		5 85	12						14		
60	" 23.	Manr. Commerce	Manchester	878				353		9 69							18		
61	" 25.	Fremona	London	816				362		9 51							18		
62	" 26.	Larne	Cardiff	161				243		4 46							10		
63	" 26.	Sarmatian	Glasgow					401		6 87	17						17		
64	" 26.	Jacona	Newcastle					253		3 89							10		
65	" 29.	Tritonia	Glasgow	997				400		12 98	40						22		
66	" 29.	Rosarian	London	322				194		4 52							10		

67		Lycia	Bristol					299		4 50						12			
		Total for June		8,011				11,063		215 79	194				3,604,364	1,000,335	422	1,465	800
		Previously reported		8,454				11,332		226 88	292				3,262,204	1,057,320	499	1,441	750
		Total for this season		16,455				22,395		442 67	486				6,866,568	2,057,655	991	2,906	1,550
67		Same date, 1900						25,577			1,399							2,510	2,453
75		" 1899						28,837			1,553							7,802	
85		" 1898						28,899			2,894							1,723	
81		" 1897						37,011			3,032								

POPE & MORGAN,
Inspectors.

MONTREAL, June 30, 1901.

Record of Live Stock shipped from Port of Montreal during Month of July, 1901.

Number.	Date.	Steamer.	Destination.	Sheep.		Cattle.				Fees Collected.	Horses.		Swine.		Hay for Feed.	Grain for Feed.	Number of Men.	Cattle in bond for United States.	Horses for South Africa.
				Shipped.	Lost.	Fat.	Stockers.	Total.	Lost.		Shipped.	Lost.	Shipped.	Lost.					
	1901.									$ cts.									
68	July, 1	Rathlin Head	Belfast								18						1		
69	" 3	Arcadian	Glasgow	160				400			14						20		
70	" 4	Bellona	Newcastle					258									10	72	
71	" 4	Lakonia	Glasgow	573				399									19	200	
72	" 4	Man. Corporation	Manchester	800				342									17		
73	" 6	Monteagle	Bristol					335			15						15	261	
74	" 7	Hurona	London	910				457			35						24		*830
75	" 10	Livonian	Glasgow	350				401									18	62	
76	" 11	Marino	"	596				398			35						19		
77	" 11	Montevidean	London	97				236									10	84	
78	" 11	Man. City	Manchester	451				296									14		
79	" 12	Lake Champlain	Liverpool								20						2		
80	" 13	Devona	London	760				391									19	188	
81	" 14	Escalona	Newcastle					159									7		
82	" 14	Memnon	Bristol					300			2						12	95	
83	" 14	Lord Iveagh	Cardiff	150				359									15		
84	" 17	Huronian	Glasgow	149				401			31						20		
85	" 18	Amarynthia	"	642				402									22	100	
86	" 20	Corinthian	Liverpool	152				527									22	152	
87	" 20	Degama	Bristol					300									12	150	
88	" 21	Man. Trader	Manchester	295				387									17	50	††,000
89	" 21	Cervona	London	647				499									23	100	
90	" 24	Sicilian	Glasgow					401									16		
91	" 24	Kastalia	"	532				394			15						19	100	
92	" 25	Lord Charlemont	Cardiff	149				289									12	35	
93	" 25	Brazilian	London	632				217									11	104	
94	" 26	Lake Superior	Liverpool					300			18						14	50	
95	" 27	Montcalm	Bristol					350			21						14		
96	" 31	Ontarian	Glasgow					385									17		
97	" 31	Tritonia	"	521				397			3						18	136	
98	" 31	Brolivania	London	750				402									20		

	Total for July	9,316			10,347		232			3,252,850	919,250	479	1,848	1,830
	Previously Reported	16,465			22,395		486			6,866,568	2,057,655	991	2,906	1,550
	Total to date	25,718			32,742		718			10,119,418	2,976,905	1,470	4,754	3,380
103	Same date, 1900	13,259			39,812		1,651						3,513	2,453
114	" 1899	19,393			43,526		2,353						11,077	
132	" 1898	7,993			44,885		3,665						4,343	
129	" 1897	22,302			56,647		4,788							

*Per s.s. Rembraudt'. †Per s.s. Indian.

POPE & MORGAN,
Inspectors.

MONTREAL, July 31, 1901.

Record of Live Stock Shipped from Port of Montreal during Month of August, 1901.

Number.	Date.	Steamer.	Destination.	Sheep.		Cattle.				Fees collected.	Horses.		Swine.		Hay for Feed.	Grain for Feed.	Number of Men.	United States Cattle.	Horses for Africa.
				Shipped.	Lost.	Fat.	Stockers.	Total.	Lost.		Shipped.	Lost.	Shipped.	Lost.					
	1900.									$ cts.					Lbs.	Lbs.			
99	Aug. 2	Lake Ontario	Liverpool								14								
100	" 2	Fremona	London					466											
101	" 3	Numidian	Liverpool					207											
102	" 3	Lycea	Bristol					301											
103	" 4	Etolia	London					304											
104	" 4	Manchester Importer	Manchester	330				417											
105	" 6	Jacona	Newcastle					255											
106	" 7	Sarmatian	Glasgow	63				403											
107	" 7	Lakonia	"	809				405			17								
108	" 8	Rosarian	London					158											
109	" 8	Kildona	"					304											
110	" 11	Monteagle	Bristol					350			16								
111	" 11	Manchester Commerce	Manchester	661				389											
112	" 13	Bellona	Newcastle					272											
113	" 14	Cebriana	London	149				361											
114	" 14	Marino	Glasgow					404			15								
115	" 15	Orcadian	"	36				419											
116	" 15	Buenos Ayrean	Liverpool					574			19								
117	" 16	Raeburn	Cape Town																900
118	" 18	Memnon	Bristol					300											
119	" 18	Hurona	London	367				541											
120	" 22	Montevidean	"	147				405											
121	" 22	Amarynthia	Glasgow	147				407			23								
122	" 23	Lord Iveigh	Cardiff	151				364											
123	" 23	Manchester City	Manchester	230				660											
124	" 24	Devona	London	491				509			8								
125	" 24	Sicilian	Liverpool					578											
126	" 25	Degama	Bristol					300											
127	" 27	Pretorian	Liverpool					819											
128	" 29	Kastalia	Glasgow	481				418			2								
129	" 30	Manchester Trader	Manchester	424				409											
130	" 30	Lake Superior	Liverpool					360			16								
131	" 30	Iona	London	1,180				438											

		Total for August				5,606				12,497			130			3,780,428	774,655	530	809	900
		Previously reported				25,781				32,742			718			10,119,418	2,976,905	1,470	4,754	3,380
		Total to date				31,387				45,239			848			13,899,846	3,751,660	2,000	5,563	4,280
147		Same date,	1900			16,395				56,498			2,248						4,162	4,691
152		"	1899			30,810				56,240			3,143						11,636	
176		"	1898			14,110				59,580			4,312						4,532	
174		"	1897			29,118				75,176			6,309						8,942	

POPE & MORGAN,
Inspectors.

MONTREAL, August 31, 1901.

RECORD of Live Stock shipped from Port of Montreal during Month of September, 1901.

Number.	Date.	Steamer.	Destination.	SHEEP.		CATTLE.				Fees Collected.	HORSES.		SWINE.		Hay for Feed.	Grain for Feed.	Number of Men.	United States Cattle.	Horses for South Africa.
				Shipped.	Lost.	Fat.	Stockers.	Total.	Lost.		Shipped.	Lost.	Shipped.	Lost.					
	1901.									$ cts.					$ cts.	$ cts.			
132	Sept. 4.	Lord Charlemont	Cardiff					332										34	
133	" 5.	Brazilian	London	90				389											
134	" 5.	Numidian	Liverpool					419			18								
135	" 5.	Concordia	Glasgow					492										54	
136	" 6.	Manchester Shipper	Manchester	817				437			1								
137	" 7.	Corinthian	Liverpool					540			1								
138	" 8.	Lycia	Bristol					300											
139	" 8.	Cervona	London					521											
140	" 11.	Sarmatian	Liverp'l & G					700	*		19							28	
141	" 12.	Etolia	London					300											
142	" 12.	Lakonia	Glasgow	677				425										51	
143	" 13.	Lake Ontario	Liverpool					270											
144	" 13.	Fremona	London	718				387											
145	" 15.	Monteagle	Bristol					374										50	
146	" 16.	Jacona	Newcastle					254											
147	" 17.	Rosarian	London					252											
148	" 18.	Buenos Ayrean	Liverp'l & G					767	†										
149	" 19.	Marino	Glasgow	199				400			17								
150	" 19.	Maplemore	Cape Town																950
151	" 20.	Lake Champlain	Liverpool					487			37								
152	" 20.	Kildona	London					304											
153	" 22.	Boliviana	"	925				390											
154	" 23.	Memnon	Bristol	150				300											
155	" 25.	Manchester Commerce	Manchester	134				363										110	
156	" 25.	Orcadian	Glasgow					553											
157	" 26.	Amaryuthia	"	429				438			17								
158	" 27.	Ontarian	London					398											
159	" 28.	Montfort	Bristol	162				350											
160	" 28.	Aurona	London					555			1								
161	" 28.	Pretorian	Liverpool					818											

		Total for September	4,301				12,515				111				4,470,008	701,975	521	429	950
		Previously reported	31,387				45,239				848				13,899,846	3,751,560	2,000	5,563	4,280
		Total to date	35,688				57,754				959				18,369,854	4,453,535	2,521	5,992	5,230
184		Same date 1900	23,686				70,216				2,421								
186		" " 1899	43,758				65,494				3,695								
214		" " 1898	21,447				72,421				4,969								
220		" " 1897	42,423				91,396				7,938								

* 403 Liverpool, 297 Glasgow. † 469 Liverpool, 298 Glasgow.

POPE & MORGAN,
Inspectors.

MONTREAL, September 30, 1901.

Record of Live Stock shipped from Port of Montreal during Month of October, 1901.

Number.	Date.	Steamer.	Destination.	Sheep.		Cattle.				Fees collected.	Horses.		Swine.		Hay for Feed.	Grain for Feed.	Number of Men.	United States Cattle.	Horses for South Africa.
				Shipped.	Lost.	Fat.	Stockers.	Total.	Lost.		Shipped.	Lost.	Shipped.	Lost.					
	1901.									$ cts.					Lbs.	Lbs.			
162	Oct. 2.	Montevidean	London	115				200							3,192,245	488,960	440	818	818
163	" 3.	Man. Shipper	Manchester					565											
164	" 3.	Kastalia	Glasgow	176				395			20							32	
165	" 4.	Devona	London	135				551			6								
166	" 5.	Garth Castle	Havre	700															
167	" 6.	Lord Iveagh	Cardiff					380										50	
168	" 7.	Degama	Bristol	204				251										48	
169	" 9.	Numidian	Liverpool					420			1								
170	" 10.	Tritonia	Glasgow					402										51	
171	" 10.	Man. Trader	Manchester	149				351											
172	" 10.	Sicilian	Cape Town																818
173	" 11.	Lake Manitoba	Liverpool					460											
174	" 12.	Corinthian	"					540										98	
175	" 13.	Brazilian	London	609				93											
176	" 13.	Cervona	"					369										116	
177	" 15.	Lycia	Bristol					250										85	
178	" 16.	Sarmatian	Liverpool & Glasgow					*522			38								
179	" 16.	Lakonia	Glasgow	169				401			15							52	
180	" 18.	Lake Ontario	Liverpool					302			30								
181	" 19.	Lord Charlemont	Cardiff					332										59	
182	" 22.	Monteagle	Bristol					350										135	
183	" 24.	Fremona	London	450				342											
184	" 25.	Buenos Ayrean	Glasgow & Liverpool					†554			32							50	
185	" 25.	Lake Champlain	Liverpool					638											
186	" 25.	Marina	Glasgow	373				399			18							51	
187	" 26.	Etolia	London	770				172											
188	" 31.	Arcadian	Glasgow					338			22								
189	" 31.	Amarynthia	"					377			19								
190	" 31.	Rosarian	London	1,877				36											
		Total for October		5,727				9,950			201								

		Previously reported	35,688			57,754			959			18,369,854	4,453,535	2,521	5,992	5,230
		Total to date	41,415			67,704			1,160			21,562,099	4,942,495	2,961	6,810	6,048
217		Same date, 1900	29,411			81,976			2,710						5,603	3,751
215		" 1899	52,606			75,373			4,452						11,745	
260		" 1898	28,900			87,540			5,381						5,261	
269		" 1897	54,828			106,681			8,853						10,742	

* Liverpool, 260; Glasgow, 262 + Liverpool, 300; Glasgow, 245.

POPE & MORGAN,
Inspectors.

MONTREAL, October 31, 1901.

RECORD of Live Stock shipped from Port of Montreal during month of November, 1901.

Number.	Date.	Steamer.	Destination.	SHEEP.		CATTLE.				Fees Collected.	HORSES.		SWINE.		Hay for Feed.	Grain for Feed.	Number of Men.	United States Cattle.	Horses for South Africa.
				Shipped.	Lost.	Fat.	Stockers.	Total.	Lost.		Shipped.	Lost.	Shipped.	Lost.					
	1901.									$ cts.									
191	Nov. 1	Jacona	Newcastle					100											
192	" 1	Iona	London	1,650				357											
193	" 1	Lake Superior	Liverpool					230			31								
194	" 2	Pretorean	"					466											
195	" 5	Memnon	Bristol					161										100	
196	" 7	Sardinian	Glasgow					202			17								
197	" 7	Kastalia	"	173				299											
198	" 7	Ontarian	London	1,251															
199	" 7	Hurona	"	1,168				143											
200	" 10	Manchester Commerce	Manchester	151				337											
201	" 14	Alcides	Glasgow					276											
202	" 14	Pomeranian	"					217			21							108	
203	" 15	Kildona	London	1,217				165											
204	" 15	Lake Manitoba	Liverpool					250										38	
205	" 16	Manchester City	Manchester	699				550											
206	" 16	Corinthian	Liverpool					525			9								
207	" 16	Dagama	Bristol	328				160			2							100	
208	" 16	Montevidian	London	1,713				53											
209	" 20	Sarmatian	Glasgow	164				217			19							61	
210	" 20	Manchester Trader	Manchester	300				379											
211	" 22	Lakonia	Glasgow	617				316			39								
212	" 22	Devona	London	3,254				166			28								
213	" 22	Lake Ontario	Liverpool					318			12								
214	" 23	Lycia	Bristol	458				200										100	
		For the month		13,123				6,087			178				2,257,260	432,320	339	507	
		Previously reported		41,415				67,704			1,160				21,562,099	4,942,495	2,961	6,810	6,048
		Total for the season 1901		54,538				73,791			1,338				23,819,359	5,374,815	3,300	7,317	6,048

248	Same date 1900	34,838				92,180			2,833							5,688	3,751
239	" 1899	58,277				81,804			4,739							11,745	
298	" 1898	34,991				99,189			5,283							5,719	
304	" 1897	60,638				117,247			10,051							12,221	
242	" 1896	76,520				96,448			10,421								
224	" 1895	210,607				94,972			13,303								
229	" 1894	139,780				88,635			5,623								
235	" 1893	3,743				83,322			1,666								
260	" 1892	15,914				98,731			1,739								

POPE & MORGAN,
Inspectors.

MONTREAL, November 23, 1901.

Record of Live Stock shipped from Port of Halifax, N.S., during Month of February, 1901.

Number.	Date.	Steamer.	Destination.	Sheep.		Cattle.				Fees Collected.	Horses.		Swine.		Hay for Feed.	Grain for Feed.	Number Men.
				Shipped.	Lost.	Fat.	Stockers.	Total.	Lost.		Shipped.	Lost.	Shipped.	Lost.			
	1901.									$ cts.					Lbs.	Lbs.	
18	Feb. 19...	Manchester Trader..	Manchester.....	.....	.....	*59	.....	59	...	0 89	.....	.....	.....	.....	9,000	8,500	3

*This lot of cattle were intended to be shipped at St. John, N.B., but train was delayed by snow, and they did not arrive until after vessel had sailed. They were forwarded by rail to meet the vessel at this point.

GEO. McKERRON,
Deputy Port Warden.

Record of Live Stock shipped from Port of St. John, N.B., during Month of December, 1900.

	1900.																
1	Dec. 8..	Alcides.....	Glasgow.....	.....	.....	263	.....	263	237	4 70	15	15	.....	.....	75,100	22,972	11
2	" 8..	Lake Superior	Liverpool.....	1,263	124	225	20	245	7	10 00	.....	.....	.....	.....	93,150	36,148	15
3	" 9..	Manch'r Commerce..	Manchester....	926	29	243	.....	243	1	8 28	.....	.....	.....	.....	103,855	32,684	13
....	.....	Lake Ontario.....	Liverpool.....	329	3	281	.....	281	2	5 87	.....	.....	.....	.....	76,350	26,830	13
....	.....	Concordia	Glasgow.....	.....	.....	360	.....	360	1	5 40	.....	.....	.....	.....	97,664	28,808	14
....	.....	Montford	Liverpool.....	800	3	309	.....	309	1	8 64	.....	.....	.....	.....	107,495	36,715	16
....	.....	Lake Champlain....	"	.....	.....	.....	.....	.....	.....	0 65	13	.....	.....	.....	3,265	1,590	1
		Total.	.....	3,318	159	1,681	20	1,701	249	43 54	28	15	.....	.....	556,879	185,747	83

J. F. HARDING,

Record of Live Stock shipped from Port of St. John, N.B., during Month of January, 1901.

	1901.																
8	Jan. 5	Amaryntha	Glasgow			315		315	5	5 43	14	1			89,025	26,674	13
9	" 5	Manchester Trader	Manchester			387		387	11	5 81					116,380	24,606	15
10	" 8	Manchester Shipper	"			386		386		5 79					123,555	30,796	15
11	" 18	Lake Superior	Liverpool	314		339		339		6 66					89,970	31,282	15
12	" 19	Alcides	Glasgow			278		278	25	4 17					75,450	22,280	11
13	" 19	Manchester City	Manchester	320		411		411		7 77					131,490	36,910	17
14	" 25	Lake Ontario	Liverpool			249		249	5	3 84	2				59,895	18,500	10
				634		2,365		2,365	46	39 47	16	1			685,765	191,048	96

Record of Live Stock shipped from Port of St. John, N.B., during month of February, 1901.

15	Feb. 1	Montfort	Liverpool	941	10	468		468	1	11 73					143,485	49,684	23
16	" 2	Concordia	Glasgow	157	4	337		337	4	5 85					95,846	29,790	14
17	" 8	Lake Champlain	Liverpool			284		284	1	5 06	16				74,765	24,500	12
18	" 11	Manchester Import	Manchester	295	0	355		355	2	8 51	34	0			124,015	35,878	18
19	" 17	Degama	Liverpool	898	44	214		214	0	7 70					77,835	29,612	12
20	" 17	Amaryntha	Glasgow			364		364	4	6 36	18	0			103,150	31,252	15
21	" 17	Manchester Trader	Manchester	309	5	298		298	2	6 02					115,070	32,880	15
22	" 22	Lake Superior	Liverpool	681	9	396		396	2	9 35					110,155	39,740	19
23	" 28	Salacia	Glasgow			345		345	0	6 03	17	2			93,240	27,760	15
		Total		3,281	72	3,061		3,061	16	66 61	85	2			937,561	301,096	143

Record of Live Stock shipped from Port of St. John, N.B., during month of March, 1901.

24	March 1	Lake Ontario	Liverpool	320		416		416	2	7 84					109,010	37,800	18
25	" 2	Manchester City	Manchester	1,509	8	415		415	2	13 78					165,075	54,375	23
26	" 16	Cancordia	Glasgow			350		350	8	5 25					95,090	27,920	14
27	" 22	Lake Champlain	Liverpool			308		308	0	4 62					53,960	24,640	12
28	" 27	Manchester Com	Manchester	320	0	313		313	1	6 30					102,630	29,520	14
29	" 29	Alcides	Glasgow			355		355	1	6 13	16	0			99,990	29,960	15
		Total		2,149	8	2,157		2,157	14	4 392	16	0			625,755	204,215	96

F. J. HARDING,

RECORD of Live Stock shipped from Port of St. John, N.B., during Month of April, 1901.

Number.	Date.	Steamer.	Destination.	SHEEP.		CATTLE.				Fees Collected.	HORSES.		SWINE.		Hay for Feed.	Grain for Feed.	Men
				Shipped.	Lost.	Fat.	Stockers.	Total.	Lost.		Shipped.	Lost.	Shipped.	Lost.			Number.
	1901.									$ cts.					Lbs.	Lbs.	
30	April, 2	Man. Importer	Manchester	899	8	352	.....	352	2	11 48	34	....	.....	.....	141,940	43,870	20
31	" 5	Lake Superior	Liverpool	1,379	...	323	.....	323	....	11 74	.....	....	.....	.....	119,730	49,274	19
32	" 10	Man. Corporation	Manchester	.....	....	367	.....	367	....	5 50	.....	....	.....	.....	110,265	29,320	15
33	" 11	Salacia	Glasgow	.....	....	324	.....	324	....	6 56	34	....	.....	.....	97,685	29,414	15
34	" 12	Lake Ontario	Liverpool	300	....	418	.....	418	5	7 77	.....	....	.....	.....	109,185	37,700	18
35	" 20	Man. City	Manchester	1,344	3	412	.....	412	1	12 90	.....	....	.....	.....	161,820	51,900	23
36	" 27	Concordia	Glasgow	.....	....	356	.....	356	....	6 14	16	....	.....	.....	100,576	30,358	15
		Total for April		3,922	11	2,552	.....	2,552	8	62 09	84	....	.....	.....	841,201	271,836	125

F. J. HARDING,
Agent.

ST. JOHN, N.B., April 30, 1901.

RECAPITULATION.

Cattle Shipments during Season of 1900-1901.

Months.	Sheep.		Cattle.				Fees Collected.	Horses.		Hay for Feed.	Grain for Feed.	Number of Men.
	Shipped.	L.	Fat.	Stockers.	Total.	Lost.		Shipped.	Lost.			
1900.							$ cts.			Lbs.	Lbs.	
December	3,318	159	1,681	20	1,701	249	43 54	28	15	556,879	185,747	83
1901.												
January	634	....	2,365	....	2,365	46	39 49	16	1	685,765	191,048	96
February	3,281	72	3,061	....	3,061	16	66 61	85	2	937,561	301,096	143
March	2,149	8	2,157	....	2,157	14	43 92	16	....	625,755	204,215	96
April	3,922	....	2,552	....	2,552	....	62 09	84	....	841,201	271,836	125
Totals	13,304	239	11,816	20	11,836	325	255 65	229	18	3,647,161	1,153,942	543

F. J. HARDING,
Agent.

ST. JOHN, N.B., June 6, 1901.

APPENDIX

STATEMENT of Expenditure by the Marine Department

	1868.	1869.	1870.	1871.	1872.	1873.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Maintenance of lights—						
Above Montreal	40,561 28	42,306 69	46,289 05	44,054 01	57,609 16	61,036 47
Montreal District	23,053 56	25,762 54	21,669 49	22,453 52	22,369 00	31,143 14
Below Quebec	45,615 35	41,651 73	43,730 61	31,582 75	41,936 00	65,645 00
Nova Scotia	46,460 72	56,394 88	43,682 86	76,230 77	67,862 24	100,953 80
New Brunswick	20,488 00	23,893 00	27,485 14	20,542 29	23,369 12	29,266 85
Prince Edward Island						
British Columbia						13,207 09
Construction—						
Above Montreal	3,136 15		2,976 83	8,770 55	6,940 45	18,999 38
Quebec	7,823 75	7,492 59	1,543 06		57,818 35	39,303 87
Nova Scotia	22,041 42	6,965 80	18,967 23	10,948 31	34,760 12	90,181 79
New Brunswick			11,555 91	8,735 73	9,561 14	16,691 06
Prince Edward Island						
British Columbia						
Dominion steamers—						
Quebec	69,026 73	37,176 02	34,549 49	59,797 05	47,500 00	51,758 05
Nova Scotia	14,778 92	26,603 94	19,759 96	13,139 86	20,999 63	24,999 57
New Brunswick						
Prince Edward Island						
British Columbia					12,115 96	15,984 72
Examinations of masters and mates			908 12	1,407 66	4,312 07	6,466 18
Hudson's Bay expedition						
Investigations into wrecks			140 00		874 00	1,068 89
Marine Hospital, Quebec	19,977 36	19,221 45	21,618 73	19,823 18	21,000 00	21,000 00
Marine hospitals	1,070 86	15,615 71	15,652 62	15,728 93	53,536 16	27,150 43
Meteorological service	8,200 00	8,950 00	8,950 00	9,379 82	12,618 15	18,830 54
Registration of Canadian shipping						
Removal of obstructions			2,350 07	1,000 00		
Rewards for saving life					2,284 32	1,975 13
Signal service						
Steamboat inspection	7,106 93	7,999 00	7,396 96	8,321 00	8,500 00	13,266 00
Survey, Georgian Bay						
Water Police, Montreal	27,445 35	10,238 71	9,323 31	8,030 00	10,000 00	14,453 87
" Quebec		12,633 59	9,038 62	9,370 73	10,348 00	18,200 00
Civil Government	15,083 88	18,064 25	19,401 05	20,220 96	22,644 52	25,336 04
Steam communication—						
Between Quebec and Maritime Provinces						
Between Prince Edward Island and Mainland						
Purchase of steamer to replace—						
Glendon						
Lady Head						
Winter mail service, P.E.I.						
Tidal observations						
Gratuities						
Survey, Burrard Inlet						
Export cattle trade						
	371,070 56	360,899 90	367,129 11	389,537 12	518,958 49	706,817 92

No. 7.

from Confederation to June 30, 1901.

1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
60,798 75	71,937 18	68,344 18	65,421 00	73,175 11	74,587 78	65,518 61	65,541 21	71,048 50
20,939 13	15,000 00	12,999 48	15,998 00	15,996 00	14,917 95	16,523 88	14,326 36	21,643 05
102,056 09	110,362 00	98,792 93	89,980 41	96,904 00	93,178 61	96,703 87	89,781 29	91,098 66
114,711 91	114,344 51	143,125 56	128,496 00	132,888 95	120,951 33	116,189 60	128,918 59	137,846 15
53,459 04	60,119 02	62,551 61	50,998 00	58,989 00	57,499 02	61,252 82	63,921 90	66,073 00
3,357 71	12,584 64	13,730 53	11,817 00	16,986 66	12,158 72	15,288 17	12,997 36	16,985 72
18,519 50	15,983 72	17,175 97	15,853 00	18,948 78	15,152 73	15,576 99	17,570 72	17,803 00
24,461 86	14,286 65	13,320 40	16,267 98	7,207 96	11,993 75	13,297 81	14,180 02	13,581 00
41,950 82	19,325 00	24,336 47	12,945 29	12,776 47	4,154 58	7,797 75	7,539 76	3,731 31
51,867 94	43,898 63	42,214 55	25,550 00	13,500 00	17,386 97	7,069 01	7,757 52	13,355 00
31,572 60	8,842 97	17,819 85	7,083 82	12,028 13	22,598 14	4,985 53	4,578 52	2,253 80
.....	.....	11,829 61	17,752 00	2,504 47	2,560 88	6,074 50	8,150 06	3,092 00
4,353 93	8,799 07	8,477 67	29 66	.....	.....	.....	8,655 39	3,237 90
64,490 00	79,043 70	62,971 49	49,987 66	42,683 00	44,972 79	49,318 93	64,973 00	44,923 98
30,008 99	22,992 62	133,826 08	38,739 39	43,027 00	42,016 53	49,438 93	36,700 00	31,049 74
.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	16,241 26	61,782 63	28,933 63	16,332 05	14,429 52	15,139 95	23,911 97
10,555 67	41,796 74	10,156 56	16,095 90	12,193 40	7,460 68	9,733 34	11,788 09	8,504 61
4,520 19	5,696 62	4,,672 08	4,050 00	4,249 76	4,250 12	4,253 43	3,888 41	3,982 00
2,313 31	366 00	466 41	342 65	500 00	1,691 00	676 73	310 48	863 19
20,456 45	21,994 75	23,795 85	19,965 97	19,987 50	20,791 77	12,991 23	19,964 33	19,938 12
45,986 87	37,111 67	37,155 72	42,449 55	37,487 10	37,445 57	35,040 00	32,218 94	33,162 45
36,700 99	33,580 00	45,560 03	44,871 38	46,050 24	45,706 13	45,554 51	46,163 54	47,464 07
272 30	1,096 46	412 06	842 14	1,435 10	239 26	257 75	607 43	2,013 28
.....	450 00	.....	203 00	462 00	305 86	825 00	150 00	1,116 51
4,931 78	3,552 86	2,292 20	1,958 55	4,071 00	2,533 10	2,263 15	1,806 13	2,212 00
1,000 00	.....	.....	.....	.....	.....	.....	.....	.....
10,291 58	12,200 00	13,081 86	13,073 01	13,228 38	13,076 46	11,854 34	12,211 65	14,835 00
12,370 86	13,395 00	14,090 00	13,524 29	14,062 00	13,462 74	13,131 06	21,953 26	21,994 74
26,526 66	24,500 00	27,136 68	21,482 08	23,498 06	23,023 26	22,094 48	13,497 81	20,221 82
30,087 23	31,326 18	32,789 18	32,304 12	32,682 50	36,610 19	35,083 95	36,447 50	36,789 46
15,000 00	10,000 00	10,000 00	.....	.....	.....	.....	.....	.....
.....	.....	750 00	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
845,150 09	844,586 09	970,146 27	820,054 38	786,156 23	755,359 47	723,360 89	761,730 62	774,831 53

STATEMENT of Expenditure by the Marine Department

	1883.	1884.	1885.	1886.	1887.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Maintenance of lights—					
Above Montreal	70,116 68	70,788 27	70,697 89	85,713 98	75,690 74
Montreal District	22,260 32	22,946 43	23,262 94	33,289 28	16,735 49
Below Quebec	102,784 99	101,302 35	118,856 94	131,095 29	131,540 80
Nova Scotia	150,793 17	142,909 72	137,439 40	143,153 24	117,708 53
New Brunswick	75,946 92	86,670 70	92,130 28	76,046 63	96,425 28
Prince Edward Island	17,907 27	19,059 62	20,218 83	22,282 52	17,852 13
British Columbia	18,349 06	18,107 54	15,497 76	14,783 75	16,250 43
Cape Race					4,453 25
Construction—					
Above Montreal	9,782 27	18,432 63	27,977 42	36,678 16	18,383 20
Quebec	9,672 50	3,168 48	4,354 87	5,877 84	1,260 00
Nova Scotia	9,422 75	12,489 35	4,352 42	5,905 17	5,330 89
New Brunswick	1,022 57	2,868 70	7,667 42	2,421 66	5,280 75
Prince Edward Island	1,934 49	2,158 60	879 40		384 60
British Columbia	1,005 26	2,830 38	5,223 11	4,942 70	321 84
Queen's Printer					26 58
Dominion steamers—					
Quebec	45,156 13	43,019 13	51,092 98	51,485 03	50,714 52
Nova Scotia	37,841 07	27,726 60	42,921 27	30,283 27	32,287 10
New Brunswick				24,633 26	14,337 23
Prince Edward Island	19,680 00	19,539 52	33,962 54	20,927 58	19,987 67
British Columbia	25,484 00	16,111 83	12,485 07	13,430 69	10,802 07
Department					13,288 83
Examinations of masters and mates	4,021 20	5,580 79	6,656 44	5,239 28	4,858 98
Hudson's Bay expedition		480 69	71,374 69	35,217 10	14,762 61
Investigation into wrecks	875 64	830 12	385 15	592 63	520 14
Marine hospital, Quebec	19,998 53	19,990 34	19,996 68	16,047 95	19,706 96
Marine hospitals	29,880 78	31,401 30	45,371 29	32,229 02	32,545 35
Meteorological service	51,990 25	56,418 16	56,625 40	56,898 33	57,140 74
Registration of Canadian shipping	168 84	189 27	237 88	157 13	233 13
Removal of obstructions	35 80	342 76	2,259 21	1,237 34	4,190 83
Rewards for saving life	2,534 60	2,614 91	5,221 15	8,147 22	7,363 94
Signal service	3,365 33	6,704 17	3,881 05	4,622 00	5,082 17
Steamboat inspection	16,209 00	21,893 28	23,235 04	21,775 57	22,847 80
Hydrographic surveys	77 81	26,745 54	20,454 68	17,759 36	21,592 55
Water Police, Montreal	15,798 24	19,021 93	17,683 59	20,933 75	17,413 47
Quebec	22,520 41	22,958 79	20,399 33	22,922 82	22,035 65
Civil Government	37,988 39	38,775 00	29,900 83	30,453 57	37,193 62
Steam communication—					
Between Quebec and Maritime Provinces					
Between Prince Edward Island and Mainland					
Repairs to wharfs					
Purchase of steamers to replace—					
Stanley	395 55	56,164 71	47,238 03		
Glendon					
Lady Head				5,985 42	6,312 93
Winter mail service, P.E.I.					
Tidal observations					
Gratuities					
Survey, Burrard Inlet					
Export cattle trade					
Survey, Bay of Quinté					
Relief of distressed Canadians					
Manning ships					
Widow of late A. Warner					
McDonald Bros					
Parliamentary Returns					
Investigating effect of Chicago drainage canal					
John McDonald					
Longitude, Montreal					
Marine biological station					
	825,010 82	927,241 61	1,129,901 14	980,120 59	917,557 34

SESSIONAL PAPER No. 21

from Confederation to June 30, 1901—*Continued.*

1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
85,588 70	72,721 23	84,035 65	93,180 72	87,033 61	87,598 15	78,090 69	82,541 16
17,510 17	12,285 79	118,750 70	122,471 89	116,531 27	120,404 19	124,348 80	124,763 81
108,278 67	112,690 20						
133,009 92	140,197 15	139,459 56	139,916 83	148,815 26	150,445 26	137,339 73	140,977 53
73,465 49	78,285 79	61,608 91	61,089 31	66,886 69	71,079 46	59,917 96	69,654 46
14,796 62	19,118 51	16,968 80	19,000 46	17,069 98	16,819 64	15,569 39	17,976 67
19,604 63	16,877 12	16,411 49	19,595 22	26,858 68	24,413 27	27,240 77	21,734 18
5,124 20	7,358 01	.....	.....	.....	.....	.....	.....
6,341 97	8,623 76		9,796 28	21,704 05	8,766 62	12,581 15	2,699 40
2,287 86	12,203 06		3,723 14	809 27	10,097 18	4 743 13	3,004 14
5,533 48	6,039 91		4,596 94	1,965 16	4,381 24	3,104 77	4,737 03
1,542 61	2,966 36	23,863 09	208 16	1,845 35	1,271 15	115 45	1,597 80
.....	.....		410 00	1 56	.....	1,604 00	.....
5,918 00	1,890 00		14,417 25	9,478 81	2,958 61	6,356 43	180 83
.....	40 14		.....	.....	.....	.....	.....
150,659 19	126,629 33	114,956 20	111,437 05	145,899 61	163,097 46	178,183 97	169,661 64
5,063 96	4,381 04	4,117 83	4,255 24	6,363 88	4,116 99	3,745 33	2,757 29
165 00	.....	.....	.....	.....	.....	.....	.....
513 91	516 67	888 94	1,172 77	603 21	643 49	850 81	351 15
18,777 62	18,643 14	10,279 08	751 75	.....	.....	.....	.....
30,667 67	33,089 20	31,450 03	33,303 37	34,106 83	35,757 07	38,403 94	38,589 05
59,986 10	58,577 07	58,452 10	62,457 10	67,138 06	64,165 60	66,440 96	64,588 34
897 02	179 21	647 52	1,207 07	462 59	1,476 19	394 00	207 40
2,500 94	3,603 65	5,737 26	3,633 65	2,878 68	1,554 53	202 02	2,217 36
6,825 48	5,503 44	8,150 92	4,952 20	6,398 93	7,432 64	8,014 67	6,591 34
4,441 59	5,092 54	4,976 80	4,700 79	5,014 42	5,040 58	4,668 93	5,311 74
21,430 45	22,213 03	20,989 52	22,183 76	22,736 59	24,386 95	25,961 36	26,385 88
19,424 14	17,808 46	17,969 23	17,677 51	16,451 10	17,542 11	31,461 76	12,653 28
18,725 95	16,948 82	13,164 00	573 80	.....	.....	.....	.....
18,553 57	14,698 68	8,620 61	7,379 85	6,161 60	5,436 23	.....	.....
32,728 78	43,501 96	42,835 78	43,253 67	43,195 31	56,477 23	54,988 88	71,373 82
.....	.....	.....	.....	.....	.....	.....	.....
.....	143,505 60	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	84 90	1,007 67	824 38
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
7,740 25	1,842 47	2,752 07	7,012 70	3,309 44	4,376 96	6,497 03	6,138 18
.....	.....	244 75	1,888 71	711 59	5,099 17	10,172 61	11,507 24
.....	200 00	80 00	1,025 00	.....	.....	3,261 32	.....
.....	.....	.....	1,690 12	2,580 45	.....	.....	.....
.....	.....	.....	520 85	1,411 57	1,711 73	1,350 83	2,268 74
.....	.....	.....	.....	.....	2,085 45	.....	.....
.....	.....	.....	.....	.....	.....	.....	7 30
.....	.....	.....	.....	.....	.....	.....	500 00
.....	.....	.....	.....	.....	.....	.....	160 00
.....	.....	.....	.....	.....	.....	.....	4,000 00
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
883,250 85	1,023,801 34	807,417 53	885,410 11	861,426 80	898,720 03	905,654 34	895,828 28

STATEMENT of Expenditure by the Marine Department from Confederation to June 30, 1901—*Concluded.*

—	1896.	1897.	1898.	1899.	1900.	1901.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Maintenance of lights—						
Above Montreal	87,256 28	80,961 06	87,841 22	92,751 23	82,810 92	93,708 16
Montreal District	124,143 66	126,186 00	116,279 88	136,134 79	122,112 42	132,147 88
Below Quebec						
Nova Scotia	123,234 65	124,671 19	126,386 00	65,072 35	122,414 86	142,359 01
New Brunswick	63,018 64	56,771 02	67,369 98	128,674 15	52,491 93	65,247 80
Prince Edward Island	17,988 15	16,429 23	18,112 93	20,589 81	42,878 40	28,031 85
British Columbia	24,770 44	25,679 52	26,862 03	29,530 20	33,545 95	31,938 25
Cape Race						
Construction—						
Above Montreal	11,993 84	9,527 84	6,867 69	3,729 62	7,094 64	12,499 99
Quebec	3,300 00	296 26	3,649 90	37,838 80	40,319 03	17,060 03
Nova Scotia	1,842 94	61 71	4,067 99	3,123 16	4,884 22	12,832 69
New Brunswick	200 00	1 60	1,423 34	91 49		266 34
Prince Edward Island		452 90	1,409 60	616 96	5,586 91	922 00
British Columbia	225 50	569 99	6,414 19	19,305 60		4,160 74
General account						660 03
Dominion steamers—						
Quebec						
Nova Scotia						
New Brunswick	145,315 28	136,940 11	117,644 39	145,270 75	180,430 65	195,484 75
Prince Edward Island						
British Columbia						
Department						
Examinations of masters and mates	4,062 82	3,536 29	3,335 40	3,568 26	3,750 69	3,730 25
Hudson's Bay expedition		19,091 32	27,050 66			
Investigation into wrecks	483 98	565 25	312 77	982 17	773 06	1,022 65
Marine Hospital, Quebec						
Marine hospitals	36,682 96	37,984 71	38,162 56	37,353 29	37,743 30	36,008 75
Meteorological service	66,600 29	67,397 71	64,135 71	73,148 05	67,692 42	74,082 76
Registration of Canadian shipping	517 60	531 55	818 33	966 48	266 43	546 62
Removal of obstructions	456 38	631 86	704 17	745 49	252 19	1,000 00
Rewards for saving life	8,004 38	5,955 19	5,081 40	7,049 09	7,007 97	8,519 92
Signal service	5,338 76	5,986 12	4,993 88	6,067 49	5,906 83	8,950 17
Steamboat inspection	26,321 27	26,837 83	26,342 29	28,035 49	27,965 72	29,247 59
Hydrographic surveys	15,099 63	12,352 99	15,306 66	13,664 97	12,660 98	16,170 29
Civil Government		74,801 37	74,644 05	72,833 97	63,331 61	68,776 95
Repairs to wharfs	2,644 69	1,795 56	1,618 97		697 87	1,261 06
Purchase of steamer Minto				144,365 26	41,951 88	
Winter mail service, P.E.I.	7,779 69	21,931 05	9,575 31	8,439 70	1,503 70	2,093 93
Tidal observations	9,627 45	13,166 20	3,081 45	5,186 35	4,372 18	7,060 20
Gratuities						
Export cattle trade	2,887 24		2,499 80	2,757 85	2,762 24	2,746 84
Manning ships	746 89					
Parliamentary returns	291 08					133 32
Investigating effect of Chicago drainage canal	2,500 00	*	*	*		1,659 14
John Macdonald	200 00					
Unforeseen expenses					3,452 21	2,630 62
Marine biological station				5,709 10	739 61	1,990 58
	793,634 49	867,772 90	856,192 50	1,102,601 91	982,561 97	1,029,925 32

* Salaries temporary clerks.

APPENDIX No. 8.

STATEMENT relating to the Wharfs under the control of the Department, on June 30, 1901.

Locality.	Wharfinger.	Date of Appointment of Wharfinger.	Remuneration allowed.	Amount deposited to credit of Receiver General.
Ontario.				$ cts.
Cockburn Island	Alfred Monck	May 20, 1890.	25 p.c. of collections	46 34
Goderich	W. Marlton	Feb. 14, 1894.	25 "	402 15
Hilton, St. Joseph Id., Algoma	E. Stubbs	June 20, 1898.	50 "	125 57
Kingsville	A. E. Malott	Nov. 6, 1895.	25 "	3 06
Morpeth	C. Stammers	Aug. 1, 1894.	25 "	
North Bay	W. McKenzie	Oct. 9, 1900.	25 "	3 66
Port Rowan	John Collett	May 2, 1898.	25 "	
Richard's Landing, Algoma	R. Armstrong	Mar. 11, 1899.	25 "	208 49
Rondeau	W. R. Fellows	Dec. 17, 1888.	25 "	83 65
Sault Ste. Marie	Geo. A. Boyd	April 9, 1897.	$142 per month during season of navigation	1,055 49
Southampton	Geo. McVittie	Aug. 16, 1895.	25 p.c. of collections	35 18
Summerstown	Under lease			
Thessalon, Algoma	F. Leightfield	May 28, 1897.	25 p c. of collections	208 30
Wiarton	H. R. A. Ely	Dec. 10, 1890.	25 "	100 60
			Total	2,272 49
Quebec.				
Agnes	L. A. Roy	Nov. 27, 1891.	25 p.c. of collections	
Anse St. Jean	F. Savoy	Mar. 13, 1895	25 " *	84 40
Baie St. Paul	Vacant		25 "	
Baie St. Paul, Isolated Block.	A. Simard	Aug. 25, 1891.	25 "	139 65
Beauport	D. Giroux	Nov. 11, 1896.	25 "	
Berthier	E. Gaumond	July 5, 1897.	50 "	48 95
Cap à-l'Aigle	Jos. Guay	Oct. 7, 1896.	25 "	38 86
Carleton	Jos. E. Cullen	Mar. 25, 1896.	$50 per annum	17 85
Cascades	Moïse Leroux	Oct. 20, 1897.	25 p.c. of collections	
Cedars	J. Reay	April 29, 1898.	25 "	
Chicoutimi	Thomas Tremblay	May 23, 1901.	25 "	107 20
Coteau du Lac	M. St. Amour	Sept. 21, 1896.	25 "	42 07
Coteau Landing	J. A. Prieur	May 25, 1897.	25 "	
Echo Vale, Lac Megantic	D. P. Matheson	May 16, 1894.	25 "	
Esquimaux Point	Vacant			
Grand River	Geo. Beaudin	Nov. 16, 1896.	25 "	165 38
Isle aux Grues	Jos. Painchaud	Feb. 17, 1890.	25 "	0 75
Isle Perrot	Roger Leduc	Oct. 20, 1897.	25 "	
Knowlton's Landing	L. Knowlton	Nov. 26, 1897.	25 "	
Lacolle	R. J. Robinson	Mar. 8, 1894.	25 "	8 25
Les Eboulements	M. Tremblay	Sept. 4, 1894.	25 "	108 63
L'Islet	Octave Morin	Feb. 8, 1893.	25 "	
Longueuil	Eusèbe Denicourt	May 15, 1901.	25 "	28 36
Magog	Edward Addy	June 20, 1898.	25 "	
Matane	Louis Durette	Aug. 25, 1900.	25 "	93 03
Murray Bay	Elie Maltais	" 15, 1893.	25 "	217 28
New Carlisle	John C. Hall	June 4, 1889.	25 "	94 65
Percé	T. W. Flynn	Jan. 19, 1893.	25 "	10 72
Port Daniel	C. Sweetman	Mar. 2, 1901.	$50 per annum	30 74
Port Lewis	Sam. Carson	Sept. 21, 1899.	25 p.c. of collections	
Rimouski	Chas. Lepage	July 24, 1894.	25 "	

* Commission on collections not to exceed $200 per annum.

STATEMENT relating to Wharfs, &c.—*Continued.*

Localjty.	Wharfinger.	Date of Appointment of Wharfinger.	Remuneration allowed.	Amount deposited to credit of Receiver General.
Quebec—Con.				8 cts.
Rivière Ouelle	J. Hudon dit Beaulieu	Nov. 28, 1892.	25 p.c. of collections	
Rivière du Loup	P. E. Tremblay	May 26, 1900.	25 "	181 49
St. Anicet	S. Dupuis	Sept. 14, 1896.	25 "	
St. Alphonse de Bagotville	Abel Tremblay	July 7, 1891.	25 "	215 91
St. Jean d'Orleans	L. Lachance	Sept. 26, 1896.	25 "	90 37
St. Jean Port Joli	J. Pelletier	" 14, 1896.	25 "	
Ste. Cécile du Bic	Olivier Ouellette	Aug. 24, 1900.	25 "	39 84
St. Laurent d'Orleans	Ed. Chabot	" 25, 1894.	25 "	
St. Thomas de Montmagny	L. L. Dionne	Oct. 22, 1896.	25 "	1 76
St. Zotique	J. M. Leroux	Sept. 21, 1896.	25 "	
Tadousac	A. Christiansen	Oct. 20, 1897.	25 "	104 67
Trois Pistoles	D. Damour	May 10, 1886.	25 "	
Valois Point	L. Gastonguay	Oct. 20, 1897.	25 "	
Ville Marie	Jules, Maillard	Feb. 2, 1899.	25 "	
			Total	1,870 81
Nova Scotia.				
Arisaig	H. R. McAdam	Dec. 30, 1898.	25 p.c. of collections	17 00
Avonport	Robert Shaw	Nov. 23, 1888.	25 "	1 29
Babbins Cove	Alex. Thomas	Oct. 20, 1897.	25 "	
Barrington	J. H. Christie	Aug. 31, 1896.	25 "	217 58
Bass River	Jothan Fulton	Jan. 6, 1898.	25 "	
Bayfield	W. McDonald	Oct. 30, 1894.	25 "	33 97
Belliveau Cove	St. Clair Thérieau	Nov. 24, 1892.	25 "	87 06
Broad Cove	John Teal	June 12, 1893.	25 "	
Broad Cove Marsh	Hugh McDonald	Oct. 19, 1892.	25 "	
Brooklyn	F. T. Gardiner	" 20, 1882.	25 "	
Canada Creek	Henry Dickey	Aug. 12, 1899.	25 "	5 35
Cape Cove	J. A. Ellis	May 14, 1897.	25 "	13 31
Centreville	Alfred Ward	" 29, 1897.	25 "	101 77
Chipman's Brook	John Kirby	" 24, 1900.	25 "	
Church Point	Chas. F. Belliveau	Aug. 20, 1892.	25 "	109 67
Cranberry Head	Abram Thurston	Feb. 16, 1889.	25 "	
Cribbens Pier, Antigonish Hr.	A. R. Boyd	Oct. 2, 1895.	25 "	
Delap's Cove	R. W. McCaul	Nov. 28, 1889.	25 "	11 29
Descousse	John Pertus	Sept. 10, 1898.	25 "	27 93
Digby	W. W. Hayden	April 20, 1897.	25 "	2,163 09
Eagle Head	Nathan Leslie	Jan. 9, 1889.	25 "	
East Bay	Donald McInnis (Ronald's son)	April 5, 1886.	50 "	
East River, Sheet Harbour	Malcolm McFarlane	May 20, 1890.	25 "	
Grand Narrows, Victoria Co.	F. X. McNeil	Nov. 11, 1896.	25 "	
Grand Narrows, Cape Breton Co.	Neil McNeil, jr.	Aug. 6, 1898.	25 "	
Grand Village	Vacant			
Hall's Harbour	T. A. Neville	Jan. 8, 1897.	25 "	18 00
Hampton	Judson Foster	Aug. 25, 1888.	25 "	19 58
Hantsport	Vacant			
Harbourville	Isaac Cook	May 28, 1897.	25 "	28 11
Horton Landing	F. G. Curry	April 30, 1898.	25 "	11 97
Iona, Grand Narrows	F. T. X. McNeil	June, 8, 1891.	25 "	
Irish Cove	Colin Cash	" 28, 1895.	25 "	21 50
Jordan Bay	John Fredericks	Feb. 20, 1900.	25 "	80 99
Kelly Cove	Jos. B. Huskins	April 11, 1899.	25 "	
Little Narrows	Vacant			
Lismore	D. A. McKinnon	July 5, 1895.	25 "	
Maitland, Hants Co.	Vacant			
Maitland, Yarmouth Co.	J. Ellis	Dec. 10, 1896.	25 "	44 25
Margaretsville	C. S. McLean	May 7, 1897.	25 "	107 86
Meteghan Cove	H. F. Robicheau	" 28, 1897.	25 "	38 07
Meteghan River	D. D'Entremont	" 14, 1897.	25 "	43 50
Militia Point	D. McIntosh	Aug. 25, 1892.	25 "	

STATEMENT relating to Wharfs, &c.—*Continued.*

Locality.	Wharfinger.	Date of Appointment of Wharfinger.	Remuneration allowed.	Amount deposited to credit of Receiver General.
Nova Scotia—Con.				$ cts.
Morden	John Redgate	Nov. 16, 1893.	25 p. c. of collections	2 34
Noel	Vacant		"	
Northside, Boularderie	Dan. McKenzie	Nov. 26, 1897.	25 "	
Oak Point (Kingsport)	Rent from Railway Company			200 00
Ogilvie	R. S. Armstrong	May 13, 1901.	25 p.c. of collections	11 62
Parrsboro'	Thompson Tipping	Nov. 26, 1888.	25 "	41 77
Parker's Cove	John A. Clark	June 26, 1901.	25 "	
Pickett's Wharf	Freeman Eaton	Aug. 2, 1899.	25 "	125 26
Pictou Island	Vacant			
Plympton	Wm. K. Smith	Aug. 8, 1890.	25 "	
Point Brulé	Alex. Craig	Dec 26, 1898.	25 "	
Port George	Outhit Douglas	June 26, 1900.	25 "	86 34
Port Greville	Vacant			
Port Hood	Albert Macdonnell	May 22, 1900.	25 "	121 82
Port Joli	Jos. S. McAdams	Feb. 5, 1900.	25 "	
Port La Tour	David Sholds	Feb. 1, 1900.	25 "	14 31
Port Lorne	Freeman Beardsley	June 27, 1897.	25 "	33 13
Port Morien	John McAulay	Dec. 10, 1896.	7½ "	623 32
Salmon River, Digby Co.	J. M. Deveau	Nov. 29, 1890.	25 "	
Salmon River, Halifax Co.	H. J. Balcom	Feb. 17, 1899.	25 "	295 14
Saulniersville	John T. Saulnier	Aug. 25, 1888.	25 "	15 48
Tancook Island	Amos H. Stevens	Mar. 11, 1898.	25 "	
Tidnish	A. E. Sampson	Aug. 20, 1896.	25 "	16 50
Tracadie	J. M. Hall	Nov. 6, 1888.	25 "	
Tusket Wedge	Vacant			
Victoria	Amos West	Dec. 4, 1900.	25 p. c. of collections	10 00
Wallace	Vacant			
Wallace Harbour, South side	"			
West Pubnico	Chas. C. D'Entremont	Mar. 28, 1898.	25 p. c. of collections	17 37
West River, Sheet Harbour	Malcolm McFarlane	Sep. 3, 1889.	25 "	
White Point	Elisha West	Jan. 9, 1889.	25 "	
White Waters	C. V. Anthony	Feb. 14, 1898.	25 "	
			Total	4,817 54
New Brunswick.				
Anderson's Hollow	W. C. Anderson	Feb. 13, 1890.	25 p. c. of collections	17 71
Black River	Robt. McLeod	Mar. 28, 1898.	25 "	159 97
Buctouche	J. J. LeBlanc	May 2, 1892.	25 "	8 00
Campbellton	Alfred J. Venner	June 10, 1893.	25 "	239 64
Cape Tormentine	E. T. Allen	Oct. 20, 1897.	25 "	454 40
Clifton, Stonehaven	S. Payne	Nov. 9, 1894.	25 "	27 13
Cocagne	H. Bourgeois	Aug. 9, 1900.	25 "	
Dalhousie	W. J. Smith	June 27, 1891.	25 "	56 94
Edgett's Landing	Thos. Barnett	July 5, 1895.	25 "	3 62
Gardner's Creek	Robert Wallace	Dec. 11, 1899.	25 "	94 79
Hopewell Cape	Geo. D. Wilson	Apr. 10, 1899.	25 "	42 16
Kingston	P. Thibodeau	Jan. 31, 1901.	25 "	16 32
Neguac	B. Poirier	June 17, 1897.	25 "	
Quaco	Wellington Vale	Dec. 19, 1899.	25 "	
St. Louis	C. Frigand	Oct. 29, 1895.	25 "	
St. Mary's	M. J. S. LeBlanc	Mar. 1, 1897.	25 "	
St. Nicholas River, S. Welford	John Grant	June 26, 1901.	25 "	
Tracadie	Prospere Savoy	Sep. 23, 1899.	50 "	
			Total	1,120 68
Prince Edward Island.				
Annandale	W. C. Jenkins	May 4, 1897.	25 p. c. of collections	32 55
Bay View	Joseph Harrington	Oct. 2, 1885.	25 "	4 39
Belfast	Jas. F. Halliday	Mar. 1, 1901.	25 "	102 22
Brush Wharf, Port Selkirk	Levi R. Ings	Sep. 18, 1885.	25 "	132 36

STATEMENT relating to Wharfs, &c.—*Concluded.*

Local Agency.	Wharfinger.	Date of Appointment of Wharfinger.	Remuneration allowed.	Amount deposited to credit of Receiver General.
Prince Edward Island—Con.				$ cts.
Campbell's Cove	Angus McIntyre	Oct. 17, 1888.	25 p. c. of collections	
Chapel Point	Roland McCormack	Sep. 18, 1885.	25 "	1 86
China Point	W. S. N. Crane	" 18, 1885.	25 "	17 19
Clifton	John Gunn	May 24, 1900.	25 "	
Cranberry, East River	James Hughes	Mar. 11, 1898.	25 "	
Crapaud and Victoria Pier	E. McKinnon	July 7, 1897.	25 "	95 21
Georgetown	James Bourke	" 2, 1885.	25 "	4 52
Haggerty's Wharf, E. River	M. Burnett	Feb. 14, 1898.	25 "	
Hickey's Wharf	Mark Webster	Oct. 22, 1896.	25 "	
Higgin's Shore	G. G. Henry	Nov. 9, 1891.	25 "	
Hurd's Point	R. Robblee	Oct. 6, 1888.	25 "	14 48
Kier's Shore	W. Hodgson	June 10, 1895.	25 "	69 09
Lambert	Wellington Johnston	May 3, 1900.	25 "	
Lewis Point	J. G. Scrimigeour	Oct. 14, 1896.	25 "	
McGee's Wharf, Abram's Vill.	Norman Gallant	Nov. 9, 1891.	25 "	
Mink River or Murray Harbour, North	Jas. P. Clow	Aug. 25, 1900.	25 "	3 47
Murray Harbour, South	J. McKinnon	Jan. 27, 1896.	25 "	
Nine Mile Creek	Edward Harrington	Oct. 29, 1885.	25 "	
North Cardigan	Rodk. J. Steele	May 1, 1901.	25 "	31 58
Pinette	Malcolm McLeod	Jan. 3, 1901.	25 "	
Pownal	M. M. Haley	Oct. 13, 1896.	25 "	54 99
Red Point	Arch. Smith	Apr. 3, 1900.	25 "	11 12
St. Mary's Bay	John Dickson	Dec. 10, 1896.	25 "	11 22
Souris	Angus McDonald, caretaker	Sep. 27, 1894.	25 "	
South Rustico, Oyster Bed Bridge	D. Gallant	Feb. 23, 1895.	25 "	5 48
Stevens and Montague	Wellington A. Johnston	May 3, 1900.	25 "	
Sturgeon River	Bernard Kearney	Sep. 18, 1885.	25 "	22 14
Tignish	A. J. Gaudet	Aug. 28, 1898.	25 "	22 59
Vernon River	J. G. McKenzie	Oct. 19, 1885.	25 "	101 55
Wood Island	Jas. Young	Apr. 10, 1899.	25 "	11 55
			Total	749 56

RECAPITULATION.

Ontario	$ 2,272 49
Quebec	1,870 81
Nova Scotia	4,817 54
New Brunswick	1,120 68
Prince Edward Island	749 56
Total wharfage dues collected and placed to credit of Receiver General	$10,831 08

ADD—Fees received by undermentioned harbour masters in excess of remuneration allowed:—

Harbour Master	St. Johns, Que.	$ 129 50	
"	Halifax, N. S.	76 50	
"	International Pier, N.S.	164 00	
"	Dalhousie, N.B.	1 00	
"	Chemainus, B.C.	201 50	
"	Victoria, B.C.	36 50	
			609 00
Total Revenue from Wharfs and Harbours			$11,440 08

APPENDIX No. 9.

STATEMENT of Sick Mariners' Dues collected for the fiscal year ended June 30, 1901.

Quebec.	$ cts.
Gaspé	193 85
Montreal	6,884 86
Paspebiac	266 38
Percé	105 36
Quebec	5,639 98
Rimouski	436 64
St. Armand	21 46
St. Johns	1,291 98
Sorel	28 72
Stanstead	22 22
Three Rivers	171 36
Total	15,062 81
New Brunswick.	
Bathurst	250 77
Chatham	1,446 54
Dalhousie	878 14
Moncton	1,067 58
Newcastle	934 00
Sackville	287 20
St. John	6,356 28
St. Stephen	135 70
Total	11,356 21
Nova Scotia.	
Amherst	557 36
Annapolis	136 00
Arichat	61 65
Antigonish	2 36
Baddeck	5 88
Barrington	6 48
Canso	212 92
Digby	192 10
Halifax	10,264 86

Nova Scotia—Continued.	$ cts.
Kentville	28 74
Liverpool	55 50
Lockeport	14 68
Lunenburg	639 92
North Sydney	1,559 50
Parrsboro'	658 86
Pictou	349 14
Port Hawkesbury	372 02
Port Hood	11 76
Shelburne	123 86
Sydney	5,894 54
Truro	1 92
Weymouth	136 22
Windsor	668 38
Yarmouth	547 40
Total	22,502 05
Prince Edward Island.	
Charlottetown	421 06
Summerside	120 74
Total	541 80
British Columbia.	
Nanaimo	4,053 22
New Westminster	110 08
Vancouver	1,931 84
Victoria	4,280 88
Total	10,376 02
Total	59,838 89
Less—Refunds	55 55
Grand total	59,783 34

APPENDIX No. 10.

REPORT OF LIFE-SAVING STATIONS.

NAVAL ASSISTANT'S OFFICE,
HALIFAX, N.S., December 4, 1901.

To the Deputy Minister of
Marine and Fisheries Department,
Ottawa.

SIR,—I have the honour to submit my annual report on the life-saving stations in the maritime provinces, Sable Island excepted, as being under the inspection of Mr. C. A. Hutchins, superintendent of light-houses in this province.

INSPECTIONS OF STATIONS.

The whole of the stations have been visited by me during the year ended June 30 last, from time to time, the stations at Port Mouton, Seal Island and Mud Island excepted. Other important duties and difficulty and expense of transport prevented my personally inspecting these three stations, but from the reports I have received from the officers in charge, and their known efficiency, I am satisfied they are maintained in the same excellent order as those I visited.

SERVICES AT WRECKS.

The only services actually rendered by the life-saving crews under my inspection, were performed by the coxswain and crew of the life-boat at Yarmouth, on June 27 last, when the life-boat, under the command of Mr. Albert Cain and her crew of six men, went off to the assistance of the barquentine *Argentine*, of Pictou, stranded on the Gannet Rock ledge at the entrance of the Bay of Fundy, and assisted in getting her afloat and into Yarmouth Harbour.

The services performed were very creditable and satisfactory, and the coxswain and his crew of six men were granted an honorarium of $6 each by the Honourable the Minister.

DEVIL'S ISLAND.

Repairs at this station have been effected to the boat-house. They were much needed and have been executed at a comparatively small cost.

PICTOU ISLAND.

Repairs to the launching ways were found necessary at my visit in June last, and have been recently completed.

BLANCHE.

The lower part of the launching ways having been injured and displaced by bad weather, have been renewed by railway rails bolted down to the rocks, similar to the plan successfully adopted at Seal Cove, Grand Manan, last year.

YARMOUTH.

Similar repairs to those executed at Blanche have been effected at this station. They were much needed, as the old way had been destroyed, and owing to the great rise and fall at this station, and the comparative flatness of the beach, the distance between high and low waters at spring tides is very great.

HERRING COVE.

Repairs, the removal of outlying rocks, and the laying down of railway rails in lieu of wooden rollers, are much needed and are under consideration.

In conclusion, I beg to state that the service is in an efficient state, that the coxswain and crews are perfectly competent, and should disaster to shipping occur on the coast, the courage and zeal of the officers and men may be relied on.

Attached to this report is a list of the life-saving stations in the maritime provinces and in the great lakes; the latter are not under my inspection, but I give the particulars respecting them from records of the office.

I have the honour to remain, sir, your obedient servant,

BLOOMFIELD DOUGLAS, R.N.R.,
Naval Assistant.

1-2 EDWARD VII., A. 1902

LIFE Saving Stations maintained

Number.	Stations.	Established	Coxswain.	Crew.	Coxswain's Salary. Per annum.	Pay of Crew.
	Bay of Fundy—				$	
1	Seal Cove	1898	F. Benson	7	75	$1.50 per drill, and extra when engaged saving life.
2	Yarmouth	1886	A. Cain	7	75	" " ..
3	Mud Island	1887	J. Pitman		80	
4	Seal Island	1880	H. Hitchens	7	250	$100 each per annum
	Atlantic Coast—					
5	Clark's Harbour	1900	J. M. Kenny	7	75	$1.50 per drill, extra when saving life.
6	Blanche	1895	W. A. B. Smith.	7	75	" " ..
7	Port Mouton	1889	J. Frowell	7	75	" " ..
8	Duncan's Cove	1886	J. W. Holland	7	75	" " ..
9	Herring Cove	1885	J. Gorman	7	75	" " ..
10	Devil's Island	1885	G. de Young	7	75	" " ..
11	Halifax	1900				No crew here
12	White Head	1890	H. P. Munroe	7	75	$1.50 per drill, extra when saving life.
13	Sable Island	1885	G. Soderberg. J. Ritcey		250 225	Paid as island staff
14	Scatterie Island	1885	F. Martell	7	75	$1.50 per drill, extra when saving life.
	Gulf of St. Lawrence—					
15	St. Paul's Island	1885	Supt. Humane Establishment.	3		$300 each per annum
16	Pictou Island		Alex. Currie	7	75	$1.50 per drill, extra when saving life.
17	Cape Tormentine	1893	No organized crew.			
	Great Lakes—					
18	Wellington	1883	"			$1.50 per drill, extra when saving life.
19	Consecon	1898	W. A. Young	7	75	" " ..
20	Cobourg	1882	D. Rooney	7	75	" " ..
21	Port Hope	1889	W. T. Clarke	7	75	" " .
22	Toronto Island	1883	Wm. Ward	7	75	" " .
23	Port Rowan	1883	R. Clark	7	75	" " ..
24	Port Stanley	1885	Wm. Berry	7	75	" " ..
25	Point Pelee	1900	W. A. Grubb, jr.	No crew yet.		
26	Goderich	1886	J. R. Craigie	7	75	$1.50 per drill, extra when saving life.
27	Collingwood	1885	P. Doherty	7	75	" " ..

by the Dominion Government.

Description of Boat.	Cost.	Where Built.	Equipment.	Remarks.
	$			
Beebe-McLellan surf-boat, self-bailing, 25 feet long.	250	Shelburne, N.S..	Full regulation	Iron rails laid in 1900.
Dobbin's pattern, self-bailing and self-righting, 25 feet long.	575	Dartmouth, N.S.	" ..	
Fishing boats and dories.....	80 pr.an.	.....	Ordinary	Kept by contract with fishermen.
Beebe-McLellan boat on east side, surf boat on west side.	375	Halifax, N.S....	Full regulation	
Beebe-McLellan, self-bailing, 25 feet long, low ends.	250	Shelburne, N.S..	" ..	Boat house and gear cost $700.
Dobbin's pattern, self-righting and bailing, 25 feet long.	575	Dartmouth, N.S.	" ..	
" " ..	575	" ..	" ..	
" " ..	575	" ..	" ..	Lyle gun established here 1900.
" " ..	575	" ..	" ..	
" " ..	575	" ..	" ..	
" " ..	375	" ..	Ordinary	This is a spare boat which can be used with volunteer crew when required.
" " ..	575	" ..	Full regulation	Lyle gun.
Two Dobbin's self-righting and bailing boats and one Beebe-McLellan surf-boat, self-bailing.	1,100	Halifax, N.S. ..	" .	Lyle gun and rocket apparatus kept here. Coxswains are under control of Superintendent of Humane Establishment.
Dobbin's pattern, 25 feet long, self-righting and bailing.	500	Dartmouth, N.S.	" ..	
Beebe-McLellan, self-bailing, 25 feet long, low ends	250	Shelburne	Full equipme't	Lyle gun added in 1900.
Dobbin's pattern, self-righting and bailing, 25 feet long.	575	Dartmouth	" ..	
Boats of winter mail service.	.....	.....	Ordinary.....	
Dobbin's pattern, self-righting and bailing.	750	Buffalo, N.Y...	Full equipme't	Removed from Poplar Point in 1900.
" " ..	750	" ..	" ..	Removed from Wellington in 1893.
" " ..	575	Goderich, Ont..	" ..	
" " ..	620	" ..	" ..	
" " ..	600	" ..	" ..	New boat 1895.
Surf boat.....	375	Buffalo, N.Y...	" ..	To be discontinued.
Dobbin's pattern, self-righting and bailing, 25 feet long.	575	Goderich, Ont..	" ..	Removed from Pelee Island in 1899.
" " ..	575	" .	" ..	
" " ..	575	" .	" ..	
Beebe-McLellan self-bailing surf-boat.	375	Collingwood	" ..	New boat in 1896.

APPENDIX No. 11.

REPORT OF THE CHAIRMAN OF THE BOARD OF STEAMBOAT INSPECTION.

CHAIRMAN'S OFFICE,
OTTAWA, November, 1901.

To the Honourable
Minister of Marine and Fisheries,
Ottawa.

SIR,—I have the honour to submit the annual report of the Steamboat Inspection Service for the fiscal year ended June 30, 1901.

It contains the general work of the service during the period mentioned, giving the number of steamers inspected, with their gross tonnage, and the amount of tonnage dues and fees collected as known by the inspectors on account of inspection. Also a statement of the board meetings held, with the penalties enforced for violations of the Steamboat Inspection Act; and the casualties occurring as reported from the several divisions, with the reports as to the number of vessels lost or unfit for service in the several districts, and the number of new vessels added thereto.

In addition to the steamboats inspected at the port of Montreal, the hoisting gear and ship's tackle of 448 vessels, used for the purpose of loading and unloading those vessels, was also inspected by the steamboat inspectors of that port.

NUMBER of steam vessels reported as known by the inspectors of steamboats in the Dominion, and their gross tonnage for the year ended June 30, 1901; also the number of vessels inspected but not registered in the Dominion for same date:

DIVISION.	Total number of Dominion registered steamers.	Gross tonnages of Dominion registered steamers.	Number of steamers inspected but not registered in the Dominion.	Gross tonnage of steamers inspected but not registered in the Dominion.
West Ontario	387	80,315·00	33	17,231.00
Kingston	173	24,682·40	28	2,203.15
Montreal	222	24,320·05	Nil	.....
Quebec	139	34,630·00	"	.....
Nova Scotia	134	23,313·14	23	28,102.58
New Brunswick and Prince Edward Island	134	14,020·20	10	6,427.37
British Columbia and Yukon Territory	220	47,090·57	25	29,133.76
Manitoba and North-west Territories	127	7,202·36	2	1,101.00
	1,536	255,573·72	121	84,198.86

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NUMBER of Dominion registered Steam Vessels inspected and their gross tonnage, with the amount of dues and fees collected on account of Steamboat Inspection, during the year ended June 30, 1901.

DIVISION.	Number of Dominion registered steamers inspected.	Gross tonnage of Dominion registered steamers inspected.	Amount of dues and fees collected on account of steamboat inspection.
			$ cts.
West Ontario	320	76,597·00	7,991.34
Kingston	162	24,438·37	2,845.88
Montreal	178	22,479·05	2,808.52
Quebec	132	34,241·00	3,482.38
Nova Scotia	112	20,780·99	4,722.48
New Brunswick and Prince Edward Island	126	13,424·47	2,358.80
British Columbia and Yukon Territory	229	53,694·55	8,474.81
Manitoba and North-west Territories	101	6,652·19	1,037.15
Inspection of tow barges			120.00
Engineers' certificates			1,032.00
	1,360	252,307·62	34,873.36

BOARD MEETINGS.

A meeting of a quorum of the Board of Steamboat Inspection was convened at Kingston, September 26, 1900, for the purpose of examining candidates offering for the position of hull inspector at Kingston, the vacancy existing owing to the death of the late inspector on June 16.

The members composing the board were Capt. M. P. McElhinney, Ottawa, Dominion hull inspector; P. D. Brunelle, hull inspector of Quebec, and E. Adams, chairman. From the examinations taken of the six candidates offering, Mr. M. R. Davis, of Kingston, was recommended as the person appearing most qualified for the position, and was appointed thereto by Order in Council of December 4, 1900, with salary of $1,000 per annum.

On October 5, 1900, a meeting of the board was convened at Toronto, composed of the following members: Capt. M. P. McElhinney, of Ottawa; P. D. Brunelle, Quebec; Wm. Evans, Toronto, hull inspectors; E. W. McKean and J. Dodds, boiler and machinery inspectors, Toronto; E. Adams, Ottawa, chairman.

The meeting was for the purpose of examining into the merits of a boat named the Oxford patent folding boat, recommended to be used on steamers for life-saving purposes, which was introduced to the department and attention requested thereto by Mr. G. H. Ellis, of Toronto. After a careful examination into the construction and adaptability for the purpose stated, the board unanimously were of opinion that the boat was not such as to warrant a recommendation of its adoption, in lieu of the present type of boat used for that purpose.

April 15, 1901.—A meeting of a quorum of the board was convened at Toronto, composed of the following boiler and machinery inspectors: J. Dodds and E. W. McKean, of Toronto; T. P. Thompson, Kingston; E. Adams, Ottawa, chairman.

The meeting was for the purpose of giving consideration to a request made to use steel stamped 54,000 pounds tensile strength in the construction of the cylindrical shells for boilers, and to calculate the allowable working pressure from the actual tensile strength, as found by making tests of the material.

The matter was given very careful consideration, and as part 1 of the rules defines the quality of steel 'to be so rated' in the construction of cylindrical shells for boilers,

to be of not less than 27 tons gross tensile strength ; this standard being in unison with the standard adopted for same purpose by the leading classification societies of Great Britain, and in view of such and not having any data sufficient to warrant them in recommending a departure from that as required by the rules, the board were unanimously of the opinion that under such conditions it would not be advisable nor prudent to so do, and a decision was rendered to that effect.

Prosecutions with Penalties Enforced for Violation of the Steamboat Inspection Act.

July 23, 1900.—At White Horse, Yukon Territory, the Collector of Customs imposed a fine of $100 on steamer *Nome* for carrying more passengers on board than that allowed by her certificate, which amount was credited to the Receiver General, and bank receipts for same forwarded to the department August 7, 1900.

August 3, 1900.—Steamer *Starling* on arrival at the port of Nanaimo, B.C., and having a boat in tow with passengers on board, not having been certificated for that purpose, was seized by the Collector of Customs for violation of the Steamboat Inspection Act, section 43, who imposed on each vessel a penalty of $50, which amount was deposited to the credit of the Receiver General, forwarding to the department drafts and deposit receipts for same.

September 26, 1900.—At Victoria, B.C., the Collector of Customs imposed a fine of $100 on the steamer *Maude* of that port, for violation of section 42 of the Steamboat Inspection Act, by carrying passengers and not holding a certificate authorizing such. The fine was deposited to the credit of the Receiver General and bank deposit receipt forwarded to the department.

October 4, 1900.—Proceedings were taken at Rat Portage, Ont., against the master of the steamer *Balmoral*, on complaint of the steamboat inspector, that the safety valve on the boiler of said steamer had been tampered with, whereby the boiler was subjected to a greater pressure than that allowed by her certificate of inspection. The case was tried before the police magistrate at Rat Portage, whereby the master of the vessel was fined $75 and costs, which was remitted to the department and received November 22, 1900.

April 18, 1901.—A complaint was lodged with the Collector of Customs at Sault Ste. Marie by the steamboat inspector, of finding the safety valve on steamer *R. A. McLean*, of Sault Ste. Marie, having been tampered with, to cause the boiler to be subjected to a greater pressure than that allowed by her certificate of inspection, on receipt of which the Collector of Customs imposed a penalty of $50 and forwarded draft for same to the department subject to their approval, when he was informed, he should have imposed the full penalty allowed by law for such a grave offence, and to warn the master if the offence was repeated his certificate would probably be dealt with.

July 10, 1901.—Information was forwarded the department by the Collector of Customs, Victoria, B.C., with bank receipt for the sum of $100, being a penalty he imposed under the 42nd section of the Steamboat Inspection Act, on the steam barge *Champion*, of Vancouver, for carrying passengers without holding a certificate of inspection authorizing such.

Casualties.

The following are the casualties reported from the several districts as having occurred during the fiscal year ending June 30, 1901 :—

West Ontario Division.

September 20, 1900.—Steamer *St. Andrews*, of Owen Sound, en route to Fort William, ran ashore on Blanchard Island, Lake Superior, proving a total loss, as after pounding out the bottom, slipped off the rocks into deep water. No fatalities.

October 2, 1900.—Steamer *Dominion*, of St. Catharines, laid up for the fall and winter at Sandwich, Ont., was totally destroyed by fire; cause of fire unknown.

October 2, 1900.—Steamer *City of Owen Sound*, of Collingwood, engaged in the passenger and freight service between Collingwood and Sault Ste. Marie, while cargo was being discharged at Collingwood was totally destroyed by fire; cause of fire unknown.

November 7, 1900.—Tug *Hattie Vinton*, of Sault Ste. Marie, sprung a leak in Mamainse Harbour, north shore of Lake Superior, and sank, was abandoned, and is a total loss; no fatalities.

November 10, 1900.—Steamer *Arabian*, of Hamilton, en route down Lake Superior, in a severe gale, was driven ashore near Whitefish Point, Mich., U.S., was afterwards released and thoroughly repaired at Port Dalhousie, Ont.

November 21, 1900.—Steamer *A. H. Jennie*, of Toronto, in a severe gale, and endeavouring to make shelter in Pickering Harbour, Lake Ontario, foundered near the entrance to the harbour, and is a total loss; no fatalities.

November 27, 1900.—Steamer *Persia*, of St. Catharines, while being laid up for the winter at Toronto, took on fire, destroying the deck and upper works, including cabin and cabin furniture; the cause of the fire is unknown. During the winter the steamer was thoroughly repaired.

May 2, 1901.—The engine of the tug *Tecumseh*, of Sault Ste. Marie, became disabled near Gore Bay, north channel of Georgian Bay. A heavy sea running at the time, the steamer *Germanic* took her in tow, endeavouring to return to Gore Bay. The tug gradually filling with water, it was decided to abandon her. Three persons on board were rescued, but she suddenly sank, drowning the captain, his sister and a commercial traveller who was on board.

East Ontario Division.

June 9, 1901.—Steamer *James Swift*, of Kingston, while lying at the wharf in Ottawa, was partially destroyed by fire; cause of fire unaccounted for. One of the firemen was suffocated.

June 14, 1901.—Steamer *Hero* of Kingston, while lying at her dock in Belleville, was destroyed by fire, becoming a total loss; cause of fire unknown. No fatalities occurred.

Montreal Division.

July 25, 1900.—Steamer *Laurier*, of Montreal, was partially burnt at Vaudreuil wharf; cause of fire unknown.

November 16, 1900.—Steamer *Napierville*, of Montreal, while at anchor opposite Verchères, foundered, afterwards was raised and taken to Sorel, and during the ice shove in spring of 1901 she again went to the bottom, and became a total wreck.

November 29, 1900.—Steamer *Minnie Bell*, of Ottawa, was partially burnt in the canal at Ottawa, cause of fire unknown, loss about $600, was afterwards repaired, and is now named the *Alva* of Ottawa.

Quebec Division.

November 21, 1901.—Steamer *St. Olaf*, of Quebec, encountered a snow storm, with a gale of east wind, and ran on an island called Boule, one of the Seven Islands in the Gulf of St. Lawrence, becoming a total loss, with all hands on board, who numbered twenty-nine people.

May 5, 1901.—Steamer *Polino*, of Quebec, while on a voyage to Newfoundland, when twenty-four hours out of Sydney broke her after crank shaft. Having a spare shaft on board, the same was fitted, when she proceeded on her voyage, arriving at Newfoundland on the eighth of the same month.

June 28, 1901.—The freight steamer *Victoria*, of Montreal and Chambly, took fire and burned while lying in Chambly basin, the crew having barely time to escape no cause assigned. No fatalities.

Nova Scotia Division.

November 4, 1900.—Steamer *Prince Edward*, when coming out of Barrington Harbour, struck a ledge and was beached to prevent sinking. Temporary repairs were made, when she proceeded to Halifax under her own steam, where placed in dry dock and permanent repairs effected.

March 15, 1901.—The paddle ferry-boat *Halifax* plying between Halifax and Dartmouth, broke the engine cross-head, which entailed the breaking of the guides, and bending piston rod. Caused by a hidden flaw in cross-head.

July 6, 1901.—Steamer *Louisburg* when on a voyage from Sydney to Montreal, struck on Red Island shoal and sustained serious damage, she was taken to Quebec where temporary repairs were made, and afterwards brought to Halifax and placed in dry dock, where permanent repairs were effected.

July 8, 1901.—Steamer *Cape Breton* when on a voyage in River St. Lawrence, struck on a shoal and sustained damage to bottom, sufficient to cause tanks No. 1 and 2 to fill, the tops of tanks were shored down and ship proceeded to Halifax, where placed in dry dock and permanently repaired.

November 10, 1900.—Steamer *City of Monticello* of Liverpool, a steel side-wheel passenger vessel of 1,033 gross tons, engaged in the coasting trade, whilst on a voyage between St. John, N.B., and Yarmouth, N.S., having on board a general cargo of merchandise, and eight passengers, with a full crew of thirty-two persons, including officers and men, owing to a severe gale and heavy sea, foundered in about seventeen fathoms of water, about four miles west of Yarmouth harbour. The captain, two officers and twenty-six of the crew, with seven passengers were lost; only four persons surviving, which were saved in one of the ordinary boats. All the life-boats were smashed whilst being lowered, or foundered with all on board shortly after leaving the sinking ship.

New Brunswick and Prince Edward Island Division.

No casualties have occurred.

Manitoba and North-west Territories.

Steamer *Sultana* of Winnipeg, during a gale in the month of June was driven ashore at the mouth of the Saskatchewan River, north end of Lake Winnipeg; where she still remains.

Steamer *Red River* of Winnipeg, reported aground last year at George's Island, Lake Winnipeg; has become a total loss.

British Columbia and Yukon Territory.

August 24, 1900.—Steamer *Cutch* of Vancouver, on a voyage from Vancouver to Skagway, stranded on Horse Shoe reef, Stephen's passage, Alaska; becoming a total loss.

September 22, 1900.—Steamer *Nelson* of New Westminster, on a trip from Nelson to Kootenay landing, on Kootenay Lake, ran ashore about 2.30 a. m. under full speed, on a rocky point, whereby vessel was strained, and fore-foot and planking forward badly damaged, was afterwards hauled out at Nelson and repaired. Cause of accident, no officer on deck, and man at the wheel fell asleep.

September 24, 1900.—Steamer *Telephone* of New Westminster, while at her moorings, took fire and was totally destroyed.

December 8, 1900.—Steamer *Hattie Young* of New Westminster, while at Marsh's landing, Fraser River, took fire, burned to the water's edge and sank. No fatalities.

December 16, 1900.—Steamer *Alpha* of Vancouver, on a voyage from Victoria to Comox, for coal, to proceed to Japan, stranded in a strong gale and fog on Yellow Island, Baynes Sound, B.C.; becoming a total loss. Master and eight of crew drowned, including three engineers.

January 2, 1901.—Steamer *Danube* of Victoria, on a voyage from Victoria to Skagway, in collision with an iceberg when off Lake Arm, Alaska; damaged plates and frames on starboard bow, temporary repairs were made, and on return to Victoria had three new plates and several frames fitted.

May 6, 1901.—Steamer *Bessie* of Victoria, while lying at the wharf at Ladysmith, B.C., caught fire and burned to water's edge; cause unknown; no person on board.

May 10, 1901.—Steamer *Princess Louise* of Victoria, on a voyage to Skeena River, struck on a rock at east end of Thormanby Island, B.C., damaging her fore-foot and planking; jettisoned cargo, and was then hauled off, proceeding to Vancouver, where placed on marine ways and repaired.

I am, sir,
Your obedient servant,

EDWARD ADAMS,
Chairman Board of Steamboat Inspection.

STEAM Vessels Inspected for the Year ended 30th June, 1901.

WEST ONTARIO DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees paid.	Class of Vessel and where employed.
		1901.		$ cts.	
John Hanlan		Not issued	37	7 96	Screw, Toronto Bay.
Hiawatha	300	July 5	163	21 04	" St. Clair River.
Tepiakan	Fish'g tug	" 6	29	7 32	" Lake Huron.
J. C. Clark		Not issued	145	19 60	" St. Clair River.
Comfort	40	July 7	14	6 12	" Sombra and Maine City.
Kuna	Tug	May 16	6	5 48	" Chatham and Vicinity.
Vick		" 16	13	6 04	" " "
Scotia	40	July 10	13	6 04	" Amherstburg & Bois Blanc Island
City of Dresden	100	" 10	194	23 52	" Windsor & Lake Erie ports.
Annie Miles	Tug	" 19	71	10 68	" Lakes.
Nautilus		" 23	9	5 72	" Welland Canal.
Osprey	Fish'g tug	" 24	6	5 48	" Lake Erie.
Eleanor	"	" 24	26	7 08	" "
Maxir	"	" 25	16	6 28	" "
City of Ladysmith	"	" 25	35	7 80	" "
Wm. Wilson	"	" 25	12	5 96	" "
Lena	"	" 25	14	6 12	" "
Hazard	"	" 26	34	7 72	" "
The Belle	"	" 26	31	7 48	" "
W. M. German	"	" 26	28	7 24	" "
Ivey Alderson	"	" 27	39	8 12	" "
R. C. Britton	Freight	" 30	213	22 04	" Duluth & Montreal.
Viola	Yacht	" 31	68	10 44	" Lakes.
Ottawa	S	Aug. 3	2431	202 48	" Duluth & Prescott.
Phoenix	Tug	" 14	37	7 96	" Lake Huron.
Daisy	"	" 14	11	5 88	" "
A. Chambers	Fish'g tug	" 15	23	6 84	" "
John Logie	"	" 15	37	7 96	" "
Sea Shell	Tug	" 15	7	5 56	" "
Frank G. McAulay	Fish'g tug	Not issued	43	8 44	" "
Mary Arnott	Tug	Aug. 16	8	5 64	" "
Earl	Fish'g tug	" 16	18	6 44	" "
Snowstorm	"	" 21	17	6 36	" Lake Erie.
Enterprise	"	" 22	18	6 44	" "
Uncle Tom	"	" 22	8	5 72	" "
Alert	Tug	" 22	47	8 76	" "
May B.	Fish'g tug	" 23	9	5 72	" "
Swan	"	" 23	14	6 12	" "
Belle	"	" 23	16	6 28	" "
Jubilee	"	" 23	10	5 80	" "
Ella	Yacht	" 24	15	6 20	" "
Eagle	Tug	June 11	12	5 96	" Lake Huron.
W. J. Strong	"	Not issued	41	8 28	" "
C. M. Bowman	"	"	88	12 04	" "
Dredge Hackett	Dredge	"	96	12 68	Harbours on Lake Huron.
Urania	500	Sept. 20	898	79 84	Paddle, Lake Erie.
Lansdowne	200	" 24	1571	133 68	" Windsor & Detroit.
Great Western	200	" 24	1080	84 40	" " "
Frankie	Yacht	Oct. 11	24	6 92	Screw, Wallaceburg & Vicinity.
T. J. Collop	Freight	" 11	63	10 04	" " "
Ariadne	Tug	" 11	38	8 04	" " "
W. S. Ireland	Freight	Not issued	105	13 40	" " "
Willie Scagel	Tug	Oct. 12	22	6 76	" " "
City of Mt. Clemens	Freight	" 13	102	13 16	" " "
Harry Sewell	Tug	" 13	25	7 00	" " "
Elite	Fish'g tug	" 22	22	6 76	" Lake Huron.
Everard	"	Not issued	25	7 00	" "
Vixen	"	"	68	10 44	" "
M. G. McDonald	"	Oct. 24	29	7 32	" "
Jas. McKeon	Tug	" 26	36	7 88	" Thessalon & Vicinity.

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Steam Vessels Inspected, &c.—West Ontario Division—*Continued.*

BOILERS AND MACHINERY—*Continued.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901.		$ cts.	
N. Dyment	Tug	Oct. 26	59	9 72	Screw, Thessalon and Vicinity.
Alpha	"	" 27	34	7 72	" " "
Killarney Belle	Fish'g tug.	Not issued	28	7 24	" Lake Huron.
Edgar P. Sawyer	Tug	Oct. 29	52	9 16	" Soo and vicinity.
Camilla	40	" 29	54	9 32	" "
Hattie Vinton	Tug	" 29	55	9 40	" "
R. A. McLean	"	" 29	30	7 40	" "
W. A. Rooth	"	" 30	52	9 16	" "
Bertha Endress	"	" 30	32	7 56	" Michipicoten River.
Gen. Weitzel	"	Nov. 1	32	7 56	" Soo and vicinity.
W. S. Davis	"	" 1	46	8 68	" "
Glyn	"	" 2	20	6 60	" "
*Islander	"	Not issued	6	10 96	" "
Huron	245	Sept. 24	1,052	92 16	Twin screw, Windsor and Detroit.
Ontario	....	Not issued	1,615	127 20	Paddle "
		1902.			
Michigan—Coasting	500 / 524	Mar. 20	1,730	146 40	" "
Lakeside Lake	349	" 25	348	35 84	Screw, Lake Ontario.
Ada Alice	125	April 2	60	9 80	" Toronto Bay.
Modjeska	801	" 10	678	62 24	Twin screw, Hamilton and Toronto.
Macassa	616	" 10	459	44 72	" "
Lake Michigan	12	" 10	573	53 84	Screw, Quebec and Duluth.
Seguin	20	" 13	818	73 44	" "
Dan'l Lamb	Dredge	Not issued	253		Toronto Bay.
Tecumseh	Freight	April 16	840	72 20	Screw, Quebec and Duluth.
Hamilton	375	" 17	938	83 04	Paddle, Montreal and Hamilton.
Ocean	125	" 22	684	62 72	Screw " Sarnia.
Persia	150	" 22	757	68 56	" " Hamilton.
D. R. VanAllen	Freight	" 22	318	30 44	" " Duluth.
Arabian	13	" 24	1,073	93 84	" Quebec and Duluth.
Chippewa	2,000	" 26	1,514	129 12	Paddle, Lake Ontario.
Toronto	1,000	" 26	2,779	230 32	" Toronto and Prescott.
Corona	1,456	" 26	1,274	109 92	" Lake Ontario.
Chicora	872	" 26	931	82 48	" "
Ongiara	244	" 27	98	12 84	Screw, Niagara River.
Reginald	Tug	" 29	186	19 88	" Lakes.
United Empire	295	" 29	1,961	164 88	" Windsor and Duluth.
Monarch	330	" 29	2,017	169 36	" "
Myles	Freight	" 29	1,199	100 92	" Duluth and Quebec.
Armenia	"	" 30	467	42 36	" "
Tepiakan	Fish'g tug.	May 1	29	7 32	" Lake Huron.
Wales	Tug	" 4	350	33 00	" Lakes.
Saginaw	"	" 4	357	33 56	" "
United Lumberman	Freight	" 6	399	36 92	" Montreal and Duluth.
Juno	"	" 6	288	28 04	" "
Clinton	"	" 7	430	39 40	" all lakes.
Home Rule	Tug	" 7	81	11 48	" "
Turbine	Yacht	" 7	66	10 28	" "
Imperial	216	" 8	150	20 00	" Sarnia and Sandusky.
Garden City	760	" 13	637	58 96	Paddle, Lake Ontario.
Jessie L. McEdwards	Tug	" 13	21	6 68	Screw, Welland Canal.
Mary R	"	" 13	44	8 52	" "
Chas. E. Armstrong	"	" 14	49	8 92	" "
Golden City	"	" 14	35	7 80	" "
Nellie Bly	Fish'g tug.	" 14	13	6 04	" Lake Ontario.
Escort	Tug	" 15	40	8 20	" Welland Canal.
M. R. Mitchell	"	" 15	40	8 20	" "
A. D. Cross	"	" 15	47	8 76	" "
Augusta	"	" 16	57	9 56	" "

* Dues and fees for 1899 and 1900.

STEAM Vessels Inspected, &c.—West Ontario Division—*Continued.*

BOILERS AND MACHINERY—*Continued.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		$ cts.	
Ella Taylor	Tug	Not issued	34	7 72	Screw, Welland Canal.
Acacia	200	May 17..	107	16 54	" Hamilton and Burlington.
Primrose	900	" 17..	189	23 12	Paddle, Toronto Bay.
Thistle	345	May 17..	78	11 24	Paddle, Toronto Bay.
Arlington	100	" 17..	23	6 84	Screw "
Mayflower	900	" 18..	189	23 12	Paddle "
Shamrock	412	" 18..	154	20 32	" "
John Hanlan	185	" 18..	37	7 96	Screw "
Hiawatha	Yacht	" 18..	46	8 68	" "
Luella	125	" 20..	38	8 04	" "
A. J. Tymon { Coasting / Lake	448 / 300	" 20..	194	23 52	" Lake Ontario.
Island Queen	140	" 21..	623	6 84	" Toronto Bay.
City of Chatham	580	" 21..	341	35 28	" Chatham and Detroit.
Euna	Tug	" 21..	6	5 48	" " and vicinity.
Owen	Freight	" 22..	103	13 24	" Lakes.
Lincoln { Coasting / Lake	511 / 361	" 25..	337	34 96	" Buffalo and Lake Erie ports.
White Star—Coasting	468 / 702	" 29..	451	44 08	Paddle " "
Kingston	1,000	June 6..	2,925	242 00	" Toronto and Prescott.
Urania	500	" 10..	898	79 84	" Lake Erie.
Pittsburg	500	" 11..	1,349	123 92	" Buffalo and Soo.
Hiawatha	300	" 19..	163	21 04	Screw ; St. Clair River.
Annie Moiles	Tug	" 19..	71	10 68	" Lakes.
Clark Bros	200	" 26..	92	12 36	" Hamilton and Whitby.
Canada	492	" 27..	312	32 96	" Toronto and Niagara.
Electric	Yacht	" 27..	49	8 92	" Lakes.
Total			44,794	4,406 82	

JOHN DODDS,
Toronto.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.—West Ontario Division—*Continued.*

BOILERS AND MACHINERY—*Continued.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901.		$ cts.	
A. H. Jennie	Freight	Not issued	197	20 76	Screw, Lake Ontario.
Reliance	Tug	July 12	311	29 88	" Georgian Bay.
City of Windsor	92	" 14	511	48 88	" Collingwood and Sault Ste Marie.
Mazeppa	300	" 13	146	19 68	" Owen Sound and vicinity.
Rosseau	Tug	" 17	53	9 24	" Muskoka Lakes.
Jennie Wilson	"	" 17	7	5 56	" " "
Allena May	"	Not issued	16	6 28	" " "
Ontario	"	July 18	11	5 88	" " "
Flyer	17	" 18	4	5 32	" " "
Wapenas	Yacht	" 18	5	5 40	" " "
Secret	"	" 21	9	5 72	" " "
Manolia	"	" 19	6	5 48	" " "
Wanda	"	" 19	12	5 96	" " "
Wawonaissa	"	" 19	7	5 56	" " "
Onagonah	20	" 20	19	6 52	" " "
Southwood	Tug	" 20	19	6 52	" " "
Ethel May	Yacht	" 20	13	6 04	" " "
Islander	107	" 24	165	21 20	" " "
Devenish	Yacht	" 21	3	5 24	" " "
Kate Murray	Tug	" 23	3	5 24	" " "
Empress Victoria		Not issued	106	16 48	" Lakes at Huntsville.
Gem	40	July 26	9	5 72	" " "
Phoenix	Tug	Not issued	29	7 32	" " "
Florence	"	July 27	27	7 16	" Lake of Bays.
Equal Rights	Yacht	" 27	6	5 48	" " "
Mary Louise	40	" 28	64	10 12	" " "
Advance	10	Aug. 9	1,031	90 48	" Duluth and Quebec.
Agnes		Not issued	14	6 12	" Roaches Point and Belle-Ewart.
Minota	Yacht	Aug. 14	29	7 32	" Lake Simcoe.
Conqueror	40	" 15	25	7 00	" " "
Annie C. Hill	Yacht	" 16	14	6 12	" " "
Enterprise	305	" 16	148	19 84	Twin screw, Barrie and Orillia.
Islay	348	" 17	175	22 00	Screw, Barrie and Orillia.
Maple Leaf	Yacht	" 18	12	5 96	" Muskoka Lakes.
Theresa	Tug	" 18	26	7 08	" " "
*Evelyn	"	" 22	85	23 60	" Georgian Bay.
*Coponaning	"	" 22	18	12 88	" French River.
*Maggie McLean	"	" 23	37	15 92	" " "
*S. R. Norcross	"	" 24	20	13 20	" " "
Bobs	40	" 27	38	8 12	" Parry Sound and vicinity.
*G. P. McIntosh	Tug	" 31	58	19 28	" Georgian Bay. *
*Sea King	Fish'g Tug	" 31	26	14 16	" " "
Sandford	Tug	" 31	56	9 48	" " "
Sweet Mary	"	Sept. 19	13	6 04	" " "
Una	Yacht	" 19	22	6 76	" " "
Maud S	Tug	" 19	14	6 12	" " "
*Margherita	Yacht	" 19	31	14 96	" " "
Bruce	Tug	" 20	16	6 28	" " "
City of Owen Sound	247	" 21	754	68 32	Paddle, Collingwood to Sault St. Marie.
Cynthia	Fish'g Tug	Oct. 15	35	7 80	Screw, Georgian Bay.
Helen S	35	" 15	86	11 88	" Collingwood and Algoma Mills.
E. Blake	Tug	" 16	22	6 76	" Georgian Bay.
J. G. Gidley	"	Not issued	57	9 56	" " "
Scotch Thistle	30	Oct. 16	17	6 36	" Killarney and Algoma Mills.
Ethel	Fish'g Tug	" 17	13	6 04	" Georgian Bay.
Georgia	Tug	" 17	28	7 24	" " "
Maggie May	"	" 17	46	8 68	" " "
Gertrude A. Renney	Fish'g Tug	" 17	14	6 12	" " "
Dolphin	Tug	" 17	24	6 92	" " "
Fred Davidson	40	" 19	43	8 44	" Killarney and Sault Ste. Marie.
B. M. Fraser	40	" 19	50	9 00	" " " "

* Dues and fees for 1899 and 1900.

STEAM Vessels Inspected, &c., West Ontario Division.—*Continued.*

BOILERS AND MACHINERY—*Continued.*

NAME OF VESSEL.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901.		$ cts.	
Uncle Jim	Fish'g Tug	Oct. 20..	11	5 88	Screw, Georgian Bay.
Edna Ivan	10	" 20..	54	9 32	" Killarney and Cockburn Island.
Stella	Fish'g. tug	" 22..	16	6 28	" Georgian Bay.
*P. S. Hiesordt	Tug	" 22..	45	7 70	" " "
*Fanny Arnold	31	" 22..	73	9 38	" Killarney and Sault Ste. Marie.
A. Wright		Not issued			" John's Island and vicinity.
Surprise	Fish'g. tug	Oct 24..	19	6 52	" Georgian Bay,
Despatch	Tug	" 24..	33	7 64	" " "
Mascot	Fish'g. tug	Not issued	21	6 68	" " "
James Playfair	"	"	26	7 08	" " "
Primrose	"	"	23	6 84	" " "
		1902.			
Algonquin	10	April 9..	1,806	152 48	" Prescott and Duluth.
Minnie M	561 coast'g / 466 lake..	" 17..	613	57 04	" Michipicoten and Sault Ste. Marie.
Philadelphia	40	" 17..	148	19 84	" Montreal and Duluth.
Erin	Freight..	" 17..	651	57 08	" " "
James Norris	Tug	" 18..	50	9 00	" Sault Ste. Marie and Vicinity.
Gordon Gauthier	Fish'g. tug	" 18..	26	7 08	" Lake Superior.
Fred. A. Hodgson	"	" 18..	63	10 04	" " "
W. J. Emerson	"	" 18..	28	7 24	" " "
Telegram	200	" 20 ..	198	23 84	" " "
John J. Long	60	" 22..	201	24 08	" Georgian Bay and Lake Huron.
Hugh S.	Tug	" 22..	24	6 92	" Georgian Bay.
Saucy Jim	"	" 22..	93	12 44	" " "
Atlantic	300	" 23..	683	62 64	" Collingwood and Sault Ste. Marie.
City of Toronto	394	" 23..	782	70 56	Paddle, Georgian Bay and all lakes.
Majestic	638	" 24..	1,578	134 24	Screw, " " "
Germanic	500	" 24..	1,014	89 12	" " " "
City of Collingwood	407	" 24..	1,387	118 96	" " " "
City of Midland	413	" 24..	974	85 92	" " " "
Brittanic	277	" 24..	428	42 24	Paddle, Collingwood and Sault Ste. Maria
Athabasca	500	" 25..	2,269	189 52	Screw, Owen Sound and Fort William.
Alberta	500	" 25..	2,282	190 56	" " " " "
Manitoba	500	" 25..	2,616	217 28	" " " " "
Rosedale	18	" 26..	1,507	128 56	" Prescott and Duluth.
Lillie Smith	Freight	" 25..	275	27 00	" Montreal and Duluth.
Hiram R. Dixon		Not issued	483	46 64	" Georgian Bay and Lake Huron.
Thos. Maitland.*	Tug	April 26..	107	13 56	" Georgian Bay.
Agnes	"	" 26..	23	6 84	" " "
Rover	"	" 27..	51	9 08	" " "
Mazeppa	336	" 27..	146	19 68	" Owen Sound and Wiarton Bay.
S. Kneeland	Tug	" 29..	46	8 68	" Meaford and vicinity.
Dredge 9	Dredge	" 29..	187	19 96	Georgian Bay ports.
Owaping	Tug	" 30..	256	25 48	Screw, the lakes.
Lillie	"	" 30..	50	9 00	" Georgian Bay.
Severn	"	" 30..	44	8 52	" Collingwood and vicinity.
Metamora	"	May 1..	239	24 12	" Georgian Bay.
Magnolia	"	" 1..	376	34 36	" " "
Imperial	"	Not issued	36	7 88	" Sault Ste. Marie and vicinity.
		1901.			
Ossifrage	326	Oct. 31..	632	58 56	" Windsor and Duluth.
John Haggart	179	" 31..	202	24 16	" Sault Ste. Marie and Thessalon.
Island Belle	Tug	" 31..	31	7 48	" Georgian Bay.
Commodore	"	Not issued	40	8 20	" Sault Ste. Marie and vicinity.

* Tonnage dues paid at 6c. per ton in 1900.
" " 10c. " 1899.

SESSIONAL PAPER No. 21

Steam Vessels Inspected &c., West Ontario Division—*Continued.*

BOILERS AND MACHINERY—*Continued.*

Name of Vessel.	Number of Passengers Allowed.	Date Cerifitcate Expires.	Gross Tons.	Tonnage Dues and Inspection Dues Paid	Class of Vessel and Where Employed.
		1902.		8 cts.	
W. E. Gladstone	Tug	May 28.	59	9 72	Screw, Georgian Bay.
Mizpah	Yacht	" 28.	18	6 44	" " "
Joe Milton	200	" 28.	93	12 52	" Lake Huron and Georgian Bay.
Signal	Tug	" 29.	94	12 52	" Georgian Bay.
Laura Grace	"	June 6.	86	11 88	" The lakes.
		1901.			
Viper	"	Oct. 31.	34	7 22	" Georgian Bay.
Molly S	30	" 31.	45	8 60	" Killarney and Thessalon.
		1902.			
Medora	344	June 11.	299	31 92	" Muskoka Lakes.
Islander	107	" 11.	165	21 20	" " "
Charlie M		Not issued	50	9 00	" " "
Kenoza	267	June 11.	225	26 00	" " "
Ahmic	34	" 12.	43	8 44	" Muskoka Lakes.
Nymoca	40	" 12	25	7 00	" "
Mink	40	" 12.	56	9 48	" "
Priscilla	Yacht	" 12.	20	6 60	" "
Bertha May	Tug	" 12.	20	6 60	" "
Queen of the Isles	"	" 13.	40	8 20	" "
Rosseau	"	" 13	53	9 24	" "
Constance	40	" 14.	52	8 16	" "
Siesta	Yacht	" 14.	3	5 24	" "
Comet	Tug	" 14.	20	6 60	" "
Muskoka	300	" 14.	197	23 76	" "
Wanita	125	" 14.	44	8 52	" Burk's Falls and Ahmic Harbour.
Wenonaw	107	" 14.	161	20 88	Paddle and screw, Burk's Falls and Ahmic Harbour.
Glenrosa	Tug	" 15.	63	10 04	Screw, Burk's Falls and Ahmic Harbour.
Emulator	"	" 15.	25	7 00	" " "
Islay	348	" 17.	175	22 00	" Barrie and Orillia.
Lorna Doone	Yacht	" 17.	5	5 40	" Lakes Simcoe and Couchiching.
Longford	150	" 17.	53	9 24	" Barrie and Orillia.
Soncil	Yacht	" 17.	14	6 12	" Lakes Simcoe and Couchiching.
Waubawshene	Tug	" 18.	97	12 76	" Georgian Bay.
J. C. Else	"	" 18.	33	7 64	Paddle, Waubaushene and vicinity.
Mayflower		Not issued	26	7 08	Screw, Penetang and vicinity.
Gertie C	Tug	"	15	6 20	" Georgian Bay.
Tillie C	"	"	22	6 76	" Victoria Harbour and vicinity.
Charlton	"	June 18.	389	36 12	" The lakes.
Superior	"	" 19.	89	12 12	" "
Bertha		Not issued	18	6 44	" Parry Sound and vicinity.
Harold Gauthier	Fish'g Tug	June 20.	9	5 72	" Georaian Bay.
James Storey	Tug	" 21.	49	8 92	" "
Carlton	"	" 21.	8	5 72	" "
Maggie May	"	" 21.	46	8 68	" "
Bobs	40	" 21.	38	8 12	" Parry Sound and vicinity.
Lorna Doone	26	" 21.	26	7 16	" Point aux Baril and Moon River.
Pilot	Tug	" 21.	70	10 60	" Georgian Bay.
Geraldine	40	" 22.	65	10 28	" Penetang and Point aux Baril.
Dorothe	Yacht	" 22.	8	5 72	" Parry Sound and vicinity.
Edna	110.	" 22.	55	9 40	" Penetang and Point aux Baril.
W. S. Oldfield	Tug	" 22.	15	6 20	" Georgian Bay.
Emma	250	" 22	146	19 76	" Penetang and Point aux Baril.
Voyageur	Tug	" 25.	44	8 52	" Georgian Bay.
City Queen	180	" 26.	69	10 52	" Penetang and Point aux Baril.
Una	Yacht	" 26.	22	6 76	" Georgian Bay.
Harvey Neelan	Tug	" 25.	65	10 20	" "
Conqueror	"	" 26.	25	7 00	" "

STEAM Vessels inspected, &c., West Ontario Division—*Continued.*

BOILERS AND MACHINERY—*Continued.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Dues Paid	Class of Vessel and Where Employed.
		1902.		$ cts.	
Home Rule	Yacht	June 27	3	5 24	Screw, Georgian Bay.
John Lee, sr	277	" 27	88	12 04	" Collingwood and Penetang.
Maud	40	" 27	40	8 20	" Penetang and Point aux Baril.
Masonic	38	" 27	39	8 12	" " "
Siesta		Not issued	15	6 20	" Penetang and vicinity.
Shawanaga	Tug	June 28	96	12 68	" Georgian Bay.
Torpedo	Yacht	" 28	8	5 64	" "
Roy	"	" 28	6	5 48	" "
Mabel, G	"	" 28	10	5 80	" "
Totals			318 03	3,584 52	

E. W. McKEAN,
Toronto.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected in Canada but Registered elsewhere for the Year ended June 30, 1901.

WEST ONTARIO DIVISION.

BOILERS AND MACHINERY—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessels and where employed.
		1901.		8 cts.	
James Beard	66	July 5..	87		Screw, Sarnia and Port Huron.
Chenango No. 1.	950	Aug. 21..	1,942		Twin screw, all Lakes.
Transfer	233	Sept. 17..	1,511		Paddle, Windsor and Detroit.
Michigan Central	300	" 21..	1,522		" "
Transport	256	" 19..	1,595		" "
Wyandotte	904	" 20..	320		Screw, Lakes Erie to Huron.
Ariel	226	" 21	202		" Walkerville and Detroit.
Fortune	427	" 24..	200		" Windsor and Detroit.
Victoria	182	" 25..	192		" "
Omer D. Conger	398	Oct. 9..	347		" Lakes Erie to Huron.
Grace Dormer	162	" 9..	66		" Sarnia and Port Huron.
Welcome	266	" 10..	213		" Port Huron and Windsor.
Mascotte	498	Nov. 1..	162		Twin screw, Thessalon and Point Iroquis.
International	380	" 3..	144		Screw, Bay Mills and Thessalon.
Grace Dormer		Not issued	66		" Sarnia and Port Huron.
Omer D. Conger		" "	347		" Lakes Erie to Huron.
		1902.			
Newsboy	381	April 19..	200		" "
Promise	1,000	" 19..	473		" "
Excelsior	250	" 20..	229		" Windsor and Detroit.
Sappho	550	" 20..	224		" Lakes Erie to Huron.
City of Toledo	1,120	May 3..	1,004		Paddle, Toledo to Southampton.
Tashmoo	1,887	" 3..	1,344		" Port Huron and Amherstburg.
Greyhound	1,353	" 7..	621		" Sarnia and Toledo.
Pleasure	1,088	" 22..	490		Screw, Amherstburg and Port Huron.
Arundell		Not issued	339		" Detroit River.
America (Lake)	765	May 27	486		" Lake Erie.
America (Coasting)	510				
Idlewild	800	June 10..	363		Paddle, Toledo to Port Huron.
Puritan		Not issued	409		Twin screw, Buffalo and vicinity.
Pearl	845	June 14..	553		Paddle, Buffalo and Port Colborne.
Pennsylvania (Lake)	1,000	" 14	747		" Duluth and Prescott.
Pennsylvania (Coasting)	711				
James Beard		Not issued	87		Screw, Sarnia and Port Huron.
Frank E. Kirby	975	June 29..	533		Paddle, Lake Erie and Detroit River.
		1901.			
Niagara	150	Oct. 31..	214		Screw, Buffalo and Fort Erie.
Total			17,231		

JOHN DODDS,
E. W. McKEAN,
Toronto.

STEAM Vessels not Inspected for the Year ended June 30, 1901.

WEST ONTARIO DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	REMARKS. Why not Inspected and Class of Vessel.	
Naiad	29	18	Screw, yacht.	
Lady of the Lakes	10	7	" tug.	
Cleopatra	104	71	" yacht.	
Cambria	937	590	Paddle, passenger.	
International	851	559	Twin screw, ry. car ferry.	
Glenora	17	10	Screw, fishing tug.	
Odessa	12	8	" passenger.	
Luther Westover	127	80	Paddle, tug.	
John Williams	14	10	Screw, "	
Cecebe	11	8	" "	Not running.
*Sea Gull, of Sarnia	41	36	" "	
L. Shickluna	16	11	" "	
Clara Hickler	42	32	" "	
Sountag	7	5	" yacht.	
A. M. Petrie	20	13	" "	
Albani	5	4	" "	
Agnes C	20	10	" tug.	
Yacht Maida	2	2	" "	
Ida	21	6	" yacht.	
Kathleen	110	72	" passenger.	
Minitaga	73	29	" tug.	
D. L. White	56	38	" "	
Dalton McCarthy	54	37	" fishing tug.	
Orcadia	26	18	" "	No application.
Heather Belle	20	13	" "	
*C. W. Chamberlain	385	243	" freight.	
*J. V. O'Brien	59	31	" passenger.	
Annie M	33	22	" fishing tug.	
*J. H. Jones	152	98	" passenger.	
Port Elgin Queen	37	25	" tug.	
*Oriole	75	48	" passenger.	
*Nipissing	273	207	Paddle, "	
*Marie	12	8	Screw, tug.	
Sea Gull of Collingwood	9	6	" "	
Beaver	29	12	" "	
*Stilleto	14	10	" passenger.	
Lillie May	10	7	" tug.	
Ripple of Chatham	15	11	" "	
" Collingwood	5	4	" "	No application.
*Winnie	14	9	" "	
Welcome	21	14	" "	
A. V. Crawford	51	35	" "	
Ida Bell	6	3	" fishing tug.	
Ranger	8	5	" "	
Nina	11	9	" tug.	
Siesta	99	67	" yacht.	
Creole	21	14	" fishing tug.	
*Evelyn of Goderich	32	22	" "	
*Geo. Swann	18	12	" "	
*Huron	55	38	" tug.	
Topsy	9	6	" passenger.	
*Jno. R. Arnoldi	116	68	Dredge.	
*Union	267	163	Paddle, passenger.	
*Hope	170	116	Screw "	
*Abino	8	5	" "	
Adrelexa	15	10	" "	
*Morning Star	5	3	" tug.	
*M. A. Bennett	34	12	" "	
Maybird	46	32	" freight.	
Gordon Jerry	124	84	" "	
E. Windsor	86	58	" "	

*Inspected since July 1, 1901.

SESSIONAL PAPER No. 21

STEAM Vessels not Inspected &c., West Ontario Division—*Concluded.*

BOILERS AND MACHINERY—*Concluded.*

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Remarks. — Why not Inspected and Class of Vessel.	
*Herbert M.	26	18	Screw, tug.	
St. George	21	14	" "	
Ocean Lily	3	2	" "	
Iota	6	4	" "	
Walter Scott	26	18	" "	
A. Seamen	76	52	" "	No application.
Rambler	6	4	" "	
*Arbutus	49	34	" "	
J. S. Blazier	89	60	" "	
*Sarah E. Day	5	4	" fishing tug.	
Advance	72	49	" "	
Shamrock	14	10	" "	
W. H. Siebold	22	15	" "	
Juno	28	19	" "	
Clucas	28	19	" "	
Sea Gull of Goderich	19	13	" "	
Laura M	18	12	" "	
*Halcro	8	5	" yacht.	
Lillian	5	4	" "	
*Maid of the Mist	62	33	" passenger.	
Total	5,534	3,593		

* Inspected since July 1, 1901.

JNO. DODDS,
E. W. McKEAN,
Toronto.

STEAM Vessels Inspected for the Year ended June 30, 1901

WEST ONTARIO DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and Where Employed.
		1901.		8 cts.	
John Hanlan	185	Not gra't'd	37	7 96	Screw, Toronto Bay.
Scow No. 1.	112	July 10		10 00	Scow "
Abino	40	" 13	8	5 64	Screw, Niagara River.
Arlington	100	" 14	23	6 84	" Toronto Bay.
Conqueror	40	" 16	25	7 00	" Lake Simcoe.
Enterprise	305	" 16	148	19 84	" "
Ladysmith	26	" 16	6	5 48	" "
Islay	348	" 17	175	22 00	" "
Longford	150	" 17	53	9 24	" "
Stiletto	30	" 18	14	6 12	" Waubaushene, Moose Point.
City Queen	180	" 18	69	10 52	" Pt. aux Baril, Penetang.
Maud	40	" 19	40	8 20	" "
John Lee, sr.	(300 C.) (200 L.)	" 19	88	12 04	" Georgian Bay.
Mayflower	27	" 19	26	7 08	" Waubaushene and Pt. aux Baril.
Topsy	20	" 20	9	5 72	" Penetang Bay.
Advance	10	" 25	1,031	90 48	" All lakes.
R. C. Brittain	Freight	" 26	213	22 04	" Duluth and Prescott.
Dominion.	"	" 28	478	43 24	" " MIM
City of Chatham	580	" 30	341	35 28	" Chatham and Detroit.
Ottawa	8	Aug. 11	2,431	202 48	" Duluth and Prescott.
Juno	Freight	" 16	288	28 04	" Montreal and Duluth.
Scotia	40	" 20	13	6 04	" Amherstburg and Bois Blanc.
City of Dresden	100	July 30	194	23 52	" Windsor and Lake Erie.
Bobs	40	June 24	38	8 12	" Penetang and Pt. aux Baril.
Onaganoh	20	Aug. 28	19	6 52	" Muskoka Lakes.
Medora	344	Sept. 1	209	31 92	" "
Constance	40	" 1	52	9 16	" "
Islander	107	" 1	165	21 20	" "
Flyer	17	" 2	4	5 32	" "
Nymoca	40	" 2	25	7 00	" "
Mink	40	" 2	56	9 48	" "
Nipissing	215	" 1	275	30 00	Paddle "
Ahmic	34	Aug. 31	43	8 44	Screw "
Kenozha	267	" 28	225	26 00	" "
Charlie M	40	" 29	50	9 00	" "
Muskoka	300	Sept. 1	197	23 76	" "
Empress Victoria	108	Not issued	106	16 48	" Huntsville and Portage.
Mary Louise	40	Sept. 2	64	10 12	" " Lake of Bays.
Gem	40	" 2	9	5 72	" Portage and Pt. Sydney
Wanita	125	" 4	44	8 52	" Magnettawan River.
City of Owen Sound	247	" 2	754	68 32	Paddle, Georgian Bay.
Great Western	200	Oct. 9	1,080	94 40	" Windsor and Detroit.
Huron	245	" 9	1,052	92 16	Screw "
Lansdowne	200	" 10	1,571	133 68	Paddle "
Scotch Thistle	30	" 16	17	6 36	Screw, Killarney, Algoma Mills.
Fred Davidson	40	" 19	43	8 44	" Killarney and Soo.
B. M. Fraser	40	" 17	50	9 00	" "
Helen S	35	" 15	86	11 88	" Collingwood, Algoma Mills.
Edna Ivun	10	" 20	54	9 32	" Killarney and Coburn Island.
Fannie Arnold	31	" 22	73	* 9 38	" Killarney and Soo.
Albert Wright		Not gra't'd			
Camilla	40	Oct. 25	54	9 32	" Soo River.
Bertha Endress	14	" 27	32	7 56	" Michipocoten River.
Telegram	200	" 30	198	23 84	" Soo and Peninsular Harbour.
Minnie M	(561 C.) (466 L.)	" 31	613	57 04	" Soo and Michipocoten.
City of Windsor	92	" 30	511	48 88	" Collingwood and Soo.

* Fannie Arnold paid ten cents per ton previous year and six cents this year to balance up.

SESSIONAL PAPER No. 21

Steam Vessels Inspected, &c.—West Ontario Division.—*Continued.*

HULL INSPECTION.—*Continued.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		$ cts.	
Lakeside	{524 C. {349 L.	Mar. 27..	348	35 84	Screw, Lake Ontario.
		1901.			
Philadelphia	40	Oct. 16..	148	19 84	" Montreal and Duluth.
		1902.			
Erin	Freight	April 15..	651	57 08	" All Lakes.
Algonquin	10	" 20..	1,806	152 48	" "
Macassa	616	" 20..	459	44 72	" Toronto and Hamilton.
Ocean	125	" 23..	684	62 72	" Montreal and Sarnia.
D. R. Van Allan	Freight	" 22..	318	30 44	" All lakes.
Arabian	13	" 23..	1,073	93 84	" "
Ada Alice	125	" 23..	60	9 80	" Toronto Bay.
John J. Long	60	" 24..	201	24 08	" Georgian Bay.
City of Collingwood	407	" 24..	1,387	118 96	" All Lakes.
City of Midland	413	" 24..	974	85 92	" "
City of Toronto	294	" 25..	782	70 56	Paddle, Penetang and Soo.
Majestic	638	" 25..	1,578	134 24	Screw, All Lakes.
Germanic	500	" 25..	1,014	89 12	" "
Atlantic	300	" 26..	683	62 64	" Collingwood and Soo.
Britannic	277	" 26..	428	42 24	Paddle " "
Athabasca	500	" 29..	2,269	189 52	Screw, Owen Sound and Fort William.
Alberta	500	" 27..	2,282	190 56	" " "
Manitoba	500	" 29..	2,616	217 28	" " "
Lillie Smith	Freight	" 29..	275	27 00	" Montreal and Duluth.
Island Queen	140	May 1..	23	6 84	" Toronto Bay.
Luella	125	" 1..	38	8 04	" "
Chicora	872	" 1..	931	82 48	Paddle, Lake Ontario.
United Empire	295	" 2..	1,961	164 88	Screw, Windsor and Duluth.
Monarch	330	" 2..	2,017	169 36	" " "
Armenia	Freight	" 2..	467	42 36	" All Lakes.
Miles	"	" 3..	1,199	100 92	" "
C. W. Chamberlain	"	" 3..	385	35 80	" "
Hiawatha	300	" 3..	163	21 04	" St. Clair River.
Michigan	500	" 4..	1,730	146 40	Paddle, Windsor and Detroit.
Imperial	216	" 3..	150	20 00	Screw, Sarnia and Sandusky.
Seguin	20	" 3..	818	73 44	" All Lakes.
Ontario	500	Not issued	1,615	137 20	Paddle, Windsor and Detroit.
United Lumberman	Freight	May 3..	399	36 92	Screw, All Lakes.
Lake Michigan	12	" 10..	573	53 84	" "
Acacia	200	" 10..	107	16 54	" Hamilton and Burlington.
Garden City	760	" 11..	637	58 96	Paddle, Toronto and Lake Ontario.
Ongiara	244	" 11..	98	12 84	Screw, Niagara River.
Corona	1456	" 13..	1,274	109 92	Paddle, Lake Ontario.
Chippewa	2000	" 13..	1,514	129 12	" " ports.
Shamrock	412	" 14..	154	20 32	" Toronto Bay.
Mayflower	900	" 14..	189	23 12	" "
Thistle	345	" 14..	78	11 24	" "
Primrose	900	" 14..	189	23 12	" "
John Hanlan	185	" 14..	37	7 96	Screw "
Hiram R. Dixon	300	" 1..	483	46 64	" Collingwood and Fort William.
Mazeppa	336	" 1..	146	19 68	" Owen Sound and Wiarton.
		1901.			
Ossifrage	326	Oct. 31..	632	58 56	" Windsor and Duluth.
John Haggart	179	" 31..	202	24 16	" Soo and Thessalon.

STEAM Vessels Inspected &c., West Ontario Division—*Concluded.*

HULL INSPECTION—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		$ cts.	
Lincoln	511	May 25	337	34 96	Screw, Buffalo and Lake Erie.
Hope	300	" 27	170	21 60	" Buffalo and Fort Erie.
Maid of the Mist	80	" 28	62	9 96	" Niagara Falls.
Persia	150	" 28	757	68 56	" Montreal and Hamilton.
White Star	{702 C. \ 468 L. }	" 29	451	44 08	Paddle, Buffalo and Lake Erie.
Toronto	1000	" 29	2,779	230 32	" Toronto and Lake Ontario.
A. J. Tymon	{448 C. \ 300 L. }	June 12	194	23 52	Screw " "
		1901.			
Molly S	30	Oct. 31	45	8 60	" Killarney and Thessalon.
		1902.			
J. H. Jones	250	June 20	152	20 24	" Lake Huron and Georgian Bay.
Joe Milton	200	" 20	93	12 52	" " "
Lorna Doone	26	" 21	26	7 16	" Point aux Baril and Moose Pt.
Edna	110	" 21	55	9 40	" " " Penetang.
Bertha		Not gra'd	18	6 44	"
Emma	250	June 22	146	19 76	" " " "
Geraldine	40	" 24	65	10 28	" " " "
Bobs	40	" 24	38	8 12	" " " "
City Queen	180	" 25	69	10 52	" " " "
John Lee, sr	{277 C. \ 200 L. }	" 26	88	12 04	" Penetang and Collingwood.
Masonic	38	" 26	39	8 12	" " Point aux Baril.
Maud	40	" 26	40	8 20	" " "
Canada	492	" 27	312	32 96	" Toronto and Niagara.
Modjeska	801	" 27	678	62 24	" Toronto and Hamilton.
Pittsburg	500	" 28	1,349	123 92	Paddle, Buffalo and Soo.
Kingston	1000	" 29	2,925	242 00	" Toronto and Prescott.
				....	

WM. EVANS.
Hull Inspector.

SESSIONAL PAPER No. 21

STEAM Vessels inspected in Canada but Registered elsewhere for the Year ended June 30, 1901.

WEST ONTARIO DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Class of Vessel and where employed.
		1901.		
Annie F. O'Neil	40	July 13..	50	Screw, Niagara River.
Pearl	845	Aug. 13..	552	Paddle, Lake Erie.
Gazelle	512	" 14..	183	Screw, "
Puritan	725	" 14..	409	" "
Pennsylvania	1000 c 711	" 14..	747	Paddle "
Sappho	700	" 15..	224	Screw, Detroit River.
Greyhound	1,353	" 16..	621	Paddle, Sarnia and Toledo.
Excelsior	560	" 17..	229	Screw, Detroit River.
Victoria	182	" 17..	192	" " "
City of Toledo	1,120	" 17..	1,004	Paddle, Toledo and Southampton.
Promise	1,000	" 17..	473	Screw, Detroit River.
Fortune	427	" 17..	200	" " "
Ariel	226	" 18..	202	" " "
Transfer	233	" 18..	1,511	Paddle and Screw, Detroit River.
Transport	256	" 18..	1,595	" " " "
Michigan Central	300	" 18..	1,522	" " " "
Wyandotte	904	" 20..	320	" Lakes Erie and Huron.
Tushmoo	1,887	" 21..	1,344	Paddle, Detroit River.
Grace Dormer	162	" 22..	66	Screw, Sarnia and Port Huron.
Omer D. Conger	398	" 22..	347	" between Lake Erie and Huron.
James Beard	66	" 22..	87	" Sarnia and Port Huron.
Welcome	266	" 23..	213	" Port Huron and Windsor.
Idlewild	800	" 20..	363	Paddle, Toledo and Port Huron.
Shenango, No. 1	950	" 24..	1,942	Screw, Lake Erie.
Louise	154	" 24..	84	" "
International	380	Oct. 26..	144	" Bay Mills and Thessalon.
Mascotte	498	" 29..	162	" Pt. Iroquois and Thessalon.
Niagara	150	Nov. 9..	214	" Buffalo and Fort Erie.
America	765	May 27..	486	" " Lake Erie.

WILLIAM EVANS,
Hull Inspector.

STEAM Vessels not Inspected for the Year ended June 30, 1901.

WEST ONTARIO DIVISION.

HULL INSPECTION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Remarks. — Why not inspected and class of Vessel.
Carlton	8	6	No application.
Odessa	12	8	"
J. C. Clark	145	99	Not running.
Adrelexa	15	10	No application.
Oriole	75	48	"
Wenonah	161	90	Not running.
Agnes	14	10	No application.
Rosedale	1,507	977	"
Comfort	14	12	"
Clark Brothers	33	22	Rebuilding.
Cambria	937	590	Not running.
Kathleen	110	72	"
Julian V. O'Brien			No application.

WILLIAM EVANS,
Hull Inspector.

SESSIONAL PAPER No. 21

Steam Vessels Inspected for the Year ended June 30, 1901.

EAST ONTARIO DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901.		$ cts.	
Torpedo			197·69	20 84	Drill boat, Canal.
Iroquois			287·18	27 96	Spoon dredge "
Gilbert		July 3..	40·83	8 28	Screw, tug, River St. Lawrence.
Maud L.		March 1..	14·05	6 12	" " canal and river.
Manita	150	July 11..	31·10	7 72	" Lindsay and Coboconk.
Calumet		" 12..	21·87	6 76	" pleasure yacht.
Alice Ethel	150	" 12..	71·75	10 76	Paddle, Bobcaygeon and Burleigh.
Mudine		" 12..	13·81	6 12	Screw, tug, Victoria and Peterboro'
Esturian	300	" 13..	139·39	19 12	Paddle, Victoria and Peterboro'.
Maple Leaf	25	" 13..	26·08	7 08	Screw, " "
Beaubocage		" 14..	129·00	15 32	Paddle, tug " "
Pearl	20	" 14 .	6·39	5 48	Screw, Lakefield and Lindsay.
Beaver		" 16..	91·50	12 32	Paddle, Lindsay waters.
Crandella	400	" 16..	266·20	29 28	" Lakefield and Rosedale Lock.
Greyhound	40	" 16..	37·35	7 96	Screw, Victoria and Peterboro'
Comet	35	" 17..	7·60	5 64	" " "
Waterwitch		" 17..	17·70	6 44	" tug " "
Marie Louise		" 17..	32·19	7 56	" " " "
Stranger		" 18..	53 41	9 24	" " "
Express	20	" 18..	3·90	5 32	" Lindsay and Port Perry.
Kawartha	20	" 19..	16·69	6 36	" Fenelon Falls and Kawartha.
Dauntless	10		3·38	5 24	" Lindsay waters.
Dawn	35		20·20	6 60	" " "
Kinirving		July 21..	145·40	16 60	" Lake and river.
Victoria	185	" 23..	58·10	9 64	" Trenton and Prescott.
Chance		" 23..	5·02	5 40	" pleasure yacht.
Wanda	30	" 24..	38·61	8 12	" Trenton and Morrisburg.
Lady of the Lake	38	" 25..	32·95	7 64	" Victoria and Peterboro.'
Estelle			8·23	5 64	" Naptha, pleasure yacht.
Majestic	185	July 27..	67·77	10 44	" Cos. Victoria and Peterboro'
Empress	200	" 27..	84·48	11 72	" " " "
Mayflower			5·99	5 48	Screw, Pleasure yacht.
Dickson			16·01	6 28	Paddle, Alligator tug.
Flash	10	July 28..	4·74	5 40	Screw, Cos. Victoria and Peterboro.
Sunbeam	210	" 28..	104·92	16 40	" " "
Idle Hour	9	" 28..	2·40	5 16	" Lindsay and Stony Lake.
Victoria	12		3 90	5 32	" Cos. Victoria and Peterboro.
North Star	165	July 30..	39·60	8 20	" Rice Lake and tributaries.
Eclipse	40	" 30..	17·94	6 44	" " "
Beaver	75	" 30..	18·00	6 44	" " "
Rainbow	40	" 30..	25·92	7 08	" " "
City of Peterborough	300	" 31..	287·60	31 04	Paddle " "
Wenonah		Aug. 7..	5·59	5 48	Screw, Pleasure yacht.
Geraldine		" 7..	17·90	6 44	" "
John Haggart	250	" 7..	201·60	24 16	" Montreal and Kingston.
Maggie May		" 9..	29·03	7 32	" Canal and river.
Siesta		" 14..	14·96	6 20	" Pleasure yacht.
Hydra		" 14..	5·70	5 48	" Fish tug.
Vesta		" 14..	7·80	5 64	" Pleasure yacht.
Florence		" 15..	3·08	5 24	" "
C. F. Dunbar		" 18..	32·86	7 64	" Tug, canal.
Beaver		" 20..	40·88	8 28	" "
Quebec		" 21..	108·31	13 64	" Freight boat.
A. B. Cooke		" 21..	34·17	7 72	" Tug, canal.
Gracie	40	" 22..	19·50	5 88	Paddle, Cornwall and Dundee.
Mary Ellen		" 22..	20·22	6 60	Screw, Tug, canal.
Grenada	175	" 23..	57·00	9 56	" Kingston and Montreal.
Princess Louise		" 24..	26·36	7 08	" Tug, canal.
Ivy	35	" 24..	7 43	5 56	" Cornwall and Lake St. Francis.
W. J. Poupore		" 25..	46·54	8 76	" Tug, canal.

STEAM Vessels Inspected, &c.— East Ontario Division—*Continued.*

BOILERS AND MACHINERY—*Continued.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901.		$ cts.	
Jopl	40	Sept. 1..	10·54	5 88	Screw, Kingston and Prescott.
Aberdeen	40	.....	12·65	6 04	" " Ottawa.
Kilbirnie	.....	Sept. 12..	15·23	6 20	" Pleasure yacht.
Nellie	.....	.....	6·82	5 56	" Kingston and Ottawa.
Tropic	15	.....	8·86	5 72	" " "
Commodore	25	.....	3·06	5 24	" Carleton and Innesville.
Myra	.....	Sept. 1..	78·21	10 84	" Tug, River St. Lawrence.
Dredge D. Stewart	.....	" 1..	295·21	28 60	Spoon dredge, canal.
Umbria	.....	" 1..	42·98	8 44	Screw, tug, canal.
John Hunter	.....	" 1..	32·14	7 56	" " "
Dredge St. Lawrence	.....	" 1..	258·10	25 64	Spoon dredge, canal.
Mona	.....	" 1..	24·87	7 00	Screw, tug, canal.
Wm. Davis	.....	" 1..	40·23	8 20	" "
Mary	.....	" 1..	61·52	9 88	" "
Dredge Ottomac	.....	" 1..	195·65	20 68	Elevator dredge, canal.
Alaska	.....	" 1..	48·74	8 92	Screw, tug, River St. Lawrence.
C. H. Jones	.....	" 1..	47·96	8 84	" " "
Hubert Larkin	.....	" 1..	48·73	8 92	" " "
Thistle	.....	Oct. 1..	36·02	7 88	" fishing tug.
D. P. Dey	.....	Sept. 1..	11·26	5 88	" tug, canal.
Prince Edward	.....	.....	18·22	6 44	Paddle, Tyendinaga and Sophiasburg.
Frank	.....	.....	15·97	6 28	Twin screw, tug, River St. Lawrence.
		1902.			
C. W. Janes	.....	April 2..	47·96	8 84	Screw " "
Hubert Larkin	.....	" 2..	48·73	8 92	" " " "
Dredge L. X. L	.....	" 2..	100·00	13 00	Spoon dredge, canal.
" Sir Hector	.....	" 2..	355·39	33 40	" " "
Pierrepont	415	" 5 .	251·98	28 16	Paddle, Trenton and Prescott.
Reliance	25	" 6..	239·14	27 12	Twin screw, all lakes and rivers.
Resolute	25	" 6..	371·86	37 76	" "
Rescue	25	" 6..	52·29	9 16	Screw, Trenton and Prescott.
Ella Ross	300	" 6..	324·88	34 00	Paddle, Brighton and Prescott.
Deseronto	85	" 6..	54·57	9 40	Screw, Trenton and Prescott.
Hero	475	"	342·12	33 36	Paddle, Trenton and Prescott.
Cuba	100	" 8	931·13	82 48	Screw, all lakes and rivers.
Bannockburn	10	" 10	1619·56	137 60	" " "
India	.....	" 10	976·49	83 08	" freight, all lakes.
Rosemount	10	" 11	1580·37	134 40	" all lakes and rivers.
David G. Thomson	.....	" 11	185·05	19 80	" tug, River St. Lawrence.
Active	.....	" 13	301·70	29 16	" " "
Glengarry	.....	" 13	732·41	63 56	" freight, all lakes.
D. D. Calvin	.....	" 16	749·53	65 00	" " "
Parthia	.....	" 16	198·13	20 84	Paddle, tug, River St. Lawrence.
Wm. Johnston	.....	" 17	94·72	12 60	Screw " "
Bathinia	.....	" 17	833·36	71 64	" freight, all lakes.
King Ben	.....	" 18	145·36	16 60	" " River St. Lawrence.
Aberdeen	.....	" 1	141·86	16 36	" " "
Water Lily	.....	" 1	95·09	12 60	" " "
Chub	.....	" 1	57·19	9 56	" " "
Nile	.....	" 20	96·30	12 68	" " "
Ranger	15	" 20	13·83	6 12	" Trenton and Prescott.
James Swift	125	" 22	265·92	29 28	" Kingston and Ottawa.
Cheiftan	.....	" 1	434 68	39 80	Paddle, tug, River St. Lawrence.
North King	525	" 24	872·95	77 84	" all lakes and rivers.
Rival	.....	" 24	125·14	15 00	" tug, River St. Lawrence.
Orion	.....	" 24	846·43	72 68	Screw, freight, all lakes.
Glide	.....	" 25	77·90	11 24	" tug, River St. Lawrence.
Jessie Hall	.....	" 25	56·54	9 56	" " "
Iona	15	" 26	231·53	26 56	" Lake Ontario and river.
Hector	.....	" 26	20·64	6 68	" tug, River St. Lawrence.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.—East Ontario Division—*Concluded.*

BOILERS AND MACHINERY—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection. Fees paid.	Class of Vessel and where employed.
		1902.		8 cts.	
Valeria	40	April 26	51.55	9 16	Screw, Trenton and Prescott.
Saturn		" 27	883·09	75 64	" all lakes and rivers.
		1901.			
Aannie Barrett		Aug. 20	41·89	8 36	" tug, canal.
		1902.			
John Milne		May 1	108·53	13 72	" freight, Rideau Canal.
Arctic		"	100·51	13 08	" freight, lake and river.
Lloyd S. Porter		" 6	488·63	44 12	" " all lakes.
C. H. Merrit	350	" 6	121·58	17 76	" Brighton and Prescott.
America	698	" 10	520·53	52 24	Paddle, Trenton and Montreal.
Where Now		" 10	47·78	8 84	" pleasure yacht.
Ellen	40	" 14	25·10	7 00	" Kingston and Prescott.
H. F. Bronson		" 17	137·12	15 96	T.S. tug, River St. Lawrence.
Aletha	350	" 18	171·27	21 68	Screw, Trenton and Valleyfield.
Kismit		" 20	5·42	5 40	" pleasure yacht.
Madge		" 20	9·49	5 72	" "
Annie Lake	40	" 20	18·52	6 52	" Brighton and Prescott.
Jessie Forward		" 20	5·64	5 48	" Pleasure yacht.
Skylark		" 21	43·29	8 44	" "
Carmana		" 21	56·08	9 48	" "
Armenia	200	" 22	109·99	16 80	" Trenton and Dickensons' La.
Reindeer	165	" 22	58·29	9 64	" Trenton and Prescott.
Varuna	240	" 23	134·04	18 72	" Brighton "
Edmond		" 28	39·10	8 12	" tug, canal.
Rideau Queen	300	" 28	350·75	36 08	" Kingston and Ottawa.
Gladys		" 30	26·01	7 08	" pleasure yacht.
Argyle	800	" 31	700·29	64 00	Paddle, Lake Ontario and river.
Eva Belle		June 3	10·10	5 80	Screw, Fishing Patrol Boat.
Alexandria	600	" 10	863·15	77 04	Paddle, Charlotte and Quebec.
Rainbow	130	" 11	50·69	9 08	Screw, Rice Lake and Tribton.
Water Lily	150	" 11	53·93	9 32	" " "
Kacymo		" 13	8·79	5 72	" pleasure yacht.
Iagara		" 13	7·43	5 56	" "
Donnelly		" 14	318·91	30 52	Paddle, tug, River St. Lawrence.
City of Belleville	250	" 18	101·17	16 08	Screw, Kingston and Prescott.
Victoria	186	" 18	58·10	9 64	" Trenton and Prescott.
Brockville	358	" 19	190·75	23 28	" Kingston and Cornwall.
Antelope	40	" 19	24·98	7 00	" Trenton and Prescott.
Albani		" 20	57·83	9 64	" pleasure yacht.
Dortha		" 21	50·98	9 08	" "
Kenneth		" 21	4·11	5 32	" "
Corrella	18	" 21	3·81	5 32	" Kingston and Prescott.
Leone	25	" 20	4·26	5 32	" " "
Lee	25	" 20	8·73	5 72	" " "
Illecillewaet		" 20	15 69	6 28	" pleasure yacht.
Total			24,438·37	2,845 88	

THOS. P. THOMPSON.
Steamboat Inspector.

STEAM Vessels Inspected in Canada but Registered elsewhere, for the Year ended June 30, 1901.

EAST ONTARIO DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901.		8 cts.	
H. P. Bigelow	100	June 20..	46·00	Exempt .	Screw, Trenton and Prescott.
Sirius	46	" 20..	22·00	" ..	" " Fort Covington.
Sophia	40	" 20 .	16·36	" .	" River St. Lawrence and Ports.
Ramona	170	July 21..	57·07	" ..	" Trenton and Prescott.
Algona	290	June 20..	92·06	" ..	" Cape Vincent and Fort Covington.
		1902.			
New Island Wanderer.	400	April 10..	123·00	" ..	Screw, Kingston and Ogdensburg.
St. Lawrence	645	" 30..	312·90	" ..	Paddle, Kingston and Montreal.
New York	730	May 4..	294·87	" ..	" Niagara River.
Empire State	750	" 8..	379·74	" ..	" Kingston and Ogdensburg.
Capt. Visgar	110	June 25..	29·23	" ..	Screw " "
Virginia	40	" 3..	21·72	" ..	" Trenton "
Idler			57·00	" ..	" all lakes and rivers.
Ramona			57·07	" ..	" Trenton and Prescott.
Gen'l. W. B. Franklin.	25	June 19..	11·35	" ..	" " "
Spry	25	" 19..	4·39	" ..	" Kingston and Ogdensburg.
Valetta	40	" 20..	27·84	" ..	" Trenton and Ogdensburg.
Capt. Dave Waggoner.			19·25	" ..	"
Nettie	25	June 20..	11·02	" ..	" Kingston and Ogdensburg.
Island Belle	335	" 21..	89·77	" ..	" " "
Henry Plumb	240	" 20..	92·78	" ..	" " and Cornwall.
Outing	25	" 24..	15·87	" ..	" Cape Vincent and Fort Covington.
Mary	300	" 20..	174·64	" ..	" Kingston and Cornwall.
Crisco	65	" 20..	62·09	" ..	" " "
Dean	22	" 20..	11·19	" ..	" Cape Vincent and Fort Covington.
Massina	250	" 20..	89·67	" ..	" " and Cornwall.
Sirius	46	" 20..	22·00	" ..	" Trenton and Fort Covington.
H. F. Bigelow	100	" 20..	46·00	" ..	" " and Montreal.
Sophia	40	" 20..	16·36	" ..	" Lake coasting and R. St. L.
Total			2,203·15		

THOS. P. THOMPSON,
Steamboat Inspector.

SESSIONAL PAPER No. 21

STEAM Vessels not Inspected for the Year ended June 30, 1901.

EAST ONTARIO DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Remarks. Why not Inspected and Class of Vessel.
Dolce	4·74	3·22	Screw, passenger; no application.
Rescue	7·23	4·92	" " "
Mary Ethel	98·61	56·13	Paddle " "
Startled Fawn	25·49	17·34	Screw " "
Anna	7·89	6·49	" tug "
Marmora	12·96	8·82	" passenger "
Mabel C	4·48	3·36	" yacht "
Alberta	122·43	88·43	" freight "
Dorothy	10·09	6·16	" passenger "
Beaubocage	129·00	104·70	Paddle " hauled out.
Helen	1·82	1·24	Screw " no application.
Total	424·74	300·81	

THOS. P. THOMPSON,
Steamboat Inspector.

STEAM Vessels Inspected for the Year ended June 30, 1901.

EAST ONTARIO DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
				$ cts.	
Cuba	109	April 8..	931·13	82 48	Screw, all lakes and rivers.
Pierrepont	415	" 9..	251·98	28 16	Paddle, Trenton, Prescott.
India	Freight..	" 10..	976·49	83 08	Screw, all lakes and rivers.
Reliance	25	" 12..	239·14	27 12	" "
Rescue	25	" 12..	52·29	9 16	" Trenton, Prescott.
Ranger	15	" 12..	13·83	6 12	" " Picton.
Ella Ross	300	" 12..	324·88	34 00	Paddle, Brighton, Prescott.
Deseronto	85	" 12..	54·57	9 40	Screw, Trenton "
Resolute	25	" 12..	371·86	37 76	" all lakes and river.
Hero	475	" 16..	342·12	35 36	Paddle, Trenton, Prescott.
Bannockburn	10	" 18..	169·56	137 60	Screw, all lakes and rivers.
Rosemount	10	" 18..	1580·37	134 40	" " "
Glengarry	Freight...	" 18..	732·41	63 56	" "
D. D. Calvin	" ...	" 20..	749·53	65 00	" "
Bothnice	" ...	" 23..	833·36	71 64	" "
Orion	" ...	" 24..	846·43	72 68	" "
Saturn	" ...	" 24..	883·09	75 64	" "
James Swift	125	" 25..	265·92	29 28	" Kingston, Ottawa.
Iona	15	" 26..	231·53	26 56	" all lakes and rivers.

STEAM Vessels Inspected, &c.—East Ontario Division—*Concluded.*

HULL INSPECTION—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902		$ cts.	
Valeria	135	April 27..	51·55	9 16	Screw, Trenton, Prescott.
North King	525	May 4..	872·95	77 84	Paddle, all lakes and rivers.
Lloyd S. Porter	Freight ...	" 6..	488·63	44 12	Screw, Lake Ontario and St. L. River.
America.. Prescott... / Montreal .	698 / 500	" 10..	520·53	52 24	Paddle, Trenton, Cape Vincent, Montreal.
Ellen	40	" 18..	25·10	7 00	Screw, Kingston, Prescott.
Aletha.. Prescott..... / Valleyfield..	350 / 240	" 18..	171·27	21 68	" " Valleyfield.
Reindeer	165	" 27..	58·29	9 64	" Trenton, Prescott.
C. H. Merrit	350	" 27..	121·58	17 76	" Sault St. Marie, Thessallon.
Varuna	240	" 21..	134·04	18 72	" Brighton, Prescott.
Annie Lake	40	" 27..	18·52	6 52	" " "
Stranger.. Prescott... / Montreal .	150 / 100	" 24..	69·58	10 20	" Trenton, Montreal.
Rideau Queen	300	" 28..	350·75	36 08	" Kingston, Ottawa.
Richelieu	410	June 1..	125·56	17 04	Paddle, lake boating, Toronto to Oakville.
Argyle.. Lake ... / River...	530 / 800	" 7..	700·29	64 00	" lake and river.
Alexandria ... Lake . / River.	450 / 600	" 7..	863·15	77 04	" " "
Waterlily	150	" 10..	53·93	9 32	Screw, Rice Lake and tributaries.
Queen	40	" 12..	15·37	6 20	" Lake Nipissing "
Ladas	25	" 12..	54·47	9 32	" Collander and Chaudière.
Van Woodland	100	" 12..	37·49	7 96	" Lake Nipissing.
Booth	40	" 13..	346·55	32 76	Paddle, " "
Sparrow	40	" 14..	38·17	8 04	Screw, " "
Empress	25	" 15..	35·57	7 88	" " "
Fleur de Mai	15	" 15..	6·74	5 56	" " " Sturgeon River.
Verva	40	" 17..	54·54	9 40	" Wahnapatie Lake.
Victoria	400	" 18..	187·58	23 04	Paddle, Pembroke to Des Joachims.
D. B. Mulligan	40	" 18..	76·69	11 16	Screw, " to Allumette Island.
Antelope	40	" 24..	24·98	7 00	" Trenton and Prescott.
Victoria	185	" 24..	58·10	9 64	" " "
Brockville Cornwall . / Prescott ..	240 / 358	" 24..	190·75	23 28	" Kingston to Cornwall.
Lee	25	" 24..	8·73	5 72	" " to Prescott.
Leone	25	" 24..	4·26	5 32	" " "
Corella	18	" 24..	3·81	5 32	" " "
City of Belleville	250	" 25..	101·17	16 08	" " "
International	150	" 25..	395·31	39 60	" Prescott and Ogdensburg.
Jubilee	40	" 26..	53·94	9 32	" Morrisburg and Waddington.
Armenia Landing .. / Prescott ..	150 / 200	" 28..	109·99	16 80	" Trenton, Dickenson Landing.

M. R. DAVIS,
Hull Inspector.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected in Canada but Registered Elsewhere, for the Year ended June 30, 1901.

EAST ONTARIO DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessels and where employed.
		1902.		8 cts.	
New Island Wanderer.	400	April 10..	123·00	Exempt.	Screw, Kingston, Cape Vincent and and Ogdensburg.
St. Lawrence..... ...	645	May 6..	312·90	"	Paddle, " " " "
New York	730	" 8..	294·00	"	" Niagara River.
Capt. Visgar.....	110	" 25..	29·23	"	Screw, " Ogdensburg.
Virginia.....	40	June 8..	21·00	"	" Trenton, Ogdensburg.
Empire State...	750	*	379·74	"	Paddle, Kingston and Ogdensburg.
Gen. W. B. Franklin..	25	June 24..	11·35	"	Screw, Trenton and Prescott.
Spry..... ...	25	" 24..	4·39	"	" Kingston and Ogdensbug.
Wm. Armstrong.....	25	" 25..	180·64	"	" Brockville and Prescott ferry.
Outing	25	" 25..	15·87	"	" Cape Vincent to Ft. Covington.
Crescoe	65	" 25..	62·00	"	" Kingston to Cornwall.
Mary { Cornwall.. ... / Prescott ...	200 / 300	" 25..	174·64	"	" " "
Dean.	22	" 25..	11·19	"	" Cape Vincent to Ft. Covington.
Hry. Plumb { Cornw'll / Prescott	175 / 240	" 25..	92·78	"	" Kingston, Cornwall.
Massena { Cornwall.. / Prescott ..	175 / 250	" 25..	89·67	"	" Cape Vincent, Cornwall.
Sirius { Montreal .... / Ogdensburg...	30 / 46	" 29..	22·78	"	" Trenton, Montreal.
H. P. Bigelow { Mont. / Ogdn.	66 / 100	" 29..	46·67	"	" " "
Sophia	40	" 29..	16·36	"	" Lake Coasting and St. Lawrence River.

* Close of navigation, 1901.

M. R. DAVIS,
Hull Inspector.

STEAM Vessels Inspected for the Year ended June 30, 1901.

MONTREAL DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901.		$ cts.	
Florida		July 3..	201	21 08	Twin screw, fr't, Montreal & Pierreville.
Lady of the Lake	700	" 4..	607	56 56	Paddle, passenger, Newport & Magog.
Annie C	10	" 4..	6	5 48	Screw " " "
Massawippi	10	" 5..	4	5 32	" " Lake Massawippi.
John A		" 5..	20	6 60	" tug, Lake Memphremagog.
Allie	10	" 13..	11	5 88	" passenger, Rideau Canal.
Frolic		" 13..	16	6 28	" pleasure yacht, Rideau Canal.
Prefontaine	40	" 16..	434	42 72	" ft. & pass., Montreal & Quebec.
Chaffey	40	" 20..	42	8 36	" pass., Lancaster and Valleyfield.
White Squall		" 20..	7	5 56	" pleasure yacht, St. Lawrence R.
Monaco		" 24..	10	5 80	" " "
Argo	40	Aug. 2..	154	17 32	Pad., ft. & pas., Lake Temiscamingue.
Meteor	250	" 2..	299	31 92	Screw " " "
Dora	25	" 3..	48	8 84	" " " "
Little Roxy		" 3..	12	5 96	" tug " "
Clyde	25	" 4..	29	7 32	" pass. " "
Beaver		" 4..	13	6 04	Pad., warp tug " "
Mink		" 4..	14	6 12	" " " "
Comet		" 6..	144	16 52	Screw, tug " "
R. Hurdman	40	" 7..	93	12 44	" passenger, Lake Kippewa.
Otter		" 7..	21	6 68	Pad., warp tug " "
North River		" 7..	22	6 76	" " " "
Charlotte	30	" 8..	14	6 12	Screw, passenger " "
D. A. Martin	40	" 8..	78	11 24	" " " "
F. W. Avery		" 8..	14	6 12	Pad., warp tug " "
C. E. Read		" 9..	13	6 04	" " " "
Bonenfant	25	" 11..	31	7 48	Twin Screw, ferry, Charlemagne & Bout de L'Isle.
Majestic	400	" 13..	275	30 00	Screw, passenger, Richelieu River.
Adonis		" 13..	14	6 12	" pleasure yacht, Richelieu River.
Tiber	80	" 16..	1,736	146 88	" frt. & pass., Gulf Ports.
Sandy		" 23..	29	7 32	" tug, Ottawa River.
Alexandria		" 28..	53	9 24	" pleasure yacht, Richelieu River.
Monitor		Sept. 7..	62	9 96	" tug, St. Lawrence River.
Monarque		" 7..	136	15 88	Pad., " "
St. George		" 13..	17	6 36	" warp tug, Trembling Lake.
Wild Rose		Nov. 13..	10	5 80	Screw, pleasure yacht, St. Lawrence R.
		1902.			
Longueuil	300	Apr. 4..	365	37 20	Pad., ferry, Montreal & Longueuil.
Cultivateur	751	" 4..	362	36 96	" " " St. Helen's Isl.
Honoré		" 20..	22	6 76	Screw, tug, St. Lawrence River.
Rockland		" 22..	78	11 24	" " Ottawa River.
Archie Stewart		" 22..	80	11 40	" " "
Dolphin		" 22..	70	10 60	" " "
G. H. Notter		" 22..	14	6 12	" " "
Florence		" 22..	62	9 96	" " "
G. H. Harris		" 23..	87	11 96	" " "
Sir Hector		" 23..	40	8 20	" " "
Hall	50	" 23..	247	27 76	" frt. & pass., Montreal & Ottawa.
Hebron		" 23..	149	16 92	" freight, " Oswego.
Welshman	25	" 23..	156	20 48	" frt. & pass., " Ottawa.
D. B. Mulligan	40	" 24..	77	11 16	" ferry, Pembroke & Desjardin.
E. H. Bronson		" 24..	285	27 80	Paddle, tug, Upper Ottawa.
Alex. Fraser		" 24..	320	30 60	" " "
C. B. Powell		" 25..	272	26 76	" " "
Hercules		" 25..	21	6 68	Pad., warp tug "
Victoria	400	" 25..	188	23 04	" pass., Pembroke & Des Joachims.
Charlemagne		" 26..	76	11 08	Screw, tug, St. Lawrence River.
McNaughton		" 27..	137	15 96	" " "
Virginia		" 27..	146	16 68	" " "
Florence		" 27..	113	14 04	" " "

SESSIONAL PAPER No. 21

Steam Vessels Inspected, &c.—Montreal Division—*Concluded.*

BOILERS AND MACHINERY—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees paid.	Class of Vessel and where employed.
		1902.		$ cts.	
Olive	60	April 29..	151	20 08	" frt. & pass., Montreal & Ottawa.
Harry Bate	40	" 29..	254	28 32	" " " " "
Empress	800	" 29..	677	62 16	Paddle, pass., Ottawa & Grenville.
Sandy		" 29..	29	7 32	Screw, tug, Ottawa River.
Melbourne	155	May 1..	894	79 52	" frt. & pass., Montreal & Toledo.
Duchess of York	700	" 1..	490	47 20	Paddle, pass., Montreal & Carillon.
Nora		" 2..	28	7 24	Screw, tug, St. Lawrence River.
Princess	443	" 3..	526	50 08	Pad., frt. & pass., Montreal & Carillon.
Richelieu	410	" 3..	113	17 04	" " " Valleyfield.
St. Laurent	257	" 4..	546	51 68	" " " Berthier.
Garnet	200	" 7..	152	20 16	" " " Valleyfield.
Chateauguay	450	" 9..	222	25 76	" " " Chateauguay.
Filgate	273	" 10..	425	42 00	" " " Cornwall.
Jessie		" 13..	19	6 52	Screw, tug, St. Lawrence River.
Sovereign	700	" 13..	637	58 96	Paddle, pass., Montreal & Carillon.
Mary		" 14..	53	9 24	Screw, tug, St. Lawrence River.
Robert Anglin		" 17..	97	12 76	Screw, freight, Ottawa River.
Ada		" 17..	28	7 24	" tug "
Victoria	300	" 17..	181	22 48	" pass., Ottawa & Thurso.
Beatrice B	40	" 18..	59	9 72	" ferry " Hull.
Juno		" 18..	17	6 36	" pleasure yacht, Deschene Lake.
G. B. Greene	600	" 18..	255	28 40	Paddle, pass. "
Albert		" 18..	269	26 52	" tug "
Pattee		" 18..	30	7 40	Screw " "
J. N. Murphy		" 20..	173	18 84	" " Chats Lake.
Hamilton		" 20..	320	30 60	Paddle " "
Samson		" 20..	15	6 20	" warp tug "
Pembroke		" 20..	194	20 52	" " Upper Ottawa.
*Flora		" 20..	5	21 60	Screw, pleasure yacht, Upper Ottawa.
Madawaska		" 21..	15	6 20	Paddle, warp tug, Chats Lake.
Amable du Ford		" 21..	17	6 36	" " "
Alva		" 22..	27	7 16	Screw, tug, Rideau Canal.
Emile	40	" 22..	12	5 96	" pass., Ottawa and Kettle Island.
Mansfield	15	" 22..	169	21 52	" ferry " Gatineau Pt.
Agnes	40	" 23..	29	7 32	" pass., Buckingham & High Rock.
Mildred	25	" 23..	15	6 20	" " " "
Leon	15	" 23..	15	6 20	" " Lievres River.
†Winona		" 24..	12	11 92	" tug, Ottawa River.
Ida	40	" 25..	247	27 76	" frt. & pass., Ottawa & Montreal.
R. B. Flower		" 25..	15	6 20	" tug, St. Lawrence River.
Island Queen	300	" 27..	98	12 84	" pass., Brighton & Prescott.
E. G. Laverdure		" 28..	54	9 32	" tug, Ottawa River.
Glide	40	" 29..	80	11 40	" ferry, Calumet & Hawkesbury.
T. Osborne		" 29..	25	7 00	" tug, Ottawa River.
Bonito	30	" 29..	17	6 36	" ferry, Calumet & L'Orignal.
Stranger	150	June 1..	65	10 20	" pass., Montreal & Trenton.
Paul Smith	300	" 3..	417	41 36	" excursion, St. Lawrence River.
Bonenfant	25	" 6..	31	7 48	Twin screw, ferry, Chateauguay & Bout de L'Isle.
Matilda		" 13..	114	14 12	Screw, tug, St. Lawrence River.
Nellie Reid		" 15..	56	9 48	" " "
Maude	350	" 24..	269	29 52	Paddle pass., Montreal & Ottawa.
†Russell		" 25..	77	22 32	Screw, tug, Ottawa River.
†Aid		" 25..	25	14 00	Paddle " "
†Nokomis		" 25..	25	14 00	Screw, pleasure yacht, Ottawa River.
E. B. Eddy		" 26..	78	11 24	" tug, Montreal & Prescott.
Total			16,919	2,054 84	

*Paid fees for 1898, 1899, 1900 and 1901.
†Paid fees for 1900 and 1901.

WM. LAURIE.

STEAM Vessels Inspected for the Year ended June 30, 1901.

MONTREAL DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901.		$ cts.	
Maggie R. King		Aug. 21	27·13	7 16	Screw, tug, Lachine Canal.
Tim Doyle		Sept. 25	14·84	6 20	" "
		1902.			
Aberdeen		April 16	86·58	11 96	" Montreal harbour.
Courier		" 18	12·48	5 96	" "
Derrick No. 1		" 18	100·00	13 00	Derrick "
Derrick No. 3		" 18	100·00	13 00	" "
Dredge No. 3		" 19	100·00	13 00	Dipper dredge "
Robert MacKay		" 23	128·58	15 32	Screw, tug "
Dredge No. 2		" 23	100·00	13 00	Dipper dredge "
Dredge No. 4		" 23	461·11	41 88	" "
Derrick No. 4		" 24	100·00	13 00	Derrick "
Derrick No. 5		" 24	100·00	13 00	" "
Derrick No. 6		" 24	100·00	13 00	" "
St. Louis		" 26	34·00	7 72	Screw, tug "
Lucia		May 1	41·07	8 28	" Lachine Canal.
Dandy		" 1	46·00	8 68	" St. Lawrence River.
St. George		" 3	67·85	10 44	" Ottawa.
Dredge No. 1		" 7	100·00	13 00	Dipper dredge, Montreal harbour.
Drill Boat		" 7	100·00	13 00	Drill scow "
Frank Perew		" 8	43·02	. . .	Screw, tug, controlled by the Department of Railways and Canals.
St. Peter		" 8	43·00	8 44	Screw, tug, Montreal harbour.
Plover		" 13	40·30	8 20	" Lachine Canal.
*W. P. Buckley		" 15	26·83	14 32	" Ottawa River.
Ida		" 15	26·41	7 08	" Lachine Canal.
Dredge T. F. M. No. 1		" 17	100·00	13 00	Dipper dredge, rivers.
Fred		" 21	24·06	6 92	Screw, tug, Lachine Canal.
Windermere		" 21	31·17	7 48	" yacht, river.
May		" 27	20·84	6 68	" tug, Lachine Canal.
Antelope		May 30	82·84	11 64	" " Ottawa River.
Kate		June 5	61·07	9 88	" " St. Lawrence River.
C. W. Dennis		" 7	16·91	6 36	" " Soulanges Canal.
Queen	40	" 12	15·37	6 20	" pass., Nippissing Lake.
Ladas	25	" 12	54·47	9 32	" " Callandar & Chaudière.
Van Woodland	100	" 12	37·49	7 96	" " Nippissing Lake.
Zephyr		" 13	2·78	5 24	" tug, Nippissing Lake.
Booth	40	" 13	346·55	32 76	Paddle, passenger, Nippissing Lake.
Nosbonsing		" 13	24·53	7 00	Screw, tug, Nosbonsing Lake.
Sparrow	40	" 14	38·17	8 04	" passenger, Nippissing Lake.
Empress	25	" 15	35·57	7 88	" " "
Shoofly		" 15	9·99	5 80	" fishing tug "
Verva	40	" 17	54·54	9 40	" passenger, Wahnapitae Lake.
Fleur de Mai	15	" 18	6·74	5 56	" " Nippissing Lake.
West Arm		" 18	26·66	7 16	" tug "
Sea Flower		" 18	6·66	5 56	" fishing tug "
Turtle		" 19	33·12	7 46	" paddle alligator "
Grain Elevator No. 2		" 21	170·00	18 60	" grain elevator, Montreal harb'r
Grain Elevator No. 4		" 21	188·00	20 04	" " "
Grain Elevator No. 7		" 21	170·00	18 60	" " "
Grain Elevator No. 12		" 21	183·00	19 64	" " "
Grain Elevator No. 13		" 22	178·00	19 24	" " "
Grain Elevator No. 9		" 22	172·00	18 76	" " "
Grain Elevator No. 14		" 22	181·00	19 48	" " "
Grain Elevator No. 16		" 22	210·31	21 80	" " "
Grain Elevator St. Lawrence No. 1		" 24	83·00	11 64	" " "
Grain Elevator No. 15		" 24	212·60	22 04	" " "

* W. P. Buckley fees and dues for 1900 and 1901.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c., Montreal Division—*Concluded.*

BOILERS AND MACHINERY—*Concluded.*

Name of Vessels.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		$ cts.	
H. Larosée		June 24	12·69	6 04	Screw, tug, Lachine Canal.
Robert Stoker		" 25	13·72	6 12	" " "
Grain Elevator No. 11		" 26	169·00	18 52	" grain elevator, Montreal harb'r
Grain Elevator No. 1		" 26	165·00	18 20	" " "
Grain Elevator No. 6		" 26	170·00	18 60	" " "
Grain Elevator No. 10		" 26	173·00	18 84	" " "
Grain Elevator No. 8		" 27	80·00	11 40	" " "
Totals			5,560·05	753 68	

LOUIS ARPIN,
Steamboat Inspector.

STEAM Vessels not Inspected for the Year ended June 30, 1901.

MONTREAL DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	REMARKS. Why not inspected and class of vessel.
Ballantyne	14	6	Paddle, warp tug.
Quinze	32	26	Screw, tug.
Vesper	8	5	" yacht.
Mattawa	22	15	" passenger.
Lottie	10	8	" "
H. M. Mixer	30	9	" tug.
Hurtubi-e	46	42	" "
John Thompson	5	4	" "
H. Trudel	13	6	Paddle, warp tug.
Tit Willow	17	11	Screw, yacht.
Hiram Robinson	61	39	" tug.
Conqueror	233	24	Paddle "
Mahigma	20	19	Screw, passenger.
Marquis of Lorne	20	11	" ferry.
Robinault	332	192	" passenger.
Dredge No. 4	100	.....	Dredge.
Dauntless	8	5	Screw, passenger. Not running.
Maid of the Mill	8	6	" tug.
River Belle	14	11	" "
Shickluna	66	33	" "
Thurso	20	9	Paddle, ferry.
Union	75	66	Screw "
Clipper	4	3	" yacht.
Janet Craig	12	6	" ferry.
St. Michael	16	10	Paddle, tug.
Vesta	14	8	Screw, yacht.
Jeanne	16	6	" "
Owl	4	3	" "
Gertie	17	9	" tug.
Derrick No. 2	100	.....	Derrick.
Elsie Ross	10	8	Screw, yacht.
Eileen	11	9	" tug.
Monaco	10	6	" yacht.
Elevator No. 5	80	47	Grain elevator.
Agnes McMahon	54	37	Screw, tug.
Laurier	19	13	" "
Weslemkoon	17	9	Paddle, warp tug.
Chummy	5	4	Screw, yacht.
British Lion	25	17	" tug.
Alcyone	38	22	" yacht.
W. Ross	14	10	" tug. No application.
Willie C	8	6	" "
Hudson	45	37	Paddle, passenger.
Thistle	2	2	Screw "
Ishaway	7	5	" yacht.
Chipmonk	20	13	" "
Dredge No. 4	100	.....	Dredge.
Dredge No. 6	100	.....	"
Totals	1,902	837	

WM. LAURIE.
LOUIS ARPIN.

STEAM Vessels Inspected for the Year ended June 30, 1901.

QUEBEC DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901.		$ cts.	
Amanda	Tug	July 5..	11	5 88	Screw, Quebec Harbour, tug.
Lenora	"	" 16..	6	5 48	" Seven Islands Bay "
Fearless	"	" 28..	10	5 80	" Pabos River " "
Admiral	250	" 30..	682	62 56	Paddle, pass., Gaspé & Dalhousie, N.B.
Oak Bay	Tug	" 31..	27	7 16	" tug, Restigouche River.
Bella	40	" 31..	43	8 44	" ferry, Cross Point & Camp'lt'n
Christiana	Tug	" 31..	57	9 56	" tug, Restigouche River.
Maggie Allard	"	" 31..	5	5 40	Screw " "
Le Brochu	"	Aug. 2..	19	6 52	" " Metapedia Lake.
Dauntless	"	" 6..	81	11 48	" " Bic and Montreal.
Beaver	"	" 8..	273	26 84	Paddle " "
Marie Louise	40	" 24..	6	5 48	Screw, ferry, Pointe à Bernard and Almaville.
Perishable	Tug	" 24..	10	5 80	Paddle, tug, on Lac à la Tortue.
Dredge, steam elevator		" 24..		5 00	Dredging iron ore in Lac à la Tortue.
Katheleen			280	27 40	Paddle, quarantine service.
Nit	P. yacht	Aug. 30..	27	7 16	Screw, pleasure yacht, Sorel.
Daisy	Tug	June 29..			Owned by Public Works Department.
Foam	"	Sept. 1..	16	6 28	Screw, Quebec Harbour, tug.
Bella	"	" 4..	51	9 08	" " "
Queen	450	" 10..	337	37 36	" Quebec and Lévis, ferry.
Alpha	Tug	" 11..	20	6 60	" " Harbour, tug.
Johana B.	"	" 12..	17	6 36	" " " "
Maud	"	" 8..	50	9 00	Paddle, tug, attending dredge.
St. Pierre (dredge)		" 8..		5 00	Spoon dredge, Nicolet River.
Albatross (ex Loon)	P. yacht	Oct. 2..	21	6 68	Screw, pleasure yacht, Quebec.
Lebolon	40	" 27..	173	21 84	Paddle, pass., Mistassini and Roberval.
Kiskisink	P. yacht	" 13..	3	5 24	Screw, pleasure yacht, Lake Kiskisink.
Honfleur	Tug	" 16..	19	6 52	" tug, Lake St. John.
Arthur	"	" 17..	15	6 20	" " "
Marie Alma		" 18..	52	9 16	" " "
Marie Louise		" 18..			Public Works Dept., attending dredge.
Dredge					Clam-shell dredge.
Jubilee	30	Oct. 25..	25	7 00	Screw, pass., Woburn and Megantic station.
Campania	Tug	Sept. 26..	23	6 84	Screw, tug, Lake Megantic.
Tees	"	" 26.	5	5 40	" " "
Macannamac	P. yacht	" 25..	4	5 32	" pleasure yacht, Spider Lake.
Shamrock		June 7..			Owned by Dept. Marine and Fisheries. Laying buoys in river.
		1902.			
North	450	May 5..	349	35 92	Paddle, ferry, Quebec and Lévis.
South	450	" 1.	289	31 12	" " "
Campana	400	" 1..	1,697	143 76	Twin screw, pass., Montreal and Pictou, N.S.
Rhodo	150	" 1.	182	22 56	Paddle, mail tender Rimouski.
Polino	30	" 1..	807	72 56	Screw, pass and freight. Montreal and St. John, Newfoundland
John Pratt	Tug				Dept. Public Works, attending dredge.
St. Jean Iberville	"				" "
Cartier	"				" "
St. Francis	"				" "
Emelia	"				" "
Eureka	"				" "
C. J. Bridges	"				" "
Laprairie	350	May 1..	600	56 00	Paddle, ferry, Montreal & Laprairie.
Chambly	600	" 1..	535	50 80	" pass. " Chambly.
Berthier	660	" 1..	934	82 72	" " " Three Riv'rs
Carolina	600	" 1..	977	86 16	" " " Chic'timi.

STEAM Vessels Inspected, &c.—Quebec Division—*Continued.*

BOILERS AND MACHINERY—*Continued.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		$ cts.	
Fire Fly	40	May 1..	214	25 12	Paddle, pass., Sorel and Berthier.
Quebec	800	" 1..	2,656	220 48	" " Montreal and Quebec.
Sorel	40	" 1..	158	20 64	" " " St. Thomas.
Terrebonne	450	" 1..	636	58 88	" " " Contrecœur.
St. Antoine	Tug	" 1..	14	6 12	Screw, tug and pleasure yacht, Richelieu River.
Richard	25	" 1..	466	45 28	Screw, pass. and freight, Montreal and lakes.
Hochelaga	300	" 1..	419	41 52	Paddle, ferry, Montreal & Longueuil.
Saguenay	443	" 1..	992	87 36	" pass., Quebec and Chicoutimi.
Hudson	Tug	" 1..	158	17 64	" tug, Montreal and Quebec.
Sincennes	"	" 1..	228	23 24	" " "
Algerian	400	" 1..	914	81 12	" pass., Montreal and Toronto.
Julia	Used	" 1..	81	12 28	Twin screw, tug, Chambly and Sorel.
Activity	"	" 1..	22	6 76	Screw attending dredge.
Nithsdale (dredge)	"	" 1		5 00	Spoon dredge.
Alice	"	" 1..	37	7 96	Screw, Montreal harbour, tug.
W. C. Frances	"	" 1..	67	10 36	" "
Rivière du Loup	40	" 1..	199	23 92	Pad., pass., Montreal and Rigaud.
Dauntless	Crew	" 1..	81	11 48	Screw, tug, Montreal and lakes.
Marie Josephine	"	" 1..	117	17 36	" wrecking schooner.
City of London	100	" 7..	505	49 20	" pass., Quebec and Murray Bay.
St. Louis	555	" 7..	428	42 24	Pad., pass., Montreal and Ste. Anne.
Chaleveix	75	" 8..	212	24 96	Screw, pass., Quebec and Murray Bay.
Champion	602	" 3..	382	38 56	Pad., pass., Quebec and Berthier.
Orleans	530	" 5..	267	29 52	Screw, pass., Quebec and Id. of Orl'ans.
Greetlands	40	" 2..	1,090	95 28	" Montreal and foreign ports.
Atlantic	60	" 2..	565	53 20	" Montreal and Gaspé.
Etoile	591	" 14..	560	52 80	Pad., pass., Montreal and St. Anne.
M. F. Pearson	Crew	" 15..			Public Works Dept., screw, attending dredges.
Frontena	"	June 15..			" "
Jessie Hume	"	" 15..			" "
Caspian	400	" 1..	968	85 44	Pad pass., Montreal and Toronto.
J. H. Nashmith	Crew	May 1..	49	8 92	Screw, Montreal and harbour, tug.
Montreal	800	" 1..	2,068	173 44	Pad., pass., Montreal and Quebec
Bohemia	375	" 11..	1,107	96 56	" " " Toronto.
Canada'	600	" 11..	1,768	149 44	" " " Chicoutimi.
Corsican	400	" 11..	946	83 68	" " " Toronto.
Trois Rivières	1,161	" 11..	1,552	132 16	" " " Ste. Anne.
Hosanna	185	" 11..	89	12 12	Screw, Montreal ferry.
Albatross (ex Loon)		" 16..	21	6 68	" pleasure yacht.
St. Croix	550	" 20..	506	48 48	Pad., pass., Montreal and Ste. Anne.
Florence	Crew	" 29..	133	15 64	Screw, steam wrecking sch. and Gulf.
Victoria	"	" 30..	48	8 84	" tug, Quebec and Bic.
Frontenac	555	" 3..	304	32 32	Twin screw, St. Romuald and Quebec.
Bella	Tug	" 2..	51	9 08	Screw, tug, Montreal and Bic.
Savoy	25	" 1..	348	35 84	" pass., Quebec and Id. Anticosti.
Thos	Tug	June 16..	323	30 84	Pad., tug, Saguenay River.
Foam	"	" 1..	16	6 28	Screw, Quebec harbour, tug.
Spray	"	" 1..	24	6 92	" " "
Hope	"	" 1..	19	6 52	" " "
Columbian	500	" 4..	884	78 72	" pass., Montreal and Toronto.
Rodolph	Tug	" 5..	116	14 28	" Quebec harbour, tug.
Douro	50	" 10 .	432	42 56	" pass and ft., Quebec and Netas quan.
Beaver	Tug	" 10..	273	26 84	Pad., tug., Quebec and Montreal.
Diver	"	" 18 .	86	11 88	Screw, wrecking schooner.
St. Maurice	40	" 18..	45	8 60	Screw, pass., Piles and La Tuque.
St. Rock	Tug	" 24..	18	6 44	" Quebec harbour tug.
* High Rock	"	" 18..	8	11 28	" tug, St. Maurice River.

* Dues and fees 1899 and 1900.

STEAM Vessels Inspected, &c—Quebec Division.—*Concluded.*

BOILERS AND MACHINERY—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Dare Certificate Expires	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		$ cts.	
Ivan R.	40	June 18..	18	6 44	Screw pass., Piles and LaTuque.
Florence	Tug..	" 18..	18	6 44	" tug "
Maria Louise	25	" 20..	6	5 48	" ferry, Almaville & Shawenegan Falls.
* Perishable.	Tug	" 20..	10	11 60	Pad., tug., Lake LaTortue.
Dredge		" 20..	1	5 00	
Blandford		" 20..	65	10 20	Pad., tug., St. Maurice River.
Glasial	40	" 22..	109	16 72	Screw fer., Three Rivers and St. Angele
Bourgeois	40	" 22..	94	12 52	Pad., fer., Three Riv's and St. Gregoir'
Como.	40	" 22..	75	11 00	" " Mashel.
Bella Ritchie	40	" 22..	69	10 52	" " Champlain.
Beatrice	Tug..	" 22..	40	8 20	Pad., tug, St. Maurice River.
St. Goerge	"	" 25..	13	6 04	Screw, Quebec harbour, tug.
Alma	"	" 24..	12	5 96	Screw, tug, Quebec and Portneuf
Spartan	400	" 28..	946	85 68	Pad., pas., Montreal and Toronto.
Victoria	30	May 5..	196	23 68	Screw, pas., Montreal and Chambly.
Randolph	Tug	June 24..	17	6 36	" Quebec harbour, tug.
Batiscan		" 24..	40	8 20	Pad., tug., Quebec and Batiscan
† Dot.	Tug		10	11 60	Screw, tug on Lake St. Francis.
† L'Arni	"		16	12 56	Tug, on Lake Aylmer.
Sarnation					Tug, owned by Public Works Dept.
† Forest			26	14 66	Tug, at Chicoutimi.
Total			34,241	3,482 38	

* Dues and fees 1899 and 1900. † Dues and fees paid for 1900 and 1901.

STEAM Vessels not Inspected for the Year ended June 30, 1901.

QUEBEC DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Remarks. — Why not Inspected and Class of Vessel.
St. James	91	54	Str., laid up in Sorel.
Contest	331	90	" running in charge of Marine Department.
Lilly H	19	13	" inspection not applied for.
Adriatic (ex Lévis)	156	87	" not running.
Fabiola	81	55	" inspection not applied for.
St. Anne	14	10	" not running.
Nil	28	19	" "
Alleghany	5	3	" "
Ingomar	22	13	" inspected but not in commission.
L'Amie	16	8	Was laid up, but inspected since.
Honkedora	10	3	Str., inspected after 30th June, 1901.
Five Brothers	11	7	" not running.
Total	780	362	

JAS. SAMSON,
Steamboat Inspector.

Steam Vessels Inspected for the Year ended June 30, 1901.

QUEBEC AND MONTREAL DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901.		$ cts	
Lady of the Lake	700	July 4..	607	56 56	Pad,, pass., Newport & Georgeville.
Amy C	10	" 4..	6	5 48	Screw " " "
Missawappi	10	" 5..	4	5 32	" " waters of Lake Missawippi.
Marquis of Lorne	40	" 6..	20	6 60	" ferry, Ottawa & Hull.
Beatrice B	40	" 6..	59	9 72	" " "
Allai..	10	" 7..	11	5 88	" pass., on Rideau Canal.
Greetlands	40	" 9..	1,091	95 28	" pass. & ft., Montreal & for. ports.
Bonenfant	20	" 9..	31	7 48	" ferry, Bout de L'Isle & Charlem.
Como	40	" 21..	75	11 00	Pad. " Three Rivers & Nicolet.
Bourgeois	40	" 21..	94	12 52	" " " St. Grégoire.
Glacial	100	" 21..	109	16 72	Screw " " Ste. Angele.
Bella Ritchie	40	" 21.	69	10 52	Pad., pass. " Champlain.
Marie Louise	40	" 26.	99	12 92	" ferry, Chicoutimi & Ste. Anne.
Mistassini	40	" 27..	249	27 92	" " Roberval & Gd. Décharge.
Undine	Crew.	" 28..	17	6 36	Screw, tug, waters of Lake St. John.
Peribonca	40	" 28..	179	22 32	Pad., pass. " "
Le Colon	40	" 28..	173	21 84	" " " "
Arthur	Crew.	" 29..	15	6 20	Screw, tug " "
Argo	75	Aug. 2..	154	17 32	Pad.,pas.& frt.,Gor.Ck. & B. des Pères
Meteor	250	" 2..	299	31 92	Screw " " "
Dora	25	" 3..	48	8 84	" " " "
Clyde	25	" 4..	29	7 32	" " " "
R. Hurdman	40	" 7..	93	12 44	" " waters of Lk. Nipissing
Charlotte	30	" 8..	14	6 12	" " " Kippewa.
D. A. Martin	40	" 9..	78	11 24	" " Turtel Portage & St. Laur.
Chaffe	40	" 10..	42	8 36	" ferry, Valleyfield & Lancaster.
Napierville (*ex* Isle Heron)	40	" 11..	546	51 68	Pad. " Verdun & Côte St. Cath.
Majestic	400	" 11..	275	30 00	Screw, pass., Burlington & Montreal.
St. Maurice	40	" 11..	45	8 60	" " Piles & La Tuque.
Admiral	250	" 30..	682	62 56	Pad., pass., Dalhousie & Gaspé Basin.
Bella	40	" 31..	43	8 44	Pad., ferry, Campbellton & Cross Pt.
Florida	Freight..	Sept. 8..	201	21 08	Screw, frt., Montreal & St. Thos. Pierrv
Fisher	50	" 8..	1,736	146 88	" pas. & frt., Montreal & Halifax.
Polaris	450	" 23..	533	50 64	" ferry, Quebec & Lévis.
Pilot	450	" 23..	426	42 08	" " " "
Queen	450	" 23..	367	37 36	" " " "
Arizona	Pl. yacht.	Oct. 15..	9	5 72	" " on Lake St. Joseph.
Jubilee	30	" 23..	25	7 00	" " " Mégantic.
		1902.			
Rhoda	150	April 12..	182	22 56	Pad., mail tender, Rimouski.
Savoy	25	" 15..	348	35 84	Screw, pas. & frt., Quebec & Anticosti.
Polino	30	" 18..	807	72 56	" " Montreal & Pictou.
Campana	400	" 20..	1,697	143 76	" " " " "
Fire Fly	40	" 22..	214	25 12	Pad.. ferry, Sorel & Berthier.
Terrebonne	450	" 22..	636	58 88	" pass. & frt., Montreal & Sorel.
Laprairie	350	" 22..	600	56 00	" ferry, Montreal & Laprairie,
Chambly	600	" 23..	535	50 80	" pas. & frt. " Chambly.
Sorel	40	" 23..	158	20 64	" ferry, Sorel & St. Thomas Pierrv.
Quebec	800	" 23..	2,656	220 48	" pass., Quebec & Montreal.
Carolina	600	" 23..	977	86 16	" " Montreal & Chicoutimi.
Saguenay	443	" 24..	992	87 36	" " Quebec " "
Rivière du Loup	40	" 24..	199	23 92	" " Montreal & Rigaud.
Richard	25	" 24..	466	45 28	Screw, pas. & frt., Quebec & Up. Lakes
Cultivateur	750	" 25..	362	36 96	Pad., f'ry, Montreal & L'Isle, St. Hélène
St. Laurent (*ex* Five Brothers)	375	" 26..	546	51 68	" pas. & frt., Montreal & Berthier
Melbourne	125	" 30..	894	79 52	Screw " " Toledo.
Longueuil	300	May 1..	305	37 20	Pad., ferry, Hochelaga & Longueuil.
Hochelaga	300	" 1..	419	41 52	" " " Boucherville
Algerian	400	" 2..	914	81 12	" pass., Montreal & Hamilton.
North	450	" 3..	289	31 12	" ferry, Quebec & Lévis.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected &c., Quebec and Montreal Division—*Continued.*

HULL INSPECTION—*Continued.*

Name of Vessel.	Number of Passengers Carried.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		$ cts.	
South.	450	May 3..	349	35 92	Pad., ferry, Quebec & Lévis.
Orleans	530	" 4..	269	29 52	Screw, ferry, Quebec & Isl. of Orleans.
Etoile	590	" 4..	560	52 80	Pad., pass. & frt. Quebec & Montreal
St. Louis	555	" 4..	428	42 24	" " " "
Champion	612	" 4..	482	46 56	" " and Berthier below.
Greetlands	40	" 4..	1,091	95 28	Screw " Montreal, foreign ports
Lord Stanley	30	" 4..	276	30 08	" pass., Montreal and Gulf ports.
Atlantic	60	" 6..	565	53 20	" " and frt. Montreal and Gaspé
Berthier	600	" 9..	934	82 72	Pad., pass. and frt. " Trois Rivières
Hamilton	375	" 10..	938	83 04	" " " and Hamilton
Charlevoix	75	" 13..	212	24 96	Screw " Quebec & Malbaie.
City of London	100	" 13..	516	49 28	" Quebec, Montreal & Malbaie
Bohemian	375	" 15..	1,107	95 56	Pad., pass. & frt., Montreal, Toronto.
Prefontaine	40	" 17..	434	42 72	Screw " Montreal and Quebec.
Victoria		" 21..	181	22 48	" " Ottawa and Thurso.
Emile	40	" 22..	12	5 96	" pas., Ottawa and Kettle Falls.
Empress	800	" 22..	677	62 16	Pad., " Ottawa and Grenville.
G. B. Green	600	" 22..	255	20 40	" " Aylmer & Deschêne Lake
Beatrice B	40	" 22..	59	9 72	Screw, ferry, Ottawa and Hull.
Mansfield	15	" 22..	169	21 52	" " New Edinburg & Gat. Pt.
Agnes	40	" 24..	29	7 32	" " Buckingham & High Rk.
Mildred	25	" 24..	15	6 20	" " " "
Léon	15	" 24..	15	6 20	" " High R. & N. D. de Leon.
Glide	40	" 24..	80	11 40	" " Calumet and Hawkesbury
Bonita	30	" 24..	17	6 36	" " " and L'Orignal.
Island Queen	300	" 25..	98	12 84	" " Brighton and Prescott.
Hosanna	185	" 25..	89	12 12	" " Montreal and Longueuil.
St. Croix	550	" 31..	506	48 48	Pad., pass. & frt. Quebec & Ste. Croix.
Corsican	400	Jan. 4..	946	83 68	" " Montreal and Hamilton.
Montreal	800	" 4..	2,068	173 44	" " " and Quebec.
Canada	600	" 4..	1,768	149 44	" " " Chicoutimi.
Trois Rivières	1,161	" 4..	1,552	132 16	" " " St. A. de Beaupré.
Princess	443	" 11..	526	50 08	" pass., Montreal and Carillon.
Duchess of York	700	" 11..	490	47 20	" " "
Victoria	30	" 11..	196	23 68	Screw, pass. " and Chambly.
Welshman	25	" 11..	156	20 48	" pass. & frt. Montreal & Ottawa.
Olive	60	" 12..	151	20 08	" " Mont., Ottawa & Perth
Chateauguay	440	" 12..	222	25 76	Pad., pas., Montreal & Chateauguay.
Sovereign	700	" 12..	637	58 96	" " " and Carillon.
Bonenfant	25	" 13..	31	7 48	" ferry, Bout de l'Isle & Charleman.
Hall	50	" 13..	247	27 76	Screw, pass. & frt. Montreal & Ottawa.
Columbian	500	" 14..	884	78 72	" pass., Montreal and Toronto.
M. E. Hackett	40	" 19..	78	11 24	" " tender in Port of Quebec.
Garnet	200	" 21..	152	20 16	Pad., pass., Montreal and Valleyfield.
Filgate	275	" 21..	425	42 00	" " " " Cornwall.
Glacial	40	" 22..	109	16 72	Screw, f'ry, Three Rivers & Ste. Angele
Bourgeois	40	" 22..	94	12 52	Pad., ferry " St. Gregoire.
Bella Ritchie	40	" 22..	69	10 52	" " " & Champlain.
Como	40	" 22..	75	11 00	" " " and Nicolet.
Spartan	400	" 27..	946	83 68	" pass., Montreal and Toronto.
Marie Louise	25	" 28..	6	5 48	Scr., f'ry, Almaville & Shawenegan F.
Ste. Maurice	40	" 29..	45	8 60	" pass., Piles and La Tuque.
Ivan R	40	" 29..	18	6 44	" " " "
Frontenac	555	May 4..	304	32 32	" ferry, Quebec and St. Romuald.
Caspian	400	" 7..	968	85 44	Pad., pass., Kingston and Toronto.
Ida	40	July 23..	247	27 76	Screw, pass. & frt. Montrl. & Chambly
Douro	50	" 31..	432	42 56	" " " Quebec & Tresbasqua

PIERRE D. BRUNELLE,
Hull Inspector.

STEAM Vessels not Inspected for the Year ended June 30, 1901.

QUEBEC AND MONTREAL DIVISION.

HULL INSPECTION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Remarks—Why not Inspected and Class of Vessel.
Laurier	18·66	12·69	Screw, passenger, not applied for inspection.
Allai	10·74	7·66	" " " " " "
Eagle	12·74	8·66	" " " " " "
St. Anne of M	14.27	9·70	" ferry, not in commission.
Marquis of Lorne	20·19	10·59	" " " "
Robinault	332·07	191·84	" passenger, not running this year.
Dama	54·58	37·11	" " " " " "
Thurso	20·07	9·09	Paddle, ferry " " " "

PIERRE D. BRUNELLE,
Hull Inspector.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected for the year ended June 30, 1901.

NOVA SCOTIA DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessels and where employed.
		1901.		$ cts.	
L. Boyer	100	July 2.	60·00	9 80	Screw, tug, passenger, coasting.
Alpha	160	June 12.	61·20	9 88	" " "
Pinafore		" 12.	25·86	7 08	" tug, coasting.
Millie R		" 13.	19·85	6 60	" "
Mable R		" 13.	15·20	6 20	" "
Centreville		" 14.	59·71	9 80	" "
Oneita		July 17.	14·96	6 20	" fishing boat coasting.
St. Michael	15	" 18.	39·20	8 12	" tug, pass., coasting.
Trusty	150	" 18.	57·60	9 64	" pass., La Have River.
Fairy		Jan. 1.	15·55	6 28	" water boat, Lunenburg Harb.
Maggie	37	July 18.	19·26	6 52	" pass., Lunenburg & South.
Gambrinus		" 20.	28·36	7 24	" tug, Halifax Harbour.
Ralph, E. S		" 21.	27·82	7 24	" fishing boat, coasting.
Fairy		" 24.	16·06	6 28	" water boat, Sydney Harbour.
Eleanor M. Cates		" 26.	58·81	9 72	" tug, coasting.
Vesta		" 25.	9·21	5 72	" " Mira River.
Lennox	18	" 27.	66·29	10 28	Paddle, ferry, Lennox passage.
Malcom Cann	115	" 27.	211·81	24 96	Screw, pass., coasting.
Eldon	39	" 27.	37·91	8 04	" pass., Strait of Canso.
Iona	30	Aug. 3.	54·27	9 32	" tug, pass., coasting.
Anticosti		" 11.	19·00	6 52	" " "
Flash	15	" 11.	7·79	5 64	" pass., Halifax Harbour.
Commodore	30	" 14.	12·84	6 04	" pass. "
Collector	75	" 21.	52·02	9 16	" pass. "
Bessie & Harry		" 16.	22·00	6 76	" water boat "
Henry Hoover	75	" 29.	54·64	9 40	" tug, pass. "
Saloor		" 29.	44·93	8 60	" lighter "
Mascotte	15	Sept. 13.	35·40	7 80	" pass. "
Annie		Oct. 11.	42·12	8 36	" water boat "
Elsie		" 1.	22·14	6 76	" tug, coasting.
Wilfrid C	60	" 24.	99·26	12 92	" pass. "
Aid		July 17.	98·55	12 84	" tug " "
La Have		Oct. 13.	49·27	8 92	" " "
Bridgewater	225	" 27.	207·79	24 64	" pass. "
Pekin	16	Nov. 9.	84·91	11 80	" " "
Yankee	40	" 13.	7·31	5 56	" " Yarmouth Harbour.
Wanda		" 13.	38·48	8 04	" tug, coasting.
Nereid		" 13.	12·24	5 96	" fishing boat, coasting.
Edna R		" 14.	49·66	8 92	" " "
Westport	25	" 14.	80·09	11 40	" pass., Yarmouth & St. John.
Petrel		" 26.	345·76	32 68	Twin-screw, wrecking tug, coasting.
Goliah	15	" 1.	146·83	19 76	Screw, tug, pass., coasting.
Halifax	250	" 10.	338·42	35 04	Paddle, ferry, Halifax Harbour.
Mayflower		May 1.	392·05	36 36	Twin-screw, freight, coasting.
I. B. Hamblen	100	Dec. 19.	31·71	7 56	Screw, pass., Halifax Harbour.
		1902.			
Newfoundland		Feb. 7.	918·75	78 52	" freight, coasting.
Harlaw	60	" 18.	451·36	44 08	" pass. "
J. L. Nelson	20	March 9.	37·84	8 04	" " "
Lenore		" 20.	15·23	6 20	" fishing boat, coasting.
Florence C		" 26.	38·98	8 12	" " "
Louisburg		" 27.	1,815·60	150 28	" freight, foreign.
Yarmouth	450	April 4.	1,451·92	124 16	" pass. " "
John L. Cann	125	" 5.	165·55	21 28	" " coasting, Yarmouth Har
Island Gem	40	" 3.	15·62	6 28	" fishing boat, p., Harmouth H.
Percy Cann	35	" 4.	80·06	11 40	" pass., Yarmouth Harbour.
Gertrule M	35	" 4.	47·58	8 84	" " "
*La Tour	75	" 4.	154·43	40 64	" " "
Shannon		" 17.	75·11	11 00	" tug, Yarmouth Harbour.
May Queen	25	" 17.	35·92	7 88	" pass., Pictou Harbour.

*Dues and fees for 1900 and 1901.

STEAM Vessels Inspected, &c., Nova Scotia Division—*Concluded.*

BOILERS AND MACHINERY—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		8 cts.	
Arcadia	37	April 17	61·64	9 96	Screw, pass., coasting.
Marion	38	" 17	10·30	5 80	" ferry, Pictou Harbour.
Cape Breton		" 22	1,764·19	146 12	" freight, foreign.
Bonavista	50	" 18	1,306·33	112 48	" pass. "
Coban	37	" 10	1,063·30	93 04	" " "
Cacouna		" 23	1,450·78	121 08	" freight, foreign.
Halifax	500	May 1	1,738·45	147 04	" passenger, foreign.
W. M. Weatherspoon		April 24	59·29	9 72	" tug, coasting.
Helen May Butler		" 21	66·98	10 36	" " "
Arieta		" 21	26·50	7 16	" fishing boat.
Dartmouth	300	" 29	311·23	32 88	Paddle, ferry, Halifax Harbour.
Lady Glover	15	May 6	137·51	19 04	Screw, passenger, coasting.
Chester		" 8	79·50	11 40	" tug, coasting.
Falmouth		" 8	43·03	8 44	" " Avon River.
Avon	100	" 9	64·66	10 12	" pass. "
Susie	80	" 9	26·83	7 16	" " "
Douglas H. Thomas	15	Jan. 1	211·91	24 96	" " coasting.
Alameda	40	May 1	62·59	10 04	" " "
Meadow Flower		" 22	6·56	5 56	" water boat, Canso Harbour.
Vulcan		" 22	18·40	6 44	" tug, coasting.
Active		" 22	59·91	9 80	" " and fishing, coasting.
Vega	90	" 23	132·22	18 56	" passen., Mulgrave and Sydney.
Merrimac	20	" 23	85·80	11 80	" " Strait of Canso.
Acadia	225	" 24	74·21	10 92	" ferry, Sydney Harbour.
Diamond		" 24	22·65	6 84	" tug, "
Gladiator		" 24	70·40	10 60	" " coasting.
Daisy		" 24	10·74	5 88	" water boat, Sydney Harbour.
Zaidee		" 24	18·63	6 44	" " "
C. M. Winch		" 25	87·72	12 04	" tug, coasting.
Hygeia	190	" 25	57·69	9 64	" ferry, Sydney Harbour.
Peerless	300	" 27	94·27	12 52	" " "
Gipsy		" 25	16·70	6 36	" tug, coasting.
Sea Bird		" 25	41·28	8 28	" fishing boat, coasting.
Marion	400	" 27	478·49	46 24	Paddle, passenger, coasting.
Blue Hill	140	" 27	195·83	23 68	Twin screw, Bras d'Or Lakes.
Pastime	150	June 11	67·71	10 44	Screw, passenger, Halifax Harbour.
Ulala		" 10	13·70	6 12	" yacht, coasting.
Arbutus		" 11	46·76	8 76	" tug, coasting.
Petrel	20	" 11	6·36	5 48	" ferry, Halifax Harbour.
Beaver	160	" 12	84·73	11 80	" passenger, coasting.
Glencoe	40	" 13	32·21	7 56	" ferry, Annapolis River.
Freddie V		" 13	26·69	7 08	" tug "
Centreville		" 14	59·71	9 80	" " coasting.
Juno	40	" 14	9·29	5 72	" ferry, Yarmouth Harbour.
Albatross		" 15	31·38	7 48	" yacht, coasting.
Tourist	40	" 15	4·42	5 32	" ferry Yarmouth Harbour.
Mearina	75	" 15	32·46	7 56	" passenger, Annapolis Basin.
Boston	550	" 15	1,694·50	143 52	" " foreign.
Dolphin		" 22	8·07	5 64	" fishing boat, coasting.
Yuba	25	" 22	12·04	5 96	" ferry, Barrington, passage.
Robbie Burns		" 25	88·95	12 12	Twin screw, lighter, coasting.
Highland Mary		" 28	73·73	10 92	" " "
Richelieu		" 4	33·67	7 72	Screw yacht.
Total			20,780·99	2,296 48	

JOHN P. ESDAILE,
Steamboat Inspector, Halifax, N.S.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected in Canada but registered elsewhere, for the Year ended June 30, 1891.

NOVA SCOTIA DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and Where Employed.
		1901.		8 cts.	
Ocamo	75	July 16..	1,826·54	154 16	Screw, passenger, foreign.
Pro Patria	60	" 21..	759·01	68 72	" "
Brucc	300	" 24..	1,154·59	100 40	" "
Erna	100	" 30..	1,530·11	130 40	" "
Orinoco	200	Aug. 8..	1,863·63	157 12	" "
Chebucto	232	" 8..	578·48	54 24	" ferry, Halifax harbour.
Tyrian	30	" 20..	1,038·57	91 12	" passenger, foreign.
Oruro	150	" 23..	1,919·67	161 52	" "
Beta	75	Sept. 12..	1,086·67	94 96	" "
Prince Edward	600	" 15..	1,413·74	121 12	Twin screw, "
Prince George	600	Nov. 15..	2,040·14	171 20	" "
Grand Lake	80	" 27..	895·89	79 68	Screw, "
		1902.			
Glencoe	80	Jan. 9..	767·09	69 36	" "
Orinoco	140	Feb. 26..	2,486·49	206 88	" "
City of Ghent	60	Mar. 22..	198·64	23 92	" passenger, coasting.
Amelia	230	April 15..	356·54	36 56	" "
Britannic		" 30..	2,392·45	189 16	" freight, foreign.
Silvia	109	May 15..	1,707·70	144 64	" passenger, foreign.
Pawnee	450	" 25..	106·08	16 56	" " coasting.
Elaine	300	" 25..	272·08	29 76	" " "
Olivette	450	June 4..	1,678·17	142 24	" " foreign.
		1901.			
Evangeline	160	Oct. 31..	78·74	11 32	Twin screw, passenger, coasting.
		1902.			
Prince Arthur	600	June 14..	2,041·44	171 28	" " foreign.
Total			28,102·58	2,426 32	

JOHN P. ESDAILE,
Steamboat Inspector.

HALIFAX, N.S.

STEAM Vessels not Inspected for the Year ended June 30, 1901.

NOVA SCOTIA DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	REMARKS. Why not Inspected and Class of Vessel.
Tusket	3·04	2·00	Laid up, tug.
Alida	64·18	29·52	" "
Scotia	41·58	28·27	" "
Gem	4·69	2·12	" fishing boat.
Havana	470·18	245·86	" passenger.
Maple Leaf	129·06	81·31	" ferry boat.
Volunda	29·80	13·96	" yacht.
City of St. John	709·12	446·75	" passenger.
Jessie Gray	76·01	47·93	" lighter.
Bessie	10·54	5·74	" passenger.
Alpha	306·91	211·54	" "
Victor	9·62	6·41	" tug.
Lion	19·82	13·48	Not yet inspected, tug.
Dolphin	12·78	8·69	" " "
Star	6·07	4·13	" " passenger.
David Duncan	20·59	10·59	Laid up, tug.
Carrie	14·83	7·37	Not yet inspected, passenger.
Lunenburg	265·55	113·11	Laid up for new boiler, passenger.
Weymouth	153·93	105·83	" " " "
Rescue	124·09	84·92	Not yet inspected, tug.
Ida Lue	44·51	30·27	" " "
A. C. Whitney	62·67	41·07	Laid up for new boiler, tug.
Zulieka	12·38	7·70	" " yacht.
Totals	2,591 86	1,538 57	

HALIFAX, N.S.

JOHN P. ESDAILE,
Steamboat Inspector.

SESSIONAL PAPER No. 21

Steam Vessels Inspected for the Year ended June 30, 1901.

NOVA SCOTIA DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1901.			
L. Boyer	100	July 5..	60·00	9 80	Screw, pass. and tug, Halifax Harbour.
Star	15	" 6..	6·07	5 48	" ferry, Wallace River.
St. Michael	15	" 17..	39·20	8 12	" pass. & tug, Liverp'l & shore p'ts
Maggie	37	" 17..	19·26	6 52	" " Lunenburg & South.
Trusty	150	" 18..	57·60	9 64	" " La Have River.
Carrie	40	" 19..	14·83	6 20	" pass., Chester and Mahone Bay
Eldon	39	" 25..	37·91	8 04	" " Strait of Canso.
Lennox	18	" 26..	66·29	10 28	Paddle, ferry, Lennox passage.
Malcom Cann	125	" 27..	211·81	24 96	Screw, pass., Mulgrave and coastwise.
Alpha	160	Aug. 7..	61·20	9 88	" " tug, Avon R. & Bay of F'y.
Commodore	30	" 14..	12·84	6 04	" excursion, Halifax Harbour.
Collector	75	" 20..	52·02	9 16	" " " "
Henry Hoover	75	" 30..	54·64	9 40	" " " "
Mascotte	15	Sept. 17..	35·40	7 80	" " " "
Flash	15	Aug. 11..	7·79	5 64	" " " "
Wilfred C	60	Oct. 24..	99·26	12 92	Screw, pass., Halifax and coast.
Bridgewater	225	" 26..	207·79	24 64	" " " "
La Tour	70	Nov. 29..	154·43	20 32	" " Yarmouth and coast.
West Port	21	" 14..	80·09	11 40	" " " "
Mayflower		May 1..	392·05	36 36	Twin screw, fr't., New Carlile & Gaspé
Halifax	250	Nov. 6..	338·42	35 04	Paddle, ferry, Halifax and Dartmouth
Goliah	15	" 7..	146·83	19 76	Screw, pass. and tug, Halifax & coast.
		1902.			
Newfoundland		Feb. 25..	918·75	78 52	" freight, Halifax and coast.
J. L. Nelson	20	Mar. 11..	37·84	8 04	" pass. & freight, Halifax & coast
		1901.			
Iona	30	Aug. 2..	54·27	9 32	" tug & pass., Syd'y Har. & lakes
		1902.			
Louisberg		Mar. 26..	1,815·60	150 28	" freight, Canadian and foreign.
John L. Cann	125	April 13..	165·55	21 28	" pass. & freig., Mulgrave & coast
Percy Cann	35	" 13..	80·06	11 40	" " Yarm'th & coast.
La Tour	70	" 16..	154·43	20 32	" " " "
Gertrude M	35	" 13..	47·58	8 84	" " " "
Yarmouth	450	" 15..	1,451·92	124 16	" " " "
Coban	37	" 18..	1,063·30	93 04	" " home and foreign.
Bonavesta	50	" 18..	1,306·33	112 48	" " Canadian "
Cacouna		" 19..	1,450·78	121 08	" freight, " "
Harlaw	60	" 22..	451·36	44 08	" pass, & fr't., Halifax & coast.
Arcadia	37	" 26..	61·64	9 96	" " Pictou and coast.
Cape Breton		" 22..	1,764·19	146 12	" freight, Canadian and foreign.
May Queen	35	" 26..	35·92	7 88	" pass. & tug, Pictou Har. & R.
Marion	38	" 27..	10·30	5 80	" " " "
Dartmouth	300	" 30..	311·23	32 88	Paddle, ferry, Halifax and Dartmouth
Halifax	500	May 1..	1,738·45	147 04	Screw, pass. & freight, Halifax & coast
Susie	80	" 8..	26·83	7 16	" excur. & tug, Bay of Fundy.
Avon	100	" 8..	64·66	10 12	" " "
		1901.			
Pekin	16	Oct. 9..	84·91	11 80	" freight & pass., Halifax & coast

STEAM Vessels Inspected, &c.—Nova Scotia Division—*Concluded.*

HULL INSPECTION—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1902.		8 cts.	
Douglas H. Thomas	15	May 13	211·91	24 96	Screw, freight & pass., Halifax & coast.
Lady Glover	15	" 6	137·51	19 04	" " "
Alameda	40	" 1	62·59	10 04	Screw, pass. & freight minor waters of N. S. and P. E. I.
Acadia	225	" 22	74·21	10 92	Sydney and North Sydney.
Peerless	300	" 24	94·27	12 52	" "
Hygeia	190	" 23	57 69	9 64	" "
Blue Hill	140	" 27	195·83	23 68	Twin screw, pass., & freight, Baddeck and Grand Lakes.
Vega	90	" 28	132·22	18 56	Screw, pass. and freight, Strait of Canso and Bras d'Or lakes.
Merrimac	20	" 28	85·80	11 80	Screw, pass. and tug, Strait of Canso.
Petrel	20	June 11	6·36	5 48	" ferry, Richm'nd & Dartmouth.
Beaver	160	" 12	84·73	11 80	" pass. & freight, Canning & Bay of Fundy.
Glencoe	40	" 13	32·21	7 56	Screw, ferry, Annapolis River.
Tourist	40	" 15	4·42	5 32	" ferry, Yarmouth Harbour.
Island Gem	40	" 15	15·62	6 28	" " "
Marina	75	" 15	32·46	7 56	" pass. and tug, Annapolis Basin
Juno	40	" 15	9·29	5 72	" " Yarmouth Harbour.
Yuba	25	" 17	12·64	5 96	" ferry, Barrington Passage.
Boston	550	" 19	1,694·50	143 52	Screw, pass. & freight, Yarmouth and foreign.
Yankee	40	" 22	7·31	5 96	Screw, erry, Yarmouth Harbour.
Pastime	160	" 28	67 71	10 44	" excursion, Halifax Harbour.

S. R. HILL,
Inspector of Hulls and Equipment.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected in Canada but Registered elsewhere, for the Year ended June 30, 1901.

NOVA SCOTIA DIVISION.

HULL INSPECTION.

Name of vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessels and where employed.
		1901.		$ cts.	
Ocamo	75	July 14..	1,826·54	154 16	Screw, pass. & ft., Canada & foreign.
Erna	100	" 16..	1,530·11	130 40	" " "
Pro Patria	60	" 20..	759·20	68 72	" " "
Bruce	300	" 24..	1,154·59	100 40	" " "
Chebucto	232	Aug. 9..	578·48	54 24	" " "
Orinoco	200	" 9..	1,863·63	157 12	" " "
Tyrian	30	" 15..	1,038·57	91 12	" " "
Oruro	150	" 22..	1,919·07	161 52	" " "
Beta	75	Sept. 14..	1,086·67	94 96	" " "
Prince Edward	600	" 16..	1,413·74	121 12	" " "
Prince George	600	Nov. 13..	2,040·14	171 20	" " "
Grand Lake	80	Dec. 1..	895·89	79 68	" " "
		1902.			
Glencoe	80	Jan. 9..	767·09	69 36	" " "
Orinoco	140	Feb. 27..	2,486·49	206 88	" " "
City of Ghent	60	Mar. 29..	198·64	23 92	" " "
Amelia	230	April 15..	356·54	36 56	" " "
Silvia	109	May 14..	1,707·70	144 64	" " "
Pawnee	450	" 25..	106·80	16 56	" " "
Elaine	300	" 25..	272·08	29 76	" " "
Olivette	450	June 4..	1,678·17	142 24	" " "
		1901.			
Evangeline	160	July 31..	78·74	11 32	" " "
		1902.			
Prince Arthur	600	June 20..	2,041·44	171 28	" " "

STEAM Vessels not Inspected for the Year ended June 30, 1901.

NOVA SCOTIA DIVISION.

HULL INSPECTION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	REMARKS. Why not Inspected and Class of Vessel.
Havana	470·18	245·86	Laid up, screw, passenger and freight.
Maple Leaf	129·06	81·31	" paddle, ferry.
City of St. John	709·12	446·75	" " passenger and freight.
Bessie	10·45	5·74	" screw, passenger and tug.
Lunenburg	265·55	113·11	" " " freight.
Weymouth	153·93	105·83	" " " "
Ida Lue	44·51	30·27	Out of district, " tug.
A. C. Whitney	62·67	41·07	Laid up for repairs, screw, passenger.
Marion	478·49	269·27	" paddle, "

S. R. HILL,
Inspector of Hulls and Equipment, Halifax, N.S.

Steam Vessels Inspected for the Year ended June 30, 1901.

NEW BRUNSWICK AND PRINCE EDWARD ISLAND DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and Where Employed.
		1901.		$ cts.	
Dirigo	40	July 3..	70·13	10 60	Screw, tug, St. John.
Waring		" 4..	28·74	7 32	" " "
Victor	35	" 12..	45·51	8 68	Pad., " Campbellton.
Nellie H		" 13..	7·52	5 64	Screw, fish boat, Dalhousie.
Henrietta		" 13..	19·12	6 52	" tug "
Frederick A.	25	" 18..	31·11	7 48	" " Richibucto.
Calluna		" 18..	22·26	6 76	" " "
Alice		" 19..	15·77	6 28	" " Buctouche.
Neptune	40	" 21..	71·15	10 68	" " St. John.
Lord Roberts		" 23..	55·98	9 48	" " "
Amanda Green		" 30..	19·63	6 60	" " "
Gracie Bell		Aug. 2..	10·52	5 88	" yacht "
Dream		" 3..	44·51	8 60	" " "
Nautilus		" 10..	26·58	7 16	" " St. Stephen.
Arbutus	86	" 10..	46·76	8 76	" pass. "
William Aitken		" 16..	74·87	11 00	" tug, Charlottetown.
Elliot		Sept. 3..	367·50	34 36	" freight, "
Mascott		" 11..	70·50	10 60	" tug, Chatham.
Springhill	100	" 22..	189·05	23 12	" " St. John.
Western Extension	280	" 27..	424·89	42 00	Paddle, ferry, St. John.
Aurora	200	" 27..	364·24	37 12	Screw, passenger, St. John.
Delta	40	Oct. 2..	19·93	6 60	" tug, Hillsboro.
Wenola		" 3..	25·10	7 00	" " Port Elgin.
Beryl Essie		" 3..	23·83	6 92	" " Tignish.
Vacuna		" 9..	9·52	5 80	" " Vanceboro.
Aberdeen	400	" 12..	243·86	27 52	Stern wheel, pass., St. John.
Kingsville		" 29..	36·59	7 96	Screw, tug, St. John.
Onangondy	208	Dec. 6..	294·75	31 60	Pad., ferry, "
		1902.			
E. Ross	40	Mar. 8..	29·63	7 40	Screw " "
Nereid		" 13..	30·03	7 40	" tug "
Maggie M		" 15..	65·78	10 28	" " "
Winnie		" 20..	12·46	5 96	" " "
Hercules		" 25..	87·11	11 96	" " "
Northumberland	350	" 28..	1255·46	108 40	Twin screw, pass., Charlottetown.
Princess	350	" 28..	541·79	51 36	Screw " "
Jacques Cartier	300	" 29..	379·96	38 40	Paddle " "
Hillsborough		" 29..	228·67	26 32	" ferry "
Elfin	70	" 29..	122·42	17 76	" " "
Fanchon	40	April 4..	110·61	16 88	" pass. and tug, St. John.
Hero		" 6..	127·63	15 24	" tug, St. John.
Fred Glasier		" 6..	10·39	5 80	Screw " "
Admiral		" 6..	158·20	17 64	Pad. " "
Lilly Glasier		" 6..	209·31	21 72	" " "
Springfield	260	" 8..	232·73	26 64	Stern wheel, pass., St. John.
Storm King	40	" 8..	107·87	16 64	Screw, pass. and tug "
David Weston	450	" 9..	765·15	69 20	Paddle, passenger "
Victoria	956	" 9..	1001·93	88 16	" " "
Captain		" 9..	68·43	10 44	Screw, tug, St. John.
Sea King		" 10..	128·63	15 32	" " "
Hope		" 10..	305·77	29 48	Padd. " "
Serena E		" 11..	24·94	7 00	Screw " Apple River, N.S.
Maggie Miller	150	" 12..	104·66	16 40	Paddle, ferry, St. John.
Hampstead	150	" 12..	234·52	26 80	Screw, pass. "
G. R. King		" 11..	45·48	8 60	" tug "
Star	300	" 12..	461·03	44 88	Paddle, pass. "
Ernest		" 12..	12·58	6 04	Screw, tug "
Clifton	200	" 12..	138·21	19 04	Stern wheel, passenger, St. John.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.—New Brunswick and P. E. Island Division—*Continued.*

BOILERS AND MACHINERY—*Continued.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Express.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		8 cts.	
Quiddy		April 12..	30·59	7 48	Paddle, tug, St. John.
Fannie		" 15..	33·44	7 64	Screw " "
Bismark	40	" 15..	49·04	8 92	Paddle " "
Wee Laddie		" 15..	16·60	6 36	Screw " "
Joseph		" 15..	53·75	9 32	" " "
Leader		" 15..	29·32	7 32	Screw, tug, St. John.
Wm. H. Murray	40	" 22..	72·55	10 84	" "
Champion		" 22..	190·14	20 20	Paddle "
Delta		" 22..	19·93	6 60	Screw, tug, Hopewell Cape.
May Queen	370	" 23..	539·40	51 12	Paddle, pass, St. John.
G. D. Hunter		" 26..	67·97	10 44	Screw, tug, St. John.
Marguerite	40	" 29..	19·66	6 60	" pass., St. Croix.
Flushing	140	May 8..	177·65	22 24	" pass., St. John.
Martello		" 8..	33·65	7 72	" tug. "
James Holly		" 9..	31·21	7 48	" " "
Montague	75	" 13..	129·55	18 32	Paddle, ferry, Georgetown.
Electra	40	" 13..	106·96	16 56	Screw, pass. "
Fred. M. Batt		" 14..	59·90	9 80	" tug, Charlottetown.
Scout		" 14..	9·00	5 72	" " "
T. A. Stewart		" 15..	35·94	7 88	Twin-screw, tug, Charlottetown.
Frank C. Batt	40	" 15..	32·90	7 64	Screw, ferry, Summerside.
Lillie	65	" 27..	71·64	10 76	" tug, St. John.
Peri		" 30..	11·77	5 96	" " "
Tangent		June 1..	35·74	7 88	Twin-screw, tug, St. John
Frederick A		" 3..	31·11	7 48	Screw " "
Ada		" 4..	3 66	5 32	" yacht, Fredericton.
Meta		" 4..	5·65	5 40	" " "
Annie Currier		" 4..	10·56	5 88	" tug "
Carrie Knight		" 4..	5·88	5 48	" " "
Randolph		" 5..	8·71	5 72	Twin-screw, yacht, Fredericton.
Eva Johnson		" 5..	15·77	6 28	Screw, tug "
Mildred		" 7..	40·11	8 20	" " "
Viking	150	" 12..	127·70	18 24	" pass., St. Croix.
Nellie H		" 20..	7·52	5 64	" fish boat, Dalhousie.
Henrietta		" 20..	19·12	6 52	" tug "
Atlas		" 21..	15·75	6 28	" " "
Borriobola Gha		" 21..	95·77	12 68	Paddle " "
Mary Odell	90	" 21..	28·92	7 32	Screw, ferry "
Victor		" 21..	45·51	8 68	Paddle, tug, Campbellton.
Florence		" 21..	19·33	6 52	Screw, yacht "
Squirrel		" 21..	13 11	6 04	" tug, Dalhousie.
St. Lawrence		" 22..	50·82	9 08	" " Bathurst.
Nyanza	150	" 22..	83·21	11 64	" " "
Nelson	100	" 24..	64·34	10 12	" pass., Chatham.
Mascott		" 24..	70·50	10 60	" tug "
St. George	200	" 24..	277·78	30 24	Paddle, tug "
St. Isidore		" 24..	141·75	16 36	" " "
Lina		" 25..	26·40	7 08	Screw, tug fish "
Bridgetown		" 25..	14·66	6 20	" " "
St. Andrew		" 25..	76·64	11 16	" " "
Sybella H	40	" 25..	70·68	10 68	Paddle, ferry "
Miramichi	100	" 25..	75·18	11 00	Screw, pass. "
Sarcelle		" 25..	21·86	6 68	" tug "
Grip		" 25..	7·18	5 56	" " "
Eva		" 25..	18·01	6 44	" " "
Wenonah		" 25..	9·02	5 72	" yacht "
Jubilee		" 26..	16·52	6 36	" tug and fish, Chatham.
Edith		" 26..	21·55	6 76	" tug "
St. Nicholas	100	" 26..	62·20	9 96	" " "
Arthur		" 26..	4·99	5 40	" yacht "
Wm. M		" 26..	29·11	7 32	" tug, Newcastle.
Lady Dufferin	40	" 27..	47·48	8 76	Paddle, ferry "

STEAM Vessels Inspected, &c.—New Brunswick and P. E. Island Division—*Concluded.*

BOILERS AND MACHINERY—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		$ cts	
Rustler	200	June 27..	105·54	16 16	Paddle, pass. Newcastle.
Laura		" 27..	13·55	6 12	Screw, tug "
Irene		" 27..	10·29	5 80	" " "
Bessie		" 27..	5·18	5 40	" fish boat "
Zulu		" 27..	17·60	6 44	Paddle, tug "
Loyalist		" 27..	17·57	6 44	" " "
St. Kilda		" 27 .	55·64	9 48	" " Chatham.
Total			13,424·47	1,782 64	

W. L. WARING,
Steamboat Inspector.

STEAM Vessels Inspected in Canada but registered elsewhere for the Year ended June 30, 1901.

NEW BRUNSWICK AND PRINCE EDWARD ISLAND DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessels and where employed.
		1901.		$ cts.	
Alice	25	Aug. 8..	12·14	5 96	Screw, passenger, Eastport.
General Leavitt	40	" 8..	22·65	6 84	" ferry "
Phantom	50	" 8..	38·28	8 04	" passenger "
Julius Wolff	25	" 9..	24·01	6 92	" " "
Luce Brothers	50	" 9..	88·82	12 04	" " "
Jeanette	105	" 10..	73·64	10 92	" " Calais.
		1901.			
St. Croix	400	Dec. 17..	1,993·58	167 52	" " Boston.
		1902.			
Cumberland	550	Mar. 1..	1,605·82	136 48	Paddle " "
Prince Rupert	850	May 27..	1,158·44	100 64	" " St. John.
State of Maine	550	June 10..	1,400·99	120 80	" " Boston.
Total			6,427·37	576 16	

W. L. WARING,
Steamboat Inspector.

SESSIONAL PAPER No. 21

STEAM Vessels not Inspected for the Year ended June 30, 1901.

NEW BRUNSWICK AND PRINCE EDWARD ISLAND DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Remarks. — Why not Inspected and Class of Vessel.
Marrette	7·04	4·79	Out of district.
Lubec	50·94	25·47	Not applied for.
Alameda	62·59	49·16	Out of district.
Ada G	102 05	30·55	Laid up.
Southport	239·92	186·15	Not applied for.
Derby	11·66	8·66	Laid up.
	25·00	19·00	"
Lottie	5·00		"
Electric	3·74	2·55	"
Arbutus	46·76	31·80	Out of district.
Calla	9·79	6·66	Laid up.
La Tour	154·43	98·70	Out of district.
Total	718·92	463·49	

W. L. WARING,
Steamboat Inspector.

STEAM Vessels Inspected for the year ended June 30, 1901.

NEW BRUNSWICK AND P. E. ISLAND DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901		8 cts.	
Dirigo	40	July 3..	70·13	10 60	Screw, pass., St. John.
Frederick A	25	" 18..	31·11	7 48	" " Richibucto.
Neptune	40	" 21..	71·15	10 68	" " St. John.
Arbutus	86	Aug. 10..	46·76	8 76	" " St. Croix River.
Elliott		Sept. 3..	367·50	34 36	" freight, coasting.
Spring Hill	100	" 22..	189·05	23 12	" pass., Basin of Minas.
Western Extension	280	" 27..	424·89	42 60	Paddle, ferry, St. John.
Aurora	200	" 27..	364·24	37 12	Screw, pass., "
Delta	40	Oct. 2..	19·93	6 60	" " Hopewell Cape.
Aberdeen	400	" 12..	243·86	27 52	Stern wheel, pass., St. John.
Quangondy	208	Dec. 6..	294·75	31 60	Paddle, ferry, St. John.
		1902			
E. Ross	40	March 8..	29·63	7 40	Screw, ferry, St. John.
Northumberland	350	" 28..	1,255·46	108 40	Twin scr., pass., Northumberland Sts.
Princess	350	" 28..	541·79	51 36	Screw, " " "
Jacques Cartier	300	" 29..	379·96	38 40	Paddle, " " "
Elfin	70	" 29..	122·42	17 76	" ferry, Charlottetown Harbour.
Fanchon	40	April 6..	110·61	16 88	" pass., St. John.
Storm King	40	" 8..	107·87	16 64	Screw, " "
Victoria	956	" 9..	1,001·93	88 16	Paddle, " "
Springfield	260	" 11..	232·73	26 64	Stern wheel, pass., St. John
Wm. H. Murray	40	" 12..	72·55	10 84	Screw, " "
Hampstead	150	" 12..	234·52	26 80	" pass., St. John.
Clifton	200	" 12..	138·21	19 04	Stern wheel, pass., St. John.
Bismark	40	" 12..	49·04	8 92	Paddle, pass., "
Maggie Miller	150	" 11..	104·66	16 40	" ferry, Millidgeville.
Star	300	" 15..	461·03	44 88	" pass., St. John.
David Weston	450	" 15..	765·15	69 20	" " "
May Queen	370	" 22..	539·40	51 12	" " "
Marguerite	40	" 29..	19·66	6 60	Screw, " St. Croix River.
Flushing	140	May 8..	177·65	22 24	" " St. John.
Montague	75	" 13..	129·55	18 32	Paddle, ferry, Georgetown, P.E.I.
Electra	40	" 13..	106·96	16 56	Screw, pass., Charlottetown, "
Frank C. Batt	40	" 15..	32·90	7 64	" ferry, Summerside, "
Lillie	65	" 27..	71·64	10 76	" pass., St. John.
Viking	150	June 12..	127·70	18 24	" " St. Croix River.
Mary Odell	90	" 20..	28·92	7 32	" " Dalhousie.
Nyanza	150	" 22..	83·21	11 64	" " Bathurst.
Nelson	100	" 24..	64·34	10 12	" " Chatham.
Miramichi	100	" 24..	75·18	11 00	" " "
St. Nicholas	100	" 24.	62·20	9 96	" " "
St. George	200	" 24 .	277·78	30 24	Paddle " "
Sybella H	40	" 24..	70·68	10 68	" ferry "
Lady Dufferin	40	" 25..	47·48	8 76	" " Newcastle.
Rustler	200	" 25..	101·54	16 16	" pass., "
Barge No. 6	250	" 25..	95·00	10 00	In tow " Millerton.

I. J. OLIVE,
Hull Inspector.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected in Canada but Registered elsewhere, for the Year ended June 30, 1901.

NEW BRUNSWICK AND PRINCE EDWARD ISLAND DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessels and where employed.
		1901.		8 cts.	
General Leavitt	40	Aug. 8.	22·65	6 84	Screw, pass., Lubec, Me.
Alice	25	" 8.	12·14	5 96	" " Eastport, Me.
Phantom	50	" 8.	38·28	8 04	" " "
Luce Brothers	50	" 9.	88·00	12 04	" " "
Julius Wolff	25	" 9.	24·01	6 92	" " "
Jeanette	105	" 10.	73·64	10 92	" " Calais, Me.
St. Croix	400	Dec. 17.	1,993·58	167 52	" " Boston.
		1902.			
Cumberland	550	Mar. 1.	1,605·82	136 48	Paddle " "
State of Maine	550	June 10.	1,409·99	120 80	" " "
Prince Rupert	850	May 27.	1,158·44	100 64	" " St. John.

I. J. OLIVE,
Hull Inspector, &c.

STEAM Vessels not Inspected for the Year ended June 30, 1901.

NEW BRUNSWICK AND PRINCE EDWARD ISLAND DIVISION.

HULL INSPECTION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	REMARKS. — Why not Inspected and Class of Vessel.
Hillsborough	228·17	66·13	Not applied for, paddle.
Southport	239·92	156·13	" "
Wm. Aitken	74·87	51·19	" screw.
Eva	18·01	12·25	" "
Victor	45·51	28·67	" paddle.
Arbutus	46·76	31·80	" screw, left district.
Calla	9·79	6·66	" laid up.
Alameda	62·59	49·16	" left district.
La Tour	154·43	98·70	" "
Marietta	7·04	4·79	" "

I. J. OLIVE,
Hull Inspector, &c.

STEAM Vessels Inspected for the Year ended June 30, 1901.

BRITISH COLUMBIA DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901.		$ cts.	
Victoria	30	July 4..	106·60	16 56	Ft. and pass., Trout Lake, B.C.
Idler	14	" 5..	3·88	5 32	Passengers "
Lardeau	17	" 5..	9·60	5 80	" Columbia River.
Archer	40	" 5..	15·32	6 20	" "
Surprise		" 7..	14·80	6 12	Tug, Kootenay Lake.
Halys		" 7..	43·81	8 52	" "
Hercules	50	" 7..	64·68	10 20	Ft. and pass. "
Ymir		" 8..	69·74	10 60	Tug "
Angerona		" 9..	13·79	6 12	" "
Red Star		" 9..	14·81	6 20	" "
Nelson	125	" 9..	496·01	47 68	Ft. and pass. "
Rossland	300	" 9..	883·55	78 72	" Columbia River.
Moyie	250	" 10..	834·81	74 80	" Kootenay Lake.
Proctor		" 10..	43·12	8 44	Tug "
Kottenay	300	" 10..	1,117·09	97 36	Ft. and pass, Columbia River.
Lytton	100	" 11..	451·66	44 16	" "
Minto	250	" 11..	828·91	74 32	" "
Flirt		" 12..	3·58	5 32	Yacht, Kootenay Lake.
Denver		" 12..	8·51	5 72	" "
Slocan	300	" 13..	578·03	54 24	Ft. and pass., Slocan Lake.
Sandon	50	" 13..	96·22	12 68	" "
Alert	13	" 14..	3·11	5 24	Passengers "
International	300	" 15..	525·55	50 08	Ft. and pass., Kootenay Lake.
Alberta	200	" 15..	508·15	48 64	" "
Kokanee	200	" 16..	347·50	35 84	" "
Marion	12	" 16..	14·78	6 20	" "
Illicillewaet	20	" 17..	97·92	12 84	" Columbia River.
Columbia		" 17..	49·84	9 00	Tug "
Fawn		" 17..	32·70	7 64	" "
Duchess	40	" 19..	145·48	19 60	Ft. and pass., Upper Columbia River.
Hyak	20	" 19..	39·04	8 12	" "
Selkirk		" 20..	58·49	9 64	Yacht, Upper Columbia.
Pert		" 20..	6·44	5 48	Freight "
Aberdeen	250	" 21..	554·04	52 32	Ft. and pass., Okanagon Lake.
Penticton		" 22..	49·69	9 00	Tug. "
Bermuda		" 28..	72·03	10 76	" Coast, B.C.
Cutch	200	June 17..	675·85	62 08	Ft. and pass. "
Joan	400	Aug. 3..	821·21	73 68	" "
Clayoquot	12	" 11..	87·18	11 96	" "
Comet	12	May 27..	85·26	11 80	" "
Mamie	12	Aug. 14..	89·60	12 20	" "
Islander	500	" 7..	1,495·09	127 60	" "
Danube	300	" 27..	886·89	78 96	" "
Willipa	100	" 9..	373·09	57 84	" "
Staffa		June 26..	51·30	9 08	Freight "
Queen City	100	Sept. 12..	391·21	39 28	Ft. and pass. "
Mystery	20	" 17..	64·80	10 20	" "
Tees	125	" 22..	679·15	62 32	" "
Kasko	500	" 27..	764·77	69 20	" Kootenay Lake.
Ethel Ross	12	" 29..	82·05	11 56	" Kamloops Lake.
Thompson	10	" 29..	149·80	20 00	" "
Nell	60	Oct. 11..	207·97	24 64	" Coast, B.C.
* Water Lily		" 24..	73·81	21 84	Water boat, Esquimalt.
Thistle		" 29..	2·43	5 16	Fishing boat, Baynes Sound.
Charmer	500	Nov. 5..	1,044·41	91 52	Ft. and pass., Coast, B.C.
Princess Louise	98	" 24..	931·76	82 56	" "
Delta		Dec. 7..	25·20	7 00	Freight "
Maude		Nov. 21..	174·99	22 00	" "

* Dues and fees for 1900 and 1901.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.—British Columbia Division—*Concluded.*

BOILERS AND MACHINERY—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		$ cts.	
Otter	70	Jan. 5.	365·97	37 28	Ft. and pass., Coast, B.C.
Sadie	25	" 9.	49·30	8 92	" "
Chieftain		" 26.	64·80	10 20	Tug "
Hope	12	" 28.	78·49	11 32	Tug and pass. "
Daisy	15	Feb. 6.	60·10	9 80	Fug and passenger, Coast, B.C.
Barbara Boscowitz	125	" 7.	337·92	33 04	Freight and pass., "
*Katie		" 11.	46·00	17 36	Freight "
*Pilot	22	" 12.	279·05	60 64	Tug and passenger "
Alert		" 12.	43·81	8 52	Tug, Coast, B.C.
Valhalla	30	" 18.	153·23	20 24	Tug and passenger, Kootenay Lake.
Lorne	20	" 22.	287·96	31 04	" " Coast, B.C.
Selkirk	35	Mar. 6.	141·63	19 36	Freight " "
Thistle	50	" 1.	222·36	25 76	" " "
Amur	228	" 19.	907·17	80 56	" " "
Czar		" 23.	152·18	17 16	Tug "
Clayoquot	50	" 21.	87·18	11 96	Frt. and passenger "
Constance	12	" 20.	49·52	9 00	" " "
Iroquois	40	Apr. 1.	195·49	23 60	" " "
Westminster		" 3.	18·29	6 44	Tug, Skeena river.
Yosemite	500	" 4.	1525·03	130 00	Freight and passenger "
J. L. Card		" 12.	141·06	16 28	Freight, Coast, B.C.
Alarm		" 15.	33·91	7 72	Tug "
R. P. Rithet	81	" 19.	816·69	73 36	Ft. and pass., Inland waters, B.C.
Oscar		" 24.	95·42	12 60	Freight, Coast, B.C.
Hazelton	156	" 25.	377·86	38 24	Freight and passenger, Skeena River.
Muriel		May 2.	44 13	8 52	Tug, Lowe Inlet.
Islander	500	" 7.	1495·09	127 60	Ft. & pass., Canadian & foreign ports.
Bristol	30	" 23.	1983·15	166 64	" " "
Sunbury	10	June 1.	37·72	8 04	Tug and pass., Inland waters, B.C.
Mermaid	100	May 19.	128·55	18 32	Ferry, Nanaimo Harbour.
City of Nanaimo	500	June 3.	761·37	68 88	Freight and passenger, Coast, B.C.
Defender	30	" 5.	216·10	25 28	" " Fraser River.
Cleere		" 10.	35·94	7 88	Tug, Coast, B.C.
Bobs		" 11.	4·14	5 32	Yacht, Harrison Lake.
Tyee		" 12.	31·53	7 56	Tug, Fraser River.
Trader	20	" 11.	167·18	21 36	Freight and passenger, Coast, B.C.
Nagasaki		" 19.	15·13	6 20	Fishing tug, Fraser River.
Surprise		" 19.	10·50	6 60	" "
Wellington		" 19.	16·30	6 28	" "
May Queen		" 19.	14·10	6 12	" "
Totals			28861·55	2,980 96	

J. A. THOMSON,
Steamboat Inspector, Victoria, B.C.

STEAM Vessels Inspected in Canada but Registered Elsewhere, for the Year ended June 30, 1901.

BRITISH COLUMBIA DIVISION.

Name of Vessel.	Number of Passengers Allowed.	Date. Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901.		$ cts.	
City of Puebla	511	July 9..	2623·88	217 92	Ft. & pass., Canadian & foreign ports.
Garland	50	Aug. 10..	166·61	21 36	" " "
Rosalie	127	" 25..	318·51	33 52	" " "
Victorian	500	" 27..	1503·64	128 32	" " "
Mischief	22	" 30..	138 77	19 04	" " "
Dolphin	400	" 27..	824·26	73 92	" " "
Sehome	350	Sept. 24..	692·46	63 36	" " "
Utopia	72	Oct. 5..	423·72	41 84	" " "
Senator	430	Dec. 15..	2409·60	200 72	" " "
		1902.			
State of California	400	Jan. 14..	2266·05	189 28	" " "
Farallon	98	Feb. 21..	749·96	68 00	" " "
Humboldt	321	Apr. 5..	1075·00	94 00	" " "
City of Seattle	592	May 8..	1411·05	120 88	" " "
Walla Walla	397	" 9..	3069·76	253 60	" " "
North Pacific	200	June 3..	488·73	47 12	" " "
Umatilla	424	" 13..	3069·76	253 60	" " "
Totals			21231·76	1,826 48	

J. A. THOMSON,
Steamboat Inspector, Victoria, B.C.

STEAM Vessels not Inspected, for the Year ended June 30, 1901.

BRITISH COLUMBIA DIVISION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Remarks. Why not Inspected and Class of Vessel.
Willie	82·60	55·94	Freight and passenger. No application.
Mist	28·64	19·50	Tug. Laid up.
Cascа	589·73	455·15	Fitting out. To be inspected, July.
Argenta	206 32	129·99	" " " "
	907·29	660·58	

J. A. THOMSON,
Steamboat Inspector, Victoria, B.C.

SESSIONAL PAPER No. 21

Steam Vessels Inspected for the Year ended June 30, 1901.

VANCOUVER DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901.		$ cts.	
Clara		July 25..	144	19 52	Freight and passenger, Yukon River.
Columbian	200	" 22..	716	65 36	" "
Emma Nott		" 23..	73	10 84	" "
Ora	75	" 23..	101	16 08	" "
Bonanza King	230	" 24..	466	45 28	" "
Canadian	200	" 25..	716	65 31	" "
Victorian	200	" 26..	716	65 28	" "
Nora	75	" 27..	101	16 08	" "
Eldorado	230	" 28..	466	45 28	" "
Anglain	100	" 30..	161	20 88	" "
Sybil	150	" 31..	622	57 76	" "
Tyrrell	150	" 31..	678	62 24	" "
Lightning	100	" 31..	557	52 56	" "
B. S. Bailey	150	Aug. 2..	193	23 44	" "
Clifford Sifton	150	" 4..	291	31 28	" "
Gold Star	135	" 6..	168	21 44	" "
Flora	75	" 7..	101	16 08	" "
J. P. Light		" 8..	719	65 52	" "
Zealandian	150	" 9..	180	22 40	" "
Majorie	16	" 9..	20	6 60	" "
Yukoner	200	" 10..	781	70 48	" "
Joseph Clossett	20	" 16..	147	19 76	" "
W. Ogilvie	39	" 18..	82	11 56	" "
Mabel F		" 18..	10	5 80	Freight "
Olive May		" 18..	86	11 88	" "
Scotia	100	" 20..	100	13 00	Freight and passenger "
Ruth	30	" 20..	52	9 16	" "
Australian	200	" 23..	420	41 60	" "
Kilbourne		" 23..	87	11 96	Tug "
Gleaner	150	" 24..	242	27 36	Freight and passenger "
Albion	30	Sept. 17..	88	12 04	Passenger, tug ; B. C. waters.
Telephone	25	" 17..	81	11 48	Freight and passenger, Fraser River.
Lapwing		" 19..	151	20 08	Freight, B. C. waters.
Senator	30	" 11..	28	7 24	Tug and passenger, B. C. waters.
Belle	20	" 17..	67	10 36	" "
Troubador		" 20..	18	7 88	Tug "
Leonora		Oct. 2..	33	7 64	" "
Etta White	15	" 3..	97	12 76	Tug and passenger "
Blonde		" 3..	33	7 64	" "
Fingal		" 8..	91	12 28	Freight "
Flyer		" 12	48	8 64	Tug "
Hattie Young	40	" 8..	132	18 56	Freight and passenger, Fraser River.
Eva		" 19..	35	7 80	Tug, B. C. waters.
St. Clair		" 28..	68	10 44	" "
Kildonan		Nov. 3..	51	9 08	" "
Clansman		" 6..	72	10 76	Freight "
Star		" 9..	14	6 12	Tug "
Fraser		" 9..	36	7 88	" "
Stampede		" 9..	12	5 96	" "
Greenwood		" 13..	23	6 84	" "
Hong Kong		" 13..	36	7 64	" "
Lottie		" 14..	29	7 32	" "
*Halifax		" 14..	28	7 24	" "
*City of Columbia		Dec. 18..	26	*14 16	" "
On Time		" 1..	11	*11 76	" "
Minto	20		36	7 88	Passenger, Harrison River.
Sea Lion		Dec. 26	6	5 48	Tug, B. C. waters.
Saturna		" 2..	22	6 76	" "

* Dues and fee paid for 1899 and 1900.

STEAM Vessels Inspected, &c.—Vancouver Division—*Continued.*

BOILERS AND MACHINERY—*Continued.*

Name of Vessel	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1902.		8 cts	
*Swan		Jan. 7..	17	11 36	Tug, B. C. Waters.
Active	30	" 17..	172	21 76	" & pass., B. C. Waters.
Albion	30	" 27..	58	12 04	" " "
Robert Dunsmuir	40	Feb. 4..	232	26 56	Freight " "
Comox	60	" 5..	101	16 08	" " "
Defiance	39	" 8..	90	12 20	" " "
Autolycus		" 8..	25	7 00	Tug "
Coquitlam	75	" 17..	256	28 40	F. & pass., "
Alice		March 5..	35	7 80	Tug, "
Firefly		" 11..	46	8 68	" "
Beaver	150	" 18..	545	51 60	F. & pass., Fraser, R.
Stranger		" 18..	21	6 68	Tug, B. C. Waters.
Saga	70	" 18..	252	28 16	F. & pass., B. C. Waters.
Capilano	25	" 15..	231	26 48	" "
Native		" 25..	52	9 16	Tug, "
Delta		" 25..	15	6 20	" "
Fearless		" 25..	53	9 24	" "
Starling		" 25..	8	5 64	" "
Esperanza		" 25..	31	7 48	" "
Reliance		" 25..	36	7 88	" "
Vigilant		" 25..	29	7 32	" "
Royal City	40	" 25..	200	24 00	F. & pass., Fraser, R.
Survey	50	" 25..	263	29 04	" "
Iris		" 26..	38	8 04	Tug, B. C. Waters.
Valcan		" 26..	78	11 16	" "
Stella		" 26..	16	6 28	" "
City of Tipella		" 26..	19	6 52	" "
Lois		" 28..	25	7 00	" "
Tepic	15	" 28..	71	10 68	" & pass., B. C. Waters.
Champion		" 28..	100	13 00	Freight, "
Swan		April 4..	36	7 88	Tug, "
*Caledonia	150	" 8..	569	160 56	F. & pass, Skeena, R.
Strathcona	200	" 8..	596	55 68	" "
Florence		" 9..	30	7 40	Tug, B. C. Waters.
Nora		" 10..	19	11 52	" "
Vera		" 10..	6	5 48	" "
Monte Christo	60	" 10..	266	29 28	F. & pass., Skeena, R.
Lottie N		" 10..	34	7 72	Tug, B. C. Waters.
North Vancouver	200	" 10..	104	16 32	Pass. ferry, Burrard Inlet.
Comet		" 18..	85	11 80	Tug, B. C. Waters.
Winnefred		" 23..	13	6 04	" "
Gipsy		" 30..	10	5 80	" "
Erie		May 1..	27	7 16	" "
Welcome		" 1..	32	7 56	F. & pass., Harrison R.
Magnet		" 1..	24	6 92	Tug, B. C. Waters.
Chehalis		" 4..	54	9 32	" "
North Star		" 11..	8	5 64	" "
Transfer	120	April 26..	264	29 12	F. & pass., Fraser R.
Spray		May 11..	8	5 64	Tug, B. C. Waters.
Terra Nova		" 1..	47	8 76	" "
St. Clair		" 2..	68	10 44	" "
Uno		" 17..	12	5 96	" "
Lorelli		June 1..	32	7 56	Tug, Yukon, R.
White Horse	150	" 7..	987	86 96	F. & Pass., Yukon R.
Selkirk	50	" 1..	777	69 16	" "
Dawson	50	" 1..	779	69 32	" "
Yukoner	125	" 3..	781	70 48	" "
Sybil	125	" 10..	622	57 76	" "
Columbian	150	" 4..	716	65 31	" "
Canadian	150	" 4..	716	65 31	" "

* Inspection fee for 1900 and 1901.
† Paid for 1899, 1900 & 1901.

STEAM Vessels Inspected, &c.—Vancouver Division—*Concluded.*

BOILERS AND MACHINERY—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Remarks.
		1902.		$ cts.	
Wilbur Crimmon	30	June 10..	168	21 44	F. & Pass., Yukon R.
Flora	70	" 10..	101	16 08	" "
Zealandian	75	" 10..	180	22 40	" "
Joseph Clossett	50	" 20..	147	19 76	" "
Ora	70	" 11..	101	16 08	" "
S. S. Bailey	100	" 11..	193	23 44	" "
Nora	70	" 11..	101	16 08	" "
Clifford Sifton	150	" 12..	291	31 28	" "
Victorian	150	" 12..	716	65 28	" "
Anglian	100	" 13..	161	20 88	" "
Eldorado	50	" 25..	466	45 28	" "
J. B. Light		" 19..	719	65 52	Freight, "
Monarch		" 27..	284	30 72	" "
Total			24,833	2,963 05	

F. M. RICHARDSON,
Steamboat Inspector, Vancouver.

STEAM Vessels Inspected in Canada but Registered Elsewhere, for the Year ended June 30, 1901.

VANCOUVER DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees paid.	Class of Vessel and where employed.
				$ cts.	
C. Hamilton	200	July 19..	595	55 76	Yukon River, freight and passenger.
Susie	250	" 20..	1,211	104 88	" " "
Leon	150	" 24..	692	63 36	" " "
Seattle No. 3	160	" 25..	548	51 84	" " "
Hannah	250	" 26..	1,211	104 88	" " "
Sarah	250	Aug. 3..	1,211	104 88	" " "
Louise	150	" 8..	718	65 44	" " "
Mainlander	200	Jan. 28..	505	48 40	Puget Sound " "
Susie	250	June 20 ..	1,211	104 88	Yukon River " "
Total			7,902	704 32	

F. M. RICHARDSON, R.N.R.,
Steamboat Inspector, Vancouver.

STEAM Vessels not Inspected, for the Year ended June 30, 1901.

VANCOUVER DIVISION.

BOILERS AND MACHINERY.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Remarks. — Why not Inspected and Class of Vessel.
Clara T. Young	31	21	No application.
Danney	15	10	"
Dreadnaught	33	22	"
Sea Gull	3	2	"
Total	82	55	

F. M. RICHARDSON, R.N.R.,
Steamboat Inspector, Vancouver.

STEAM Vessels Inspected for the Year ended June 30, 1901.

BRITISH COLUMBIA DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901.		$ cts.	
Sea Gull	12	June 30.	2·52	5 24	Screw, passenger.
Cutch	200	" 17.	675·85	62 08	" freight and passenger.
Comet	12	May 27.	85·26	11 80	" " "
Joan	400	Aug. 3.	821·21	73 68	Twin screw " "
Clayoquot	12	" 11.	87·18	11 96	Screw " "
Mamie	12	" 14.	89·60	12 20	" " "
Islander	500	" 7.	1,495·09	127 60	Twin screw " "
Lapwing		June 19.	150·73	20 08	Screw "
Willapa	100	Aug. 9.	373·69	37 84	" " "
Danube	300	" 27.	886·89	78 96	" " "
Senator	30	Sept. 11.	27·63	7 24	" " "
Queen City	100	" 12.	391·21	39 08	" " "
Tees	125	" 22.	679·15	62 32	" " "
Albion	30	" 17.	88·11	12 04	" " "
Telephone	25	" 17.	80·66	11 48	Stern wheel " "
Mystery	20	" 17.	64·80	10 20	Screw " "
Belle	12	" 17.	66·62	10 36	" " "
Hattie Young	40	Oct. 8.	131·75	18 56	Stern wheel " "
Etta White	15	" 3.	97·35	12 76	Screw " "
Nell	60	" 11.	207·97	24 64	Twin screw " "
Charmer	500	Nov. 5.	1,044·41	91 52	Screw " "
Princess Louise	98	" 22.	931·76	82 64	Paddle " "
Maude		" 21.	174·99	22 00	Screw "

SESSIONAL PAPER No. 21

STEAM Vessels Inspected, &c.—British Columbia Division—*Concluded.*

HULL INSPECTION—*Concluded.*

Name of Vessel.	Number of passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902.		8 cts.	
Active	20	Jan. 3..	171·74	21 76	Screw, freight and passenger.
Otter	54	" 5..	365·97	37 28	" " "
Sadie	25	" 10..	49·30	8 92	" " "
Albion	30	" 17..	88·11	12 04	" " "
Daisy	15	Feb. 6..	60·10	9 80	" " "
Robert Dunsmuir	40	" 4..	231·75	26 56	Twin screw " "
Hope	12	Jan. 28..	78·49	11 34	Screw " "
Comox	140	Feb. 5..	101·17	16 08	" " "
Defiance	39	" 8..	89·88	12 20	" " "
Barbara Boscowitz	125	" 7..	337·92	35 04	" " "
Capilano	25	" 17..	231·14	26 48	" " "
Coquitlam	75	" 17..	256·33	28 48	" " "
Minto	20	" 10..	36·19	7 88	Stern wheel " "
Pilot	22	" 12..	279·05	60 64	Screw " "
Lorne	22	" 22..	287·96	31 04	" " "
Thistle	50	Mar. 1..	222·36	25 76	" " "
Selkirk	35	" 5..	141·63	19 36	" " "
Clayoquot	50	" 21..	87·18	11 96	" " "
Saga	150	" 18..	252·47	28 16	Twin screw " "
Constance	12	" 20..	49·52	9 00	Screw " "
Amur	128	" 19..	907·17	80 56	" " "
Royal City	40	" 25..	290·46	24 00	Stern wheel " "
Surrey	50	" 25..	263·26	29 04	Paddle " "
Transfer	120	" 26..	264·16	29 12	Stern wheel " "
Beaver	150	" 26..	545·44	51 60	" " "
Tepic	15	" 28..	70·87	10 68	Screw " "
Lois	10	" 28..	25·15	7 00	" " "
Iroquois	40	April 1..	195·44	23 60	" " "
North Vancouver	200	" 10..	103·83	16 32	" " "
Yosemite	500	" 4..	1,525·03	130 00	Paddle " "
R. P. Rithet	200	" 19..	816·69	73 36	Stern wheel " "
Hazelton	156	" 24..	377·86	38 24	" " "
Islander	500	May 7..	1,495·09	127 60	Twin screw " "
Chehalis	15	" 10..	53·75	9 32	Screw " "
St. Clair	25	" 21..	68·12	10 46	" " "
Bristol	30	" 22..	1,983·15	166 64	" " "
Mermaid	100	" 19..	128·55	18 32	Twin screw " "
Sunbury	10	June 1..	37·72	8 08	Screw " "
City of Nanaimo	500	" 3..	761·37	68 80	Twin screw " "
Defender	30	" 5..	216·10	25 28	Stern wheel " "
Trader	20	" 11..	167·18	21 36	Screw " "

R. COLLISTER,
Hull Inspector.

STEAM Vessels Inspected in Canada but Registered Elsewhere for the Year Ended June 30, 1901.

BRITISH COLUMBIA DIVISION.

HULL INSPECTION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901.		8 cts.	
City of Puebla	511	July 9..	2,623·88	217 92	Screw, Canadian and foreign ports.
Garland	50	Aug. 10..	166·61	21 36	" " "
Rosalie	127	" 25..	318·51	33 52	" " "
Victorian	500	" 27..	1,503·64	128 32	" " "
Mischief	22	" 30..	138·77	19 04	" " "
Dolphin	400	" 27..	824·26	73 92	Twin screw, " "
Utopia	71	Oct. 5..	423·72	41 84	Screw, " "
Schome	350	Nov. 14..	692·42	63 36	Paddle, " "
Senator	430	Dec. 15..	2,409 60	200 72	Screw, " "
		1902.			
State of California	400	Jan. 14..	2,266·05	189 28	" " "
Mainlander	200	" 24..	505·19	48 40	" " "
Farallon	98	Feb. 21..	749·96	68 00	" " "
Humboldt	321	April 5..	1,075·00	94 00	" " "
City of Seattle	592	May 8 .	1,411·05	129 88	" " "
Walla Walla	397	" 9..	3,069·76	253 60	" " "
North Pacific	200	June 7..	488·73	47 12	Paddle, " "
Umatilla	424	" 13..	3,069·76	253 60	Screw, " "

R. COLLISTER,
Hull Inspector.

STEAM Vessels not Inspected for the Year ended June 30, 1901.

BRITISH COLUMBIA DIVISION.

HULL INSPECTION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Remarks. — Why not Inspected and Class of Vessel.
Willie	82·68	55 94	Tug, laid up.
Mist	28·64	19 50	Freight & passenger, to be inspected later.
Casca	589·73	455 15	Freight & passenger, to be inspected in July
Sea Gull	2·52	1 72	Passenger, no application.
Rothesay	553·11	348 66	Freight and passenger, laid up.

R. COLLISTER,
Hull Inspector.

SESSIONAL PAPER No. 21

STEAM Vessels Inspected for the Year ended June 30, 1901.

KEEWATIN, MANITOBA AND NORTH-WEST TERRITORIES DIVISION.

BOILERS, MACHINERY AND HULL INSPECTION.

Name of Vessel.	Number of Passengers allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1900.		8 cts.	
Mary Ann	40	July 3..	86·86	11 96	Screw, tug, Fort William.
W. J. Aikens	40	" 4..	41·82	8 36	" " "
Herbert		" 11..	21·13	6 68	" " "
Missanabuie		Not issued	15·09		" " Missanabuie.
Arcadia		July 11..	23·16	6 84	" fish tug, Lake Superior.
Nettie		" 12..	3·34	5 24	" " "
Maud C		" 12..	5·16	5 40	" " "
Rosey May		" 12..	3·64	5 32	" " "
Minota		" 13..	34·95	7 80	" " "
Ida		" 13..	19·37	6 52	" " "
Brothers		" 16..	17·50	6 44	" " "
James Mayhew		" 16..	16·94	6 36	" tug, "
Kate Marks		" 17..	54·15	9 32	" " "
Swan		" 18..	7·76	5 64	" " "
Georgina	25	" 19..	43·79	8 52	" pass. & freight, Lake Superior.
Wm. Cross	15	Aug. 1..	21·66	6 76	" tug, pass., Lake Wabigoon.
Wm. Whyte		" 2..	17·81	6 44	" " "
Galatia	25	" 2..	46·10	8 68	" pass. & freight "
Minneola		" 1..	9·20	5 72	" tug, Lake Manitou.
George Ward		" 3..	2·59	5 24	" " " Barrel.
Gladys		" 2..	2·60	5 24	" " " "
Rambler		" 3..	6·14	5 80	" " Lac des Mille Lacs.
Forester		" 3..	3·00	5 24	" " "
Circe		" 3..	2·83	5 24	" " "
Dolphin		" 4..	12·63	6 04	" " "
Siskiwett	25	" 9..	47·17	7 72	" " Lake Superior.
Rainy River Messenger		" 10..	5·90	5 64	" " Rainy River.
Otter		Not issued	78·99		Stern paddle, Saskatchewan River.
Minnow		Aug. 24..	9·52	6 60	" " "
Mountain Belle		Not issued	4·21		Screw, yacht, Banff.
Minnewauka		"	4·61		" " "
Dolly		Aug. 29..	2·57	5 24	" passenger, Red River.
Princess	140	Sept. 10..	405·44	40 40	" pass. & freight, Lake Winnipeg
Manitou		" 17..	106·06	13 48	" freight, Lake Winnipegosis.
Mocking Bird		" 17..	38·02	8 04	" tug, "
Lady Ellen		" 21..	18·57	6 52	" " "
Isabelle		" 22..	60·90	9 88	" " "
Iona		" 22..	39·15	8 12	" " "
Majestic	40	Oct. 8..	135·22	18 80	" passenger, Rainy Lake.
Carrie L.		" 9..	14·56	6 20	Side paddle, Seine River.
Agwinde	40	" 17..	307·41	32 56	Stern " pass. & frt., Rainy River.
Jenny Lind		Not issued	5·81		Screw, tug, Sturgeon Lake.
John Glen		Nov. 3..	14·07	6 12	Side paddle, White Fish Lake.
		1901.			
Argyle	150	April 4..	77·70	11 24	Screw, pass., Rat Portage & Keewatin.
Daisy Moore		" 23..	38·31	8 04	" tug, Lake of the Woods.
Spray		" 29..	8·98	5 72	" " "
Catherine S.	35	" 29..	66·60	10 36	" " "
D. L. Mather		" 29..	103·32	13 24	" " "
Empress		May 1..	129·28	15 32	" " "
Clipper	40	" 4..	52·95	9 24	" pass., "
Rambler	30	" 4..	25·83	7 08	" " & tug "
Keenora	500	" 2..	486·34	46 88	" " & frt., Rat Portage and Fort Francis.
Heather Belle	20	" 2..	21·18	6 68	Screw, pass. & frt., Lake of the Woods.
Shamrock	40	" 2..	79·84	11 40	" " " "
Ethel Banning		" 2..	37·54	8 04	" freight, "
Lotta S.	30	" 4..	48·03	8 84	" pass. & frt., "

STEAM Vessels Inspected, &c.—Keewatin, Manitoba and North-west Territories Division—*Concluded.*

BOILERS, MACHINERY AND HULL INSPECTION—*Concluded.*

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1901		8 cts.	
Phantom	40	May 4	55·86	9 48	Screw, pass. & frt., Lake of the Woods
Pastime		" 30	14·82	6 20	" private yacht, "
Squaw	35	" 4	42·95	8 44	" pass. & frt. "
Kenuna		" 4	41·86	8 36	" tug, "
Princess	150	" 6	405·44	40 40	" pass. & frt., Lake Winnipeg.
Frank Burton		" 6	52·00	9 16	" tug, " "
Sultana	20	" 27	277·65	30 24	" pass. & frt., "
Idell		" 7	53·92	9 32	Screw tug, Lake Winnipeg.
Fisherman		" 7	44·22	8 52	" " "
Premier	60	" 8	413·99	41 12	Screw, pass., & frt., Lake Winnipeg.
Highlander		" 9	59·24	9 72	" freight, " "
Rockett		" 9	55·61	9 48	" " " "
Lady of the Lake		" 9	201·43	24 16	" " " "
Chieftain		" 9	60·85	9 88	" tug, " "
City of Selkirk	75	" 8	457·82	44 64	" pass. & frt., " "
Gertie H	150	" 11	90·95	9 28	Stern paddle, pass., Red River.
Miles		" 20	63·04	10 04	Screw tug, Lake Winnipeg.
Balmoral		" 21	36·94	7 96	" " "
Harry Montgomery		" 21	3·65	5 32	" Red River.
Edna Brydges	40	" 22	176·05	22 08	Screw, pass. & frt., Lake of the Woods
Ethel	15	" 23	20·20	6 60	" " " "
Queen		" 23	31·65	7 56	" tug, " "
Keewatin		" 25	41·25	8 28	" " " "
Nora		" 27	20·33	6 60	" " Eagle Lake.
Cairo		" 27	14·47		" " "
Irene	10	" 27	9·71	5 80	" pass. & frt., Wabigon Lake.
Galatia	25	" 28	46·10	8 68	" " " " "
Wm. Whyte		" 28	17·81	6 44	" tug, " "
Wm. Cross	15	" 29	21·66	6 76	" pass. & frt., Lake Manitou.
Minneola		" 29	9·20	5 72	" tug, " "
Mikado	25	" 31	24·92	7 00	" pass. & frt., Lake of the Woods.
Cruiser		June 5	26·92	7 16	" tug, " "
Agwinde	125	" 5	307·41	32 55	Stern pad., pass. & frt., Rainy River.
Bay Star		" 5	12·52	6 04	Screw, priv. yacht, Lake of the Woods.
Mary Hatch		" 11	121·18	14 68	" tug, " " "
Carry L		" 13	14·56	6 20	Side paddle, frt. Seine River.
Gale		" 13	2·62	5 24	Screw tug, Rainy Lake.
Undine	15	" 14	9·46	5 72	" pass., "
Majestic	40	" 15	135·22	18 80	" " "
Minnetonka		" 19	63·24	10 44	" tug, Lake of the Woods.
Sport		" 19	16·26	12 56	" " Winnipeg River.
Villeneuve		" 19	27·58	7 24	" " " "
Daisy		" 22	26·33	7 08	" " Lake Winnipeg.
Viking		" 24	17·00	6 36	" pass. & frt., Selkirk & Gimlie.
Hudson Bay Messenger		" 29	8·00	5 64	" private yacht, Lake of Woods.
Total			6,652·19	1,037 15	

GEO. P. PHILLIPS,
Steamboat Inspector.

STEAM Vessels Inspected in Canada, but registered elsewhere, for the year ended June 30, 1901.

KEEWATIN, MANITOBA AND NORTH-WEST TERRITORIES DIVISION.

BOILERS, MACHINERY AND HULL INSPECTION.

Name of Vessel.	Number of Passengers Allowed.	Date Certificate Expires.	Gross Tons.	Tonnage Dues and Inspection Fees Paid.	Class of Vessel and where employed.
		1902			
Argo	500	May 20..	1,089·00	....	Screw, (steel) Lake Superior, between Port Arthur and Duluth.
Seagull	40	June 14..	12·00	.....	Screw, on Rainy Lake, passenger and freight.
Total			1,101 00		

STEAM Vessels not Inspected for the Year ended June 30, 1901.

KEEWATIN, MANITOBA AND NORTH-WEST TERRITORIES DIVISION.

BOILERS, MACHINERY AND HULL INSPECTION.

Name of Vessel.	Gross Tonnage.	Registered Tonnage.	Remarks. Why not Inspected and Class of Vessel.
Sparrow	49·28	27·90	Screw, pass., McKenzie River.
Wrigley	104·59	66·92	" "
St. Alphonse	24·94	14·92	" "
Graham	360·19	223·51	Stern paddle, pass., Slave River.
St. Joseph	27·06	16·06	Side " " "
Alpha	7·50	4·98	Screw, pass., Slave River.
Lillian B	4·05	1·80	" "
Athabaska	166·73	125·85	Stern paddle, pass., Athabaska River.
Lilly	1·61	1·01	Screw, not in commission.
May	11·08	7·12	Screw, tug, to be inspected.
Gem	11·08	7·20	" not in commission.
Sunbeam	2·86	1·94	" to be inspected.
Beaver	34·51	22·21	" "
Ninsongus	7·60	5·20	Side paddle, "
Widgeon	7·95	6·09	Screw, tug, not in commission.
Annie Mac	13·42	11·10	" to be inspected.
Klondike	8·05	4·00	" at Prince Albert, did not visit there.
Northern Belle	6·78	3·85	" " "
Hazel	7·52	5·11	" to be inspected.
Maple Leaf	81·84	50·02	Screw, pass., "
City of Alberton	67·72	42·04	" "
Mohican	34·20	24·08	" "
Josie	12·42	6·96	Screw, tug, not in commission.
Pearl	10·00	2·77	" "
Gordon M	3 01	2·02	" to be inspected.
Petrel	166·98	93·67	Screw, freight, not in commission.
Chieftain	36·26	24·64	Screw, tug, to be inspected.
Widgeon	2·29	1·56	" "
Monarch	113·09	51·06	Side paddle, "
Ospray	21·22	13·97	Screw, "
Angler	16·16	10·99	" "
Total	1,422·00	880·55	

GEO. P. PHILLIPS,
Steamboat Inspector.

WESTERN ONTARIO DIVISION.

STATEMENT of the Number of Steam Vessels added to the Dominion during the Year ended June 30, 1901; their Class and Horse-power; whether of Wood or Iron; their Gross and Registered Tonnage; where built; and where and how employed.

Name of Vessel.	Horse-power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Islander	13·50	Screw	Composite	165	78	Gravenhurst, O	Muskoka lakes, passenger.
Phœnix	7·26	"	Wood	29	20	Huntsville, O.	Lakes at Huntsville, tug bo't
Theresa	2·13	"	"	26	18	Rosseau Falls, Ont.	Muskoka lakes "
Bobs	6·00	"	Composite	38	26	Parry Sound, O	Parry Sound & vicinity, pas.
J. G. Gidley	14·13	"	Wood	57	39	Little Current, Ont.	Little Current " "
Edna Ivan	20·16	"	"	54	36	Goderich, Ont.	Georgian Bay, passenger.
Primrose	8·40	"	"	23	16	Owen Sound, O	" fishing tug.
W. J. Emerson	5·63	"	"	28	19	Goderich, Ont.	Lake Superior "
Hiram R. Dixon	52·18	"	"	483	282	Mystic, Conn.	Georgian Bay and Lake Huron, passenger.
Imperial	6·53	"	"	36	22	Buffalo, N.Y.	Sault Ste. Marie and vicinity, tug boat.
Ossifrage	61·71	"	"	632	303	Bay City, Mich	Windsor & Duluth, pass.
Commodore	6·53	"	"	40	22	Manitowac "	Sault Ste. Marie and vicinity, tug boat.
Laura Grace	16·13	"	"	86	58	Collingwood, O	Port Arthur and vicinity, tug boat.
Viper	3·67	"	"	34	19	Owen Sound, O	Georgian Bay, tug boat.
Molly S.	10·66	"	"	45	27	"	Little Current & vic'ity, pas.
Torpedo	1·20	"	"	8	6	Toronto, Ont.	Penetang & vicinity, yacht.
City of Lady-smith	10·66	"	"	35	24	Hamilton, Ont	Lake Erie, fishing boat.
R. C. Britton	13·33	"	"	213	149	Tando, Ohio	All lakes, freight.
Ottawa	106·30	"	Steel	2,431	1,344	Toronto, Ont.	" passenger & freight
May B.	1·63	"	Wood	9	5	Port Burwell, O	Lake Erie, fishing tug.
W. J. Strong	4·80	"	"	41	28	Port Elgin, O	Lake Huron, tug.
Dredge Hackett	4·80	"	"	96	50	Wiarton, Ont.	Harbours on lakes, dredge.
Everard	6·00	"	"	25	17	Gore Bay, Ont.	Lake Huron, fishing tug.
N. Dyment	10·00	Twin scr'w	"	59	40	Goderich, Ont.	Thessalon and vicinity, tug.
Glyn	3·33	Screw	"	20	12	Richards Landing, Ont.	Sault Ste. Marie & vic'ty "
Kingston	273·20	Paddle	Steel	2,925	1,909	Toronto, Ont.	Toronto and Prescott, pass.
Total	669·87			,638	4,569		

JOHN DODDS, E. W. McKEAN, } *Toronto.*

STATEMENT of the Number of Steam Vessels added to the Dominion during the Year ended June 30, 1901; their Class and Horse-power; whether of Wood or Iron; their Gross and Registered Tonnage; where built; and where and how employed.

EAST ONTARIO DIVISION.

Name of Vessel.	Horse-power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Manita	8·16	Screw	Wood	34·10	23·19	Bobcaygeon	Passenger, counties Victoria and Peterboro'.
Pearl	0·83	"	"	6·39	4·35	"	" " "
Kawartha	1·87	"	"	16·69	11·36	"	Passenger, Fenelon Falls and Kawartha lakes.
Dauntless	0·83	"	"	3·38	2·31	"	" " "
Kinirving	4·03	"	"	145·40	69·70	Smith's Falls	Freight, canal and river.
Lloyd S. Porter	42·66	"	"	488·63	379·45	Port Huron, U.S.	" Lake Ontario and River St. Lawrence.
Frank	3·27	Twin scr'w	"	15·97	3·06	Cardinal, Ont.	Tug, canal & River St. Law.
Annie Barrett	6·53	Screw	"	41·89	17·89	Kingston, Ont.	" " "
Ellen	8·60	"	"	25 10	16·66	Rockport, Ont.	Passenger, R. St. Lawrence.
Aletha	22·50	"	"	171·27	89·98	Kingston, Ont.	" " "
Water Lily	2·70	"	"	53·93	36·68	Peterboro'	Pass., Rice L. & tributaries.
Kaeymo	2·40	"	"	8·79	5·98	Kingston, Ont.	Pleasure yacht.
Iagara	5·00	"	"	7·43	5·05	"	"
Victoria	3·33	"	"	58·10	39·51	"	Pass., Trenton and Prescott.
Arctic	4·60	"	"	100·51	82·94	Grindstone Island, U.S.	Freight, R. St. Lawrence.
Total	117·31			1,177·58	788·11		

THOS. P. THOMPSON,
Steamboat Inspector.

STATEMENT of the Number of Steam Vessels added to the Dominion, &c.—*Continued.*

MONTREAL DIVISION.

Name of Vessel.	Horse-power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Fleur de Mai	1·2	Screw	Wood	6·74	5·83	Sturgeon Falls	Lake Nipissing, passenger.
West Arm	4·8	"	"	26·66	23·95	"	" tug.
Dredge T. F. M. No. 1	1·6		"	100·00		Not known	River, dredging.
Hercules	2·7	Paddle	"	21·00	13·00	Pembroke	Upper Ottawa, warp tug.
Comet	20·09	Screw	"	144·42	98·21	Opimican	Lake Temiscaming, pass.
Jessie	6·5	"	"	19·00	12·92	Buffalo, N.Y.	St. Lawrence River, tug.
Florida	5·4	Twin scr'w	"	201·39	128·23	St. Thomas de Pierreville	" freight.
Allie	0·67	Screw	"	10·74	7·66	Ottawa	Rideau Canal, passenger.
Monitor	14·4	"	Steel	61·59	39·13	Montreal	St. Lawrence River, tug.
	57·36			591·54	328·93		

WM. LAURIN,
LOUIS ARPIN,
Steamboat Inspectors.

STATEMENT of the Number of Steam Vessels added to the Dominion during the Year ended June 30, 1901; their Class and Horse-power; whether of Wood or Iron; their Gross and Registered Tonnage; where built, and where and how employed.

QUEBEC DIVISION.

Name of Vessel.	Horse-power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Douso	61·46	Screw pass	Iron	432·57	200·57	1879, Bristol, Eng.	Pass. and ft., Quebec Natashquan Siding.
Victoria	13·4	" tug.	Wood	47·54	32·33	1901, Quebec.	Tug, Quebec and Bic.
Marie Louise	1·2	" pleas	"	5·66	5·01	1898, Three Rivers.	Pleas. yacht, Shawenegan Falls.
Jock	4·8	" tug.	"	30·59	20·80	1901, Montmagny, Que.	Tug, Quebec and Montmagny.
Jas. Paul	3·3	" "	"		20·00	1901, Sorel.	Tug, Montreal and Sorel.
Jno. H. Hackett	31·33	" "	"	117·07	79·68	1900, Quebec.	" Montreal and Gulf.
Manicouagan	3·33	" "	"	28·20	19·11	1898, Bic.	" Manicouagan River.
St. Charles	4·8	" "	"	22·81	15·51	1901, Quebec.	" Quebec Harbour.
	123·62			704·27	393·01		

JOS. SAMSON,
PIERRE B. BRUNELLE,
Steam Boat Inspectors.

STATEMENT of the Number of Steam Vessels added to the Dominion, &c.—*Continued.*

NOVA SCOTIA DIVISION.

Name of Vessel.	Horse-power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Millie K.	9·63	Screw	Wood	19·85	7·19	White Water, N.S.	Tug, coasting.
Mable R.	1·20	"	"	15·20	10·34	Lockport, N.S.	Tug, coasting.
Oneita	1·63	"	"	14·96	10·18	Shelburne, "	Fishing boat, coasting.
Iona	27·33	"	"	54·27	35·01	Liverpool, "	Tug and pass., coasting.
Pekin	16·60	"	"	84·91	57·74	Moser River, "	Passenger, coasting.
Yankee	1·20	"	"	7·31	2·90	Notknown, US	" Yarmouth Harbour
Susie	8·16	"	"	26·83	15·74	Parrsboro, N.S.	" Avon river.
Total	65·75			223·33	139·10		

JOHN P ESDAILE,
Steamboat Inspector, Halifax, N.S.

SESSIONAL PAPER No. 21

STATEMENT of the Number of Steam Vessels added to the Dominion during the Year ended June 30, 1901, their Class and Horse-power, whether of Wood or Iron; their Gross and Registered Tonnage; where built, and where and how employed.

NEW BRUNSWICK AND PRINCE EDWARD ISLAND DIVISION.

Name of Vessel.	Horse-power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Lord Roberts	16·00	Screw, tug	Wood	55·98	38·07	St. John, N.B.	Tug, St. John Harbour and Bay.
Gracia Bell	1·04	" yacht	"	10·52	7·16	Not registered.	Yacht, St. John river.
Aurora	31·00	" pass.	"	364·24	182·59	Brooklyn, N.Y	Passenger, St. John, Grand Manan.
James Holly	4·00	" tug	" ...	31·21	21·22	St. John, N.B.	Tug, St. John river.
Wenonah	2·07	" yacht	"	9·02	6·13	Chatham, "	Yacht, Miramichi river.
Wm. M.	12·07	" tug	"	29·11	19·80	Chatham, "	Tug, Miramichi river.
Scout	·67	" fishb't	" ..	9·00	.....	Not registered.	Fish-boat, Prince Edward Island.
Total	66·85			509·08	274·97		

W. L. WARING,
Steamboat Inspector.

STATEMENT of the Number of Steam Vessels added to the Dominion, &c.—*Continued.*

BRITISH COLUMBIA DIVISION.

Name of Vessel.	Horse power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Idler	2·00	Screw	Wood ...	3·88	1·94	Vancouver	Trout Lake, B.C., yacht.
Pert	1·09	"	" ..	6·44	4·38	Golden	Upper Columbia, freight.
Bermuda	19·00	"	" ..	72·03	48·99	Vancouver	B.C. waters, tug.
Kaslo	26·06	Stern wh'l	" ...	764·77	369·78	Kaslo	Freight and passengers, Kootenay Lake.
Otter	24·00	Screw	"	365·97	231·81	Victoria	Freight and passengers, B.C. waters.
Valhalla	36·05	"	" ..	153·23	34·11	Nelson..	Freight and passengers, Kootenay Lake.
Hazelton	9·06	Stern wh'l	" ...	377·86	235·94	Victoria	Freight and passengers, Skeena River.
Defender	13·00	"	"	216·10	137·94	Langley	Freight and passengers, Fraser River.
Bobs	·5	Paddle....	" ...	4·14	2·61	Vancouver	Harrison Lake, yacht.
Trader	19·00	Screw	"	167·18	113·69	"	Freight and passengers, B.C.
Total	151·02	.....	.....	2,131·60	1,180·40		

J. A. THOMPSON.
Steamboat Inspector.

VICTORIA, B.C.

STATEMENT of the Number of Steam Vessels added to the Dominion during the Year ended June 30, 1901; their Class and Horse-power; whether of Wood or Iron; their Gross and Registered Tonnage; where built, and where and how employed.

VANCOUVER AND YUKON DIVISION.

Name of Vessel.	Horse-power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where Built.	Where and How Employed.
Welcome	2·04	Stern wh'l	Wood	32·43	20·44	Harrison Riv..	Harrison River, freight.
Minto	1·06	"	"	36·19	22·80	" ..	" freight & pas.
Firefly	4·02	"	"	46·30	29·70	Fraser	Fraser River, tug.
Terra Nova	9·01	Screw	"	47·09	32·03	Vancouver	B.C. waters, tug.
Greenwood	2·01	"	"	22·95	15·84	"	" "
Uno	1·06	"	"	12·42	8·45	"	" "
Bermuda	16·00	"	"	72·03	48·99	"	" "
Nancy	1·05	"	"	5·85	1·87	"	" "
Eagle	10·07	"	"	34·74	23·62	"	" "
Newera	8·03	"	"	55·96	37·06	"	" "
Idler	1·09	"	"	3·88	1·92	"	" "
Man Ping	8·00	"	"	19·51	14·27	Hong Kong	" yacht.
Lottie N.	14·04	"	"	34·11	24·02	Skeena River..	Skeena River, tug.
Saga	54·06	"	Iron	252·47	176·68	Sweden	B.C. waters, freight & pas
White Horse	17·00	Stern wh'l	Wood	986·65	630·69	White Horse..	Yukon River, "
Dawson	19·02	"	"	778·75	490·62	" ..	" "
Selkirk	19·00	"	"	777·24	489·67	" ..	" "
Prospector	9·06	"	"	262·64	165·47	" ..	" "
WilburCrimmin	6·06	"	"	168·20	105·97	Couperville	" "
Monarch	8·00	"	"	284·33	179.13	San Francisco	" "
Quick	2·04	"	"	67·20	61·16	.....	" "
Lorelei	1·06	"	"	31·93	20·12	....	Skagway, A.
Totals	.....	.....	..	4,032·87	2,600·50		

F. M. RICHARDSON, R.N.R.,
Steamboat Inspector.

VANCOUVER.

STATEMENT of the Number of Steam Vessels added to the Dominion, &c.—*Continued.*

KEEWATIN, MANITOBA AND NORTH WEST TERRITORIES DIVISION.

Name of Vessel.	Horse-power.	Class.	Wood, Iron or Steel.	Gross Tonnage.	Registered Tonnage.	Where built.	Where and How Employed.
Agwinde	6·60	Stern pad.	Wood	307·41	143·13	Rat Portage	Rainy River, pass. & frt.
Bertha	1·20	Screw	"	10·59	6·95	Rosport	Lake Superior, fish. tug.
Cecila B.	2·13	"	"	13·65	8·75	Duluth, Minn.	Rainy Lake, tug.
Carrie L.	1·30	Side pad.	"	14·56	7·99	Mine Centre	Seine River, tug & freight.
Day Star	0·53	Screw	"	12·57	9·67	Rat Portage	Lake of the Woods, pr.yac't
Dolly	0·53	"	"	2·57	2·00	Winnipeg	Red River, passenger.
Highlander	3·33	"	"	59·24	39·11	Selkirk	Lake Winnipeg, fish. tug.
Manitou	6·66	Twin scr'w	"	107·79	59·03	Winnepegosis	Lake Winnipegosis, fr.&ps.
Rambler	0·83	Screw	"	6·14	2·94	Duluth, Minn.	Lake Nipigon, frt. & tug.
Daisy	3·33	"	"	26·33	7·37	Selkirk	Lake Winnipeg, fish. tug.
Viking	2·13	"	"	17·00	11·17	"	" pass. & frt.
Villeneuve	2·70	"	"	27·85	18·64	Rat Portage	Winnipeg River, frt. & tug.
	31·27			605·65	316·75		

GEO. P. PHILLIPS.

SESSIONAL PAPER No. 21

STATEMENT of Steam Vessels lost, broken up or laid up, as unfit for service, in the Dominion during the Year ending June 30, 1901, and where and how employed.

WEST ONTARIO DIVISION.

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and Reason of Unfitness.
Bob Foote	Georgian Bay, fishing tug	39	Screw, dismantled.
City of Parry Sound	" passenger	491	" burned.
Gypsy	Muskoka Lakes, tug	20	" dismantled.
Sea Shell	Lake Huron "	7	" "
Phœnix	" "	37	" "
Hattie Vinton	Soo and vicinity "	55	" foundered.
Evangeline	" yacht	24	" dismantled.
Annie Clark	Lake Superior, fishing tug	51	" "
St. Andrew	All lakes, freight	1,113	" foundered.
Dominion	" "	478	" burned.
Gertrude	Toronto Bay, ferry	76	" dismantled.
Abecona	" yacht	46	" "
La Belle	Lake Huron, freight	75	" wrecked.
A. H. Jennie	Lake Ontario "	197	" foundered.
H. L. Lovering	Georgian Bay, tug	55	" dismantled.
Delight	" "	26	" burned.
Tecumseh	" "	10	" foundered.
Huron Belle	" "	27	" dismantled.
Queen	Lake Simcoe "	7	" foundered.
Maple Leaf	Muskoka Lakes "	12	" "
		2,846	

JNO. DODDS,
E. W. McKEAN,
Toronto.

STATEMENT of Steam Vessels lost, broken up or laid up, &c.—*Continued.*

EAST ONTARIO DIVISION.

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and Reason of Unfitness.
Pilgrim	River St. Lawrence, passenger	262·49	Paddle, hull used up.
Caribou	" "	144·19	Screw "
Transit	Prescott, car ferry	140·81	T.-screw "
Nellie Cuthbert	River St. Lawrence, passenger	59·03	Screw "
Eclipse	Peterboro, passengers	17·94	" lengthened and name changed.
C. F. Dunbar	Cornwall Canal, tug	32·86	" hull used up.
		657·32	

THOS. P. THOMPSON,
Steamboat Inspector.

STATEMENT of Steam Vessels lost, broken up or laid up, &c.—*Continued.*

MONTREAL DIVISION.

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and Reason of Unfitness.
Charlotte	Lake Kippewa, passenger	14	Screw, unfit for service.
Wenoway	" Quinze "	99	Paddle "
Napierville	St. Lawrence River, ferry	165	" "
Temiscamingue	Lake Temiscamingue, passen'gr	415	" dismantled.
		691	

WM. LAURIN,
LOUIS ARPIN.

STATEMENT of Steam Vessels lost, broken up or laid up, &c.—*Continued.*

QUEBEC AND MONTREAL DIVISION.

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and Reason of Unfitness.
Johanna B	Quebec and Montmagny, tug	17	Screw; old age, not worth repairing.
Victory	Pabos River, towing	42	" completely used up.
St. Olaf	Quebec, Sydney, pass. & freight	305·27	" total loss on Seven Islands, Gulf of St. Lawrence, Nov. 25, 1900
Napierreville	Verdun and C. St. Cat'n, ferry.	165·44	Paddle, crushed by ice at Sorel.
		519·71	

JOS. SAMSON,
Steamboat Inspector.

PIERRE D. BRUNELLE,
Hull Inspector.

STATEMENT of Steam Vessels lost, broken up or laid up, &c.—*Continued.*

NOVA SCOTIA DIVISION,

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and reason of Unfitness.
Mic-Mac	Ferry, Halifax Harbour	150 63	Paddle, broken up.

JOHN P. ESDALE,
Steamboat Inspector, Halifax, N.S.

STATEMENT of Steam Vessels lost, broken up or laid up, &c.—*Continued.*

NEW BRUNSWICK AND P. E. ISLAND DIVISION.

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and reason of Unfitness.
Nill			

W. L. WARING,
Steamboat Inspector, Victoria, B.C.

STATEMENT of Steam Vessels lost, broken up or laid up, &c.—*Continued.*

BRITISH COLUMBIA DIVISION,

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and reason of Unfitness.
Spratt's Ark	Freight, coast B. C.	307·88	Dismantled, to be broken up.
Glad Tidings	Missionary Yacht	43·02	Laid up, to be fitted with new boiler.
Wm. Hunter	F. and P., Slocan Lake	50·67	" requires extensive repairs.
Rainbow	" coast B. C.	297·21	Dismantled.
Cutch	" "	675·85	Lost.
Alpha	" "	653·46	"
Bessie	Tug, coast B. C.	10·90	Burnt.
Marion	F. and P., Duncan River	14·78	Dismantled.
		1,963·77	

J. A. THOMPSON,
Steamboat Inspector.

STATEMENT of Steam Vessels lost, broken up or laid up, &c.—*Continued.*

VANCOUVER DIVISION.

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and reason of Unfitness.
Telephone	F. and pass., Fraser River	81	Stern wheel, burnt.
Hattie Young	" " "	132	" "
Ruth	" Atlin Lake	52	" "
Cutch	" coasting	676	Screw, wrecked.
San Juan	Tug, Skeena B.	21	" laid up.

F. M. RICHARDSON,
Steamboat Inspector, Vancouver.

STATEMENT of Steam Vessels lost, broken up or laid up, &c.—*Concluded.*

KEEWATIN, MANITOBA AND N. W. T. DIVISION.

Name of Vessel.	Where and how last employed.	Gross Tonnage.	Class of Vessel and reason of Unfitness.
Mary Ann	Tug, Fort William	86·86	Screw, tug, hull condemned, machinery taken out.
Una	Pass. and freig., Lake Wabigom	19·42	Stern paddle, condemned.
Forester	Tug, on Lac des Mille Lacs	3·00	Screw tug, hull condemned, machinery taken out.
Aurora	Pass & freight, Lake Winnipeg	224·50	Sid pad., pass. & freight, condemned.
Alma T	Tug, White Fish Lake	15·78	Screw, tug, hull burnt.
Millie Howell	" Lake Winnipeg	24·11	" " hull condemned, machinery taken out.
Zena	" Lake Superior	6·66	Screw, tug, condemned.
Zephyr	" Lake of the Woods	19·27	" " hull condemned, machinery, taken out.
Red River	Freight, Lake Winnipeg	166·00	Wrecked on Lake Winnipeg.
		565·60	

GEO. PHILLIPS,
Steamboat Inspector.

SESSIONAL PAPER No. 21

LIST of Certificates of Competency and Temporary Certificates granted to Engineers of Steamboats, during the Year ended June 30, 1901.

Number of Certificate.	Date of Certificate.	Name.	Grade.	Address.	Where Examination was passed.	Fee.
	1900.					8 cts.
2723	July 5.	Joseph Petitclere	Temporary	Wisowasa, Ont	North Bay	2 00
2724	" 5.	Fredk. Windsor	"	Callandar "	Callandar	2 00
2725	" 5.	James Connolly	"	Niagara "	Niagara	2 00
2726	" 10.	Fred. Van Norman	"	Rat Portage, Ont.	Rat Portage	2 00
2727	" 11.	Delamard B. Lowe	4th Class	Vancouver, B.C.	Vancouver	5 00
2728	" 12.	Richard Boyd	Temporary	Waubaushene, Ont	Toronto	2 00
2729	" 13.	Chas. Alfred Lawson	4th Class	Victoria, B.C.	Victoria	5 00
2730	" 16.	Mitchell Kenville	Temporary	Brockville, Ont.	Brockville	2 00
2731	" 16.	Robert Harmon	"	Lindsay "	Lindsay	2 00
2732	" 16.	Alex. McLeod	"	Pictou, N.S.	Pictou	2 00
2733	" 18.	Fredk. Huck	"	Rockport, Ont.	Kingston	2 00
2734	" 18.	Chas. C. Pilkey	"	Orillia, Ont.	Orillia	2 00
2735	" 18.	Maxime Lapierre	"	Amherstburg, Ont	Amherstburg	2 00
2736	" 19.	Horace Lee Waring	2nd Class, U.K.	St. John, N.B.	St. John	5 00
2737	" 19.	Chas. Cass Evans	4th "	Montreal, P.Q.	Montreal	5 00
2738	" 19.	Saml. Prior James	Temporary	Combermere, Ont.	Combermere	2 00
2739	" 24.	John A. Camber	"	Georgeville, P.Q.	Georgeville	2 00
2740	" 24.	Clovis Bellefeuille, jr.	"	Valleyfield "	Montreal	2 00
2741	" 24.	Theophile Bellefeuille	"	Rat Portage, Ont.	Rat Portage	2 00
2742	" 24.	Auguste Fortin	"	" "	"	2 00
2743	" 30.	Joseph Asselin	4th Class	Montreal, P.Q.	Montreal	5 00
2744	" 31.	Vincent Robinson	Temporary	Gravenhurst, Ont.	Toronto	2 00
2745	Aug. 1.	Rosario Derry	"	Rat Portage "	Rat Portage	2 00
2746	" 1.	Adjutor Begin	4th Class	Village Bienville	Quebec	5 00
2747	" 4.	Albert L. Nickerson	4th "	Midland, Ont.	Midland	5 00
2748	" 14.	Rodney Patnote	Temporary	Penetang "	Toronto	2 00
2749	" 14.	George Fredk. Beaumont.	"	Bracebridge, Ont.	Port Carling	2 00
2750	" 14.	George Martin	"	Ottawa, Ont.	Oliver's Ferry	2 00
2751	" 14.	Joseph G. Sampson	"	North Hatley, Ont.	North Hatley	2 00
2752	" 14.	Eugene Bélanger, jr	2nd Class, U.K.	Village Bienville	Quebec	5 00
2753	" 14.	Adlore Gagnon	Temporary	Keewatin, Ont	Rat Portage	2 00
2754	" 20.	Frank R. Massey	"	Rat Portage, Ont.	"	2 00
2755	Sept. 26.	Archd. P. McDonald.	"	"	"	2 00
2756	" 26.	Alfred McDonald.	"	"	"	2 00
2757	" 26.	Albert Openshaw	"	"	"	2 00
2758	" 26.	Arthur Bellefeuille.	"	Three Rivers, P.Q.	Shawenegan	2 00
2759	" 26.	Martin L. Crandell	"	Port Perry, Ont.	Kingston	2 00
2760	" 26.	Wm. Hungerford	"	Lindsay, Ont..	Lindsay	2 00
2761	" 26.	Timothy Whitred	"	Hastings "	Hastings	2 00
2762	" 26.	Arthur Davis	"	Poole's Resort, Ont.	Kingston	2 00
2763	" 26.	Wm. F. McKenzie	3rd Class	North Sydney, N.S.	Halifax	5 00
2764	" 26.	Chas. Sauvageau	2nd "	Village Lauzon, P.Q.	Quebec	5 00
2765	" 26.	Etienne Dufresne	4th "	Lévis, P.Q.	"	5 00
2766	" 26.	Richd. John Smith	1st " U.K.	Halifax, N.S.	Halifax	5 00
2767	" 26.	L. Bruno Pintal	2nd "	Champlain, P.Q.	Sorel	5 00
2768	" 26.	Henri Gendron	4th "	Sorel, P.Q.	"	5 00
2769	Oct. 9.	James F. Paige	1st " U.K.	Truro, N.S.	Halifax	5 00
2770	" 11.	Chas. McLean	Temporary	Dryden, Ont.	Wabigoon	2 00
2771	" 22.	Wm. Rae	4th Class	Vancouver, B.C.	Vancouver	5 00
2772	" 22.	Adjuto Fortin	4th "	Lévis, P.Q.	Montreal	5 00
2773	" 22.	Jos. Archd. Pickard	4th "	Toronto, Ont.	Toronto	5 00
2774	" 22.	Jas. E. Blackaller	4th "	Montreal, P.Q.	Montreal	5 00
2775	" 22.	Ureisse Hamelin	4th "	Three Rivers, P.Q.	Quebec	5 00
2776	" 22.	Rufus O. Zwicker	2nd Class, U.K	Halifax, N.S.	Halifax	5 00
2777	" 22.	Alphonse Couet	2nd "	Montreal, P.Q.	Quebec	5 00
2778	" 22.	John Morris	1st Class U.K.	Brooklyn, N.Y.	Montreal	5 00
2779	" 22.	Robt. Wm. Hooper	1st Class	Halifax, N.S.	Halifax	5 00
2780	" 22.	Fred. A. Weddleton	3rd "	Yarmouth, N.S.	"	5 00
2781	" 22.	Wm. Burgoyne	Temporary	Fenelon Falls, Ont.	Kingston	2 00
2782	" 27.	Ernest Thivierge	"	Roberval, Q.	Roberval	2 00
2783	" 27.	Philias Dery	"	Mistassini, Q.	"	2 00
2784	" 29.	Wm. Powles	"	Tyendinaga, Ont.	Kingston	2 00
2785	" 31.	Malcolm McKinnon	4th Class	Vancouver, B.C.	Vancouver	5 00

LIST of Certificates of Competency granted to Engineers of Steamboats, &c.—*Con.*

Number of Certificate.	Date of Certificate.	Name.	Grade.	Address.	Where Examination was passed.	Fee.
	1900.					$ cts.
2786	Oct. 31..	Peter Brow.....	Temporary...	Lake Megantic.....	Lake Megantic	2 00
2787	Nov. 9..	Andrew W. Lockerbie....	"	Michipicoten	Michipicoten	2 00
2788	" 9..	Charles Taylor	3rd Class..	Albirnie, B. C.....	Victoria.....	5 00
2789	" 9..	Ralph D. Stevens.....	4th "	Victoria, B.C.	"	5 00
2790	" 9..	John Moore.....	4th "	Vancouver, B.C.....	Vancouver....	5 00
2791	" 9..	Alex. McLeod.....	4th "	"	"	5 00
2792	" 21..	James Young.....	4th "	Gore Bay, Ont.....	Gore Bay	5 00
2793	" 21..	Wm. Terry.....	3rd "	Manitoulin Island.....	Little Current	5 00
2724	" 21..	Sam'l. Mack.....	3rd "	Spanish River, Ont.....	Spanish River,	5 00
2795	" 27..	Jos. A. Crapeau.....	4th "	Sorel, Q.....	Sorel.....	5 00
2796	" 29..	Wm. J. Edwards.....	4th "	Windsor, Ont.....	Toronto	5 00
	1901.					
2797	Jan. 3..	William Mallett	4th "	Yarmouth, N.S.....	Halifax.....	5 00
2798	" 3..	Jas. McDonald Denny ...	4th "	Victoria, B.C.....	Victoria	5 00
2799	" 3..	William Godfrey.....	4th "	"	"	5 00
2800	" 3..	James Boyd.....	4th "	Toronto, Ont..	Toronto	5 00
2801	" 3..	Ulysse Bouchard.....	4th "	Murray Bay, Q.....	Quebec.	5 00
2802	" 3..	Lawrence Black	4th "	Brockville, Ont.	Kingston....	5 00
2803	" 3..	Jas. W. Hazlett.....	4th "	Kingston, "	"	5 00
2804	" 3..	John Garand.....	4th "	Garden Island, Ont....	"	5 00
2805	" 4..	Edward. M. Garrity.....	3rd "	Waubaushene, Ont.....	Toronto	5 00
2806	" 4..	Thos. A. Waterman.....	2nd " U.K.	Halifax, N.S.....	Halifax	5 00
2807	" 4..	Patrick Jas. Hunt.....	1st " "	Brooklyn, N.Y.....	St. John, N.B	5 00
2808	" 4..	Christian C. Kurtz.....	4th "	Nelson, B.C.....	Victoria.....	5 00
2809	" 4..	James W. Hopwood....	3rd "	Rat Portage, Ont.....	Rat Portage..	5 00
2810	" 4..	Alex. J. McIntyre.....	3rd "	St. John, N.B.....	St. John, N.B	5 00
2811	" 4	William J. Nahl.....	3rd "	Arrowhead, B.C.....	Victoria	5 00
2812	" 4..	James A. Gill.....	3rd "	Victoria, B.C.....	" ...	5 00
2813	" 4..	Daniel Sullivan.....	3rd "	"	"	5 00
2814	" 4..	William Tracy.....	Temporary...	Barrie, Ont.....	Toronto	2 00
2815	" 4..	Joseph Reynolds	4th Class....	Penetanguishere, Ont....	"	5 00
2816	" 16..	John A. Coleman.....	4th "	Acton West, Ont.....	"	5 00
2817	" 16..	Samuel Garrity.....	4th "	Garden Island, Ont.....	Kingston.....	5 00
2818	" 16..	Wm. John Young.....	4th "	Picton, Ont.....	"	5 00
2819	" 16..	Julian Bourne.....	4th "	Vancouver, B. C	Vancouver....	5 00
2820	" 16..	James Anderson.....	4th "	"	"	5 00
2821	" 16..	John Leonard.....	Temporary...	St. John, N.B.....	St. John.....	2 00
2822	" 26..	Wm. A. Dawson	"	Napanee, Ont.....	Kingston.....	2 00
2823	" 26..	Arthur Carbonneau.....	4th Class.....	Levis, Q.....	Quebec	5 00
2824	" 26..	George D. Finn	4th "	Collingwood, Ont.....	Toronto	5 00
2825	" 29..	James R. P. Gaudin..	3rd "	Victoria, B.C.....	Victoria....	5 00
2826	" 29..	John H. Ritchie.....	3rd "	"	"	5 00
2827	" 29..	Ernest Goldthorp.....	3rd "	Huntsville, Ont.....	Toronto	5 00
2828	" 29..	Denis Goum.....	3rd "	Lachine Lock, P.Q.....	Montreal....	5 00
2829	" 29..	Henry Wilson.....	2nd " U.K.	Victoria, B.C	Victoria.....	5 00
2830	" 29..	Arthur J. M. Cardie	4th "	Vancouver, B.C	"	5 00
2831	" 29..	Rich. J. Muchmore.....	4th "	Kingston, Ont.....	Kingston.....	5 00
2832	" 29..	Andrew Kerr.....	4th "	Collingwood, Ont.....	Toronto	5 00
2833	" 29..	Wm. Burgoyne.....	Temporary...	Fenlon Falls, "	Kingston.....	2 00
2834	" 29..	James Gregg.....	2nd Class.....	Owen Sound, Ont.....	Toronto.....	5 00
2835	Feby. 9..	Robert Vince.....	4th Class....	Kingston, Ont.....	Kingston.....	5 00
2836	" 9..	Howard A McKenzie.....	1st Class, U.K	Montreal, P.Q.....	Montreal.	5 00
2837	" 11..	Percy C. T. Bonham.....	4th "	Owen Sound, Ont.	Toronto, Ont..	5 00
2838	" 11..	Wm. George Scott.....	3rd "	Bentwood, Ont..	"	5 00
2839	" 11..	Wm. Harman	2nd "	Collingwood, Ont.....	"	5 00
2840	" 11..	Wm. Andrew McWilliam.	2nd " U.K.	Kingston, Ont.....	Kingston, Ont.	5 00
2841	" 13..	Jas. E. Readman.....	3rd "	Victoria Harbour, Ont ..	Toronto, Ont..	5 00
2842	" 13..	Jas. M. McMillan.....	2nd " U.K.	Woodside Dartm'th, N.S.	Halifax, N.S..	5 00
2843	" 13..	Albert E. House.....	2nd Class.....	Midland, Ont.	Toronto, Ont..	5 00
2844	" 13..	Frank Krafve	Temporary...	Barrington Passage, N.S.	Halifax, N.S..	2 00
2845	" 13..	John Kennedy.	2nd Class.....	Garden Island..	Kingston.....	5 00
2846	" 21..	Joseph Reynolds.	Temporary...	Penetanguishene.....	Toronto.....	2 00

SESSIONAL PAPER No. 21

List of Certificates of Competency granted to Engineers of Steamboats, &c.—*Con.*

Number of Certificate.	Date of Certificate	Name.	Grade.	Address.	When Examination was passed.	Fee.
	1901.					8 cts.
2847	Feb. 22.	Wm. Eldred Brown	3rd Class	Vancouver, B.C.	Vancouver	5 00
2848	" 22.	George Lemelin	2nd "	St. Joseph de Lévis	Montreal	5 00
2849	" 27.	John J. McLaren	2nd " U.K.	Montreal, P.Q.	"	5 00
2850	" 27.	Jas. Harvey Brown	1st "	Hamilton, Ont.	Hamilton	5 00
2851	" 27.	James McGregor	3rd "	Toronto, Ont.	Toronto	5 00
2852	" 27.	Adjutor Roy	3rd "	Village Lauzon	Quebec	5 00
2853	Mar. 7.	Wm. Gebbie Allan	4th "	Victoria, B.C.	Victoria, B.C.	5 00
2854	" 7.	Wm. Alfred McLaren	4th "	Owen Sound, Ont.	Toronto	5 00
2855	" 7.	Robert S. Bajus	4th "	Kingston, Ont.	Kingston	5 00
2856	" 7.	Joseph Guenard	4th "	Village Lauzon, Q.	Quebec	5 00
2857	" 7.	Louis Paré	4th "	"	"	5 00
2858	" 7.	Mich. J. Toppings	4th "	Westport, Ont.	Kingston	5 00
2859	" 7.	Alex. Ouzilleau	4th "	Village Lauzon, Q.	Quebec	5 00
2860	" 7.	Ambrose Dunn	4th "	Kingston, Ont.	Kingston	5 00
2861	" 7.	Frank P. Maloney	4th "	Sorel, P.Q.	Sorel	5 00
2862	" 7.	John J. Davies	4th "	Charlottetown, P.E.I.	St. John, N.B.	5 00
2863	" 7.	Richard P. Warren	4th "	Collingwood, Ont.	Toronto	5 00
2864	" 7.	Jas. Foubister	4th "	Kingston, Ont.	Kingston, Ont.	5 00
2865	" 7.	Wm. Henry Hartley	4th "	"	"	5 00
2866	" 7.	Andrew E. Kennedy	4th "	"	"	5 00
2867	" 7.	David Alex. Blue	4th "	Collingwood, Ont.	Toronto, Ont.	5 00
2868	" 7.	John Wright	4th "	Wolfe Island, Ont	Kingston, Ont.	5 00
2869	" 7.	Charles F. Dobbie	4th "	Halifax, N.S.	Halifax, N.S	5 00
2870	" 9.	Hugh Andrews	2nd "	St. John, N.B.	St. John, N.B.	5 00
2871	" 9.	George Boyd	2nd "	Kingston, Ont.	Kingston, Ont.	5 00
2872	" 9.	Archibald Lees	1st " U.K.	Victoria, B.C.	Victoria, B.C.	5 00
2873	" 9.	Squire Shires	3rd "	"	"	5 00
2874	" 9.	Arthur Legendre	3rd "	St. Tite des Caps	Quebec	5 00
2875	" 11.	Wm. James Davis	4th "	Toronto, Ont.	Toronto	5 00
2876	" 11.	Jas. Esson Luna	4th "	Montreal, P.Q.	Montreal	5 00
2877	" 11.	Alfred B. Davidson	4th "	Toronto, Ont.	Toronto	5 00
2878	" 11.	Arthur S. Vigars	4th "	Port Arthur, Ont.	Port Arthur	5 00
2879	" 11.	John Wm. Johnston	3rd "	Halifax, N.S.	Halifax	5 00
2880	" 19.	Alex. F. McKenna	3rd "	Vancouver, B.C.	Vancouver	5 00
2881	" 19.	Reese Binch	2nd "	Toronto, Ont.	Toronto	5 00
2882	" 19.	Jas. Howlett	2nd "	Dartmouth, N.S.	Halifax	5 00
2883	" 19.	Robert McLeod	4th "	Victoria, B.C.	Vancouver	5 00
2884	" 19.	Joseph Dick	4th "	Vancouver, B.C.	"	5 00
2885	" 19.	Thos. C. McFadden	4th "	Peterboro, Ont.	Peterboro	5 00
2886	" 19.	George Crawford	2nd "	Picton, N.S.	Halifax, N.S	5 00
2887	" 19.	Thos Theriault	2nd "	Village Lauzon, P.Q.	Quebec	5 00
2888	" 19.	Joseph Reynolds	Temporary	Penetanguishene, Ont.	Toronto	2 00
2889	" 19.	J. W. Jollimore	"	Pictou, N.S.	Halifax	2 00
2890	" 19.	John J. Anderson	4th Class	Halifax, N.S.	"	5 00
2891	" 19.	Chas. E LaVallee	4th "	Toronto, Ont.	Toronto	5 00
2892	" 27.	Alfred F. Laurie	2nd " U.K.	Montreal, P.Q.	Montreal	5 00
2893	" 27.	Wm. A. Robertson	1st " "	Halifax, N.S.	Halifax	5 00
2894	" 27.	Josias G. G. Simpson	3rd "	Wiarton, Ont.	Toronto	5 00
2895	Mar. 27.	Thomas Renfrew	4th Class	Victoria, B.C.	Victoria, B.C.	5 00
2896	" 27.	David Brickenridge	4th "	"	"	5 00
2897	" 27.	John Ferguson	4th "	Wiarton, Ont.	Owen Sound, O.	5 00
2898	" 27.	Allan A. Ferguson	4th "	Picton, N.S.	Montreal, P.Q.	5 00
2899	" 27.	Telesphore Legault	4th "	Oka, P.Q.	"	5 00
2900	" 27.	Clarence M. Lawrence	4th "	Wiarton, Ont.	Owen Sound, O	5 00
2901	" 27.	Zotique Larose	4th "	St. Antoine de Bienville	Quebec	5 00
2902	" 27.	Hilaire Mercier	2nd "	Village Lauzon	"	5 00
2903	" 27.	Horace H. Rutherford	4th "	Owen Sound, Ont.	Owen Sound	5 00
2904	April 2.	Herbert R. Stevens	4th "	Halifax, N.S.	Halifax	5 00
2905	" 2.	L. R. Boulanger	4th "	Quebec	Quebec	5 00
2906	" 2.	Herbert R. Stevens	Temporary	Bobcaygeon, Ont.	Kingston	2 00
2907	May 6.	Arthur Davis	"	Poole's Resort, Ont.	"	2 00
2908	" 6.	Emery Scott	"	Keewatin, Ont.	Rat Portage	2 00
2909	" 6.	Alfred McCall	"	Rat Portage, Ont.	"	2 00
2910	" 6.	Gabriel Bellefeuille	"	" "	"	2 00

LIST of Certificates of Competency granted to Engineers of Steamboats, &c.—*Con.*

Number of Certificate.	Date of Certificate	Name.	Grade.	Address.	Where Examination was passed.	Fee.
	1901.					8 cts.
2911	May 6..	John Paul.....	Temporary ..	Newboro, Ont..	Kingston. ..	2 00
2912	" 6..	Oscar Earle.....	" ..	Smith's Falls, Ont	"	2 00
2913	" 6..	F. H. Richardson.....	" ..	Richardsonville, N.B. ..	Richards'o'vill'	2 00
2914	" 6..	James R. Leblanc	" ..	Tusket Wedge, N.S.....	Halifax	2 00
2915	" 6..	Arthur McCann.....	" ..	Wallace, Ont.....	Wallace	2 00
2916	" 6..	James C. Barry.....	" ..	Lefroy, Ont.....	Toronto ...	2 00
2917	" 6..	Clowes Banks.....	" ..	St. Marys, N.B.....	St. John, N.B.	2 00
2918	" 6..	Edgar P. Strang.....	" ..	Charlottetown, P.E.I....	"	2 00
2919	" 6..	Dougald Alex. McLeod. ..	3rd Class.....	Collingwood, Ont.....	Collingwood. .	5 00
2920	" 6..	John Armstrong.....	3rd "	Vancouver, B.C.....	Vancouver....	5 00
2921	" 6..	David J. Gulliver.....	3rd "	Douglastown, N.B	St. John, N.B.	5 00
2922	" 6..	George Allan	3rd "	Victoria, B.C.	Victoria.....	5 00
2923	" 6..	Walter G. Tatton.....	2nd "	North Head Grand Manan	St. John.....	5 00
2924	" 6..	Lemuel Winchester.....	2nd "	Charlottetown, P.E.I ..	St. John, N.B.	5 00
2925	" 6..	Wm. Christopher Vey....	1st " U.K..	Victoria, B.C.....	Victoria	5 00
2926	" 7..	Ernest Harrison.....	4th "	Wallaceburg, Ont....	Windsor, Ont.	5 00
2927	" 7..	Wm. Lowery.....	4th "	Chatham, Ont.....	"	5 00
2928	" 7..	Wm. H. Carefoot.....	4th "	Collingwood, Ont....	Collingwood,O	5 00
2929	" 7..	Napoleon Molleur.....	4th "	Montreal, P.Q.....	Montreal, P.Q	5 00
2930	" 7..	Thomas Yielding.....	4th "	Vancouver, B.C.....	Vancouver....	5 00
2931	" 7..	Carl. A. McIntyre.....	4th "	"	"	5 00
2932	" 7..	Edwin H. M. Dean.....	4th "	Mayne Island, B.C....	Victoria, B.C.	5 00
2933	" 9..	John M. Donovan.....	Temporary...	Rat Portage, Ont.....	Rat Portage..	2 00
2934	" 9..	Walter D. Booker.....	"	"	"	2 00
2935	" 9..	Herbert Johnson.....	"	"	"	2 00
2936	" 9..	Chas. W. Fraser.....	"	"	"	2 0
2937	" 9..	Jas. D. Kelly.....	4th Class....	Vancouver, B.C.....	Vancouver....	5 00
2938	" 17..	John Edward Hill.....	2nd " U.K..	Victoria, B.C.....	Victoria.....	5 00
2939	" 17..	Gustav Oelkers.....	2nd " " ..	Quebec.	Quebec. ...	5 00
2940	" 17..	Edgar L. Fawcett	4th "	Victoria, B.C.....	Victoria.....	5 00
2941	" 17..	George Greenshields.....	4th "	Nanaimo, B.C.....	"	5 00
2942	" 17..	Clarence Gaul	Temporary...	Ottawa, Ont	Montreal....	2 00
2943	" 17..	Wm. Campbell.....	"	Pictou, N.S.....	Halifax, N.S.	2 00
2944	" 17..	Peter G. Cavanagh..	"	Perth, Ont.....	Montreal....	2 00
2945	" 17..	Jonathan Hymers.....	"	Parry Sound, Ont.....	Parry Sound .	2 00
2946	" 28..	Thos. W. Whitely	"	Sombra, Ont.....	Sombra, Ont..	2 00
2947	" 39..	Clifton Kingsley.....	"	Rat Portage, Ont.....	Rat Portage..	2 00
2948	" 30..	Eugene Charest.....	"	"	"	2 00
2949	" 31..	John Jas. Coones.....	"	Bridgenorth, Ont.....	Kingston. ..	2 00
2950	" 31..	Daniel O'Donnell.....	"	Belleville, Ont.....	Belleville....	2 00
2951	" 31..	John E. Ball..	"	Caesarea, Ont.....	Lindsay, Ont .	2 00
2952	June 7..	James Logan.....	"	Birdsall, Ont	Kingston, Ont	2 00
2953	" 7..	Thos. J. Mullen.....	"	L'Orignal....	L'Orignal.....	2 00
2954	" 7..	Wm. Burns.....	"	Rat Portage, Ont....	Rat Portage..	2 00
2955	" 7..	Wm. E. Mayhew.....	"	"	"	2 00
2956	" 7..	Richard Whiteman.....	"	Vermillion Bay, Ont...	Vermillion B'y	2 00
2957	" 7..	Charles McLean.....	"	Dryden, Ont.....	Dryden, Ont..	2 00
2958	" 7..	Frank Edw. Backus.....	4th Class	Sault Ste. Marie, Ont....	S't. Ste. Marie	5 00
2959	" 10..	Joseph Bark.....	Temporary...	Cornwall, Ont.....	Kingston, Ont	2 00
2960	" 17..	Wm. E. Sproull.....	"	Pictou Landing, N.S ..	Pictou, N.S...	2 00

APPENDIX No. 12.

STATEMENT giving Names and Stations of Light-Keepers, &c., in the Dominion.

ABOVE MONTREAL.

Name.	Station.	Appointed.	Salary.
			$ cts.
Acton, Jas. A	Burnt Island	April 12, 1890	250 00
Armstrong, John	Kaministiquia River	" 28, 1894	200 00
Alexander, Andrew	Lamb Island	May 1, 1897	400 00
Aitken, Jas. H	Stonehouse Point	July 25, 1900	250 00
Allard, Michel	Lake St. Louis, Light-ship No. 3	June 3, 1901	300 00
Baker, Henry F	Clapperton Island	Dec. 2, 1895	350 00
Boyd, Robert P	Cole Shoal	April 9, 1884	250 00
Boyd, Wm. S	Griffith Island	May 14, 1889	350 00
Butler, Silas L	Port Dover	July 15, 1897	300 00
Baxter, Wm. I	Brebeuf Island	June 6, 1901	375 00
Borron, Edward	French River	Sept. 13, 1875	500 00
Beaulieu, Octave	Point à Cadieux	July 26, 1892	150 00
Boucher, François	Aylmer Island	Nov. 17, 1882	175 00
Bamford, Robert	Wilson's Channel, Algoma	June 21, 1888	250 00
Bertrand, Felix	Lower End Coulonge Lake	Mar. 16, 1885	100 00
Boyd, Wm. M	Kagawong	April 13, 1893	72 00
Boyter, A. B	Narrow, Island	Jan. 3, 1898	200 00
Brown, Adam	Red Rock, Parry Sound	May 25, 1899	450 00
Ball, J. H	Manitoulin Island Light and Fog Alarm	" 7, 1900	600 00
Bowerman, H. R	Michael's Bay, Algoma	Mar. 16, 1901	120 00
Butchart, Daniel	Tobermoray	Aug. 28, 1901	130 00
Campbell, Thos	Burlington Beach	April 1, 1875	350 00
Collins, Allen	Christian Island	Mar. 25, 1891	*425 00
Cross, Manly R	Gananoque Narrows and Jack Straw Shoal	Aug. 25, 1896	480 00
Campbell, Robert	Goderich	June 9, 1886	400 00
Currie, Geo	Isle of Coves	April 1, 1878	†650 00
Craig, Wm	Thunder Cape	May 17, 1892	600 00
Cook, Seldon B	Long Point Light and Fog Alarm	June 9, 1897	700 00
Campbell, John	McTavish Point	Nov. 18, 1896	100 00
Clark, Arthur Geo	Nottawasaga Island	July 5, 1890	500 00
Crevier, Dolphis	Point Claire	May 11, 1888	200 00
Cartier, H. J	River Thames	Oct. 19, 1884	425 00
Cooper, John	Port Arthur	" 14, 1882	300 00
Cosgrove, George	Victoria Island, Lake Superior	Nov. 14, 1889	350 00
Columbus, Christopher	Penetanguishene and Whisky Island	Mar. 18, 1893	300 00
Conover, Forrest H. C	Leamington	April 24, 1883	150 00
Cox, John	Morrison's or Hawley's Island	June 22, 1887	100 00
Chabot, Joseph	Papineauville Range Lights	" 17, 1897	100 00
Connors, Frank	Point Pleasant	Oct. 13, 1898	200 00
Chase, H. J	Weller's Bay	Nov. 4, 1898	150 00
Crespin, Vital	Lake St. Louis, Light-ship No. 2	June 3, 1901	300 00
Davieux, Joseph	Corbay Point, Batchewana	May 27, 1890	350 00
Durnan, George	Gibraltar Point	" 31, 1854	625 00
Davieau, Hyacinthe	Michipicoten Island	July 1, 1881	400 00
Daoust, Dosithée	McKie's Point	Sept. 22, 1893	175 00
Davis, John H	Pidgeon Island	May 16, 1896	350 00
Dick, Andrew	Point Porphyry	Aug. 10, 1880	400 00
Dutcher, Samuel	Meaford	May 7, 1877	150 00
Darling, Thomas	Nipissing, South-east Bay Beacon Light	July 1, 1890	60 00
Dixon, Joseph G	Lake Rosseau	" 21, 1890	100 00
Dempsey, J. Frank	Potter's Island Pole Light	June 14, 1892	‡100 00
Demers, Wilbrod	Caribou Island, Lake Superior	May 10, 1899	800 00

*Allowance $10. †Allowance $100. ‡Allowance $50.

STATEMENT giving Names and Stations of Light-keepers, &c.—*Continued.*

ABOVE MONTREAL—*Continued.*

Name.	Station.	Appointed.	Salary.
			$ cts.
Read, Mrs. C.	Port Stanley	Aug. —, 1890.	300 00
Ely, Henry R. A.	Wiarton Pole Light	Sept. 14, 1891.	75 00
Felan, Maurice	Oakville Pier	April 28, 1894.	150 00
Fortier, David H. A.	Port Colborne Range Lights and Fog Alarm	" 11, 1865.	550 00
Fellowes, W. R.	Rondeau Harbour	Dec. 18, 1888.	350 00
Filiatreault, Thomas	Coteau Landing	May 27, 1890.	140 00
Fraser, John	Wind Mill Point	Dec. 13, 1901.	180 00
Grignon, Xavier	Beauharnois	Mar. 16, 1885.	†200 00
Gloude, Benjamin.	Pointe Claire	Sept. 7, 1872.	300 00
Gillespie, Wm	Wolfe Island	Mar. 16, 1885.	250 00
Gauthier, Charles	St. Placide	May 1, 1874.	140 00
Gordon, Robert	Cobourg Pier	" 16, 1883.	180 00
Griffith, Alfred H.	Giant's Tomb	Sept. 17, 1898.	250 00
Gorley, John, jr	Manitowaning	July 3, 1900.	150 00
Hackett, Mrs. A.	Bois Blanc	June 27, 1901.	435 00
Hudgins, James M	False Ducks	April 28, 1894.	350 00
Hamilton, John	Hamilton's Island	Sept. 3, 1873.	130 00
Hill, Thomas H.	Lancaster Pier	July 1, 1877.	325 00
Haitze, Jean	Lonely Island	May 11, 1885.	450 00
Hunter, David	Port Dalhousie	Oct. 29, 1879.	350 00
Hawkins, David B.	Peninsula Harbour	Aug. 31, 1891.	400 00
Harvey, James	Thessalon	Nov. 22, 1897.	250 00
Hughes, Wm.	Red River Range Lights	——— —, 1885.	250 00
Hamilton, Thos.	Pie Island, Port Arthur	April 15, 1899.	75 00
Humes, David	Stribling Point Range Lights	Oct. 3, 1900.	*15 00
Johnson, Isaac S.	Cherry Island	Nov. 5, 1883.	300 00
Jeffrey, Carson	Nigger Island Shoal	April 28, 1894.	200 00
Kinney, James	Gore Bay	July 27, 1895.	350 00
Kennedy, James	Allumette Island	May 23, 1887.	100 00
Lambert, Wm. McGregor.	Chantry Island	Oct. 1, 1880.	500 00
Labelle, Louis	Deep River Island	May 5, 1897.	100 00
Laberge, Alfred	Green Shoal	Jan. 26, 1866.	‡240 00
Lamorandière, Pierre Régis de	Killarney	Sept. 24, 1880.	400 00
Léger, Thomas	Lachine Pier	July 14, 1897.	250 00
Lamondin, Louis	Byng Inlet	" 30, 1901.	375 00
Lee, John	Southampton	Oct. 7, 1882.	150 00
Lockerbie, Andrew	Collingwood Harbour	May 4, 1883.	300 00
Low, Robert	Thornbury	April 12, 1887.	80 00
Lowry, Robert M.	Port Elgin	Mar. 14, 1896.	80 00
Lumsden, A.	Lake Temiscamingue Lights	Oct. 6, 1890.	250 00
Lidwill, John R.	Pelee Island	July 10, 1899.	300 00
Lawson, Colin P.	Middle Island	Oct. 17, 1898.	240 00
Landon, John A.	Spectacle Shoal and Red Horse Rock	Nov. 27, 1901.	300 00
Mullin, Michael	South River, Muskoka	May 8, 1900.	80 00
Munroe, John Jocob	Lancaster Bar	June 8, 1892.	280 00
Moreland, F	Nine Mile Point	April 1, 1895.	200 00
Masson, Lucas H.	Pointe aux Anglais	Sept. 4, 1897.	200 00
Mongeon, Charles A.	Way Shoal	May 23, 1887.	100 00
Matheson, Norman	Cape Robert, Algoma	Oct. 7, 1896.	350 00
Miller, John	Port Credit	Dec. 16, 1897.	150 00
Morriseau, Jonathan	Hooper's Point	Mar. 24, 1898.	150 00
Manson, John	Colchester Reef	June 9, 1886.	600 00
Morriseau, Michael	Rainy River, Algoma	June 9, 1886.	**250 00
Martin, Wm. J.	Spanish River	July 5, 1890.	250 00
Malott, Albert E.	Kingsville Range Lights	April 12, 1890.	150 00
Miron, Louis	Gargantua	Oct. 26, 1889.	450 00
Murray, Wm.	Barryfield Range Lights	May 17, 1900.	150 00
Montgomery, Wm	Toronto Harbour, Eastern Channel	Oct. 16, 1895.	300 00

* Per month during season of navigation. † Allowance $60. ‡ Allowance $10. ** Allowance $30.

SESSIONAL PAPER No. 21

STATEMENT giving Names and Stations of Light-keepers, &c.—*Continued.*

ABOVE MONTREAL—*Continued.*

Name.	Station.	Appointed.	Salary.
			$ cts.
Matheson, Daniel	Black Bear Island, Manitoba	June 22, 1889	150 00
Magnusson, August	Gull Harbour, Lake Winnipeg	Sept. 19, 1898	150 00
Mallette, B.	Lake St. Louis Lightship No. 1	April 30, 1901	250 00
Mason, F. E.	Long Point, West End	June 3, 1901	400 00
Manders, Samuel	Paquet Rapids	July 26, 1901	100 00
McKillop, John	Campbell's Island	April 2, 1892	150 00
McIntosh, John	Arnprior Island	" 2, 1892	150 00
McKenzie, John	Owen Sound	July 14, 1873	100 00
McDonald, Murdoch	Point Clark	Jan. 8, 1897	375 00
McDonald, Amos	Salmon Point	July 12, 1897	300 00
McKillop, Donald	St. Anicet Shoal	June 8, 1892	230 00
McLaren, Allan J	Brown's or Knapp's Point	Feb. 11, 1896	180 00
McKay, Chas. S	Battle Island	Aug. 27, 1877	500 00
McIntosh, Daniel	South Bay Point	Oct. 1, 1881	200 00
McKenzie, Wm.	Strawberry Point	May 17, 1893	300 00
McQuestion, Mrs. Maria	McQuestion Point	June 9, 1886	100 00
McAulay, Donald	Saugeen River	March 16, 1899	80 00
McDonald, Lauchlin D	Mississagua Island	May 16, 1896	450 00
McCool, James	Fort William Beacon Light, Ottawa River	" 23, 1887	90 00
McDevitt, Chas	Point au Baril	March 1, 1897	300 00
McKay, John	Lyal Island	Oct. 27, 1884	450 00
McLean, Arch	Owen Sound	Dec. 23, 1897	126 00
McGaw, Thos	Kincardine	June 13, 1899	350 00
McDougall, Neil	Squaw Island	April 25, 1901	150 00
Norton, James S	Tomahawk Island	June 28, 1901	150 00
Ouellette, Godfrey	Buckam's Point	May 1, 1884	180 00
O'Brien, Matthew	Frenchman's Bay	Oct. 13, 1898	125 00
O'Conner, P	Bishop's Bay, Algoma	April 13, 1899	150 00
Purvis, John	Great Duck Island Light and Fog Alarm	March 9, 1898	*500 00
Pettypiece, Stephen	Lime Kiln Crossing	May 11, 1888	350 00
Prosser, John	Muskoka or Fox Island	Sept. 14, 1896	250 00
Plunkett, H. E	Swampy Island, Lake Winnipeg	Oct. 12, 1884	350 00
Proudfoot, Thos	Neebish, St. Mary's River	Nov. 4, 1898	100 00
Root, Albert	Grenadier Island	Dec. 15, 1863	250 00
Roddick, Robert	Gull Island	March, 1872	500 00
Rowe, Geo. Albert	Telegraph Island	Oct. 25, 1895	200 00
Repentigny, Toussaint de	Ste. Anne de Bellevue	Feb. 28, 1881	†125 00
Robillard, Honoré	Isle Perrot	Jan. 25, 1897	100 00
Redmond, William H	Gravenhurst Narrows	June 18, 1894	100 00
Rains, Evan	Shoal Point, Algoma	Nov. 24, 1884	250 00
Rains, A. M	Sailor's Encampment	Aug., 1892	‡ 7 00
Rains, W. W	Westfield Range Light	" 1892	‡ 7 00
Ritchie, James	South Bay Range Lights	" 20, 1898	150 00
Rowan, James	Victoria Island, Galetta	Dec. 3, 1898	100 00
Richardson, Wm. J	Michipicoten Hr., Algoma	Sept. 27, 1900	200 00
Richardson, Thos. J	Western Islands Light and Fog Alarm	June 27, 1901	700 00
Sommers, Napoleon	Midland Range Lights	June 19, 1900	150 00
Shannon, William	Gross Point	Sept. 27, 1866	**425 00
Shannon, George	Assistant	" 27, 1866	175 00
Seguin, Grégoire	L'Orignal	May 8, 1894	100 00
Smithers, R. O	Mohawk Island	March 31, 1896	400 00
Sutherland, Jno	Port Burwell	June 18, 1894	225 00
Schofield, Fergus	Port Maitland	April 16, 1871	350 00
Simpson, Hedley V	Presqu'Isle	May 11, 1888	540 00
Smith, H. E	Presqu'Isle, Main Light	April 29, 1898	350 00
Shepperd, Mrs. Wm., acting keeper	Sulphur Island, Range Light	Aug. —, 1890	300 00
Sullivan, Silas	Baskin's Wharf	Dec. 22, 1896	130 00
Sauvé, Honoré	Caron's Point	Feb. 16, 1889	60 00
Stoneburner, John A	Cornwall Canal, upper entrance	April 12, 1890	100 00

*Allowance $200 attending Fog alarm. †Allowance $25. ‡Per month while light in operation.
**Allowance $10.

STATEMENT giving Names and Stations of Light-keepers, &c.—*Continued.*

ABOVE MONTREAL—*Concluded.*

Name.	Station.	Appointed.	Salary.
			$ cts.
Smith, Donald	Flower Pot Island	Nov. 8, 1897	300 00
Spencer, D. O.	Scotch Bonnet	Aug. 8, 1898	350 00
Scott, Guy J.	Point Peter, Light and Fog Alarm	June 6, 1901	650 00
Scott, Wm. J.	Corunna, Range Lights	April 23, 1901	120 00
Taylor, Ross	Stag Island, River St. Clair	July 13, 1900	150 00
Taylor, Edward	Parry Sound, Range Lights	June 3, 1901	350 00
Veech, Stannes	Nine Mile Point: light-keeper and engineer of fog alarm	Mar. 7, 1894	450 00
Valee, Charles	Hope Island	April 20, 1899	450 00
Wallace, John G.	Lindoe Island	July 1, 1881	250 00
Winthrop, Robert W.	Head of Dechêne Rapids	April 13, 1891	100 00
Weightman, Wm.	North Sisters Rock, Algoma	Nov. 6, 1885	350 00
Wootton, Edward	Niagara, Fog Bell	July 11, 1887	50 00
White, Charles L.	Snug Harbour, Parry Sound	" 25, 1894	350 00
Webster, Chas	Cabot's Head, Light and Fog Alarm	May 10, 1898	650 00
Whitmarsh, John	Snake Island	July 18, 1900	350 00
Weir, John C.	Belleville	April 4, 1901	200 00
Wemp, Daniel	Centre Brother Island	Jan. 9, 1901	200 00

BETWEEN MONTREAL AND QUEBEC AND BELOW QUEBEC.

Arcand, Elzear	Cap de la Madeleine	May 17, 1892	80 00
Ayer, R	Georgeville, Lake Memphremagog	From year to year	*1 50
Arcand, Alfred	Seven Islands	May 20, 1898	324 00
Ascah, James	Fame Point, Gaspé Co.	Sept. 2, 1880	400 00
Beaudet, Fulgence	Lotbinière (1)	June 1, 1895	80 00
Beaudet, George	Lotbinière (2)	Jan. 4, 1883	80 00
Beaudet, Charles	Platon	Aug. 24, 1894	†120 00
Bourque, Peter	Bird Rocks	Nov. 27, 1896	1,300 00
Bouilliane, Pierre	Lark Islet	Sept. 1, 1872	200 00
Bertrand, Auguste	Macquereau Point	Dec. 21, 1877	300 00
Banville, Joseph	Matane	Feb. 1, 1897	‡250 00
Bourget, F.	Percé Roadstead	Mar. 18, 1893	200 00
Breton, Narcisse	Point Rich	May 16, 1896	50 00
Bourget, Charles	Cape Despair	Nov. 1, 1897	§400 00
Bisson, Wm	Grand River	Oct. 22, 1896	§150 00
Bergeron, George	River Valee	June 16, 1885	70 00
Bouchard, Louis	Cap au Saumon, Lighthouse and Fog Alarm	May 16, 1896	600 00
Beaulieu, Jos. Hudon dit	Point aux Originaux	April 7, 1875	250 00
Boucher, Louis	Isle aux Raisins	" 13, 1898	240 00
Belanger, H.	St. Thomas Wharf	" 4, 1898	80 00
Buiold, Louis	Carleton Point	May 25, 1899	250 00
Boisvert, Alcide	Cape Charles	July 23, 1901	150 00
Baron, Amedie	Cap Charles	June 26, 1901	70 00
Bouchard, Geo.	St. Irenée	Aug. 31, 1901	40 00
Carignan, L. P.	Champlain Main Light	Oct. 1, 1892	80 00
Cormier, Wm.	Amherst Island	April 26, 1871	**300 00
Colton, P. J.	Belleisle	" 1, 1882	††1,100 00
Côté, Luc	Cape Chatte	Dec. 3, 1901	††300 00
Campbell, John W.	Cape Norman, Lighthouse and Fog Alarm	April 12, 1890	720 00
Costin, Eugène	Cape Rosier	Nov. 4, 1890	80 00
Chamberlain, H.	Oak Point, Range Lights	April 19, 1900	75 00
Collins, Geo. F.	Entry Island	Feb. 30, 1901	250 00
Chenel, John	Grand Entry, Mag. Island	July 4, 1901	50 00

*Per week. †Has also charge of Back Rock Range Light at $5 per month. ‡Allowance $100.
§Allowance $30. **Has allowance of $50 for fuel, &c. ††Allowance $100. ‡‡Allowance $200.
¶A light-ship is maintained, under contract, at Peninsula Bank, Gaspé Basin. The present contractor is Thomas Kennedy, sr., of Douglastown, Gaspé County.

SESSIONAL PAPER No. 21

STATEMENT giving Names and Stations of Light-keepers, &c.—*Continued.*

BETWEEN MONTREAL AND QUEBEC AND BELOW QUEBEC—*Continued.*

Name.	Station.	Appointed.	Salary.
			$ cts.
Chabot, Edouard	Pointe St. Laurent	Aug. 1, 1880..	300 00
Chiasson, Edward	Etang du Nord	Oct. 22, 1896..	350 00
Croteau, Telesphore	St. Croix, Front Range	Mar. 28, 1901..	70 00
Dubreuil, Hector	Pointe aux Trembles	Feb. 18, 1897..	130 00
Desmarais, Phileas	River St. Francis	July 2, 1897..	*20 00
Duperie, Alfred J	Pointe aux Joncs	May —, 1873..	40 00
Dubois, Octave	Flower Island, Strait of Belle Isle	Oct. 14, 1899..	500 00
Demers, Alphonse	Pointe à Basil	Feb. 6, 1901..	100 00
Danville, Elzéar	"	" 6, 1901..	100 00
Electric Light Company	Roberval Beacon Light (2)	June —, 1898..	60 00
Fournier, Alfred	Upper Traverse	April 14, 1900..	600 00
Fugère, Léandre	Batiscan (1)	" 19, 1868..	80 00
Fugère, Napoléon	" (2)	Jan. 10, 1887..	80 00
Fiset, Jean H	Lake St. Peter Light-ship No. 2	April 22, 1875..	500 00
Fontaine, Edouard	Cape Bauld Lighthouse and Fog Alarm	Nov. 1, 1892..	800 00
Faffard, Victor	Pointe de Monts	Aug. 1, 1889..	†400 00
Fraser, Pierre T	Red Island	April 12, 1890..	‡450 00
Fagot, George	Greenly Island Lighthouse and Fog Alarm	June 30, 1890..	800 00
Ferland, Nap	St. Petronelle	Sept. 3, 1901..	150 00
Gervais, Ovila	Contrecœur (1)	Mar. 1, 1877..	100 00
Giguère, Denis	Lavaltrie	April 24, 1870..	300 00
Galibois, Jean B	Bellechasse	June 23, 1880..	320 00
Gauthier, Jean	Martin River	Feb. 21, 1876..	§300 00
Goudreault, Jos. M	River Caribou	———, 1874..	40 00
Gauthier, Francis	Pointe aux Joncs	April —, 1872..	40 00
Goudreault, Abraham	Eboulements Pole Light	May 10, 1882..	40 00
Grenier, Solomon	Newport	June 3, 1897..	120 00
Guyon, Philip	Isle aux Prunes	Mar. 22, 1898..	120 00
Hébert, Moïse M	Cap de la Madeleine	May 11, 1888..	80 00
Harvey, André	Chicoutimi Wharf	" 20, 1889..	40 00
Huot, Joseph	L'Ange Gardien	Aug. 1, 1885..	70 00
Heroux, Didié	Lake St. Peter Light-ship No. 3	April 13, 1898..	400 00
Irvine, John	Red Island Light-ship	March 2, 1900..	**500 00
Lafleche, Désiré	Lake St. Peter Light-ship No. 1	April 12, 1887..	400 00
Lachapelle, Jean B	Repentigny (2)	Feb. 1, 1861..	75 00
Langlois, Antoine	River du Chêne	July 11, 1888..	100 00
Laliberé, Arthur	Ste. Emelie, Front Range	Sept. 24, 1890..	70 00
Lebel, Esdras	Lower Traverse Light-ship	April 21, 1900..	††2,300 00
Leclerc, P. M	Ste. Emelie, Back Range	" 8, 1899..	80 00
Lavoie, M	St. Fulgence	———, 1893..	70 00
Le Huguet, François	Gaspé Cape	Oct. 22, 1896..	650 00
Lindsay, Wm	Gaspé Wharf	June 14, 1900..	42 00
Lindsay, Irenée	Green Island	Sept. 25, 1888..	600 00
Loisel, John	Pointe Paspebiac	Aug. 27, 1894..	150 00
Leclerc, A	St. Antoine	Feb. 6, 1899..	175 00
Le Blanc, Regis	White Island Light-ship	Jan. 11, 1878..	‡‡500 00
Lemieux, Z	South-west Point, Anticosti	July 19, 1900..	600 00
Lachance, Louis	Port of St. John	Sept. 26, 1896..	300 00
Leclerc, Geo	Pillars—Abernon Rock	July 30, 1901..	650 00
Lavoie, F	Anse St. Jean Wharf	———, 1889..	40 00
Levesque, Arthur	Kamouraska	Feb. 19, 1901..	400 00
Mouseau, François	Port St. Francis	Mar. 27, 1900..	***30 00
Montplaisir, Antoine B	Cap de la Madeleine	Aug. 6, 1877..	175 00
Martineau, Valerie	Champlain Pole Light	" 2, 1889..	60 00
Mercier, O	Isle à la Raque	" 31, 1883..	150 00
Malo, Joseph	Isle Ste. Thérèse (1)	Feb. 1, 1897..	130 00

* Per month. † $200 for attending signal gun, &c. ‡ Allowance, $50 for fuel, &c.
§ Allowance, $25. †† Was in charge of Upper Traverse Light-ship from April 13, 1893.
** Allowance, $1,900. ‡‡ Allowance, $2,300. *** A month during season of navigation.

1-2 EDWARD VII., A. 1902

STATEMENT giving Names and Stations of Light-keepers, &c.—*Continued.*

BETWEEN MONTREAL AND QUEBEC AND BELOW QUEBEC—*Continued.*

Name.	Station.	Appointed.	Salary.
			$ cts.
Ménard, Denis	North of Halfway Point	Sept. 12, 1890	170 00
Marchand, Ferdinand	Pointe aux Citrouilles	April 27, 1896	200 00
Martin, Paul	St. Valentine	April 28, 1873	150 00
Molson, Mrs. Alexander	Molson's Island, Lake Memphremagog	From year to year	†2 50
Malouin, Alfred	Anticosti, West Point	July 1, 1877	‡‡‡450 00
Martin, Jule G	Little Metis	Dec. 23, 1879	‡‡300 00
Marceau, Louis	St. Francis	April 1, 1884	75 00
Maltais, Eli	Murray Bay	May 10, 1882	50 00
Mayrand, Eugene	Grondines (2)	May 28, 1901	100 00
Morin, Hypolite	Pilgrims	April 29, 1898	340 00
Marcotte, P. L	Point Bleue, Lake St. John	Nov. 28, 1898	40 00
McWilliams, John J	Father Point	June 1, 1876	200 00
McLaren, Donald	River du Moulin	Sept. 19, 1889	35 00
Nadeau, Alphonse	Anticosti, South Point	June 18, 1894	800 00
Noel, Edouard	Richelieu Light, Lotbinière	April 10, 1899	150 00
Pelletier, Tancrède	Egg Island	July 1, 1901	500 00
Paquin, Sylva	Point du Lac	May 2, 1900	100 00
Paul, Edouard	Isle de Grace	Sept. 7, 1871	‡30 00
Pagé, Celestin	L'Islet Richelieu	Jan. 9, 1895	150 00
Peters, D. E	Witch Rock, Lake Memphremagog	Oct. 31, 1901	†4 00
Peters, J. H	Green Point	From year to year	†1 50
Patterson, J. C	Wadleigh	"	†1 50
Painchaud, Joseph	Crane Island	Oct. 1, 1864	320 00
Paquet, Pierre	St. Famille	" 19, 1885	70 00
Poitras, Alexander	Bersimis Range Light	Sept. 21, 1891	100 00
Pedneau, Pierre	Isle aux Coudres Pole Light	April 6, 1896	40 00
Poulin, Alfred	Ste. Famille	" 26, 1898	70 00
Pmeault, Louis	Bicquet Lighthouse and Fog Alarm	Oct. 6, 1900	700 00
Perrault, Henri	St. Pierre les Becquets	May 28, 1901	70 00
Reeves, Samuel	Isle Ste. Thérèse (2)	Oct. 12, 1870	270 00
Rivet, Léon L	Repentigny (1)	April 28, 1894	75 00
Robinson, George L	Ash and Bloody Islands	June 18, 1894	200 00
Richard, Alphonse	Brandy Pots	Oct. 7, 1878	400 00
Rennie, E. H	Cape Ray Lighthouse and Fog Whistle	" 19, 1884	800 00
Roberge, C. Honoré	St. Pierre Island	" 19, 1885	70 00
Rodrique, F. F	Portneuf	Jan. 22, 1858	250 00
Racette, D	St. Croix back range lights	Feb. 10, 1900	70 00
St. Onge, Thomas	Contrecœur	June 14, 1886	75 00
Salvail, Omer	Isle à la Pierre	May 6, 1897	220 00
Simard, Edward	Montée du Lac, and Cape Rouge Beacons	Oct. 28, 1870	400 00
Sasseville, F. J	Cape Magdalen, Lighthouse and Fog Whistle	June 9, 1886	700 00
Simard, Arthur	River Caribou	" 9, 1870	40 00
St. Croix, George	Plateau Rock	Oct. 22, 1896	400 00
Savard, Jno	River Caribou		40 00
Simard, H	St. Anne de Chicoutimi		40 00
Trottier, Widow I	Grondines (1)	Aug. 1, 1872	100 00
Thurber, Mrs. Wm	Ste. Croix	March 28, 1901	175 00
Tremblay, W. T	Goose Cape	April 4, 1888	250 00
Tremblay, Dorilas	Portneuf (2)	Feb. 18, 1875	350 00
Tremblay, George	River du Moulin	Sept. 9, 1889	35 00
Trudelle, Ambroise	L'Ange Gardien	Oct. 19, 1885	70 00
Tremblay, Pitre	St. Alphonse Wharf	June 19, 1895	40 00
Tremblay, Henry	Cape l'Aigle Pole Light	Feb. 6, 1896	40 00
Tremblay, Thomas	Bay St. Paul	Oct. 25, 1898	250 00
Tremblay, P. E	Harbour Light Rivière du Loup	May 19, 1900	70 00
Tremblay, Alexis	Heath or East Point, Anticosti	July 25, 1900	600 00
Vigneau, Placide	Perroquet Island	Sept. 19, 1892	600 00
Vézina, Oliver	St. Pierre	Oct. 28, 1897	70 00
Whitman, Robert H	Lacolle	May 14, 1883	150 00
Wheeler, W	Lead Mines, Lake Memphremagog	From year to year	‡1 50
Wyatt, Thomas	Forteau Lighthouse and Fog Whistle	Oct. 18, 1889	‡800 00

*Per month. †Per week. ‡Allowance $75. ‡‡Allowance $20 for fuel and $20 for horse. ‡‡‡Allowance $250.

SESSIONAL PAPER No. 21

STATEMENT giving Names and Stations of Light-keepers, &c.—*Continued.*

NEW BRUNSWICK.

Name.	Station.	Appointed.	Salary.
			$ cts.
Arseneau, James	Dalhousie	Jan. 18, 1894	100 00
Archer, Wm	North Tracadie	Nov. 7, 1872	275 00
Allain, Joseph	Hay Island, Beacon Light	May 21, 1895	150 00
Balmer, Matthew	Oak Point	April 27, 1900	80 00
Barbour, Jas. G	Cape Enrage Lighthouse and Fog Signal	May 11, 1888	800 00
Bent, A. J. Percy	Cape Jourimain or Cape Tormentine	Jan. 25, 1901	300 00
Blacklock, Fred. G	Cape Spencer	Mar. 5, 1888	400 00
Brown, Charles	Quaco	Nov. 25, 1884	400 00
Bradshaw, L. B.	Quaco Fog Alarm	Sept. 3, 1887	400 00
Brune, John David	Goose Lake	May 11, 1888	*250 00
Boudreau, Jos. B.	Petit Rocher	Feb. 26, 1896	150 00
Blakley, Lawrence	Harper's Point	Sept. 9, 1887	75 00
Bellmore, Fredk	Dipper Harbour	Mar. 12, 1895	100 00
Belleveau, Philip T.	Folly Point	Nov. 29, 1897	175 00
Cochran, Fredk. M	St. Martin's Wharf, Quaco	Mar. 25, 1892	100 00
Conley, John C	Beaver Harbour	April 2, 1892	250 00
Cummings, Geo.	Campbellton Beacon Light	Jan. 1, 1880	100 00
Chapman, James	Baie du Vin Island	July 24, 1882	200 00
Crandall, D. H.	Grays Point, Pole Light	April 12, 1900	70 00
Carney, John	Perry Point	Sept. 25, 1900	80 00
Copp, Ed. J	Anderson's Hollow	Jan. 14, 1901	100 00
Dixon, Elias C	Pea Point	Nov. 16, 1898	250 00
Delaney, John	Grant's Beach	Oct. 7, 1880	125 00
Drake, Jeremiah	St. John Signal Station	Mar. 24, 1881	650 00
Dumaresq, Francis X	Shippegan	Nov. 7, 1872	280 00
Dalzell, Geo. Y	Swallow Tail	Mar. 18, 1893	400 00
Dutch, John	Heron Island	" 7, 1875	200 00
Dinsmore, Samuel G	Big Duck Island Fog Alarm	July 5, 1886	550 00
DeGrace, John	Indian Point	June 4, 1889	150 00
Davidson, Warren P	Southern Wolves	Jan. 14, 1897	500 00
Day, W. A	Belyea's Point	Sept. 20, 1899	90 00
Egan, Edward	Bellonie's Point	May 17, 1892	100 00
Frawley, Frank	Point Lepreau Fog Alarm	June 15, 1898	450 00
Flewelling, M	Flewelling's Wharf	April 12, 1890	80 00
Fanjoy, William	Fanjoy's Point	Dec. 15, 1897	80 00
Ferguson, W. G	South Tracadie Gully	Mar. 23, 1898	150 00
Guptill, S. N	Grand Harbour	Oct. 24, 1900	400 00
Gillard, John	Point DuChene Range Lights	June 13, 1888	90 00
Gillespie, David	Hillsborough Pier	Dec. 31, 1892	75 00
Gould, Francis T	Point Brule Range Lights, Shediac	Jan. 13, 1899 April 3, 1900	40 00
Hendry, A. M	Hendry Farm	" 25, 1899	80 00
Hayden, Michael	Pokemouche	Oct. 17, 1888	200 00
Henderson, Arthur	Midjic Bluff	" 5, 1894	200 00
Hamm, Chas. P	Musquash	Jan. 14, 1879	†300 00
Helms, Geo	Petit Passage Fog Whistle	May 5, 1882	‡400 00
Hachey, Octave	Pokesudie Island	July 12, 1881	180 00
Hagan, E	Ward's Point	April 12, 1890	80 00
Harvey, W. L	Gannet Rock	May 20, 1898	700 00
Hannah, Mrs. B	Spruce Point	Sept. 1892	120 00
Ingals, Turner	S. W. Head, Seal Cove	Dec. 4, 1900	500 00
Ingersoll, Colin J	Machais, Seal Isd. Light house & Fog alarm	Dec. 30, 1901	1,000 00
Kilpatrick, Joseph	Passamaquoddy Bay	Feb. 3, 1898	350 00
Lantaigne, Gervais	Caraquet Island	June 16, 1888	200 00
Leblanc, Charles P	Cassie's Point	May 4, 1872	250 00
Looney, Thos. E	Greenhead, St. John River	Oct. 14, 1896	200 00

*Allowance, $12. †Allowance, $45. ‡Allowance, $180.

STATEMENT giving Names and Stations of Light keepers, &c.—*Continued.*

NEW BRUNSWICK—*Concluded.*

Name.	Station.	Appointed.	Salary.
			$ cts.
Mills, George	Lower Fox Island	June 23, 1897	200 00
Morrison, Peter	Oak Point	" 24, 1882	100 00
Morrison, Peter, jr	Portage Island	July 1, 1892	200 00
Morrison, Duncan	Sheldrake Island	Feb. 25, 1880	300 00
Maillet, D. O	Indian Point, Buctouche	July 7, 1883	150 00
Matheson, R. B	Newcastle	April 18, 1898	100 00
McLaren, William	St. John Harbour	June 8, 1901	350 00
McLeod, J. H	Bliss Island	Oct. 17, 1900	300 00
McLennan, Kenneth	Escuminac Lighthouse and Fog Whistle	March 7, 1892	750 00
McEwen, David	Middle Island	July 22, 1875	300 00
McIntosh, Chas	Neguac Range Lights	Dec. 19, 1892	100 00
McBaine, Alex	Cox's Point	May 6, 1898	80 00
McMonagle, Miles	Oromocto Shoals	" 26, 1891	80 00
McDonald, R. P	Musquash Island	Jan. 28, 1901	80 00
McMann, Robert Harvey	McMann's Point	Nov. 2, 1901	80 00
McNeil, Henry H	Dalhousie Beacon Lights and Douglas Island Light	Jan. 1, 1880	150 00
McConnell, Robert	Miscou Gully	Sept. 9, 1887	100 00
Nevers, George	Jemseg	Nov. 24, 1884	80 00
Nobles, Israel	Belleisle Point	" 23, 1885	80 00
Purvis, David	No Man's Friend	June 2, 1897	80 00
Preston, S	Preston Beach	July 11, 1889	125 00
Pendlebury, Wm. J	St. Andrews	April 10, 1889	250 00
Pickett, Robert E	Parmer's Point	May 11, 1897	80 00
Parker, Alvin	Mulholland's Point	June 13, 1901	200 00
Palmer, E. B	Hampstead	Nov. 6, 1900	80 00
Quinton, Wm. M	Mark's Point	April 12, 1890	120 00
Russell, James R	Grindstone Island	Jan. 13, 1899	700 00
	Miramichi Light-ship		
Rivers, Robert	Miscou Light-house and Fog Whistle	April 24, 1877	800 00
Robinson, John	Neguac Beach	June 30, 1896	150 00
Richard, Peter F	Richibucto	May 30, 1895	185 00
Robertson, Charles M	Robertson's Point	June 30, 1897	80 00
Robertson, Meier	Shediac Island Beacons	Dec. 29, 1873	253 00
Ross, Elijah	Negro Point	March 5, 1878	400 00
Robichaud, Jude	Richibucto Beacon	Dec. 5, 1891	225 00
Robicheau, Henry B	Dixon Point	June 21, 1884	150 00
Roherty A	Belledune	Feb. 5, 1895	100 00
Richards, D. L	Partridge Isd. Lighthouse and Fog Whistle	July 19, 1900	800 00
Sutherland, Geo. A	Bathurst Harbour	March 20, 1882	†200 00
Seely, Neil	Head Harbour Lighthouse and Fog Whistle	May 3, 1882	800 00
Scott, Chas. F	Stonehaven	July 20, 1885	100 00
Thomas, Geo. H	Point Lepreau	Aug. 29, 1884	400 00
Tatton, George T	Grand Manan Fog Whistle	Oct. 16, 1886	550 00
True, Geo. Howard	Wilmot's Bluff	Sept. 11, 1899	80 00
Upton, Robert	Bridge's Point	" 11, 1899	80 00
Williston, Wm. W	Fox Island	May 31, 1873	300 00
Wagner, Richard	Sand Point	June 7, 1883	80 00
Williams, Forrest W	William's Wharf	May 11, 1897	80 00

NOVA SCOTIA.

Amero, George D	Pubnico	Feb. 6, 1893	240 00
Amirault, James	Sissiboo	July 11, 1899	200 00

*Allowance $300. †Allowance $10.

SESSIONAL PAPER No. 21

STATEMENT giving Names and Stations of Light-keepers, &c.—*Continued.*

NOVA SCOTIA—*Continued.*

Name.	Station.	Appointed.	Salary.
			$ cts.
Amero, Chas. A	Whitehead Island	Nov. 9, 1897	300 00
Beaman, Edwin	Digby Pier	May 29, 1897	100 00
Burke, James	Main-à-Dieu	" 2, 1871	300 00
Bonner, George	Point Aconi	April 18, 1874	200 00
Burgess, Watson	Port l'Hebert	July 26, 1892	150 00
Boutillier, R. J.	Superintendent of Sable Island	Nov. 13, 1884	*600 00
Boutillier, Henry	Paddy's Head, Indian Harbour	June 6, 1901	100 00
Bollong, James	Pope's Harbour	Aug. 6, 1877	300 00
Bourgeois, Philip	Cheticamp Range Lights	May 23, 1898	150 00
Boudrot, Thomas	Hawk Island, Poulamon	June 19, 1901	200 00
Baker, Thomas	Pease Island	May 19, 1879	350 00
Burns, Wm. H	Wedge Island	April 2, 1892	400 00
Brackett, Wm	Herring Cove	Aug. 28, 1897	100 00
Belleveau, John H	Belliveau's Cove	Feb. 16, 1889	80 00
Brownell, Luther	Cold Spring Head	Mar. 27, 1901	120 00
Brown, James	Canberry Head Fog Alarm	June 22, 1898	500 00
Buchanan, Angus A	Neil's Harbour	Aug. 14, 1899	150 00
Buckman, Chas	North Point, Brier Island	Jan. 7, 1901	200 00
Baird, Fredk	Cariboo Island or Gull Rock	Dec. 30, 1901	300 00
Chiasson, Gernan	Caveau Point Range Lights	Aug. 20, 1897	120 00
Chiasson, Joseph P	Grand Entry, Inverness	May 21, 1901	60 00
Critchton, H. H	Critchton's Head	" 6, 1874	200 00
Crooks, Deman	Liscombe	Oct. 6, 1894	300 00
Connington, Thomas	Louisburg Range Lights	" 26, 1897	150 00
Crowell, John	Seal Island Lighthouse and Fog Whistle	" 14, 1899	800 00
Campbell, Samuel C	St. Paul's Island, Superintendent	July 17, 1897	1700 00
Campbell, J. O	Port Mouton	April 29, 1898	300 00
Comeau, Louis C	Meteghan River Wharf	Oct. 12, 1875	100 00
Campbell, John	Red Islands	Nov. 30, 1901	120 00
Croucher, George A	Croucher's Island	Jan. 31, 1883	300 00
Clough, Daniel	Grandique Pole Light	July 4, 1884	70 00
Clory, Abraham	Glasgies Point Pole Light	" 25, 1894	150 00
Coolin, Joseph	Westhaver's Point	Aug. 5, 1885	250 00
Carey, James	Carey's Beach	" 18, 1886	60 00
Cameron, John	Beaver Point	Sept. 29, 1896	150 00
Campbell, John M	Engineer Fog Alarm, St. Paul's Island	Oct. 26, 1898	400 00
Christian, John	Betty's Island	Dec. 12, 1899	500 00
Creelnam, Samuel	Porte-à-Pique	May 2, 1901	25 00
Doane, Isaac	Cape Sable	July 1, 1871	800 00
Duene, Wm	Green Island	Oct. 30, 1871	500 00
Doody, James	Meagher's Beach, Lighthouse and Fog Whistle	Feb. 19, 1896	800 00
Dunne, James M	Fort Williams	Oct. 26, 1859	260 00
Doane, John H	Yarmouth Fourchu, Lighthouse & Fog Whistle	July 1, 1874	800 00
Doane, Joshua	Yarmouth Harbour	Feb. 23, 1874	‡350 00
Doyle, Edward	Mabou Range Lights	June 14, 1897	70 00
D'Entremont, W. H	Abbott's Harbour	May 22, 1888	50 00
Dewis, F. H. P	Cape d'Or	April 13, 1898	500 00
Daigle, Nicholas	Margaree, Outside Range	June 8, 1901	50 00
Ellis, Wm. E	Annapolis, Pt. Prim or Digby L. H. & F. W	March 8, 1875	800 00
Early, John	Margaretville	Feb. 19, 1887	230 00
Fowler, James E	Apple River Lighthouse and Fog Whistle	July 25, 1894	700 00
Fisher, Joel W	Baccaro or Barrington	Aug. 8, 1883	400 00
Fulker, Wm. G	Devil's Island	July 1, 1886	420 00
Firth, Charles M	Coffin Island, Liverpool	June 30, 1880	400 00
Foster, Israel C	Port Medway	Oct. 13, 1892	260 00
Foster, Samuel T	Port Medway Breakwater	Feb. 17, 1899	100 00
Foster, Geo. M	Port George	Nov. 5, 1897	100 00
Fraser, John A	Callaghan's Island	Dec. 31, 1892	200 00
Faulkner, W. Y	Burnt Coat	June 22, 1898	250 00
Findlay, John H	Bull Point	Dec. 7, 1899	100 00
Giffin, Spencer H	Country Harbour, Green Island	Sept. 18, 1883	400 00

*With board for self and family. †Allowance $1,400. ‡Allowance $30 per annum for fog bell.

STATEMENT giving Names and Stations of Light-keepers, &c.—*Continued.*

NOVA SCOTIA—*Continued.*

Name.	Station.	Appointed.	Salary.
			$ cts.
Gilkie, Henry A	Sambro	Jan. 8, 1877	800 00
Giffin, Ira L	Holly Point, Isaac's Harbour	April 28, 1894	200 00
Goudock, Edward	Shelburne Sand Point	Dec. 3, 1880	280 00
Gardner, Frederick T	Brooklyn Pier	Feb. 6, 1885	100 00
Gallant, Patrick	Little Loraine	Jan. 19, 1900	80 00
Goodwin, Jas. E	Wood's Harbour	Aug. 27, 1900	200 00
Harpell, Jeremiah	Jeddore Harbour Range Lights	Jan. 21, 1901	150 00
Helm, William	Flint Island	July 31, 1883	450 00
Hopkins, Leslie	Bon Portage Island	Oct. 20, 1897	350 00
Huntley, Charles H	Kingsport Pier	June 30, 1890	100 00
Hensbee, David S	Crowe Harbour	Nov. 10, 1897	300 00
Hawley, Matthew	South Bay, Ingonish	May 13, 1897	140 00
Hardy, John	Gabarus	Nov. 22, 1890	200 00
Hennesey, W. P	Highland Village Pole Light	April 6, 1899	25 00
Hinds, James	Victoria Beach	Mar. 7, 1901	100 00
Jackson, David	Ingonish Island	April 13, 1898	360 00
Johnson, Edward	Chebucto Head Lighthouse and Fog Whistle	May 14, 1872	800 00
Joyce, Simon	Seal Island Pole Light	July 4, 1884	100 00
Jamieson, Chas	Cape St. Lawrence	Sept. 21, 1893	400 00
Jamieson, Geo. C	Cole Harbour Range Lights	Oct. 21, 1898	120 00
Long, Joseph	Canso Harbour	Dec. 31, 1896	250 00
Leblanc, Severin	Fish Island	July 1, 1889	250 00
Lowden, David	Pictou Harbour Range Lights	" 12, 1897	150 00
LeVashe, Wm	Arichat	Oct. 17, 1898	250 00
Lyons, John W	Barrington Light-ship	June 18, 1897	500 00
Landry, Edward	Big Arrow Island	Feb. 23, 1897	200 00
Larkin, Ephraim	Shag Harbour, Stoddart's Island	Mar. 18, 1896	200 00
Livingstone, George S	Advocate Harbour	May 8, 1884	250 00
LeBlanc, Benjamin	Tusket Wedge	Nov. 1, 1892	300 00
Morrell, B. H	Brier Island	June 6, 1901	400 00
Morrison, Charles	Amet Island	Oct. 5, 1894	320 00
Morrison, M. D	Black Rock Point	June 8, 1892	250 00
Muise, Marcellin	Chetichamp	Nov. 27, 1896	300 00
Misner, John E	Fort Point	May 16, 1896	150 00
Moser, Samuel	Moser's Island	Nov. 6, 1885	450 00
Mullins, James	Mullins Point	June 8, 1892	250 00
Munro, William	Pictou	Nov. 22, 1890	460 00
Murphy, Michael	Ponket Island	Dec. 18, 1890	350 00
Mundell, Joseph	Sand Point	Oct. 18, 1869	400 00
Martell, John T	Scatterie Lighthouse and Fog Whistle	July 30, 1897	800 00
Murray, John	Cape George	Nov. 3, 1882	200 00
Munroe, William L	Three Top Island	Oct. 28, 1879	300 00
Mitchell, John W	Jeddore Rock	Sept. 29, 1882	400 00
Mitchell, Wm. A	Quaker Island	Feb. 19, 1896	300 00
Matheson, Murdoch	Whycocomah Pole Light	Sept. 11, 1884	60 00
Morrison, Widow	Freestone Pole Light	June 5, 1897	150 00
Manger, John J	Cape LaRonde	Nov. 16, 1898	300 00
McKay, H. G	Bird Island	May 21, 1901	450 00
McNeil, Francis, S. H	Iona	Nov. 16, 1901	120 00
Myrick, John	Cape Race, Newfoundland, Lighthouse and Fog Whistle	Nov. 1, 1897	1,000 00
McDonald, Robert	Carter's Island or Lockport	Jan. — 1885	275 00
McRae, Roderick	Margaree or Sea Wolf Island	Feb. 3, 1898	400 00
McLellan, Rod'k	Margaree Harbour, Inside Range	June 8, 1901	50 00
McKay, R	North Canso	Feb. 4, 1882	350 00
McFarlane, Andrew	Pictou Island	June 8, 1892	400 00
McDonald, John A	Port Hood	May 10, 1880	280 00
McDonald, James	Point Tupper	Mar. 15, 1870	300 00
McAskell, Donald	St. Anne's Harbour	June 26, 1889	140 00
McLean, H	Gillis Point	Dec. 18, 1897	150 00
McRae, Hector	McKenzie Point, Plaster Harbour	Aug. 20, 1890	160 00
McLeod, Norman	Cape North, Money Point	Oct. 14, 1899	400 00

SESSIONAL PAPER No. 21

STATEMENT giving Names and Stations of Light-keepers, &c.—*Continued.*

NOVA SCOTIA—*Continued.*

Name.	Station.	Appointed.	Salary.
			$ cts.
McRae, Donald	Kidston's Island	May 17, 1892	200 00
McLeod, Angus	St. Esprit	Oct. 27, 1880	400 00
McDonald, Charles L	Little Narrows	Jan. 17, 1896	120 00
McDonald, Norman	Marjorie's Isle Pole Light	July 4, 1884	100 00
McAskill, Kenneth	Jerome Point	" 30, 1901	250 00
McNeil, John C	Piper's Cove	Dec. 18, 1897	120 00
McNeil, Laughlin	McNeil's Back Pole Light	Aug. 6, 1884	60 00
McFadyen, Malcolm	Mabou Range Light	April 17, 1891	50 00
McVickar, Archibald	Cow Bay Breakwater	July 3, 1896	70 00
McDonald, Donald	Clark's Harbour Pole Light	April 25, 1892	50 00
McNeil, John	Campbell's Island, Victoria Co	May 22, 1900	100 00
McEachern, A. L	Cape St. George	Sept. 8, 1898	450 00
McLeod, Murdoch	Pugwash	Dec. 10, 1897	250 00
McKenna, John L	McNutt's Island, Shelburne Harbour L. H. & F. W	Mar. 31, 1899	800 00
MacIntosh, James	Egg Island	July 28, 1899	500 00
McLellan, Ingersoll L	Economy Pole Light	May 16, 1899	*6 00
McAdam, Hugh R	Arisaig	Nov. 14, 1898	100 00
Nass, Henry	Lunenburg	Mar. 12, 1897	300 00
Nickerson, Byron	Negro Island	July 26, 1897	300 00
Nunn, George	Sydney South Bar	June 20, 1872	300 00
O'Brien, Chas. W	Walton Harbour	Jan. 2, 1901	135 00
O'Leary, Wm	Beaver Island	Feb. 22, 1900	350 00
O'Hara, Theodore	Port Bickerton	Jan. 26, 1901	150 00
Orchard, L. D	Gull Rock	" 1, 1877	400 00
Payzant, Jason	Little Hope Island	Oct. 22, 1901	500 00
Pearl, Albert	Green Island	Dec. 29, 1873	500 00
Price, Philip	Louisburg	Nov. 8, 1897	350 00
Peters, John G	Low Point	Oct. 1, 1865	460 00
Pettis, William	Parrsboro'	Dec. 6, 1888	340 00
Palmer, Howard	Wolfe Point	Oct. 14, 1899	250 00
Palmer, H. W	Fort Point	May 22, 1878	200 00
Perry, John	Sheet Harbour	Dec. 17, 1878	500 00
Phinney, Elisha	Cape Sharp, Diligent River	July 6, 1893	250 00
Perry, Levi	North East Harbour Range Lights	June 17, 1899	200 00
Peters, John N	Brier Island	" 6, 1901	400 00
Robinson, Charles	Black Rock	Mar. 16, 1885	330 00
Ruggles, Frank	Boar's Head	May 24, 1901	350 00
Robicheau, B. H	Cape St. Mary's	July 5, 1886	250 00
Rathburn, S. M	Horton Bluff	1879	250 00
Reid, George J	Isle Haute	Oct. 18, 1889	500 00
Ross, Robert	George's Island	Jan. 18, 1876	250 00
Robblee, Jacob V	Shafner's Point	May 29, 1897	150 00
Riley, Simon W	Annapolis Royal	Mar. 7, 1892	100 00
Richards, Stephen C	Charles Cove Guysboro'	Nov. 4, 1901	120 00
Smith, Eph	Inner Pole Light Sambro Island	Jan. 3, 1900	20 00
Sullivan, James	Cape Canso, Cranberry Island, L. H. & F. W.	May 23, 1887	800 00
Scott, M. C	Guysborough	April 19, 1884	220 00
Swinehammer, George	Peggy's Cove Point	Jan. 4, 1883	350 00
Spencer, Robert A	Spencer's Point	April 1, 1870	125 00
Suthern, Edward W	Westport	" 12, 1890	300 00
Saulnier, John H	Church Point	Aug. 8, 1878	200 00
Sampson, C	Quetique Island	Dec. 1, 1874	350 00
Strum, James A	Westhaver Island	Sept. 23, 1888	200 00
Sollows, A. J	Green Cove Pole Light	Dec. 28, 1900	75 00
Sampson, Theodore	South Beaver Harbour Pole Light	Oct. 15, 1892	80 00
Smith, Caleb	Salter's Head Beacon Light	June 21, 1888	60 00
Smith, William B	Westhead Barrington	April 12, 1890	200 00
Simpson, John	Pictou Custom House Light	Dec. 10, 1901	100 00
Smeltzer, John D	Hobson Island	April 10, 1900	300 00
Smith, John Young	Pages Island, Port La Tour	Jan. 17, 1901	150 00

* Per month during season of navigation.

STATEMENT giving Names and Stations of Light-keepers, &c.—*Continued.*

NOVA SCOTIA—*Concluded.*

Name.	Station.	Appointed.	Salary.
			$ cts.
Vigneau, George	Jerseyman's Island	Mar. 23, 1883	300 00
Vance, George	Masstown	June 29, 1898	25 00
Walsh, Peter	Lingan, C.B.	Oct. 22, 1901	200 00
Wolfe, Howard M	Ironbound	June 22, 1895	250 00
Wells, James	Whitehead	Oct. 20, 1897	510 00
Winton, Robert B	Guion Island	April 28, 1877	450 00
Wambold, James	Sheet Harbour Passage	May 11, 1887	50 00
Webb, Patrick	Harbour au Bouche	Feb. 19, 1896	250 00
Webber, James M	Torbay	May 10, 1898	300 00
Wynacht, W. H	Cross Island Lighthouse and Fog Whistle	April 13, 1898	800 00
Young, Uriah	Chester, Quaker Island	Feb. 15, 1884	400 00

PRINCE EDWARD ISLAND.

Anderson, Albert	St. Peter's Harbour	July 25, 1900	130 00
Allen, Joel S.	Indian Point Pier	May 18, 1898	350 00
Arsenealt, F. C.	Cape Egmont	April 20, 1900	200 00
Clark, Jesse	St. Andrew's Point, Inner Range	August 14, 1901	125 00
Champion, Wm.	Cascumpec Harbour	October 25, 1897	100 00
Costain, Frederick	Miminegash, Rix Point Range Light	May 19, 1897	40 00
Connors, George	St. Andrew's Point, Outer Range	June 3, 1901	125 00
Fraser, John.	Summerside Wharf	April 12, 1897	100 00
Gaudet, Agape	Tignish	August 30, 1897	130 00
Gillis, Donald	Point Prim	Decemb. 10, 1897	300 00
Hardy, Wm.	Little Channel	July 26, 1875	100 00
Howatt, Abner J.	Crapaud Outer Range Light	July 22, 1893	100 00
Harris, Wm.	Cape Bear	Novemb. 11, 1896	350 00
Kennedy, Alexander	Hazard's Inner Range Light	June 27, 1890	60 00
Kielly, John Andrew	Cove Head, Inner Light	Novemb. 27, 1900	80 00
(Vacant)	Crapaud Inner Range Light		100 00
Lewis, James	Brighton Beach Range Lights	March 1, 1899	100 00
Munn, Duncan	Little Sands	May 1, 1877	30 00
Morrison, John D.	Cardigan	August 15, 1901	100 00
McDonald, John W.	Tracadie	May 24, 1901	100 00
McRae, Daniel	Hazard's Outer Range Light	April 6, 1900	70 00
McDonald, Lauchlin	East Point Lighthouse and Fog Whistle	Feb. 23, 1897	600 00
McDonald, John	Orwell	June 25, 1879	80 00
McLeod, Jas. H.	New London	January 29, 1896	100 00
McDonald, Wm.	West Point	Decemb. 1, 1875	300 00
McKay, John.	Wood Island	Septemb. 12, 1898	250 00
McDonald, Angus	Souris	Novemb. 13, 1880	300 00
McDonald, Jas. A.	Savage Harbour	July 11, 1889	100 00
McLeod, Lemuel	Murray Harbour Beach Light	Decemb. 21, 1897	50 00
McPherson, Daniel W.	Brush Wharf, Orwell, Range Lights	January 13, 1899	60 00
McNeil, Alex. S	Block House, Charlottetown	March 25, 1901	340 00
Oulton, Robert T.	Savage Island, Cascumpec	June 14, 1897	80 00
O'Brien, Patrick	Miminegash Range Light	May 14, 1897	60 00
Phee, James	North Cape	Septemb. 4, 1897	300 00
Penny, Robert	Murray Harbour, Penny's Light	Novemb. 11, 1897	50 00
Pino, Joseph N.	North Rustico	February 6, 1897	125 00
Ranaghan, Peter.	Sea Cow Head	April 21, 1873	250 00

SESSIONAL PAPER No. 21

STATEMENT giving Names and Stations of Light-keepers, &c.—*Concluded.*

PRINCE EDWARD ISLAND—*Concluded.*

Name.	Station.	Appointed.	Salary.
			$ cts.
Robertson, Alfred	Annandale Range Lights	October 5, 1898.	100 00
Sinclair, Wm.	Fish Island	March 8, 1897.	250 00
Stewart, Geo.	Summerside Harbour Back Range Light	Septemb. 5, 1895	80 00
Steele, Colin.	Panmure Island	June 3, 1901	250 00
Tuplin, Jas. C.	Sandy Island, Cascumpec	May 5, 1897.	300 00
Taylor, Chas	Darnley Basin Range Lights	June 14, 1897.	60 00
Taylor, James W.	St. Peter's Island	May 1, 1897.	200 00
Wiggins, G. W. J	Darnley Point Range Lights	October 16, 1896.	100 00
Wright, Chas. L	Wright's Range Light, Crapaud	June 14, 1894.	100 00

BRITISH COLUMBIA.

Brown, Wm. Henry	Ballinac Island	Oct. 3, 1901.	180 00
(Vacant)	Discovery Island Lighthouse and Fog Whistle		900 00
Carpenter, C	Dryad Point Light	Nov. 7, 1899.	180 00
Crozier, James	Bare Point, Chemainus	June 12, 1897.	168 00
Clark, M. G.	Entrance Island Lighthouse and Fog Whistle	Nov. 26, 1897.	900 00
Codville, James	Pointer Island	July 11, 1900.	360 00
Daykin, William P.	Carmanah Point Lighthouse and Fog Whistle	Nov. 4, 1890.	1,200 00
Davidson, John	Cape Mudge	June 27, 1898.	360 00
Davies, John	Fiddle Reef, Victoria	Dec. 2, 1898.	*25 00
Eastwood, F. M.	Race Rocks	Jan. 31, 1891.	1,200 00
Erwin, Walter	Point Atkinson Lighthouse and Fog Whistle	Oct. 5, 1880.	1,000 00
Forsythe, James	Ivory Island	Sept. 5, 1900.	500 00
Georgeson, Henry	Plumber Pass Lighthouse and Fog Whistle	July 21, 1884.	900 00
Georgeson, James	Saturna Island, East Point	Oct. 26, 1889.	550 00
Grove, John	Prospect Point	June 21, 1898.	300 00
Gallup, J. W.	Balfour	Mar. —, 1900.	*20 00
Gordon, Walter	Yellow Island	Sept. 27, 1901.	500 00
Harrison, S. G.	Beren's Island	Nov. 4, 1897.	300 00
Harvey, Thos. W.	Lawyer's Island	Oct. 22, 1901.	600 00
Jeffries, Alfred	Sister's Rock, Vancouver	April 30, 1901.	500 00
Jones, William D	Brockton Point, Burrard Inlet	Aug. 20, 1890.	300 00
Johnston, Capt. George	Fisgard	July 30, 1901.	500 00
McColl, Wm.	Garry Point	Aug. 4, 1898.	*10 00
Patterson, Thomas	Cape Beale	Mar. 2, 1895.	†500 00
Richardson, John	Portlock Point Lighthouse and Fog Alarm	Dec. 2, 1895	460 00
Scarlett, Robert	Egg Island	Aug. 22, 1900.	600 00

* Per month. † Allowance, $700.

DEPARTMENT OF MARINE AND FISHERIES,
OTTAWA, November 6, 1901.

APPENDIX No. 13.

REPORT OF EXAMINERS OF MASTERS AND MATES.

HALIFAX, N.S., December 5, 1901.

To the Deputy Minister of Marine and Fisheries,
Ottawa.

SIR,—Owing to the lamented death of the late chairman, Captain W. H. Smith, R.N.R., on the 10th of May last, I have, under your instructions, the honour to submit, for the information of the Honourable the Minister of Marine and Fisheries, the annual report of the proceedings of the Board of Examiners of Masters and Mates, from June 30, 1900, to June 30, 1901, to the end of the fiscal year.

Examinations for candidates for Certificates of Competency Sea-going, were held as follows:—

At Halifax 11 times, at St. John 5 times, at Yarmouth 5 times, making 21 times in all.

There were also four examinations held at Victoria, B.C., the papers and problems having been sent to the chairman at Halifax for his inspection.

No examinations were held at Quebec during the twelve months. One candidate was prepared for examination there for master sea-going, but, owing to the late chairman having been prevented by illness from visiting that port, the applicant was sent to Halifax at government expense and examined by him here.

At Halifax eight applications were made for sea-going certificates of competency as master, and seven for master coasting and inland waters; eight sea going and six masters for coasting and inland waters received certificates. Fourteen applications were made for sea-going certificates as mate, and six for mates coasting; twelve sea-going and six coasting mates received certificates.

At St. John five applications were made for sea-going certificates of competency as master, and twelve for master coasting and inland waters; three sea-going and eleven masters for coasting and inland waters received certificates. Six applications were made for sea-going certificates as mate, and five for mates of coasting and inland waters; four sea-going and four coasting and inland mates received certificates

At Yarmouth one application was made as a sea-going certificate as master and five for mates certificates; one master and one mate received certificates.

At Victoria three applications were made for sea-going certificates as masters and one for a mate's certificate, and all were successful.

It can, therefore, be seen that seventeen applications were made for master's certificates of competency sea-going, and twenty-six for mates' during the year; fifteen masters and eighteen mates received certificates, also nineteen applications for certificates as master competency coasting and inland waters, were made to the Board of Examiners, and eleven for mates' certificates; seventeen masters and ten mates received certificates.

Two certificates of service were issued through the Halifax office for master coasting, and nine renewal certificates.

The total number of certificates issued by the Department of Marine and Fisheries during the fiscal year, including competency, service and renewal, upon applications made to the Board of Examiners at Halifax, was 71, and fees to the amount of $756 were collected and deposited to the credit of the Receiver General.

Amongst the applicants enumerated above, some have presented themselves a second or third time for examination, having previously failed to pass.

At Yarmouth, examinations for certificates for coasting and inland waters, are conducted by an examiner, Capt. J. E. Murphy, who also acts as instructor to the candidates for such certificates, as well as to those who desire to present themselves before the Board for sea-going certificates. He reports direct to the department in a similar manner to the examiners of coasting and inland officers at other ports.

Since the death in October, 1899, of the former member of the Board who resided at St. John, namely the late Captain William Thomas, all the applications for coasting and inland certificates at that port have been examined by the chairman at the time of of his usual monthly visit to St. John, with the exception of a few who have been examined by Captain Murphy, there and at Yarmouth.

As the number of applicants for certificates has been very limited, and owing to the tonnage of ships of the modern type greatly exceeding the old class of vessel, masters and mates find less opportunity of employment. I see no difficulty in continuing, with the valuable assistance of Mr. Haliburton-Gilpin, the secretary, the present system, without interfering with my other duties in connection with the Tidal Survey and Life Saving Service.

From my experience in the past few months, two days per month at Yarmouth and St. John should in ordinary cases be sufficient to enable me to examine all the candidates presenting themselves at these ports.

I have the honour to be, sir,
Your obedient servant,

BLOOMFIELD DOUGLAS, R.N.R.,
Acting Chairman Board of Examiners of Masters and Mates.

APPENDIX No. 4

REWARDS FOR SAVING LIFE.

LIST of persons to whom rewards have been granted by the Government of Canada for the fiscal year ended June 30, 1901, for the gallant and humane services rendered in life-saving from shipwrecked vessels, or by British and Foreign Governments for similar services rendered by Canadian vessels in saving life from shipwrecked British and Foreign vessels for the same period.

Names and Designations of Persons.	Nature of Services rendered.	Date of Services rendered.	Description of Reward.
M. G. Nickerson, manager; J. E. Brown, captain; John Ernest, engineer; Joseph Brown, mate; Isaac Banks, cook; Isaac Hunt, deck-hand; S. G. Newell, purser; Everett Cleaveland, firemen; seamen of ss. *Gertrude M.*, of Clark's Harbour, N.S.	Service rendered in saving the lives of certain fishermen caught in the ice off Bon Portage.	Feb. 9, 1901.	To owner, $35; to captain and engineer, $2 each; mate, $2; cook, deck-hand, purser and fireman, $1.75 each.
Captain Albert E. Isserwood, of Port Francis, Ont.	Saving the lives of two men at Rainy River.	Mar. 23, 1900.	A life-saving medal.
Fred. C. Lahey, Robert Murray, William Scott, Edward Lahey, Richard Cline, Alfred Bennet, Robert Nicoll, and Ed. Kelly, volunteer crew of the Life-boat at St. John, N.B.	Rescuing the master and crew of the American schooner *Hazel Dell*, wrecked near Government Pier, St. John, N.B.	Dec. 2, 1899.	A gold life-saving medal to each of the men by the President of the United States.
Robert Armstrong, resident of Lower Barney's River, Pictou Co., N.S.	Saving a person from drowning off the seashore at Barney's River, N.S.	Aug. 20, 1900.	A silver watch.
John Lawlor, Outer Basin, Quebec	Saving the firemen of ss. *Manchester City* from drowning, at Outer Basin, Quebec.	June 13, 1900.	A bronze medeal.
Walter C. Hare, Henry Howler, Frederick C. Block, and Charles J. Peer, of Port Credit.	Bravery in the rescue of the crew of the schooner *Augusta*, near Port Credit, Ont.	Nov. 25, 1900.	A silver life-saving medal to each man.
John C. Webber, seaman, late of the ss. *Parklands*, of Hartlepool.	Saving the lives of three of the crew of the barque *Ada Barton*, of St. John, N.B.	Feb. 16, 1884.	$14.60 being the equivalent of £3 sterling, the amount of the award.
Capt. D. Doxrud, master; John Daddow, chief officer; E. Peterson, boatswain: H. Loronsen, quarter master; Rudolph Kittleson, M. O'Keefe, seamen of Belgian steamer *Rhinland*.	Rescuing the crew of the brigantine *Ida Maud*, of Liverpool, N.S.	Oct. 6, 1899.	A binocular glass to master, a gold watch to chief officer, a silver watch to each: boatswain and quarter master, and $10 each to Messrs. Kettleson and O'Keefe.
A. E. Tweddel, P. Lafranc, L. Chouinard, and W. Soucy, of St. Octave de Métis, Quebec.	Rescued wrecked mariners at Pointe aux Senells.	Sept. 12, 1900.	A binocular glass to Mr. Tweddel, $10 to each of the others.